
Microsoft
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Supplementary income generation through

Micro-Tasks

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Approval Sheet

The Interaction Design - Project Three entitled **“Supplementary Income Generation through Micro-Tasks”** by Shashank Khanna is approved, in partial fulfillment of the requirements for Master of Design degree in Interaction Design.

Guide:

Chairman:

Internal Examiner:

External Examiner:

Acknowledgements

I got this golden opportunity to work on this project at Technology for Emerging Markets Group at Microsoft Research, India. It is a dream come true for me. I have always been fascinated to see the research TEM has been involved into and now I did my project there, Just Wow!. Learning in this time has been immense for me, I got to see the professional side of research which holds strong potential to solve challenging needs of emerging markets.

Here I would like to thank my guides Bill Thies, Aishwarya Ratan, and Prof. Anirudha Joshi for helping me shape this project. I also want to thank Ed Cutrell, Kentaro Toyama, Prof. Ravi Poovaiah, Indrani Medhi, Saurabh Panjwani, David Hutchful, Nimmi Rangaswamy, Olga Morawczynski for all the meaningful interactions on and off the topic.

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Last but not the least, thanks to all my friends and my family for continuous support and moral boosting during the entire phase of this project.

Declaration

I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/ source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Signature

Name of the student

Roll No.

Date:

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Abstract

The micro-task market allows small tasks (typically requiring work for a few minutes or even seconds) to be posted as requests on a common web-based platform. These tasks are then distributed among large numbers of potential respondents. The respondent can select and complete any task for rewards that can be monetary or non-monetary (e.g. Enhancing reputation). To ensure quality, the completed work is monitored through filters and peer review. One such micro-task service is Amazon's Mechanical Turk.

In this study, we investigated the barriers to such services being accessible to large numbers of potential users in developing country locations. We adopted few tasks from Amazon's MTurk for the purpose of comparative study. Original MTurk interface was compared to four major interventions- MTurk in Kannada, Original UI and Kannada Video Instructions, Improved UI and Kannada Text Instructions, Improved UI and Kannada Video Instructions. We calculated the effects of improved UI, instructions format, and language localization on the task completion and remuneration rates for micro-tasks, among low-income novice computer users.

We found that just language localization was not sufficient to enable micro-tasks but improved UI and language localization proved positive. These results are instructive in outlining the challenges in having such supplementary income-generating opportunities benefit those with basic computer skills and low levels of income. We also present recommendations on key changes in the design of such services that can significantly impact access and usage among currently excluded user groups.

Process Overview

Literature Study

- Micro-Task Markets
- Crowd Sourcing
- Digital Literacy

User Studies

- Task Analysis
- User Recruitment
- Interview Sessions
- Analysis and Affinity Mapping
- Problems and Opportunities

Research Study

- Test 1: MTurk Original Interface
- Test 2: MTurk Original Interface in Kannada
- Test 3: MTurk Original Interface + Kannada Video Instructions
- Test 4: New User Interface + Kannada Text Instructions
- Test 5: New User Interface + Kannada Video Instructions
- Comparative Result and Analysis
- Projected Income Calculation

Design Explorations

- Design Guidelines
- Design Proposal

Introduction I Project

Micro-Tasks as a source supplementary income generation for developing economies.

Dr. Bill Thies and Aishwarya Ratan from Technology for Emerging Markets Group at Microsoft Research India introduced me to the potential of Micro-Tasks Market for developing economies like India.

Favorable indications to explore Micro-Task Markets in India:

- Large user base is gaining access to computing technologies.
- Digital literacy rates are increasing.
- Motivated population in need to earn some extra money by investing some personal time.
- Availability of simple tasks which involve low or minimal learning.
- Tasks are priced in USD so we can take advantage of arbitrage.
- Availability of hundreds and thousands of similar kind of tasks, also called as multiple HITs (Human Intelligence Tasks).

Literature Study I Micro-Tasks

Micro-Tasks

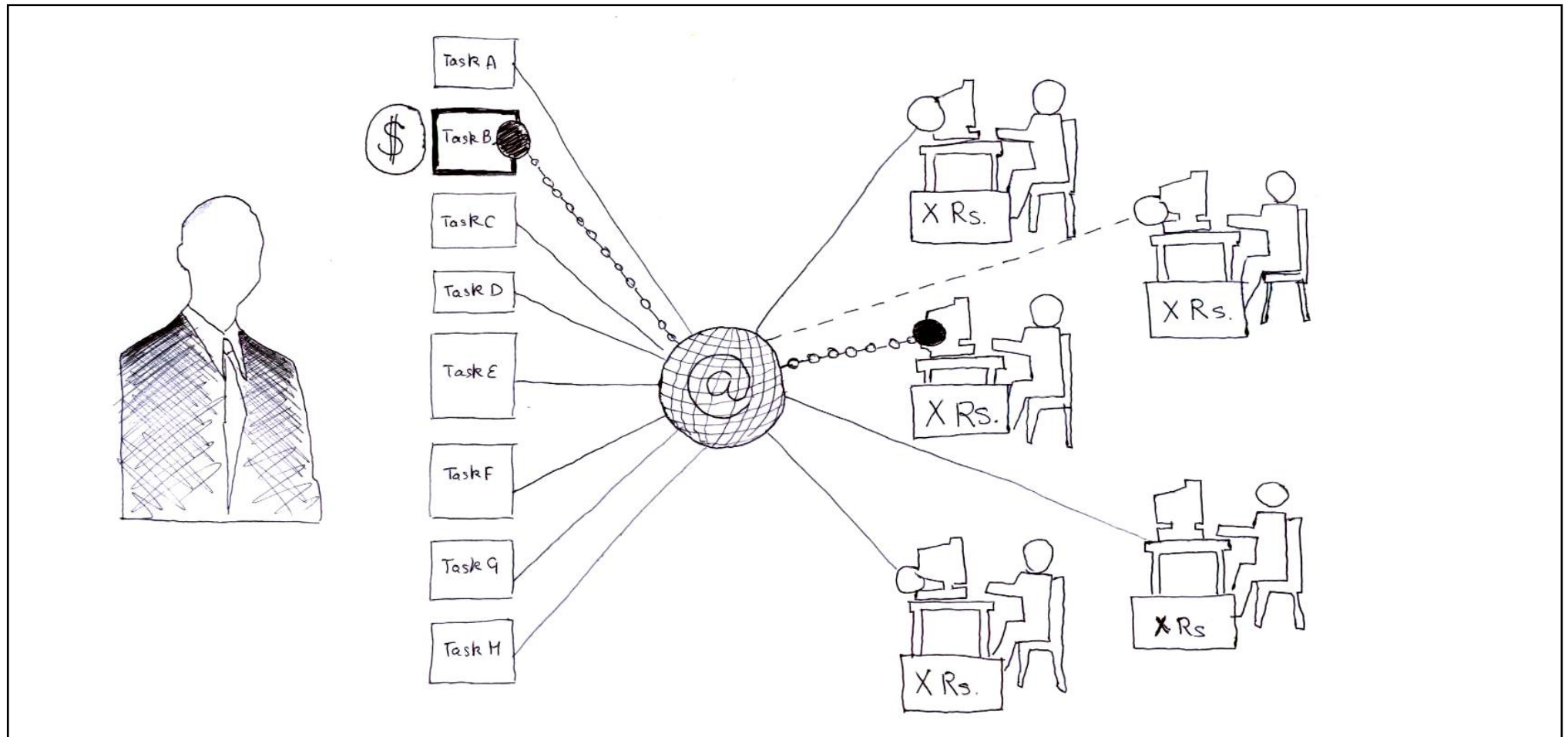
There are many complex digital tasks which can be broken down into small tasks and can be distributed to other people to complete them. There are many such things that human beings can do much more effectively than computers, such as identifying objects in a photo or video, performing data de-duplication, transcribing audio recordings, or researching data details. These tasks can be completed in small time without much of effort.

Tags: Micro-Tasks, HITs, HPUs, Peer Production, Networked Collective Intelligence, Wisdom of Crowds, Micro-Outsourcing, Social Engineering, Crowd-Sourcing or Digital Labor.

Micro-Task Markets

Micro-task market is a system in which small tasks (typically on the order of minutes or even seconds) are entered into a common system to large number users. User can select and complete them for some reward which can be monetary or non-monetary (e.g., reputation). To ensure quality the work is monitored through filters and peer review.

Micro-task markets have been highly successful in domains such as question-and-answer matching (e.g., Yahoo! Answers, Amazon Askville). They offer the practitioner a way to quickly access a large user pool, collect data, and compensate users with micro-payments.



Micro-Task Market Concept Model

Micro-Tasks | Web sites

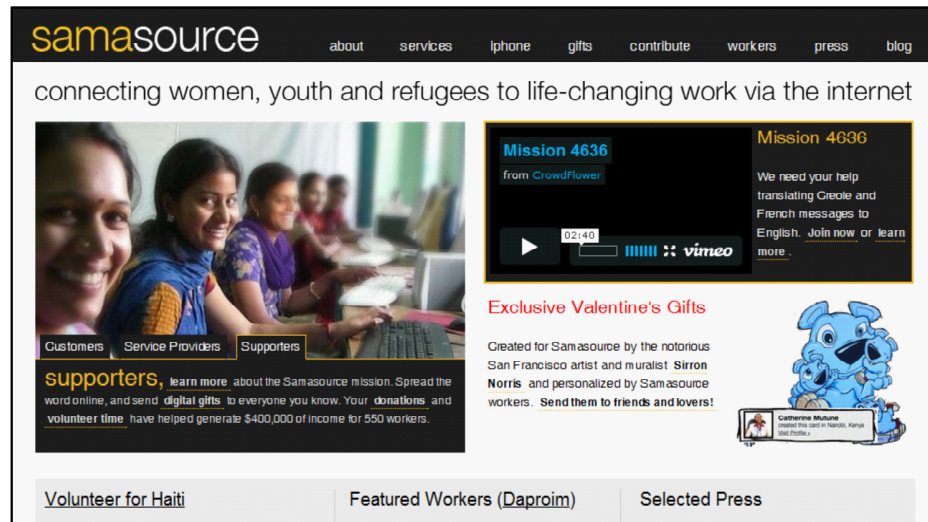
Currently many web services are hosting Micro-Tasks where people participate, select available tasks and complete them in available time. This medium is becoming quite popular among the workers and requesters.

The screenshot shows the Mechanical Turk website. At the top, there are tabs for 'Your Account', 'HITS', and 'Qualifications'. Below these are links for 'Introduction', 'Dashboard', 'Status', and 'Account Settings'. A yellow banner states: 'Mechanical Turk is a marketplace for work. We give businesses and developers access to an on-demand, scalable workforce. Workers select from thousands of tasks and work whenever it's convenient. 59,241 HITS available. View them now.' The main content is divided into two columns. The left column, 'Make Money by working on HITs', explains that HITs are Human Intelligence Tasks and lists benefits for workers: 'Can work from home', 'Choose your own work hours', and 'Get paid for doing good work'. It includes a flow diagram: 'Find an interesting task' (with a magnifying glass icon) → 'Work' (with a gear icon) → 'Earn money' (with a dollar sign icon). A 'Find HITs Now' button is at the bottom. The right column, 'Get Results from Mechanical Turk Workers', explains that requesters can ask workers to complete HITs and get results. It lists benefits for requesters: 'Have access to a global, on-demand, 24 x 7 workforce', 'Get thousands of HITs completed in minutes', and 'Pay only when you're satisfied with the results'. It includes a flow diagram: 'Fund your account' (with a wallet icon) → 'Load your tasks' (with a document icon) → 'Get results' (with a star icon). A 'Get Started' button is at the bottom.

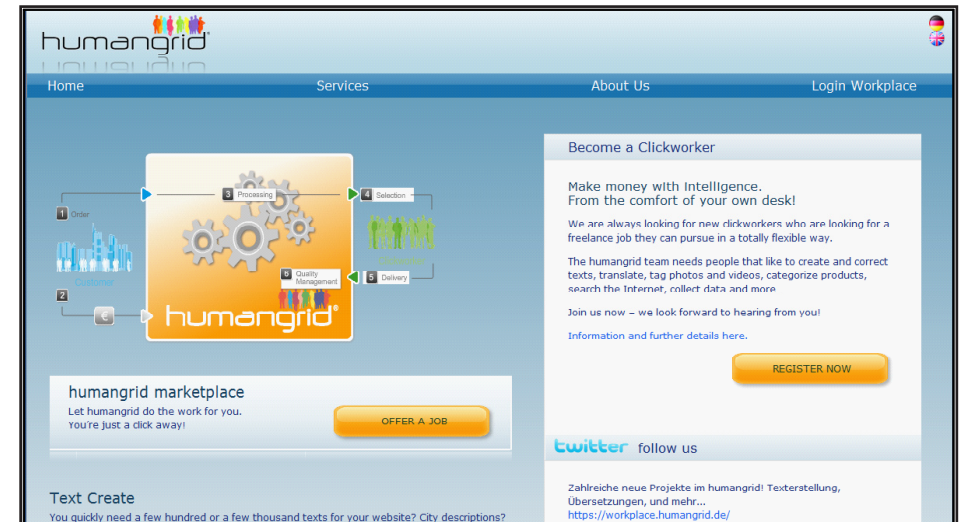
<http://www.mturk.com/>

The screenshot shows the txteagle website. The header has the txteagle logo and the tagline 'Empowering the largest knowledge workforce on Earth.' with links for 'ABOUT', 'SERVICES', 'PARTNERS', and 'CONTACT'. The main content features a large image of a smiling man in a purple shuka. To the right of the image, text states: 'There are over 2 billion literate, mobile phone subscribers in the developing world, many living on less than \$5 a day. Corporations pay people to accomplish billions of image, audio and text-based tasks. txteagle enables these tasks to be completed via the mobile phone by people around the globe.' At the bottom, there are three labels: 'For clients:', 'For users:', and 'For service providers:'.

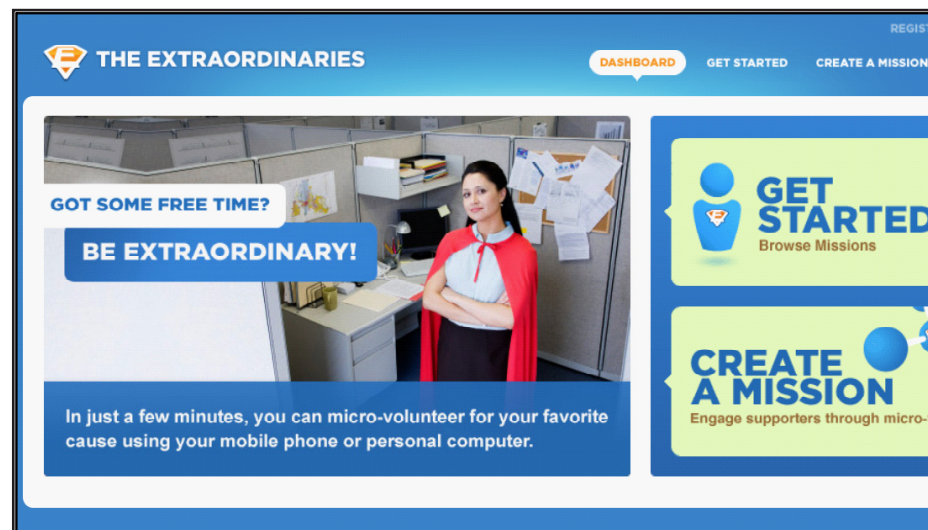
<http://txteagle.com/>



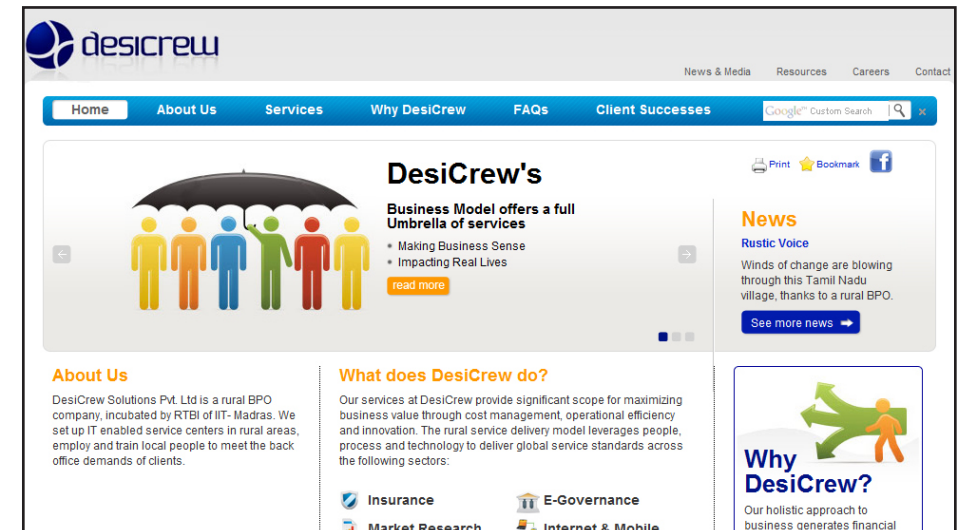
<http://www.samasource.org/>



<http://www.humangrid.de/en/>



<http://beextra.org/>



<http://www.desicrew.in/>

Type of Micro-Tasks

Web sites like Amazon's MTurk are flooded with many different types of Micro-Tasks. These tasks can broadly be categorized as follows:

- Data Manipulation
- Data Enhancement
- Text Classification
- Transcription of texts
- Optical Character Recognition
- Content Monitoring
- Information Extraction
- Meta Data Verification
- Rating of Slogans
- Rating of Product Names
- Picture ratings
- Picture classification

For purpose of our study, we analyzed few real Micro-Tasks available on Amazon's Mturk based on skill set required to perform them.

Micro-Tasks I Task Vs. Skill

Task No	Task	Location	Time	HITs	Price	Offline	Online	Click	Open	Save	Locate	Categorize	Search	Rollover
1	Fill out form	PC	15 M	1	\$3	N	Y	Y	Y	Y	Y	N	N	N
2	Find information about a product in an image	PC	60 M	1	\$0.50	N	Y	Y	N	Y	Y	N	Y	N
3	Choose what is better	PC	10 M	1	\$1.00	N	Y	Y	N	Y	N	N	N	N
4	Simple survey	PC	10 M	1	\$1.00	N	Y	Y	Y	Y	Y	N	N	N
5	Classify images of Structures	PC	60 M	300+	\$0.05	N	Y	Y	N	Y	N	N	N	Y
6	Copy Images using a simple drawing tool	PC	5 HR	6	\$0.04	N	Y	Y	N	Y	Y	N	N	N
7	Answer a question about a website	PC	20 M	1	\$0.05	N	Y	Y	N	Y	N	N	N	N
8	Is this image copied?	PC	10 M	4	\$0.05	N	Y	Y	N	Y	N	Y	N	N
9	Add funny text to an image	PC	30 M	5	\$0.05	N	Y	Y	N	Y	N	N	N	N
10	Image Filtering for Nightlife Social Networking sit	PC	60 M	1	\$0.02	N	Y	Y	N	Y	N	Y	N	N
11	Grading of grouping by object type	PC	30 M	7	\$0.03	N	Y	Y	N	Y	Y	Y	N	N
12	Outline people for the robot	PC	30 M	424	\$0.03	N	Y	Y	N	Y	Y	Y	N	N
13	Image Interestingness Study	PC	60 M	17	\$0.01	N	Y	Y	N	Y	N	Y	N	N
14	Check if these websites work	PC	60 M	6000+	\$0.01	N	Y	Y	Y	Y	Y	N	N	N
15	Test Software Installer	PC	24 hou	1	\$2.00	Y	Y	Y	Y	Y	N	N	N	N
16	Vote in facebook	PC	60 M	1	\$0.20	N	Y	Y	Y	N	Y	N	N	N
17	Painting 3 Dimensional Models	PC	4 DAYS	1	\$0.50	Y	Y	Y	Y	Y	Y	N	N	Y
18	Evaluate Search Results	PC	60 M	1	\$1.00	N	Y	Y	Y	N	Y	N	Y	N

Task No	Selecton	Type	Drag	Download	Upload	Format	Read	Instructions	Describe	Language	Calculate	Chat	Email	Draw	Level
1	N	Y	N	N	N	N	Y	Y	N	EN	N	N	N	N	4
2	N	Y	N	N	N	N	Y	Y	Y	EN	N	N	N	N	4
3	Y	Y	N	N	N	N	Y	N	N	EN	N	N	Y	N	5
4	Y	Y	N	N	N	N	Y	Y	N	EN	N	N	Y	N	5
5	Y	N	N	N	N	N	Y	N	N	EN	N	N	N	N	4
6	N	N	Y	N	N	N	Y	Y	N	EN	N	N	N	Y	6
7	Y	N	N	N	N	N	Y	Y	N	EN	N	N	N	N	4
8	Y	Y	N	N	N	N	Y	Y	Y	EN	N	N	N	N	4
9	N	Y	N	N	N	Y	Y	Y	Y	EN	N	N	N	N	4
10	Y	N	N	N	N	N	Y	N	N	EN	N	N	N	N	4
11	Y	Y	Y	N	N	N	Y	Y	N	EN	N	N	N	N	4
12	Y	N	Y	N	N	N	Y	Y	N	EN	N	N	N	Y	6
13	Y	N	N	N	N	N	Y	Y	N	EN	N	N	N	N	4
14	Y	N	N	N	N	N	Y	Y	N	EN	N	N	N	N	4
15	N	Y	N	Y	Y	N	Y	Y	N	EN	N	N	N	N	4
16	Y	N	N	N	N	N	Y	Y	N	EN	N	N	N	N	4
17	Y	Y	Y	Y	Y	N	Y	Y	N	EN	N	N	N	Y	6
18	Y	Y	N	N	N	N	Y	Y	N	EN	N	N	N	N	4

Literature Study I Digital Literacy

Digital Literacy in India has seen significant rise. If we particularly target low-income section in India, access to computing technologies is rapidly growing. Availability of personal computers, access at office, cyber cafes with internet connectivity has positively sprawled.

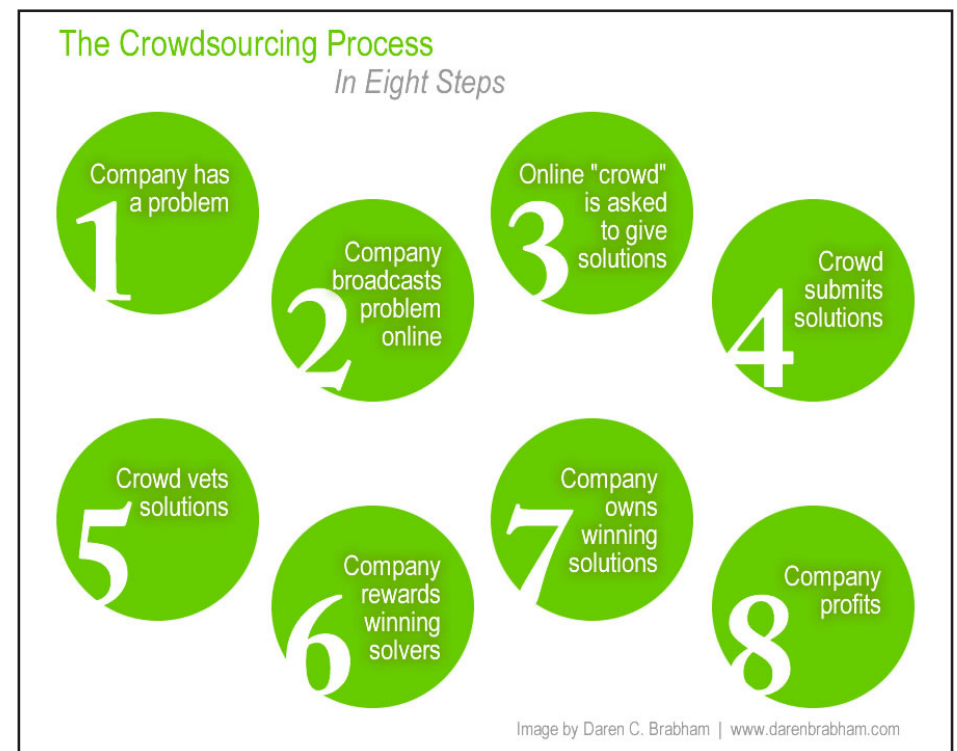
Digital literacy involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT:

- Instrumental skills – the ability to operate hardware and software.
- Informational skills – the ability to search for relevant information using digital hardware and software.
- Strategic skills - using the information for own purpose and position.

Cognitive skills are the fundamental skills consisting of mathematical skills, reading skills, problem solving skills, spatial skills, and visual skills. (Source: Wikipedia article on Digital Literacy)

Literature Study I Crowd Sourcing

Crowd Sourcing is a distributed problem-solving and production model. Problems are broadcast to an unknown group of solvers in the form of an open call for solutions. Users—also known as the crowd—typically form into online communities, and the crowd submits solutions. The crowd also sorts through the solutions, finding the best ones. These best solutions are then owned by the entity that broadcast the problem in the first place—the crowdsourcer—and the winning individuals in the crowd are sometimes rewarded.



Crowd Sourcing may produce solutions from amateurs or volunteers working in their spare time, or from experts or small businesses which were unknown to the initiating organization.

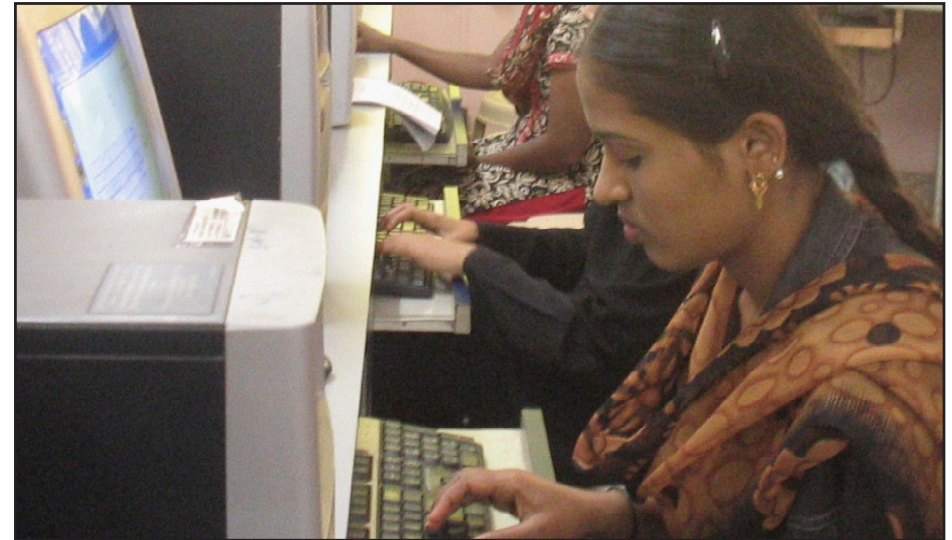
Perceived benefits of crowd sourcing include the following:

- Problems can be explored at comparatively little cost, and often very quickly.
- Payment is by results or even omitted.
- The organization can tap a wider range of talent than might be present in its own organization.
- By listening to the crowd, organizations gain first-hand insight on their customers' desires.
- The community may feel a brand-building kinship with the crowd sourcing organization, which is the result of an earned sense of ownership through contribution and collaboration.

(Source: Wikipedia article on Digital Literacy)

Users

For the purpose of this study we targeted users with basic experience of using a computer from Low-Income segment.



Profession: Support Staff, Unemployed, Driver, Housekeeping

Education: Schooling, Read/Write local language

Income: 4000 per month (average income)

Digital Literacy: Basic course in computer/ Peer to Peer learning

Resources: Access to PC with internet

Time Available: Off duty hours

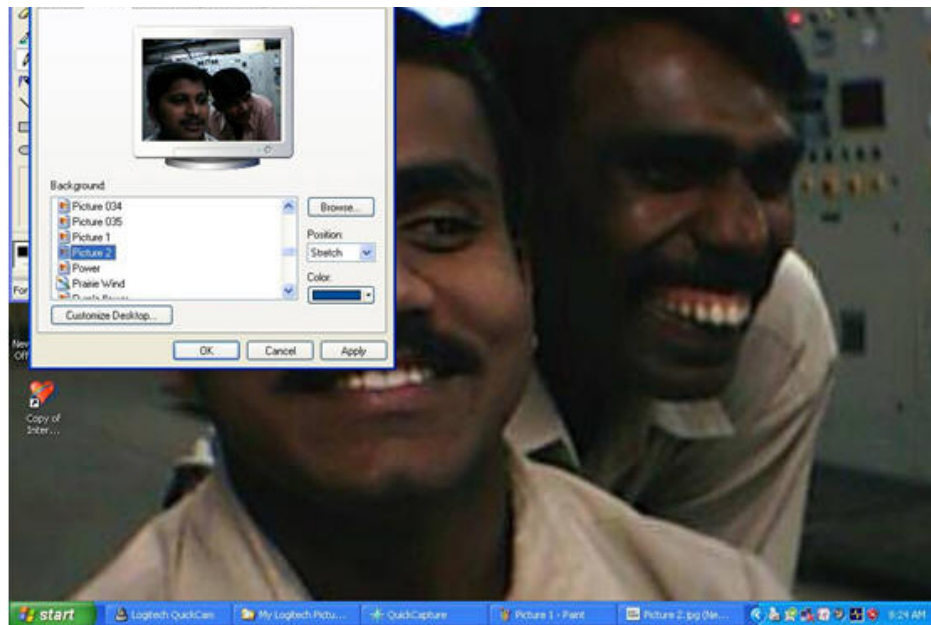
Users I User Recruitment

Microsoft Research India

Kelsa+: IT Access for Low-income Workers

Kelsa+ is a program that offers the low-income service staff in modern offices Internet-connected PCs for free, unrestricted use during their off-duty hours. This project assesses how such a program affects workers' self-esteem, basic digital literacy, English proficiency, and career opportunities.

People Involved: Aishwarya Lakshmi Ratan, Udai Singh Pawar, Sean Blagsvedt, Sambit Satpathy, Thanuja Subramanian, Kentaro Toyama, Lilian Zia, Itamar Kimchi, Gautam Prasad at Microsoft Research India.



Hope Foundation

Computer Training Centre for the under privileged

Hope Foundation Centre: Shivaji Nagar Branch, Bangalore

Coordinators: Mr Augstine, Mr Joseph



Users I User Demographics

User	Occupation	Comp Skills	Education	Education Medium	Native Language	Income	Sex	Age	Location
U-1	Driving	6 Months	SSC	Telgu	Telgu	6000	M	30	Office
U-2	Housekeeping	Basic, 1 Yr	SSC	Kannada	Kannada	5000	M	25	Office
U-3	Sec Guard	K+ Course 3 Mo	SSLC	Kannada	Kannada	4000	M	25	Office
U-4	Sec Officer	Basic 3yrs	11th	English	Kannada	16000	M	34	Office
U-5	Driving	2 Yrs Internet	2nd Arta	Kannada	Telgu	8000	M	23	Office
U-6	Student	Basics 3 Months	SSC	English	Urdu	0	F	19	Hope
U-7	Not Employed	3 Months, Pagemaker	2nd PUC	English	Kannada	0	F	18	Hope
U-8	Salesman	Basics 3 Months	SSC	English	Urdu	5000	M	20	Hope
U-9	Student	Basics	10th	Kannada	Kannada	0	M	22	Hope
U-10	Student	Basics	B Com 1st Yr (Disc)	Kannada	Kannada	0	F	23	Hope
U-11	Hitesh Compnay	Basic 6 mo	BA 2nd Yr	Kannada	Kannada	3500	F	22	Hope
U-12	Airtel	Basic, DTP	BA 2nd Yr	Kannada	Kannada	8000	M	23	Hope
U-13	Student	DTP	BA 2nd Yr	Kannada	Telgu	0	M	25	Hope
U-14	Not Employed	Basic	10th	Kannada	Kannada	0	M	21	Hope
U-15	Staffing Solutions	Basics	B Com	Kannada	Tamil	11000	F	26	Hope
U-16	Security Officer	Basics on the job	PUC	Kannada	Kannada	12000	M	32	Office
U-17	Embroidery Worker	Basics	2nd PUC	Kannada	Kannada	4000	F	25	Hope
U-18	Student	Basics DTP	B. Com	Kannada	Tamil	0	M	19	Hope
U-19	Student	Basics, Tally	B Com	Kannada	Tamil	0	F	21	Hope
U-20	Sales Associate	Tally	B Com	Kannada	Marathi	2200	F	22	Hope
U-21	Housekeeping/IT	2Yrs IT	7th	Kannada	Kannada	4000	M	27	Office
U-22	Driving	Basics	10th	English	Telgu	6000	M	28	Office

Users I User Demographics

User	Occupation	Comp Skills	Education	Education Medium	Native Language	Income	Sex	Age	Location
U-23	Sec Guard	K+ Course 3 Mo	B Com 1st Yr (Disc)	Telgu	Telgu	0	M	23	Office
U-24	Driver	3 Months	2nd PUC	Kannada	Kannada	6000	M	24	Office
U-25	Student	Done-1 yr	2nd PUC	Kannada	Kannada	0	F	20	Hope
U-26	Student	2 Yrs	SSC	English	Tamil	0	M	20	Hope
U-27	Not Employed	Basics Tally	Diploma	Kannada	Telgu	0	F	21	Hope
U-28	Student	Basics	SSC	Kannada	Urdu	0	M	21	Hope
U-29	Student	Basics	SSC	English	Kannada	0	F	20	Hope
U-30	Page Point Service	Basics Tally	2nd PUC	English	Tamil	3500	F	23	Hope
U-31	Sec Officer	2 yrs Basic	SSC	Kannada	Tamil	10000	M	35	Office
U-32	Facilities	Basic, 1 mo	2nd PUC	Kannada	Kannada	7000	M	27	Office
U-33	Student	Basic	2nd Yr B.Com	Kannada	Urdu	0	M	20	Hope
U-34	Sanjivni	Basic	2nd PUC	Tamil	Tamil	4000	M	35	Hope
U-35	Student	Basic	2nd PUC	Tamil	Tamil	0	M	17	Hope
U-36	Philips Service Centre	Basics	10th	English	Tamil	4000	F	19	Hope
U-37	ICICI	Basics Tally	BA	Kannada	Kannada	6000	F	27	Hope
U-38	Not Employed	Basics Tally	Diploma Commercial	Kannada	Kannada	0	F	19	Hope
U-39	Not Employed	Basics Tally	Diploma, Shorthand	Kannada	Kannada	0	F	20	Hope
U-40	Not Employed	Basics 3 Months	2nd PUC	Kannada	Telgu	0	F	17	Hope
U-41	Finance	Basics	10th	Kannada	Telgu	4500	M	33	Office
U-42	Student	Basic	2nd PUC	Kannada	Tamil	0	M	17	Hope
U-43	Datalink	Basic(Tally)	B.com	kannada	Urdu	3000	F	21	Hope
U-44	Funishing	Basic(Tally)	2nd yr B.com	English	Urdu	3400	M	19	Hope
U-45	Airtel	Basic	B Com	English	Urdu	6500	F	21	Hope

Users I User Demographics

User	Occupation	Comp Skills	Education	Education Medium	Native Language	Income	Sex	Age	Location
U-46	Student	Basic	Diploma	English	Kannada	0	F	18	Hope
U-47	Student	Basics	Diploma	Kannada	Telgu	0	F	19	Hope
U-48	Student	Basics	2nd PUC	Kannada	Tamil	0	F	17	Hope
U-49	Student	Basics 1 Yr	B Com	Kannada	Tamil	0	F	17	Hope
U-50	Art Gallery	Advanced	B Com 1st Yr	Kannada	Tamil	1000	M	18	Hope
U-51	Sec Guard	Basics	2nd PUC	Kannada	Kannada	6000	M		Office
U-52	Maintaenance	Basics	2nd PUC	Kannada	Kannada	4000	M		Office
U-53	Sec Guard	Basics	2nd PUC	Kannada	Kannada	6000	M		Office
U-54	Driving	Basics	10th	Kannada	Telgu	6000	M		Office
U-55	Student	Basics	2nd PUC	Kannada	Telgu	0	F		Hope
U-56	Student	Basic 3yrs	12th english	Kannada	Tamil	0	M	20	Hope
U-57	Not Employed	Photoshop	2nd yr B.com	English	Kannada	0	M	22	Hope
U-58	Call Centre	Basic	2nd PUC	Kannada	Kannada	7000		26	Hope
U-59	Citibank	Data entry	BA Eng	Kannada	Tamil	5500	M	20	Hope
U-60	Student	Basic	2nd yr B.com	Kannada	Urdu	0	M		Hope

User Studies



Some initial questions we had in mind to initiate the study:

- Potential of Low-Income user segment in terms of digital literacy and access to resources?
- What are the different type of Micro-Tasks available?
- What are the suitable type of Micro-Tasks for targeted user base?
- Is user able to complete simple Micro-Tasks?
- What is the income generation by working on Micro-Tasks?
- What is the time consumption to work on such tasks?
- What problems and opportunities exist in the current system of Micro-Task markets like Amazon's Mturk if adopted for Indian users?

To start understanding the following issues, we selected few simple Mturk tasks and recruited 13 users for the same. Users were from Microsoft Research Office as well as Hope Foundation Computer Training Centre. Focus of the study was to understand real users perspective on such tasks. Users were given introduction about the purpose of this study and then asked to perform. This was under supervision with prompting in between. Users were asked informally about their interests in such tasks. Later on, all the user statements were analyzed through affinity mapping.

User Studies

Selected Tasks I Find Bank Branches

Timer: 00:00:48 of 60 minutes

Finished with this HIT? [Let someone else do it?](#)

[Submit HIT](#) [Return HIT](#)

☐ Automatically accept the next HIT

Total Earned: \$0.43
Total HITs Submitted: 14

Find Bank Branches

Requester: Dolores Labs

Qualifications Required: None

Reward: \$0.05 per HIT **HITs Available:** 228 **Duration:** 60 minutes

Instructions [Hide](#)

In this task you will be asked to find a particular bank branch at a given address to confirm its name, location, and phone number. Please correct any incorrect information provided in the form (i.e., If you find the bank at another location, then give us the correct address etc.).

It is very important that you pay close attention to detail. Please check all street numbers and zip codes, as well as the spelling of the bank, street, city, and state names.

You may need to search for both the name of the bank and the address separately to check if one of them is wrong. We provide a link to Bing with the bank name, state, and phone number. You may need to change these search terms to find the correct business.

You may not use google in completing this task. Ideal responses will be pulled from official bank websites etc.

In some cases, we have provided a phone number. You may try calling this number to verify the location. Use the maps as an aid. If the map is incorrect, just do the best you can.

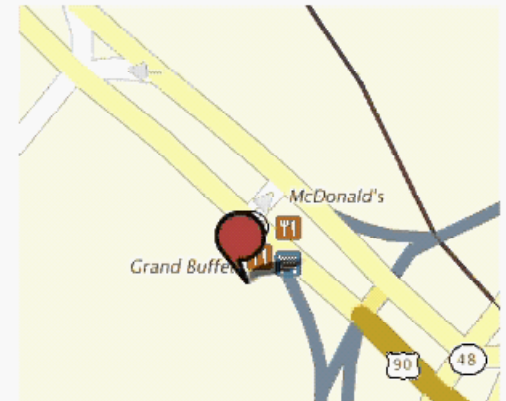
Please do not use copyrighted sources for this info.

Wal-Mart(ATM)

800 S Clearview Pky
UNINC JEFFERSON PARISH,
LOUISIANA
70123

Phone: No data available

Try searching on [Bing](#) or [Yahoo](#). You will probably need to alter the search by adding other keywords or location information like the phone number, you can also try using other search engines.



User Studies

Selected Tasks I Outline people for the robot

Outline people for the robot

Requester: Caroline Pantofaru


Reward: \$0.02 per HIT

HITs Available: 424

Duration: 30 minutes

Qualifications Required: Person box worker qualification (v0.4) is 100, Person outline worker qualification (v0.7) is 100, HIT approval rate (%) is greater than 90, HIT approval rate (%) is greater than 90

IMPORTANT: Read the [instructions!!](#)

(a)  personOutline

Please click "Accept HIT" on the web page before doing any work!

Please click "Accept HIT" on the web page before doing any work!

Please click "Accept HIT" on the web page before doing any work!

Please click "Accept HIT" on the web page before doing any work!

Please click "Accept HIT" on the web page before doing any work!


Please click "Accept HIT" on the web page before doing any work!


Please click "Accept HIT" on the web page before doing any work!


Please click "Accept HIT" on the web page before doing any work!


[Open help chat in a new window](#)


PersonOutlineOnly: clarifications:
Global conversation - [Learn more](#)

 **Sign In**
with Google Connect

 RE gopinath: please use this board only for questions related to the HIT RE Michael: The payout rat... [More »](#)
[Ethan](#) 12/5

 Gopinath are you coming from tamilnadu...
[ThiLaStars](#) 12/5

 it would be better if the work is approved or rejected fast. It gives confidence
[vikky](#) 12/5

 Hai
[ThiLaStars](#) 12/5

[Translate »](#) [Next »](#)

[Embed this](#) [Google Web Elements](#)

User Studies

Selected Tasks | Outline people for the robot

READ INSTRUCTIONS COMPLETELY! SCROLL TO THE END!

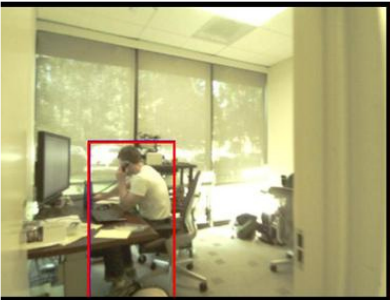

Accurately trace an outline of the **main** person in the **right** image.

Instructions

1. What you see: The left image is the whole photo, the right image is an enlarged version of the red box.
2. In the **right image**, outline the **person that the red box belongs to. Outline ONLY ONE person.**
3. Click on the **personOutline** button to the right of the photo to start an outline.
4. **Trace the outline** of the person by clicking points on the edge of the person (between the person and the rest of the environment).
5. To finish one outline, click on the small dot where you started.
6. Once all parts of the person have been outlined, click **submit** to complete the HIT.

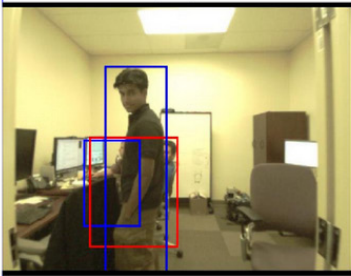
How to draw an outline

What you see: The original image with a box around Bob (left), and an enlarged version of the box (right)

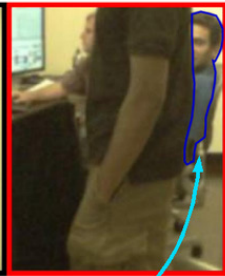



Good Examples

Original image,
one box per person

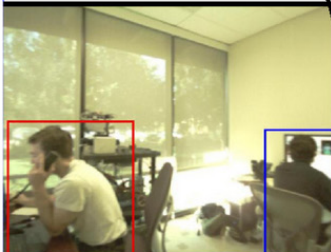


Enlarged red box

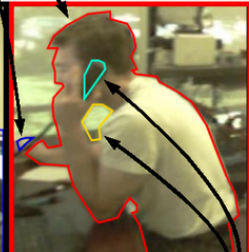


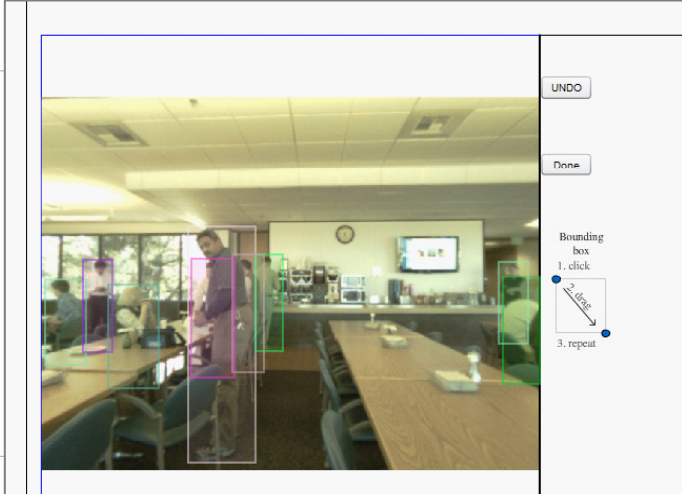
Trace the **ONE** person that the red box belongs to.

Only outline inside the right image.
Outline each section of the person.



Outline "holes" that show the background inside another outline.
Outline objects (not clothes) that are inside another outline.





[RecentChanges](#)
[personOutlineOnly](#)
Page
[Immutable Page](#)
[Info](#)
[Attachments](#)
 More Actions: ▼
User
[Login](#)

User Studies

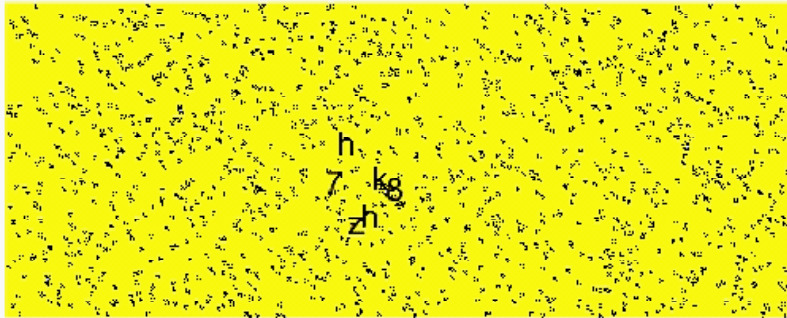
Selected Tasks I Do 20 Images Captcha

Do 20 image captcha - (99.9% acceptance rate, 2mn task) - we give a 5\$ bonus every day.


Requester: Elie Bursztein

Qualifications Required: None

Reward: \$0.10 per HIT HITs Available: 32 Duration: 2 hours



7h k8 | next >>



6bvw91 | next >>

User Studies


Selected Tasks | Do 20 Images Captcha

Telugu Cinemas x Amazon Mechan... x Amazon Mechan... x Amazon Mechan... x Amazon Mechan... x Amazon Mechan... x MTLABEL x


Main Instructions Unsure? Look up in Wikipedia Google [Additional input] No good photos? Have expertise? comments? Click here!

First time workers please click here for instructions.

Click on the photos that contain the object or depict the concept of : **minnow, Phoxinus phoxinus**: very small European freshwater fish common in gravelly streams .(PLEASE READ DEFINITION CAREFULLY)
 Pick as many as possible. **PHOTOS ONLY, NO PAINTINGS, DRAWINGS, etc.** It's OK to have other objects, multiple instances, occlusion or text in the image.
 Do not use back or forward button of your browser. OCCASIONALLY THERE MIGHT BE ADULT OR DISTURBING CONTENT.



Below are the photos you have selected FROM THIS PAGE ONLY (they will be saved when you navigate to other pages). Click to deselect.



User Studies I Users I Findings

After speaking to users, we had some interesting observations about their behavior and expectations. Here is a summary of few Important findings:

Professional:

- Many employers give access to computer in office.
- Users work on official work using software like Ms Word, Excel etc in duty hours. Access to any other activity is restricted by Instructions.
- Users can access web services like you tube, photofun, email, news sites in local language (eg- enadu for telgu news).
- Slow promotion/increment in income, users look for more part time opportunities to work.
- Typically most of the users working as support staff leave early morning for the job, shifts are rotational in nature with one day off in a week.
- Users get some time free in duty hours when workload is less.
- Most users use local bus service to travel to and fro, and listen to radio on their mobile phone. Can we evaluate this as an opportunity?

Resources:

- Users access computer at office, home, cyber cafe or at a friend's place.
- Users are not able to install plug-ins, or office network blocks updates.
- Use dial-up connection at home.
- Local language fonts are not installed on local machine.
- Due to slow internet connection, tasks take long time to load and users lose interest.

Education:

- Most users have completed basic schooling and have elementary exposure to English, but it is very hard for them to make meaning of complete sentences, at most they can read words.

Digital Skills:

- Users prefer to work in a familiar digital environment, working in new browsers takes some time to get acquainted and they are not comfortable working in tabs.

- Users have very poor skills to search as most of the data is in English.
- Users pick results by keywords.
- They tend to make decisions by looking at text from the results page itself without actually clicking the links.
- User heavily rely on search suggestions/ auto complete.
- Users don't understand technical names like red cross hair, drag and drop etc.
- A very quick way of learning computer skills is availability of computer and learning from the peer group.
- Social dynamics play a big role, like drivers take monopoly over the machine as it is placed in parking.
- Users indicate their interest in having dedicated computer classes, in most of the cases they are not able to afford.
- Projects like Kelsa+ projects or Hope Foundation centres are offering tailored courses to prepare users for commercial jobs.
- Users tend to learn a particular way of accessing a digital service and every time they use it in the same way. They are afraid of experimenting with new ways of doing the same thing.

User Studies I Micro-Tasks I Findings

Cognitive Skills:

- Users need to concentrate to perform task and it gets more complex as time is finishing.
- Many users want to continue using skills and experience they have gained in professional job for a part time job.

Payment:

- Less time consumption, more income.
- Preferred mode of payment is through cash.
- Current mode of payment is through sending a cheque with minimum amount of \$4.

Personalization:

- Users want their skill specific tasks.
- Users want to set personal growth plans/ projected income and wish to achieve that through part time jobs.

Observing users perform given tasks under supervision was a new learning. It gave us some deep insights about how users work and what they expect but don't get in current system of Micro-Tasks Markets. After analyzing all the field notes we were able to categorize all the information in five main steps involved.

These are as follows:

Inform > Engage > Acquire > Enable > Manage

Inform:

- Most users are very excited about the thought of earning extra money online but are unaware of such services.
- Users don't have any idea of Micro-Task Markets, what it is, how it works etc.

Engage:

- Users don't get any training on how to use this web site interface.
- Users are supposed to register and most users didn't find it difficult.

- Input fields like language/ country with options given helped them answer quickly.
- Users are shown tasks which are not based as per their skills.
- Users use personal information as passwords like mobile phone number.

Acquire:

- Select Micro-Tasks: Web sites like MTurk are full of many different types of Micro-Tasks. Currently they can be sorted out as:

HIT Creation Date (oldest first)
 HIT Creation Date (newest first)
 HITs Available (most first)
 HITs Available (fewest first)
 Reward Amount (least first)
 Reward Amount (most first)
 Expiration Date (soonest first)
 Expiration dates (latest first)
 Title A-Z
 Title Z-A
 Time Allotted (least first)
 Time Allotted (most First)

But can not be sorted based on the skill set of users.

- There are many usability problems in the interface, like one example below is a classic example of wrong accordance.

User Intuitively clicks this link to start task Actual start Task Link

The screenshot shows the 'All HITs' page on MTurk. At the top, it says 'All HITs' and '1-10 of 1836 Results'. Below this is a 'Sort by:' dropdown set to 'Expiration Date (latest first)' and a '60' icon. There are links for 'Show all details' and 'Hide all details'. On the right, there are pagination links: '1 2 3 4 5 Next >> Last'. The main content is a list of tasks. Each task row has a title, requester, expiration date, time allotted, reward, and number of HITs available. A red box highlights the 'View a HIT in this group' link for the first task. A red line points to this link. Another red line points to the task title 'Find the Website Address, the contact email and the physical address of the following Hotels'. A third red line points to the 'View a HIT in this group' link for the second task.

Task Title	Requester	HIT Expiration Date	Time Allotted	Reward	HITs Available
Find the Website Address, the contact email and the physical address of the following Hotels	Gisella	May 30, 2010 (6 days 20 hours)	60 minutes	\$0.01	11793
Find the Website Address, the contact email and the physical address of the following Hotels	Gisella Boria	Jun 12, 2010 (2 weeks 5 days)	60 minutes	\$0.01	9892
Outline people for the robot	Caroline Pantofaru	May 26, 2010 (2 days 11 hours)	30 minutes	\$0.02	7025
Tag and label Websites[Note: Images are pornographic in nature]	Chaitanya Gaddam	May 26, 2010 (2 days 20 hours)	10 minutes	\$0.01	5389
Classify this advertiser	Classify It	May 28, 2010 (4 days 19 hours)	3 minutes	\$0.05	5098
Relevanz der Produktsuchergebnisse	Amazon Requester Inc.	May 29, 2010 (5 days 22 hours)	10 minutes	\$0.01	4532
Business Information - Find the URL	Biz Insight	May 25, 2010 (1 day 11 hours)	2 hours	\$0.02	4350
Categorize the Mobile (Cell Phone) Website - Requires FireFox Browser Plugin	TurkForce via CastingWords	Oct 16, 2010 (20 weeks 5 days)	2 hours	\$0.05	3363
Fun 10-second quiz about favorite celebrities! Only 4 questions!	TAMedia	May 31, 2010 (6 days 23 hours)	60 seconds	\$0.10	2002

Example of a Task selection screen

- Many different tasks are available, so user gets confused on which task to start with.
- No Tasks are mapped as per skills required.
- Task Names mentioned becomes misleading.

Instructions:

- After selecting one of the Tasks, user needs to understand all the rules associated to work on the task.
- Users tend to skip reading long texts.
- Users show affinity to Images, for example if there is a map image in instructions, users directly assume that this task is related to find something on map.
- Users unable to figure out what to be done in this task, try to click familiar links like 'Go' which most often leads the user away from task page.
- Web site Interface links are as highlighted as task specific links, which adds more confusion to users mind.
- Users prefer wizard based Instructions.
- Users show difficulty in retaining large no. of rules in memory.

- Users are not able to return to instructions, after starting the Task.
- For most of the tasks, instruction page is overloaded with information, which decreases the communication of specific rules.
- Most Instructions are Text + Images, written in English with technical lingo and set in a crowded layout.
- Users tends to seek help from others.


READ INSTRUCTIONS COMPLETELY! SCROLL TO THE END!
Accurately trace an outline of the **main** person in the **right** image.

Instructions

1. What you see: The left image is the whole photo, the right image is an enlarged version of the red box.
2. In the **right image**, outline the **person that the red box belongs to. Outline ONLY ONE person.**
3. Click on the **personOutline** button to the right of the photo to start an outline.
4. **Trace the outline** of the person by clicking points on the edge of the person (between the person and the rest of the environment).
5. To finish one outline, click on the small dot where you started.
6. Once all parts of the person have been outlined, click **submit** to complete the HIT.

How to draw an outline

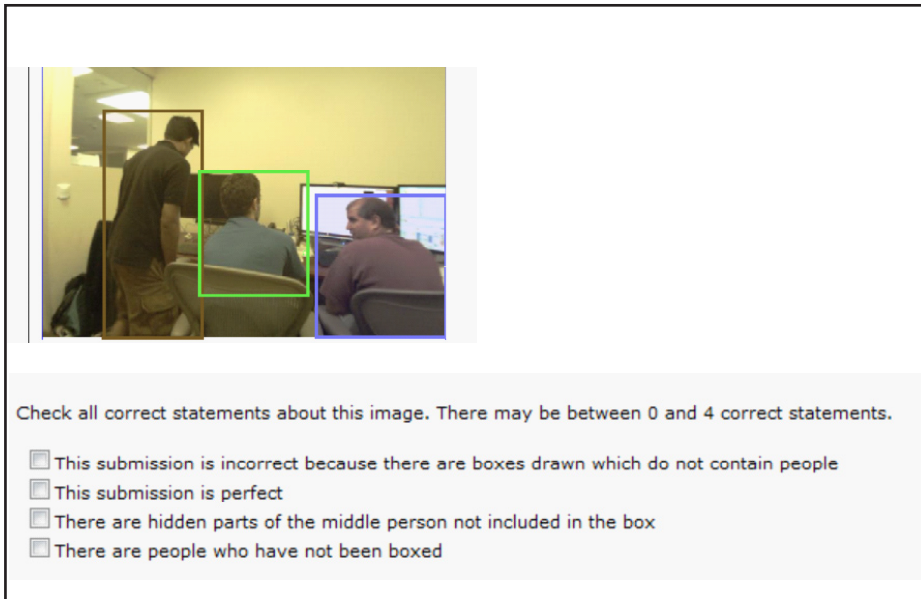
What you see: The original image with a box around Bob (left), and an enlarged version of the box (right)



Example of an instructions page.

Qualification Test:

- Few tasks require users to appear for a qualification test, which offers similar complexities as of the Task.
- Qualification test is difficult for the user to find in current MTurk interface.
- If user fails qualification test, he is blocked to appear for that task. With limited no. of chances to appear for the qualification test.



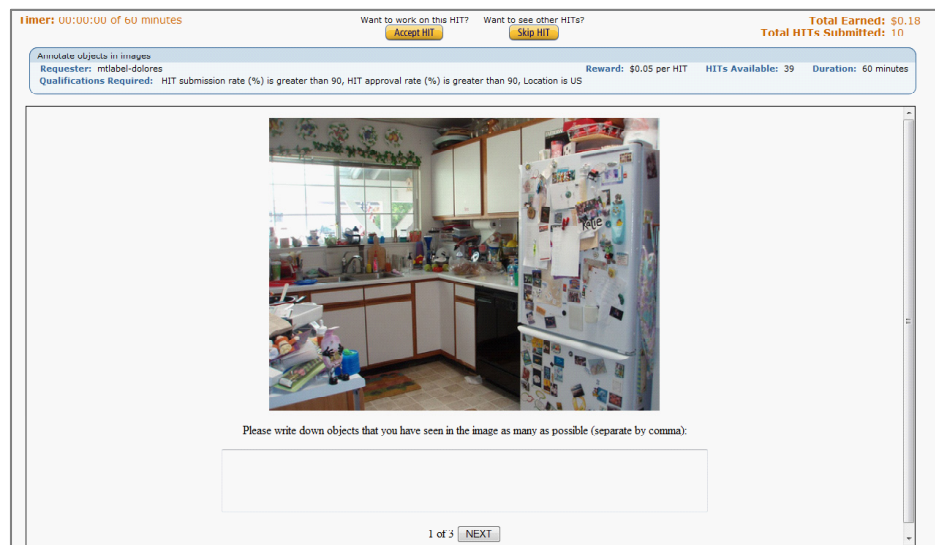
Example of a qualification test

Training:

- Most of the tasks don't offer any training module to practice the task.
- User wastes time in getting acquainted with the task, after starting the countdown timer.
- A training module may require the user to understand rules to perform the task.
- Video, pictures and audio with hands-on experience can reduce learning time.
- It takes hands-on experience for user to get comfortable with input method

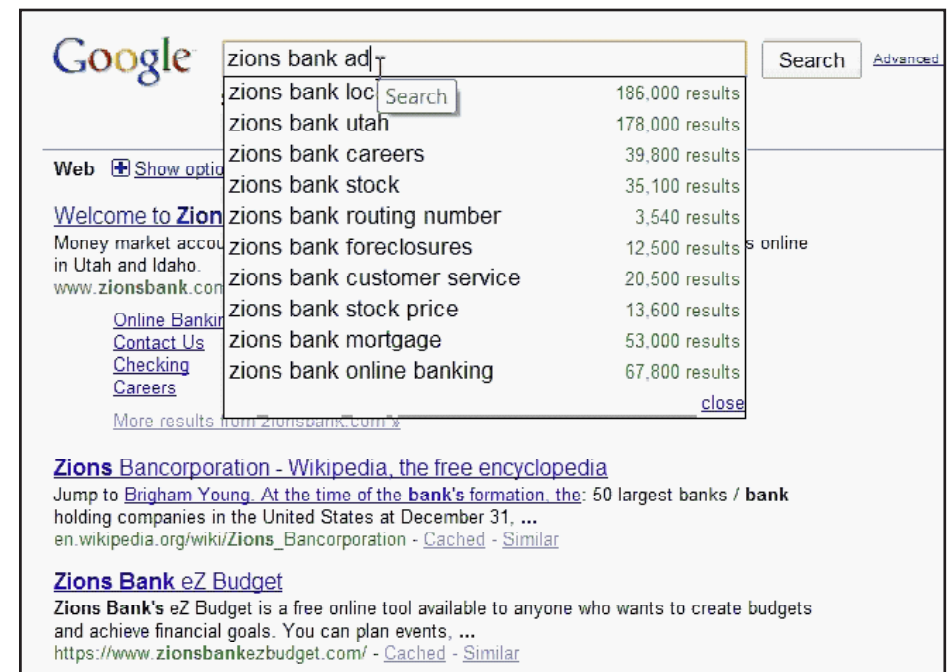
Mental Model:

- Cultural influence on task is very strong
- A confused user develops a wrong mental model of the task and tends to do mistakes.
- User needs to be explained of concepts.
- Users are not familiar to certain western images, so they are not able to make right decisions. Like looking at below shown image of a western kitchen, user could not map it to a kitchen as there is no gas stove present in the image.



Method:

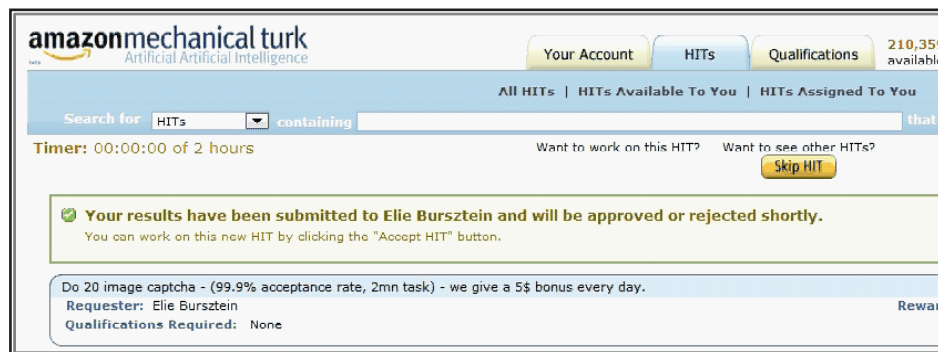
- With a wrong mental model of the task, users acquire wrong method to complete the task.
- Though they increase their speed of performing the task, but with a wrong method they keep making similar mistakes.
- An intelligent and interactive UI can prompt users to correct wrong input.



Example: Screenshot of a user searching for Bank Information.

Completing Task:

- With the restriction of Accept HIT in MTurk, many users tend to skip clicking that.
- User may get distracted by contextual disturbances while performing the task.
- Countdown timer does not alert the user when it is approaching the end, suddenly task gets over.
- User finds it difficult to review the task before submitting.
- User looks for prompts/ help while working on the task.



Example: User gets this message after submitting the task.

Errors in Task:

- At times, requester makes error in providing information which confuses the user.
- Difficult to perform two tasks simultaneously: processing visuals in image and making complex interaction
- Misleading interface with many active links lead the user in wrong direction.
- Slow connections/ plug-ins not installed also demotivate the users.
- In some tasks, pressing backspace button, reloads the page and earlier task gets over. Such errors are very common on users part to perform as many active links are present in web browser, MTurk interface, task specific interface.

Performance:

- Users want to know immediately after finishing the task about how they performed.
- Requesters rate users based on their performance.
- After peer to peer review, users get results in form of monetary value.

Manage:

- After first time induction to such platforms, users are in a position to upgrade their account.
- They can add on more qualifications.
- They can check and authorise monetary information.
- They can access history of work, payments etc.
- Users may communicate with the requester in case of any doubts.
- Currently it's very difficult for the user to understand all the information in Account Dashboard.



Research Study | Enable MTurk Tasks

After understanding the process and user potential of Micro-Task Markets we saw that users were able to perform some tasks with prompts, so we wanted to understand in detail about the impact of few interventions in the Original MTurk interface which allows user to work on the tasks in an unsupervised environment.

To measure the impact of all changes we planned five comparative studies.

- Test 1: MTurk Original Interface
- Test 2: MTurk Original Interface + Kannada Video Instructions
- Test 3: MTurk Original Interface in Kannada
- Test 4: New User Interface + Kannada Text Instructions
- Test 5: New User Interface + Kannada Video Instructions

We selected following two tasks from MTurk and recreated them in an offline mode with same functionality as it has online.

- Draw Bounding Box around objects in images
- Which type of box contains more dots per box, on average?

Each type of task was performed by 10 users. We recorded all the activities of users with video screen capture. All these tasks were conducted without giving any prompts or extending any help to the user. This was important as we wanted to compare the impact of different interventions.

Users were carefully recruited based on their knowledge of language and basic computer skills.

Research Study I Selected Tasks

Draw Bounding Box around objects in images

Want to work on this HIT?

Want to see other HITs?

Total Earned: \$0.31
Total HITs Submitted: 25


☐ Automatically accept the next HIT

Draw bounding boxes around objects in images
Requester: mtlabel-dolores
Qualifications Required: None

Reward: \$0.05 per HIT HITs Available: 1754

Main

Draw a box around **lamp**: *an artificial source of visible illumination*



Press down and drag out the box.

Draw a bounding box around the following object in the image:
lamp: an artificial source of visible illumination
Instructions:

- Include all visible parts and draw as tightly as possible
- If there are multiple instances, pick only ONE (any one).
- Do NOT draw on the instances that already have bounding boxes.

☐ Check here if there's NO lamp in this image or if every instance already has a bounding box.
(Optional) Enter any comment you have:

No 1

20 images in total. 19 left 'Submit' button will show up in the final page.

Want to work on this HIT?

Want to see other HITs?

☐ Automatically accept the next HIT

Research Study I Selected Tasks

Which type of box contains more dots per box, on average?

amazon mechanical turk
Artificial Intelligence

shashank khanna | Account Settings | Sign Out | Help

Your Account | HITs | Qualifications | 136,548 HITs available now

All HITs | HITs Available To You | HITs Assigned To You

Search for HITs containing that pay at least \$ 0.00 for which you are qualified GO

Timer: 00:00:00 of 5 minutes

Total Earned: \$0.31
Total HITs Submitted: 26

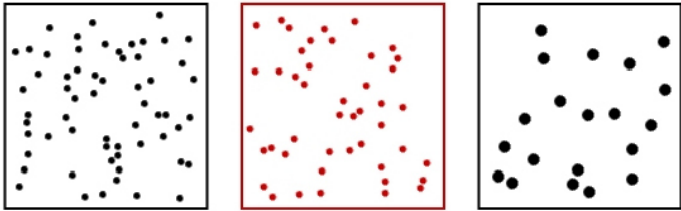
Which type of box contains more dots per box, on average?

Requester: Alvarez Lab
Qualifications Required: HIT approval rate (%) is not less than 95

Reward: \$0.05 per HIT | HITs Available: 2 | Duration: 5 minutes

Instructions: In each picture below, you will see one red box and two black boxes, filled with dots. On average, which type of box contains more dots per box, red or black? Do NOT count the dots, or use a calculator or any explicit mathematics or arithmetic. Look at the picture and estimate. It is important that you do NOT report the type of box that has more dots in total, because together, the two black boxes *always* have more dots than the one red box! Instead, report the color with more dots per box.

By answering the following questions, you are participating in a study being performed by cognitive scientists at Harvard, in the Department of Psychology. If you have questions about this research, please contact Jordan Suchow at suchow@fas.harvard.edu. Your participation in this research is voluntary. You may decline to answer any or all of the following questions. You may decline further participation, at any time, without adverse consequences. Your anonymity is assured; the researchers who have requested your participation will not receive any personal information about you.



On average, which type of box has more dots per box, red or black?

☐ The RED box has a GREATER number of dots than the average black box. ☐ The BLACK boxes have a GREATER number of dots per box than the red box.

Want to work on this HIT? Accept HIT | Want to see other HITs? Skip HIT

Report this HIT: [violates the Amazon Mechanical Turk policies](#) or [broken](#) (Why?)

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Research Study I Test 1

Original MTurk Interface in English

Task A1:

Draw Bounding Box around objects in images

A1	Time Taken	Completed	Answers	Written Instructions	Accept HIT	Lamp	Instruction 1	Instruction 2	Instruction 3	Instruction 4	Browsed	Draw Box	Clear Box	Submit HIT
U1	14 Min	No	0	No	Yes	No	No	No	No	No	Yes	No	No	Yes
U2	9 Min	No	0	Yes	No	Yes	No	No	No	No	No	18,PR	Yes	No
U3	20 Min	No	0	No	No	No	No	No	No	No	No	2	Yes, PR	No
U4	5 Min	No	0	No	No	No	No, PR	No	No	No	Yes	No	No	No
U5	3 Min	No	0	No	No	No	No	No	No	No	No	No	No	No
U6	12 Min	No	0	No	Yes	No	No	No	No	No	Yes	4	Yes	R8
U7	5 Min	No	0	No	No	No	No	No	No	No	No	No	No	No
U8	6 Min	No	0	No	PR	No	No	No	No	No	Yes	No	No	No
U9	8 Min	No	0	No	No	No	No	No	No	No	No	No	No	No
U10	13 Min	No	0	Yes	Yes	Yes	No	No	No	No	No	Yes	Yes	No

A1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
U1	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U2	R2	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
U3	R8	R8	R5	R8	R8	R8	R8	R8	No	No	No	No	No	No	No	No	No	No	No	No
U4	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
U5	R8	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
U6	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U7	R8	R8	R8	R8	R8	R8	R8	R8	R8	No	No	No	No	No	No	No	No	No	No	No
U8	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
U9	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	No	No	No	No	No	No	No	No	No	No
U10	R8	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

- Interface: Original interface is confusing with many active links.
- Instructions: Too much information confuses user.
- Rules are not clear.
- Method: Doesn't instruct on how to draw a bounding box.
- Results indicate that users don't where to begin with.
- Some users browsed through the task, but gave up after an average of 9.5 minutes.
- Zero users completed the task.

R1- Fit, R2- Big, R3- Small, R4- Multiple, R5- Not Lamp, R6- Check Box, R7- Comment, R8- Skip, PR- Propmt

Research Study | Test 1

Task B1:

Original MTurk Interface in English

Which type of box contains more dots per box, on average?

B1	Time Take	Answers	Payable	Complete	Instruction	Answer 1	Answer 2	Answer 3
U-21	12 Min	0	No	No	No	Miss	Miss	Miss
U-22	9 Min	2	No	Yes	Yes	No	Yes	Yes
U-23	6 Min	0	No	No	No	No	Miss	Miss
U-24	5 Min	0	No	No	No	No	Miss	Miss
U-25	5 Min	2	No	Yes	Yes	Yes	No	Yes
U-26	3 Min	1	No	Yes	Yes	No	No	Yes
U-27	5 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-28	2 Min	1	No	Yes	Yes	Yes	Miss	Miss
U-29	4 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-30	3 Min	1	No	No	No	Yes	Miss	Miss

- This task is easy compared to the earlier one because it has few simple rules to be followed, only three images to be answered and maximum time is 5 minutes.
- Interface: Many users got struck on the first page of interface as the task opens in a separate window with vertical scroll bar in already opened browser, which confuses the users and they keep scrolling down the browser page instead of using task scroller.
- Results indicate that most users tried out the task but without complete understanding of instructions.

Research Study I Test 2

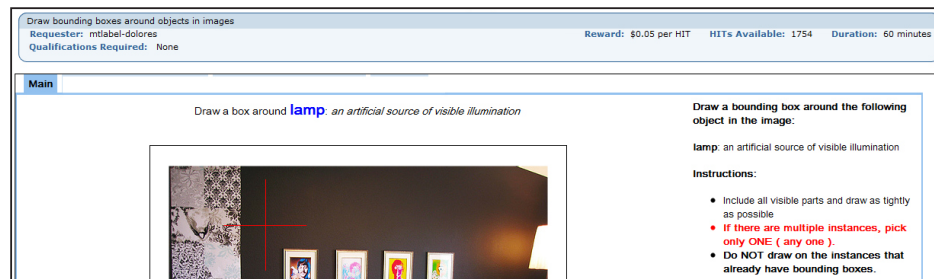
Original MTurk Interface in Kannada

Task A2:

Draw Bounding Box around objects in images



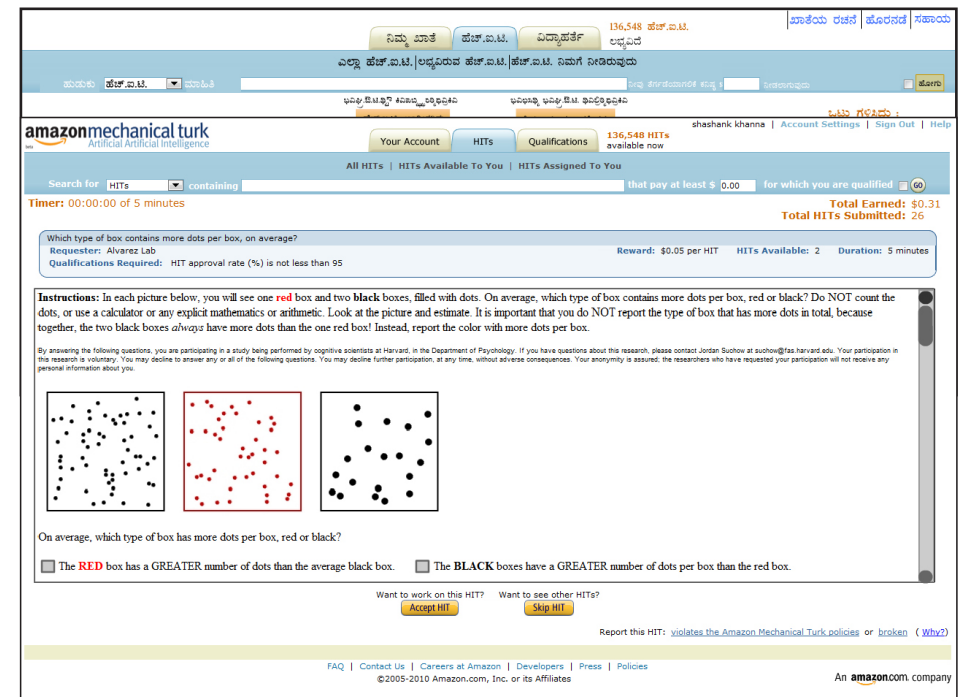
Interface translated into Kannada. (Translation by Satish)



Original english Interface

Intervention in Task: To understand if local language may improve the task, we kept the same interface element and with the help of English to Kannada translation expert we translated the interface as it is.

Task B2: Which type of box contains more dots per box, on average?



Interface translated into Kannada.

Research Study | Test 2

Original MTurk Interface in Kannada

Task A2:

Draw Bounding Box around objects in images

A2	Time Taken	Payable	Completed	Written Instructions	Accept HIT	Lamp	Instruction 1	Instruction 2	Instruction 3	Instruction 4	Browsed	Draw Box	Clear Box	Submit HIT
U-11	15:11	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-12	10:57	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-13	22:21	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-14	06:38	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-15	08:35	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-16	06:37	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-17	05:49	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-18	08:14	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-19	04:00	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
U-20	05:32	No	0	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

A2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
U-11	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-12	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-13	R2	R3	R3	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-14	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-15	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-16	R2	R2	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-17	R3	R3	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-18	R2	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-19	R2	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-20	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8

R1- Fit, R2- Big, R3- Small, R4- Multiple, R5- Not Lamp, R6- Check Box, R7- Comment, R8- Skip, PR- Propmt

- With language localization and same interface as original, the results are very similar to English original interface with no users able to perform the task.
- We also observed that many terms when translated as it is became very difficult for user to understand.

Research Study I Test 2

Original MTurk Interface in Kannada

Task B2:

Which type of box contains more dots per box, on average?

B2	Time Start	Time Stop	Answers	Payable	Accept HIT	Complete	Answer 1	Answer 2	Answer 3
U-11	15:42	22:24	0	No	No	No	No	No	No
U-12	11:06	14:54	2	No	No	Yes	Yes	No	Yes
U-13	22:45	26:46:00	3	No	No	Yes	Yes	Yes	Yes
U-14	07:00	14:36	1	No	No	Yes	No	No	Yes
U-15	08:50	11:21	0	No	No	No	No	No	No
U-16	06:40	09:00	0	No	No	No	No	No	No
U-17	06:20	10:36	2	No	No	Yes	Yes	Yes	No
U-18	08:30	14:10	2	No	No	Yes	No	Yes	Yes
U-19	04:11	07:09	0	No	No	No	No	No	No
U-20	06:02	08:56	0	No	No	No	Skip	Yes	Yes

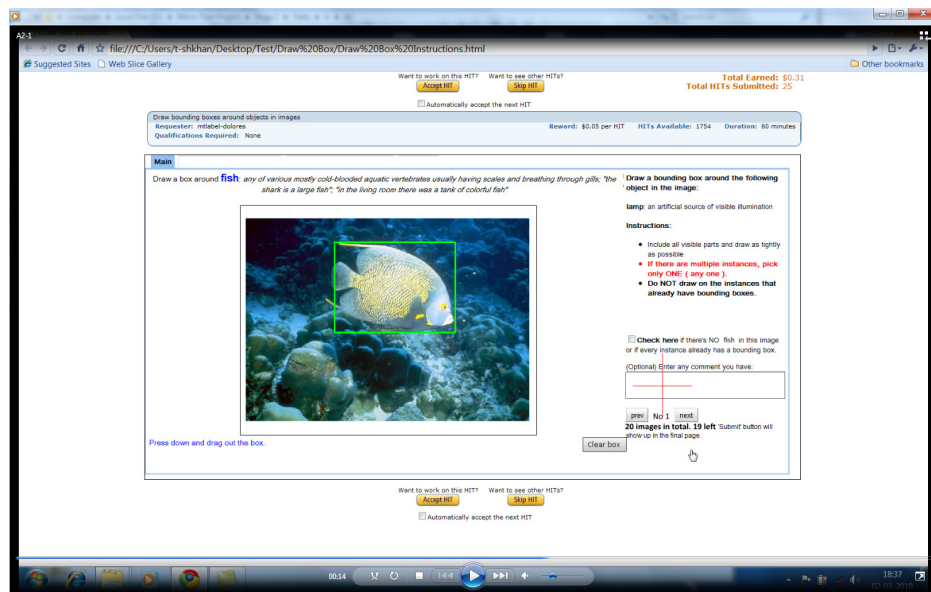
- With language localization users didn't show much progress. Some attempted the test but none of the task was payable.

Research Study | Test 3

Intervention in Task: To understand the impact of instructions on task, we designed a tutorial video which introduces the task, then explains all the rules and method to perform the task. The language is everyday spoken Kannada, easy for native speakers in Bangalore to understand.

Task A3:

Draw Bounding Box around objects in images



Video Instruction: Screen Capture, Voice over in Kannada explaining rules and Interaction method.

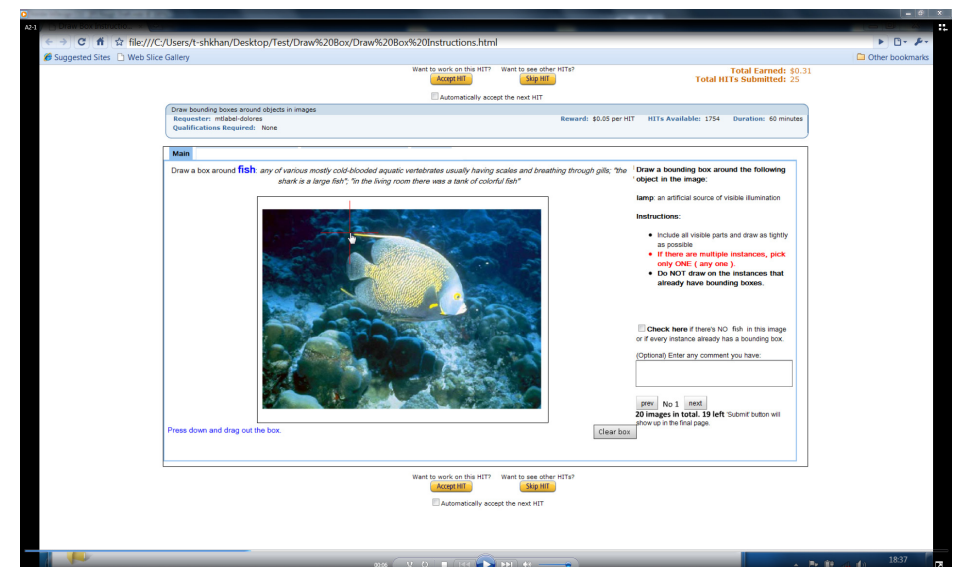
Original MTurk Interface + Video Instructions in Kannada

Task A3 Script:
Introduction:

- In this project you have to draw a box which should fit tightly over the object mentioned here e.g. fish in this project.
- To work on this project you will have to answer 20 images in 30 minutes.

Method:

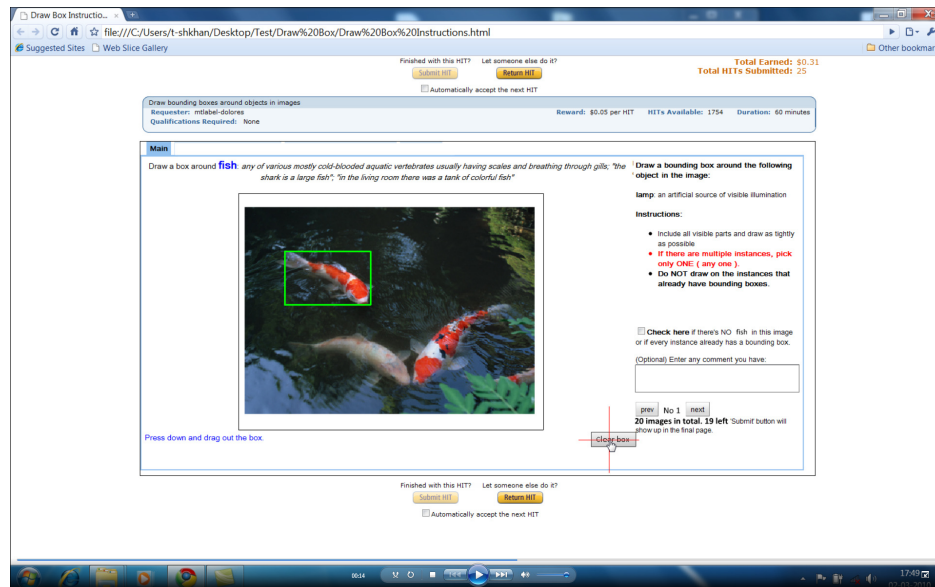
- To draw the box, click left upper corner of the object and release the mouse on right lower corner of the object.



Research Study I Test 3

Original MTurk Interface + Video Instructions in Kannada

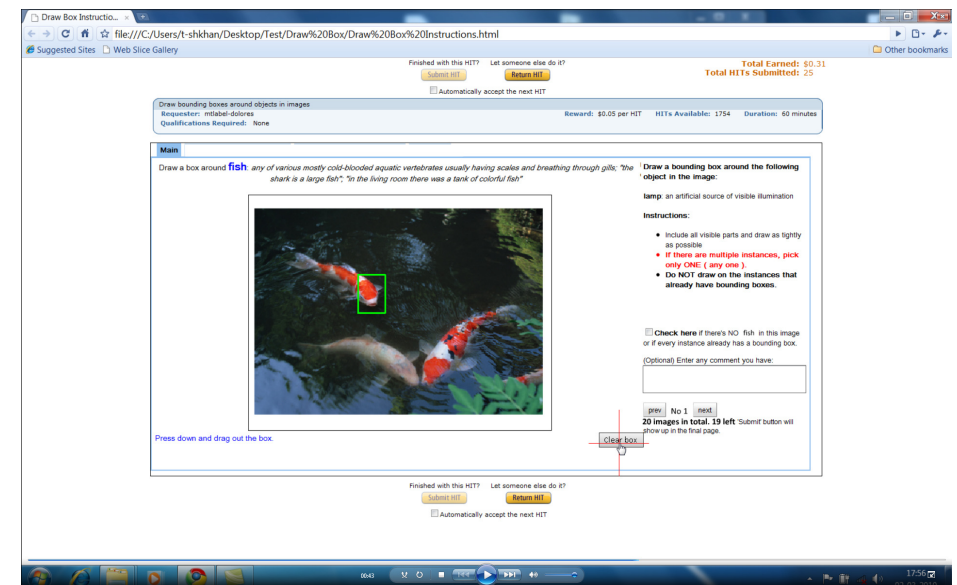
- if you make a mistake, click clearbox.



Rules:

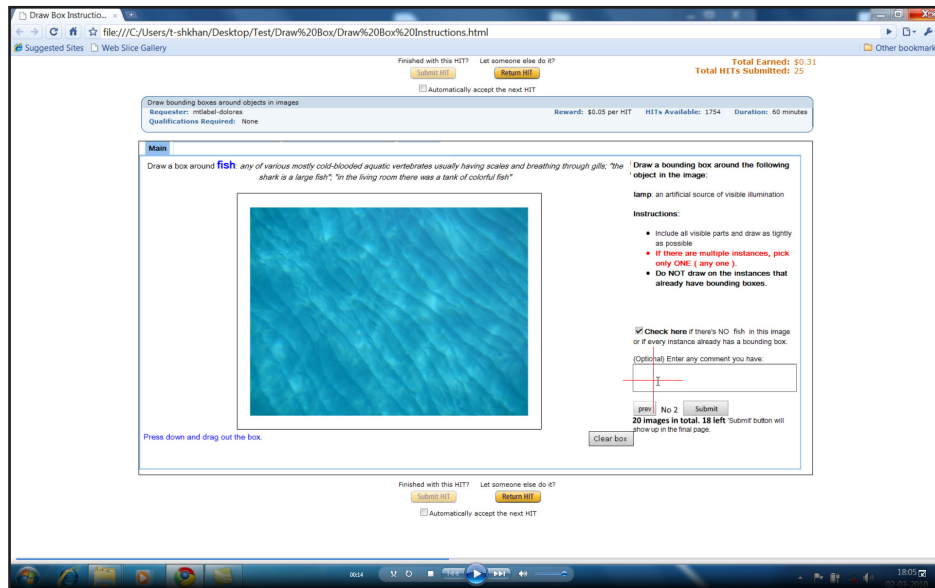
- If you make a loose box, your answer is wrong, redraw by clicking on clearbox.

- If you make a small box, your answer is wrong, redraw by clicking on clearbox.



- Make sure to draw a tight box for correct answer, and then click next to work on next image.

- If the mentioned object is not in the image, click this check-box.

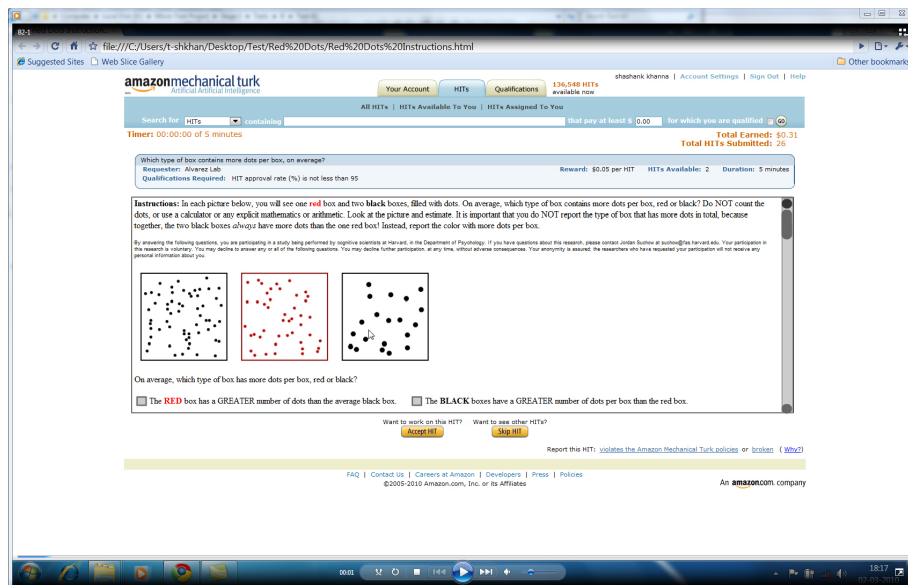


Research Study I Test 3

Original MTurk Interface + Video Instructions in Kannada

Task B3:

Which type of box contains more dots per box, on average?

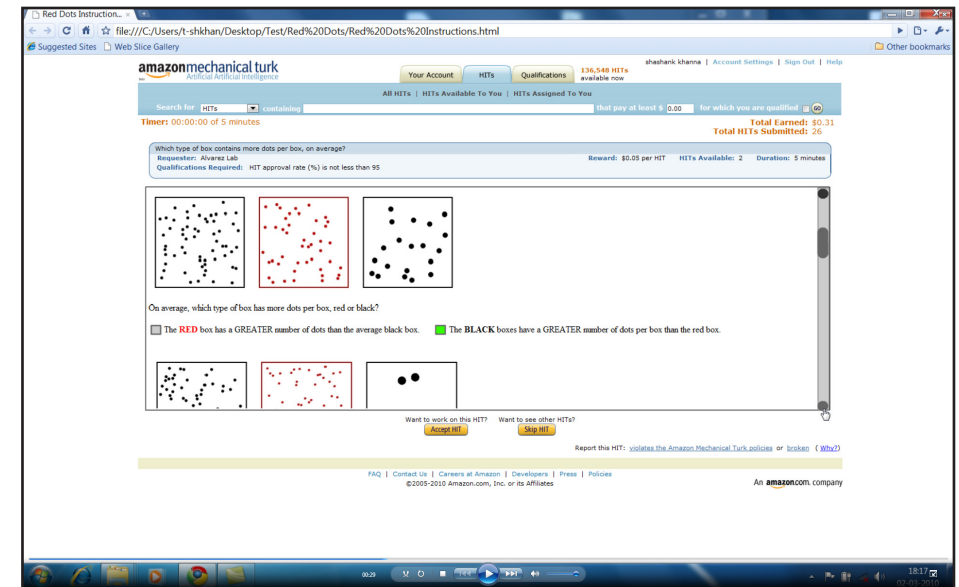


Video Instruction: Screen Capture, Voice over in Kannada explaining rules and Interaction method.

Task B3 Script:

Intoduction and Rule:

- In this project, you have to look at colored boxes and answer which box on average has greater no. of dots without calculating the dots.



Method:

- For example in this image, on average black box seems to have more no. of dots, so to answer check this option 'Black box has greater no. of dots compared to the red box'

Research Study I Test 3

Original MTurk Interface + Video Instructions in Kannada

Task A3:

Draw Bounding Box around objects in images

A3	Video	Time Take	Complete	Correct	Draw Box	Clear Box	Written Instructions	Accept HIT	Lamp	Fit	Big	Small	Multiple	Tick	Browsed	Submit HI
U-21	2	7 Min	Yes	9	1	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes
U-22	1	13 Min	No	0	17	Yes	No	No	No	No	No	No	No	No	No	No
U-23	2	17 Min	Yes	8	Yes	No	No	Yes	No, PR	No	No	No	No	No	No	Yes
U-24	1	15 Min	No	0	16	Yes	No	No	No	No	No	No	No	No	Yes	No
U-25	1	12 Min	Yes	3	16	Yes	No	No	Yes	Yes	Yes	No	No	Yes	No	Yes
U-26	1	7 Min	Yes	6	3	Yes	No	No	No, Pr	No	No	No	No	Yes	Yes	Yes
U-27	2	14 Min	Yes	13	2	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
U-28	2	18 Min	Yes	12	11	Yes	Yes	No	No	Yes	No	No	No	Yes	No	Yes
U-29	1	26 Min	Yes	13	1	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes
U-30	2	15 Min	No	0	5	Yes	No	Yes	No	Yes	Yes	Yes	No	No	Yes	Yes

A3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
U-21	R1	R1	R1	R1	R5	R1	R3	R3	R1	R1	R2	R5	R5	R5	R5	R5	R5	R5	R1	R1
U-22	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-23	R5	R2	R1	R1	R5	R1	R5	R3	R1	R1	R1	R5	R5	R5	R5	R5	R5	R5	R1	R1
U-24	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8
U-25	R6	R1	R3	R3	R1	R3	R8	R3	R3	R3	R3	R8	R8	R1	R8	R8	R8	R8	R3	R3
U-26	R2	R2	R3	R3	R6, R5	R3	R6	R3	R3	R3	R1	R1	R6	R1	R1	R1	R1	R6	R3	R3
U-27	R1	R1	R3	R1	R1	R1	R1	R5	R1	R1	R1	R5, R6	R1	R5, R6	R6	R1	R5	R5, R6	R1	R1
U-28	R2	R2	R1	R6	R1	R2	R6	R6	R2	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1	R8
U-29	R1	R1	R1	R1	R5	R1	R1	R3	R1	R1	R1	R5, R6	R1	R5, R6	R5	R5	R1	R5, R6	R1	R1
U-30	R1, PR	R5	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R8	R5	R8	R8	R8	R8	R8	R8

R1- Fit, R2- Big, R3- Small, R4- Multiple, R5- Not Lamp, R6- Check Box,
 R7- Comment, R8- Skip, PR- Propmt

- Results indicate that playing a video instruction which teaches users what to do and how to do imparts some learning on how to do the task, but still there are many problems with the interface which confuses them.
- Results are better than earlier tests but still not good enough to make it payable. One reason observed is that users are not able to retain all the rules associated to perform the task.

Research Study I Test 3

Original MTurk Interface + Video Instructions in Kannada

Task B3:

Which type of box contains more dots per box, on average?

B3	Time Take	Answers	Payable	Complete	Instruction	Answer 1	Answer 2	Answer 3
U-1	2 Min	1	No	Yes	Yes	Yes	No	No
U-2	1 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-3	1 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-4	1 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-5	1 Min	2	No	Yes	Yes	Yes	No	Yes
U-6	1 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-7	35 Sec	3	Yes	Yes	Yes	Yes	Yes	Yes
U-8	3 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-9	1 Min	3	Yes	Yes	Yes	Yes	Yes	Yes
U-10	1 Min	3	Yes	Yes	Yes	Yes	Yes	Yes

- Results indicate a significant increase as video describes the instructions which is a one simple rule and also the interaction method is explained which helps user overcome some usability problems.

Research Study | Test 4

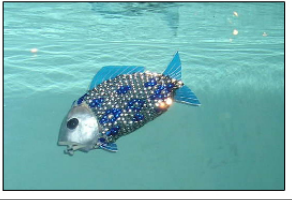
New MTurk Interface + Text Instructions in Kannada

Intervention in Task: After understanding impact of just translation or change in instruction medium, results are still not upto the mark. To test further we decided to propose a new interface in Kannada which is simple, clear and guides the user with numbered steps to follow the pattern of looking at information on page. We kept only task specific information, which minimises users chances to get lost in too much information. Here we redesigned the instructions page in simple kannada text.

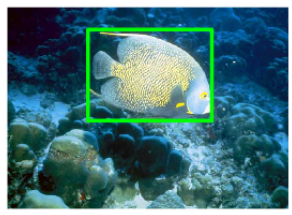
Task A4: Draw Bounding Box around objects in images

- ಈ ಪ್ರಾಜೆಕ್ಟಿನಲ್ಲಿ ನಿಮಗೆ ಕೆಲವು ಚಿತ್ರಗಳನ್ನು ತೋರಿಸುತ್ತೇವೆ.
- ನಿಮಗೆ ಒಂದು ವಸ್ತು ಗುರಿಯಾಗಿ ಸಿಗುತ್ತದೆ.
- ಒಂದೊಂದು ಚಿತ್ರದಲ್ಲಿ ಆ ವಸ್ತುವನ್ನು ನೀವು ಹುಡುಕಿ, ಅದರ ಸುತ್ತು ಒಂದು ಬಾಕ್ಸ್ ಬರೆಯಬೇಕು.

1 ಉದಾಹರಣೆಗಾಗಿ : ಈ ಚಿತ್ರದಲ್ಲಿ ನಿಮ್ಮ ಗುರಿ **ಮೀನು**.



2 ಚಿತ್ರದಲ್ಲಿರುವ ಮೀನನ್ನು ಕಂಡುಹಿಡಿದು, ಅದರ ಮೇಲೆ ಒಂದು ಬಾಕ್ಸ್ ಬರೆಯಿರಿ. ಬಾಕ್ಸ್ ಬರೆಯಲು, ಕಂಪ್ಯೂಟರಿನ ಮೌಸ್‌ನ್ನು ಉಪಯೋಗಿಸಿ.

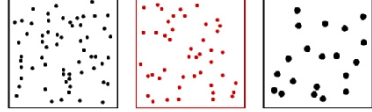


Task B4: Which type of box contains more dots per box, on average?

1 ಕೆಳಗಿರುವ ಪ್ರಶ್ನೆಗಳಲ್ಲಿ ನೀವು ಕೆಲವು ಚಿತ್ರಗಳನ್ನು ನೋಡುವಿರಿ.
ಒಂದೊಂದು ಪ್ರಶ್ನೆಯಲ್ಲಿ ಮೂರು ಬಾಕ್ಸ್‌ನ ಚಿತ್ರಗಳು ಇರುತ್ತವೆ: ಒಂದು **ಕೆಂಪು** ಬಾಕ್ಸ್ ಮತ್ತು ಎರಡು ಕಪ್ಪು ಬಾಕ್ಸ್.
ಈ ಬಾಕ್ಸ್‌ಗಳು ಚುಕ್ಕೆಗಳಿಂದ ತುಂಬಿವೆ.
ಯಾವ ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಹೆಚ್ಚಿನ ಚುಕ್ಕೆಗಳು ಇವೆ, ನೋಡಿ? ಕೆಂಪು ಬಾಕ್ಸ್, ಅಥವಾ ಕಪ್ಪು ಬಾಕ್ಸ್?

2 ಸೂಚನೆ:
ಬಾಕ್ಸ್‌ನಲ್ಲಿರುವ ಚುಕ್ಕೆಗಳನ್ನು ನೀವು ಎಣಿಸಬಾರದು. ಅಂದಾಜು ಮಾಡಿ ಹೇಳಿ.
ಕಪ್ಪು ಬಣ್ಣದ ಚುಕ್ಕೆಗಳು ಎರಡು ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಇವೆ. ಅದರಡನ್ನು ಬೇರೆ ಬೇರೆಯಾಗಿ ತಿಳಿದುಕೊಳ್ಳಿ .
ಯಾವ ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಹೆಚ್ಚು ಚುಕ್ಕೆಗಳು ಇವೆ, ಬರೀ ಅದರ ಬಣ್ಣವನ್ನು ನೋಡಿ ಉತ್ತರವನ್ನು ಒತ್ತಿ.

3 ಈ ಪ್ರಾಜೆಕ್ಟಿನಲ್ಲಿ 3 ಪ್ರಶ್ನೆಗಳಿವೆ. ಅದನ್ನು 5 ನಿಮಿಷಗಳಲ್ಲಿ ನೀವು ಪೂರ್ಣಗೊಳಿಸಬೇಕು. ಶುರು ಮಾಡಿ.



ಯಾವ ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಹೆಚ್ಚಿನ ಚುಕ್ಕೆಗಳು ಇವೆ, ನೋಡಿ? ಕೆಂಪು ಬಾಕ್ಸ್, ಅಥವಾ ಕಪ್ಪು ಬಾಕ್ಸ್ ?

☒ **ಕೆಂಪು** ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಹೆಚ್ಚು ಚುಕ್ಕೆಗಳು ಇದ್ದರೆ, 'ಕೆಂಪು ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಕಪ್ಪು ಬಾಕ್ಸ್‌ಗಿಂತಾ ಹೆಚ್ಚು ಚುಕ್ಕೆಗಳಿವೆ' ಎಂಬ ಬಟನ್‌ನ್ನು ಒತ್ತಿ.

☒ **ಕಪ್ಪು** ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಹೆಚ್ಚು ಚುಕ್ಕೆಗಳು ಇದ್ದರೆ, ಒಂದು ಕಪ್ಪು ಬಾಕ್ಸ್‌ನಲ್ಲಿ ಕೆಂಪು ಬಾಕ್ಸ್‌ಗಿಂತಾ ಹೆಚ್ಚು ಚುಕ್ಕೆಗಳಿವೆ' ಎಂಬ ಬಟನ್‌ನ್ನು ಒತ್ತಿ.

ಶುರು ಮಾಡಿ ➡

Research Study I Test 4

New MTurk Interface + Text Instructions in Kannada

Task A4:

Draw Bounding Box around objects in images

A4	Time Taken	Completed	Correct	Lamp	Instruction 1	Instruction 2	Instruction 3	Instruction 4	Browsed
U-31	3.35	Yes	17	Yes	Yes	Yes	Yes	Yes	No
U-32	23.51	Yes	13	Yes	Yes	Yes	Yes	Yes	No
U-33	7.01	Yes	17	Yes	Yes	Yes	Yes	Yes	Yes
U-34	7.07	Yes	17	Yes	Yes	Yes	Yes	Yes	No
U-35	13.58	Yes	2	Yes	No	No	No	No	No
U-36	07:46	Yes	16	Yes	Yes	Yes	Yes	Yes	Yes
U-37	12:26	Yes	12	Yes	Yes	Yes	Yes	Yes	Yes
U-38	06:04	Yes	6	Yes	No	No	Yes	Yes	No
U-39	12:13	Yes	12	Yes	Yes	Yes	Yes	Yes	Yes
U-40	08:44	Yes	18	Yes	Yes	Yes	Yes	Yes	Yes

A4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
U-31	R1	R1	R1	R1	R5	R1	R6	R1	R1	R1	R1	R1	R6	R1	R1	R1	R1	R1	R1	R1
U-32	R1	R1	R1	R1	R5	R1	R8	R1	R1	R1	R1	R5	R5	R5	R1	R8	R8	R1	R1	R1
U-33	R1	R1	R1	R1	R5	R1	R1	R1	R2	R1	R1	R1	R5	R1	R1	R1	R1	R1	R1	R1
U-34	R8	R1	R1	R1	R1	R1	R6	R1	R1	R1	R1	R1	R6	R1	R1	R1	R1	R1	R1	R1
U-35	R8	R1	R2	R2	R8	R2	R2	R2	R2	R2	R2	R8	R8	R8	R8	R8	R5	R1	R2	R2
U-36	R1	R1	R1	R1	R5	R1	R1	R1	R1	R1	R1	R1	R8	R1	R1	R1	R5	R1	R1	R2
U-37	R1	R1	R1	R1	R6	R1	R8	R8	R1	R1	R3	R8	R6	R1	R1	R1	R8	R8	R1	R1
U-38	R2	R2	R2	R2	R8	R5	R8	R8	R1	R2	R2	R1	R5	R1	R1	R1	R5	R1	R2	R2
U-39	R2	R8	R2	R1	R1	R2	R5	R1	R1	R1	R1	R8	R1	R1	R1	R1	R5	R5	R1	R1
U-40	R1	R1	R1	R1	R1	R1	R8	R1	R1	R1	R1	R1	R1	R1	R1	R1	R8	R1	R1	R1

R1- Fit, R2- Big, R3- Small, R4- Multiple, R5- Not Lamp, R6- Check Box,
 R7- Comment, R8- Skip, PR- Propmt

- A simple UI and easy text instructions given step by step explain eases the task for user.
- Results indicate significantaly better results than all previous tests.
- Here we conclude that easy communication of rules and simple UI enables such tasks which otherwise became very difficult for the user to perform.

Research Study I Test 4

New MTurk Interface + Text Instructions in Kannada

Task B4:

Which type of box contains more dots per box, on average?

B4	Time Take	Answers	Complete	Instruction	Answer 1	Answer 2	Answer 3
U-41	00:51	3	Yes	Yes	Yes	Yes	Yes
U-42	04:44	3	Yes	Yes	Yes	Yes	Yes
U-43	01:56	2	Yes	Yes	Yes	No	Yes
U-44	01:36	3	Yes	Yes	Yes	Yes	Yes
U-45	01:35	3	Yes	Yes	Yes	Yes	Yes
U-46	02:02	3	Yes	Yes	Yes	Yes	Yes
U-47	02:18	3	Yes	Yes	Yes	Yes	Yes
U-48	02:02	3	Yes	Yes	Yes	Yes	Yes
U-49	03:12	3	Yes	Yes	Yes	Yes	Yes
U-50	00:45	3	Yes	Yes	Yes	Yes	Yes

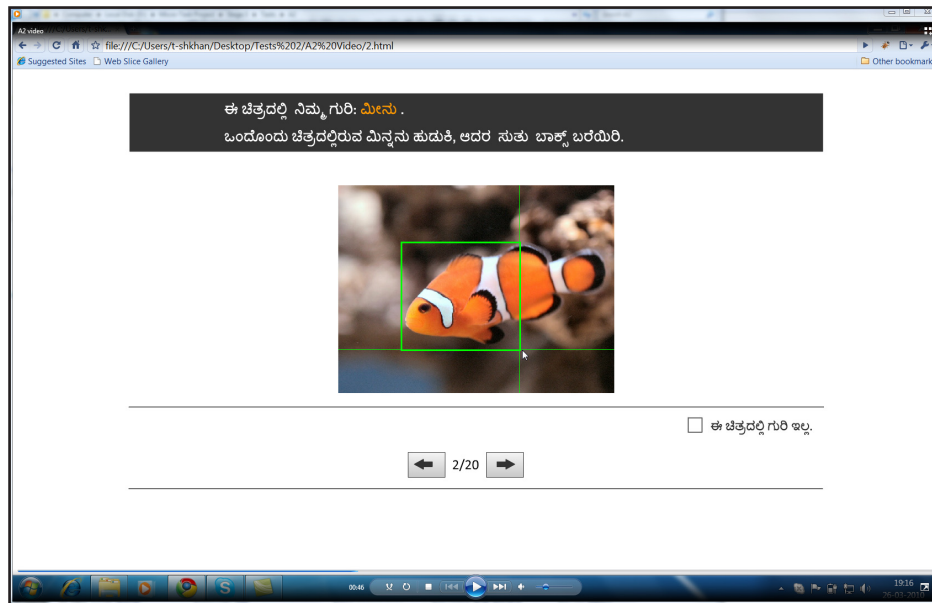
- Results indicate 100% success for this task.
- Average time taken by users to perform this task is 2 minutes out of 5 minutes, so such tasks when available in large numbers increase chances of earning more.

Research Study I Test 5

Interventions in Task: To distinguish the impact of video instructions over text instructions, we replaced the instructions page with video tutorial keeping the interface same as last task.

Task A5:

Draw Bounding Box around objects in images

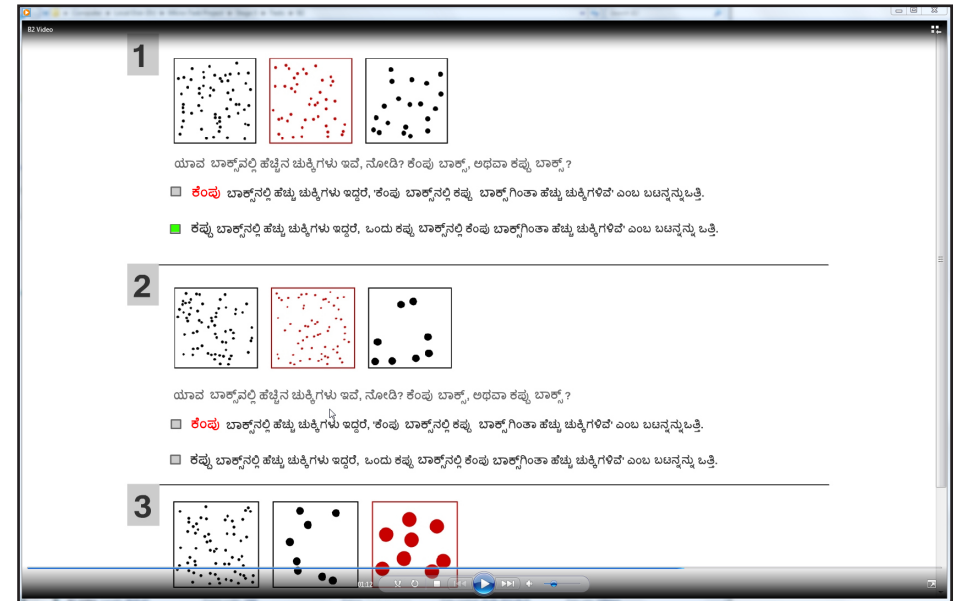


Video Instruction: Screen Capture, Voice over in Kannada explaining rules and Interaction method.

New MTurk Interface + Video Instructions in Kannada

Task B5:

Which type of box contains more dots per box, on average?



Video Instruction: Screen Capture, Voice over in Kannada explaining rules and Interaction method.

Research Study | Test 5

New MTurk Interface + Video Instructions in Kannada

Task A5:

Draw Bounding Box around objects in images

A5	Time Take	Completed	Correct	Lamp	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
U-41	03:06	Yes	14	Yes	R2	R1	R1	R1	R1	R2	R8	R1	R1	R1	R5	R1	R5	R8	R1	R1	R1	R1	R1	R1
U-42	06:45	Yes	8	Yes	R2	R5	R1	R1	R5	R1	R5	R1	R1	R8	R5	R8	R5	R5	R8	R1	R5	R5	R1	R1
U-43	08:42	Yes	15	Yes	R1	R1	R1	R1	R1	R6	R6	R6	R1	R1	R1	R1	R5	R1	R1	R1	R1	R1	R1	R1
U-44	07:27	Yes	15	Yes	R1	R5	R1	R1	R1	R1	R6	R5	R1	R1	R1	R5	R5	R1	R1	R1	R1	R1	R1	R1
U-45	13:00	Yes	14	Yes	R1	R1	R1	R2	R8	R1	R8	R1	R1	R1	R1	R6	R8	R1	R1	R1	R5	R1	R1	R1
U-46	06:58	Yes	17	Yes	R1	R1	R1	R1	R5	R1	R1	R1	R1	R1	R1	R5	R5	R1	R1	R1	R1	R1	R1	R1
U-47	14:21	Yes	18	Yes	R1	R1	R1	R1	R1	R1	R8	R1	R1	R1	R1	R1	R1	R1	R1	R1	R5	R1	R1	R1
U-48	14:32	Yes	18	Yes	R1	R1	R1	R1	R5	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1	R5	R1	R1	R1
U-49	08:25	Yes	16	Yes	R5	R1	R1	R1	R5	R8	R1	R1	R1	R1	R1	R1	R1	R1	R1	R1	R5	R1	R1	R1
U-50	07:44	Yes	15	Yes	R1	R1	R1	R1	R5	R1	R5	R1	R1	R1	R1	R8	R1	R1	R1	R1	R5	R1	R8	R1

R1- Fit, R2- Big, R3- Small, R4- Multiple, R5- Not Lamp, R6- Check Box, R7- Comment, R8- Skip, PR- Propmt

- Results are very similar to Text based instructions which signify that a simple UI is making a major difference in enabling a task and communicating the correct instruction in a user friendly way either through Text/Video.

Research Study I Test 5

New MTurk Interface + Video Instructions in Kannada

Task B5:

Which type of box contains more dots per box, on average?

B5	Time Take	Answers	Complete	Instruction	Answer 1	Answer 2	Answer 3
U-31	00:15	3	Yes	Yes	Yes	Yes	Yes
U-32	01:45	3	Yes	Yes	Yes	Yes	Yes
U-33	02:24	2	Yes	Yes	Yes	No	Yes
U-34	00:24	3	Yes	Yes	Yes	Yes	Yes
U-35	00:34	2	Yes	Yes	Yes	No	Yes
U-36	00:47	2	Yes	Yes	Yes	No	Yes
U-37	00:33	3	Yes	Yes	Yes	Yes	Yes
U-38	00:27	3	Yes	Yes	Yes	Yes	Yes
U-39	01:53	2	Yes	Yes	Yes	No	Yes
U-40	00:25	3	Yes	Yes	Yes	Yes	Yes

- Results are very similar to Text based instructions which signify that a simple UI is making a major difference in enabling a task and communicating the correct instruction in a user friendly way either through Text/Video.

Research Study

Demographics Vs. Results

User	Occupation	Comp Skills	Education	Education Medium	Native Language	Income	Sex	Age	Location	T1	Results	T2	Results
U-1	Driving	6 Months	SSC	Telgu	Telgu	6000	M	30	Office	A1	0	B3	3
U-2	Housekeeping	Basic, 1 Yr	SSC	Kannada	Kannada	5000	M	25	Office	A1	0	B3	1
U-3	Sec Guard	K+ Course 3 Mo	SSLC	Kannada	Kannada	4000	M	25	Office	A1	0	B3	3
U-4	Sec Officer	Basic 3yrs	11th	English	Kannada	16000	M	34	Office	A1	0	B3	2
U-5	Driving	2 Yrs Internet	2nd Arta	Kannada	Telgu	8000	M	23	Office	A1	0	B3	3
U-6	Student	Basics 3 Months	SSC	English	Urdu	0	F	19	Hope	A1	0	B3	3
U-7	Not Employed	3 Months, Pagemaker	2nd PUC	English	Kannada	0	F	18	Hope	A1	0	B3	3
U-8	Salesman	Basics 3 Months	SSC	English	Urdu	5000	M	20	Hope	A1	0	B3	3
U-9	Student	Basics	10th	Kannada	Kannada	0	M	22	Hope	A1	0	B3	3
U-10	Student	Basics	B Com 1st Yr (Disc)	Kannada	Kannada	0	F	23	Hope	A1	0	B3	3
U-11	Hitesh Compnay	Basic 6 mo	BA 2nd Yr	Kannada	Kannada	3500	F	22	Hope	A2	0	B2	0
U-12	Airtel	Basic, DTP	BA 2nd Yr	Kannada	Kannada	8000	M	23	Hope	A2	0	B2	0
U-13	Student	DTP	BA 2nd Yr	Kannada	Telgu	0	M	25	Hope	A2	0	B2	2
U-14	Not Employed	Basic	10th	Kannada	Kannada	0	M	21	Hope	A2	0	B2	2
U-15	Staffing Solutions	Basics	B Com	Kannada	Tamil	11000	F	26	Hope	A2	0	B2	0
U-16	Security Officer	Basics on the job	PUC	Kannada	Kannada	12000	M	32	Office	A2	0	B2	0
U-17	Embroidery Worker	Basics	2nd PUC	Kannada	Kannada	4000	F	25	Hope	A2	0	B2	0
U-18	Student	Basics DTP	B. Com	Kannada	Tamil	0	M	19	Hope	A2	0	B2	2
U-19	Student	Basics, Tally	B Com	Kannada	Tamil	0	F	21	Hope	A2	0	B2	3
U-20	Sales Associate	Tally	B Com	Kannada	Marathi	2200	F	22	Hope	A2	0	B2	1
U-21	Housekeeping/IT	2Yrs IT	7th	Kannada	Kannada	4000	M	27	Office	A3	9	B1	0
U-22	Driving	Basics	10th	English	Telgu	6000	M	28	Office	A3	8	B1	0
U-23	Sec Guard	K+ Course 3 Mo	B Com 1st Yr (Disc)	Telgu	Telgu	0	M	23	Office	A3	13	B1	3
U-24	Driver	3 Months	2nd PUC	Kannada	Kannada	6000	M	24	Office	A3	3	B1	2

Research Study

Demographics Vs. Results

User	Occupation	Comp Skills	Education	Education Medium	Native Language	Income	Sex	Age	Location	T1	Results	T2	Results
U-25	Student	Done-1 yr	2nd PUC	Kannada	Kannada	0	F	20	Hope	A3	12	B1	1
U-26	Student	2 Yrs	SSC	English	Tamil	0	M	20	Hope	A3	13	B1	3
U-27	Not Employed	Basics Tally	Diploma	Kannada	Telgu	0	F	21	Hope	A3	0	B1	1
U-28	Student	Basics	SSC	Kannada	Urdu	0	M	21	Hope	A3	6	B1	1
U-29	Student	Basics	SSC	English	Kannada	0	F	20	Hope	A3	0	B1	0
U-30	Page Point Service	Basics Tally	2nd PUC	English	Tamil	3500	F	23	Hope	A3	0	B1	2
U-31	Sec Officer	2 yrs Basic	SSC	Kannada	Tamil	10000	M	35	Office	A4	17	B5	3
U-32	Facilities	Basic, 1 mo	2nd PUC	Kannada	Kannada	7000	M	27	Office	A4	2	B5	2
U-33	Student	Basic	2nd Yr B.Com	Kannada	Urdu	0	M	20	Hope	A4	17	B5	3
U-34	Sanjivni	Basic	2nd PUC	Tamil	Tamil	4000	M	35	Hope	A4	13	B5	3
U-35	Student	Basic	2nd PUC	Tamil	Tamil	0	M	17	Hope	A4	17	B5	2
U-36	Philips Service Centre	Basics	10th	English	Tamil	4000	F	19	Hope	A4	16	B5	2
U-37	ICICI	Basics Tally	BA	Kannada	Kannada	6000	F	27	Hope	A4	12	B5	3
U-38	Not Employed	Basics Tally	Diploma Commercial	Kannada	Kannada	0	F	19	Hope	A4	6	B5	3
U-39	Not Employed	Basics Tally	Diploma, Shorthand	Kannada	Kannada	0	F	20	Hope	A4	12	B5	2
U-40	Not Employed	Basics 3 Months	2nd PUC	Kannada	Telgu	0	F	17	Hope	A4	18	B5	3
U-41	Finance	Basics	10th	Kannada	Telgu	4500	M	33	Office	A5	14	B4	3
U-42	Student	Basic	2nd PUC	Kannada	Tamil	0	M	17	Hope	A5	14	B4	3
U-43	Datalink	Basic(Tally)	B.com	kannada	Urdu	3000	F	21	Hope	A5	8	B4	3
U-44	Funishing	Basic(Tally)	2nd yr B.com	English	Urdu	3400	M	19	Hope	A5	15	B4	2
U-45	Airtel	Basic	B Com	English	Urdu	6500	F	21	Hope	A5	15	B4	3
U-46	Student	Basic	Diploma	English	Kannada	0	F	18	Hope	A5	17	B4	3
U-47	Student	Basics	Diploma	Kannada	Telgu	0	F	19	Hope	A5	18	B4	3
U-48	Student	Basics	2nd PUC	Kannada	Tamil	0	F	17	Hope	A5	18	B4	3
U-49	Student	Basics 1 Yr	B Com	Kannada	Tamil	0	F	17	Hope	A5	16	B4	3
U-50	Art Gallery	Advanced	B Com 1st Yr	Kannada	Tamil	1000	M	18	Hope	A5	15	B4	3

Research Study | Analysis

Task A:

Draw Bounding Box around objects in images
20 Max Answers | 30 Minutes | \$ 0.05

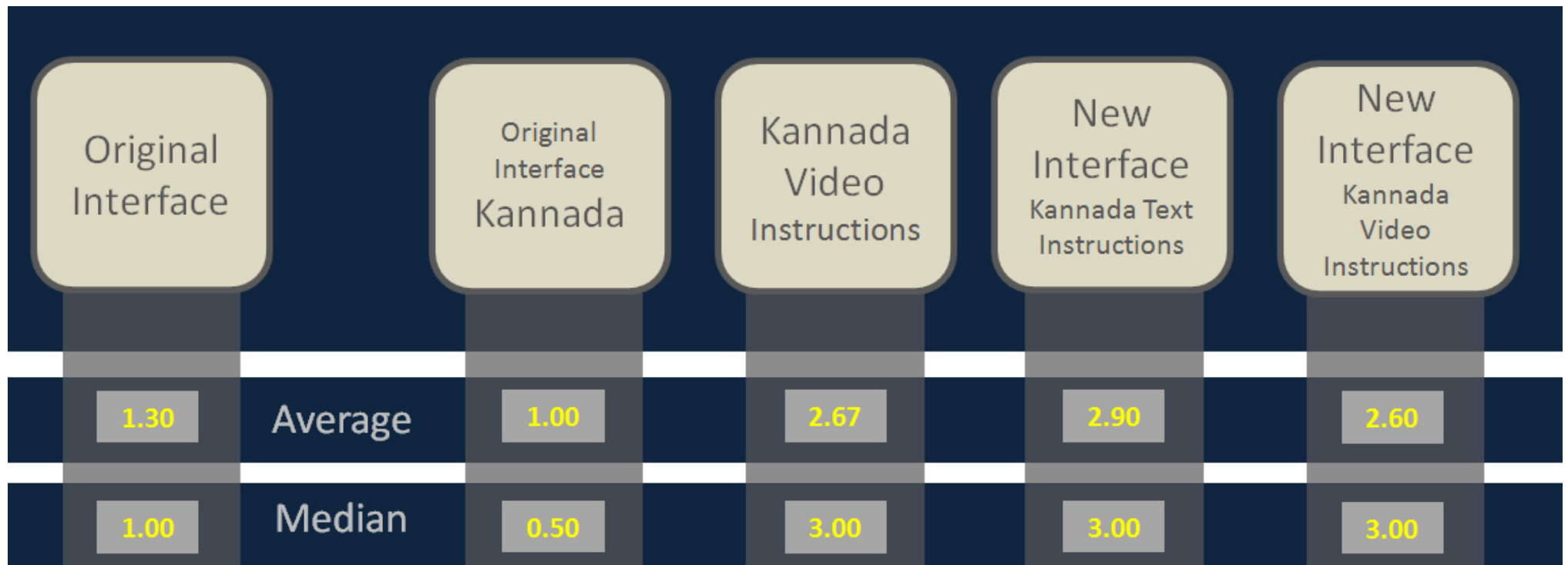
Original Interface English	Original Interface Kannada	Kannada Video Instructions	New Interface Kannada Text Instructions	New Interface Kannada Video Instructions
0.00	0.00	6.40	13.00	15.00
0.00	0.00	7.00	14.50	15.00

Research Study | Analysis

Task B:

Which type of box contains more dots per box, on average?

3 Max. Answers | 5 Minutes | \$ 0.05



Research Study I Projected Income

Task A4:

Draw Bounding Box around objects in images

New MTurk Interface + Text Instructions in Kannada

20 Max Answers I 30 Minutes I \$ 0.05

	Time Taken	Completed	Correct	Payable	Max time allotted	One hour	Seconds	Expected tasks completed per hour	\$ payment per hour	Rupee payment per hour	Baseline hourly wage	Baseline monthly salary	If spend 1 hour a day, so 30 hours a month	Increment in monthly earnings	
A4															
U1	3.35	Yes	17	1	30:00:00	3600	215	16.744186	0.837	37.6744186					
U2	23.51	Yes	13	0											
U3	7.01	Yes	17	1			421	8.5510689	0.428	19.23990499					
U4	7.07	Yes	17	1			427	8.4309133	0.422	18.96955504					
U5	13.58	Yes	2	0											
U6	07:46	Yes	16	1			466	7.7253219	0.386	17.38197425					
U7	12:26	Yes	12	0											
U8	06:04	Yes	6	0											
U9	12:13	Yes	12	0											
U10	08:44	Yes	18	1			524	6.870229	0.344	15.45801527					
									0.483	21.745	21.1789773	3388.636364	652.343209	19.25%	Entire group (employed and unemployed)
												5964		10.94%	Employed workers

Research Study I Projected Income

Task B4:

Which type of box contains more dots per box, on average?

New MTurk Interface + Text Instructions in Kannada

3 Max. Answers I 5 Minutes I \$ 0.05

B1	Time Taken	Payable	Max time allotted	One hour	Seconds	Expected tasks completed per hour	\$ payment per hour	Rupee payment per hour	Baseline hourly wage	Baseline monthly salary	If spend 1 hour a day, so 30 hours a month	Increment in monthly earnings	
U11	00:51	1	05:00	3600.00	51.00	70.59	3.53	158.82					
U12	04:44	1			284.00	12.68	0.63	28.52					
U13	01:56	0			116.00								
U14	01:36	1			96.00	37.50	1.88	84.38					
U15	01:35	1			95.00	37.89	1.89	85.26					
U16	02:02	1			122.00	29.51	1.48	66.39					
U17	02:18	1			122.00	29.51	1.48	66.39					
U18	02:02	1			122.00	29.51	1.48	66.39					
U19	03:12	1			192.00	18.75	0.94	42.19					
U20	00:45	1			45.00	80.00	4.00	180.00					
Ave	01:54					38.44	1.92	86.48	21.179	3388.64	2594.5	76.56%	Entire group (employed and unemployed)
										5964		43.50%	Employed workers

Research Study I Findings

After studying research results, we are in a better position to conclude few very important findings:

- There are tasks on Mturk that, if understood, people can complete and be paid for.
- Different types of tasks require different skills; some are more accessible than others (e.g., web search + typing too hard)
- But, the Mturk web site as it is not usable (by low-income, 7-14 years of education)
- Language localization of web site as-is does not help
- But, changing UI and simplifying / clarifying instructions does enable site to be usable and people to be paid
- Video instructions do not significantly improve task completion over improved UI+text
- Cultural context also influences ability to complete tasks (e.g., some kinds of Western lamps not recognized)

Design Exploration I Project Brief

Extensive research over four months gave strong insights about suitable guidelines that can enable Micro-Task Markets for developing and culturally contextual economies like India. Having proved that with usable interface and clear communication of instructions can enable few categories of Micro-Tasks for users with basic computing experience, we plan to extend the study further by giving few design explorations.

Looking at the scope of project time line, we are restricting our self to propose design explorations and guidelines from the workers perspective.

Design Exploration I Consideration

Design Consideration:

To follow the design as per five main steps 'Inform>Engage>Acquire>Enable>Manage' we found during research and keeping in mind all the findings for User Experience development for targeted users.

Interface:

- Single column interface is suitable.
- Step by Step instructions/ numbered interface guides user throughout the web page.
- Selection of local language daily usage terms are easy for user to understand.
- Minimizing active links on webpage allows less chances of making mistakes.
- Simple and clean interface is suitable.
- Visual chunking of information as per importance is very crucial.
- Good instructional design helps user to retain information.
- Access to help should readily be available to user anytime.

- Design of buttons/ navigation should be that simple and consistent, where user understands where they are going after clicking on it.

Micro-Task System:

- Users should be informed about what this service is and how it works.
- Users should get to work on tasks based on preferred skill sets.
- Clear communication of instructions is most crucial.
- Training module to preview the task with hands on experience benefits user in making informed choice.
- User should feel empowered on the interface instead of feeling lost- local language helps.
- It is a task oriented platform, and it should have all information to allow that.

Design Exploration | Ideation

To design a web based crowd sourcing platform for Micro-Tasks which can host digital skill based jobs like tagging photos as well as special skill based offline jobs also like sketching, taking photographs etc.

Based on the research study done, this option suits more realistic to the findings and also can be explored within project time line.

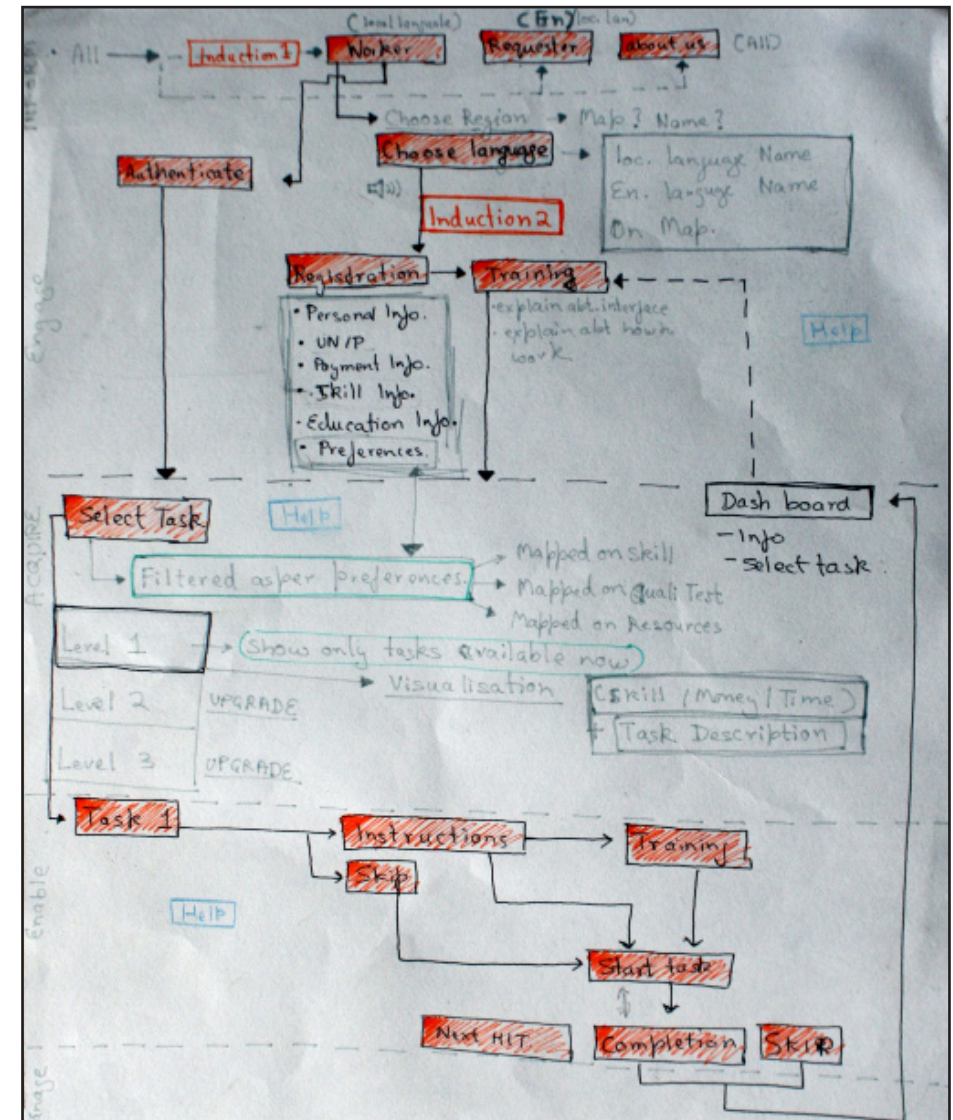
Design Scope:

To design a web site which is an online Micro-Task Market for targeted user segment.

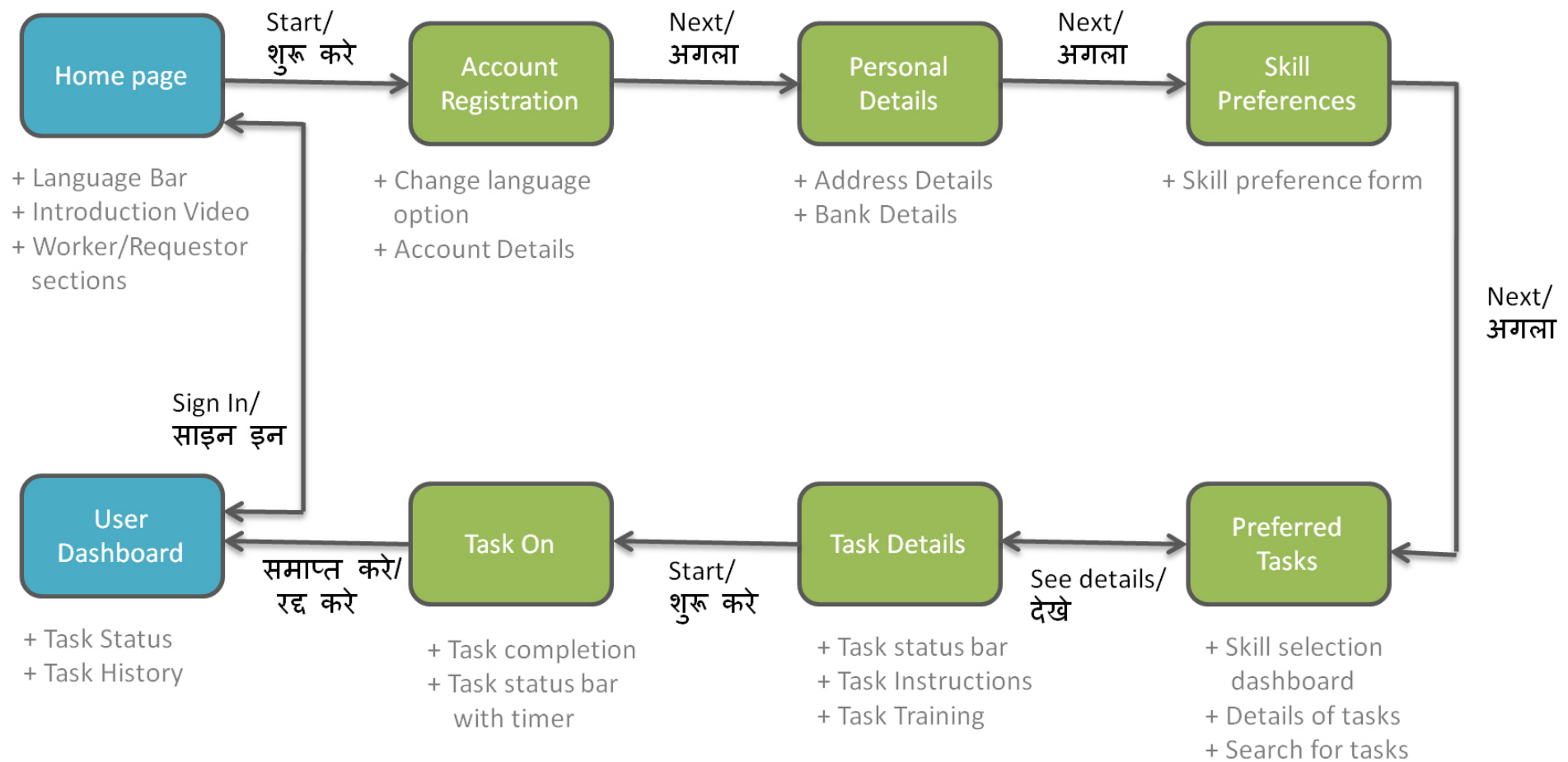
To detail out the design for workers.

Human in the Loop- One person translating the task to open it to a large pool of workers.

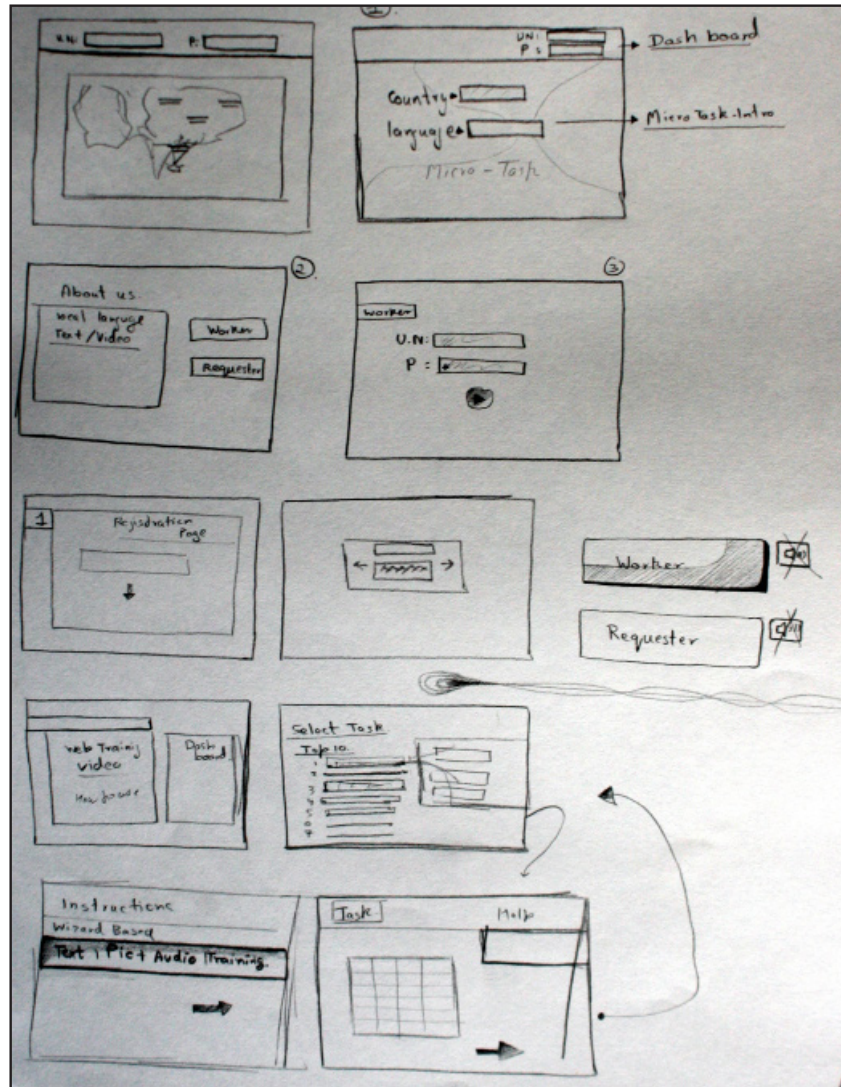
To propose Task upload templates design and guidelines for the requester's section.



Design Exploration | Development



Design Exploration I Development



Task Bazaar

English Version

User Name

Password

▶

1 Country

2 Language

3 ▶

Task Bazaar

1

2

Worker

Requester

▶

Design Exploration | Development

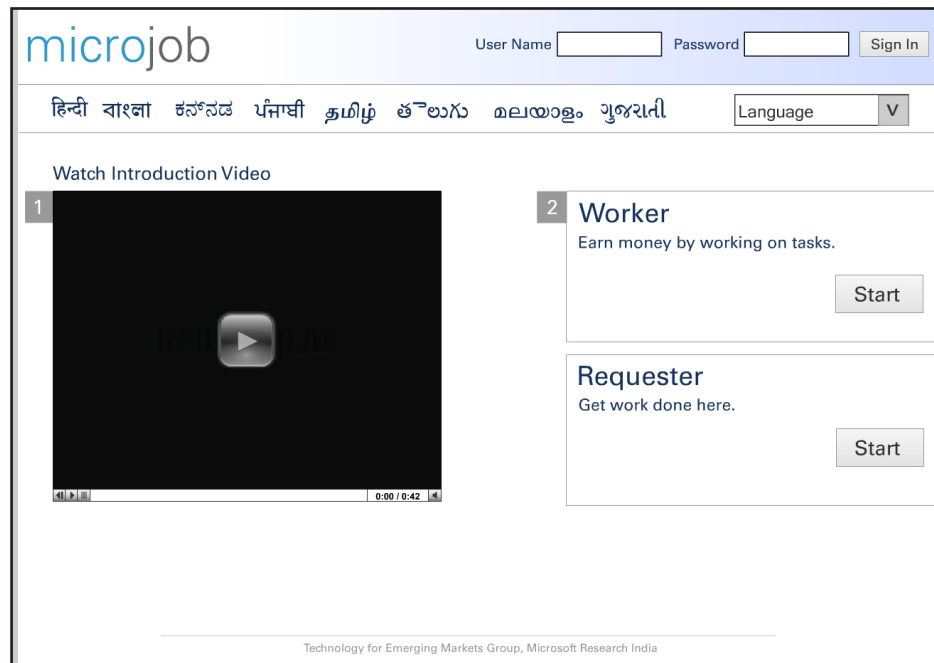
A mid-fidelity prototype of a web form for 'microjob'. The form is titled 'microjob' in blue text. It features a 'Sign In' button in the top right corner. The main form area contains two dropdown menus: 'Country: A' and 'Language: A'. A 'Next >' button is located below the 'Language' dropdown. A small box in the top right corner of the form area contains the numbers '1,2,3'.

Mid- Fi Prototype

A mid-fidelity prototype of a web form for 'microjob', similar to the one on the left but with numbered annotations. The form is titled 'microjob' in blue text. It features a 'Sign In' button in the top right corner. The main form area contains two dropdown menus: 'Country: A' and 'Language: A'. A 'Next >' button is located below the 'Language' dropdown. A small box in the top right corner of the form area contains the numbers '1,2,3'. The 'Country' dropdown is annotated with a blue square containing the number '1'. The 'Language' dropdown is annotated with a blue square containing the number '2'. The 'Next >' button is annotated with a blue square containing the number '3'.

Mid- Fi Prototype

Design Prototype | Inform



Hi- Fi Prototype: Video Introduction, Start Task



Hi- Fi Prototype: Local Language Interface

Design Prototype | Engage

Hi- Fi Prototype: Minimalistic Interface

Hi- Fi Prototype: Indic text input through Keyboard, On screen Keyboard and English Input

Hi- Fi Prototype: Registration

Design Prototype | Acquire

microjob बुधवार 16 जून 2010 | ram.kumar@gmail.com साइन आउट

आप किस तरह का काम करना चाहते हैं?

- चित्रकला ☐
- पढ़ना ☐
- लिखना ☐
- टाइप करना ☐
- तस्वीरें ☐

भाषाओं का ज्ञान?

भाषा का नाम	पढ़ना	लिखना	बोलना
1 हिन्दी	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 English	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 तारशा	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 తెలుగు	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 गुजराती	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Hi- Fi Prototype: Skill Set based profile

microjob बुधवार 16 जून 2010 | ram.kumar@gmail.com साइन आउट सेटिंग्स

अपनी पसंद का काम चुने काम खोजे

काम	पैसे	समय	तादाद	इस तरह का काम	
1 किस बॉक्स में ज्यादा बिंदु हैं अंदाजे से	Rs 2.5/-	5 मिनट	128		देखें
2 बैंक का नाम खोजें	Rs 5/-	30 मिनट	99		देखें
3 लेम्प के ऊपर बॉक्स बनाइए	Rs 5/-	30 मिनट	1247		देखें
4 फोटो का चित्र बनाइये	Rs 5/-	30 मिनट	83		देखें
5 अंग्रेजी भाषा को हिन्दी भाषा में लिखें	Rs 25/-	50 मिनट	1467		देखें

6 अगला 5 >

Hi- Fi Prototype: Acquire Task based on skill sets involved.

Design Exploration | Enable

microjob बुधवार 16 जून 2010 | ram.kumar@gmail.com साइन आउट सेटिंग्स

<< वापस	काम	पैसे	समय	तादाद	इस तरह का काम	ईमेल
	किस बॉक्स में ज्यादा बिंदु हैं अंदाज़े से	Rs 2.5/-	5 मिनट	128		ईमेल

काम की जानकारी

1 आप नीचे 3 बॉक्स देखेंगे, 2 काले और 1 लाल रंग के डोट्स का

2 आपको ये देख कर बताना है की अंदाज़े से किस रंग के बॉक्स में ज्यादा डोट्स हैं

3 आपको इस काम के लिए डोट्स की गिनती नहीं करनी है

4 गिनती से तो हमेशा मिलकर दोनों काले बॉक्स के ही डोट्स ज्यादा होंगे पर सिर्फ देख कर ये बताना है की लाल या काले रंग के बॉक्स में से किसे ज्यादा डोट्स हैं

ट्रेनिंग

5 आप इस उधारण पर काम करके अभ्यास कर सकते हैं

किस रंग के बॉक्स में ज्यादा बिंदु हैं अंदाज़े से?

☐ लाल रंग के बॉक्स में अंदाज़े से ज्यादा डोट्स हैं

☐ काले रंग के बॉक्स में अंदाज़े से ज्यादा डोट्स हैं

<< वापस 6 शुरू करें

Hi- Fi Prototype: Task Information and Training for hands on pre-view.

microjob बुधवार 16 जून 2010 | ram.kumar@gmail.com साइन आउट सेटिंग्स

काम	पैसे	समय	तादाद	इस तरह का काम	ईमेल
किस बॉक्स में ज्यादा बिंदु हैं अंदाज़े से	Rs 2.5/-	5 मिनट	128		ईमेल

00:00:08

1

किस रंग के बॉक्स में ज्यादा बिंदु हैं अंदाज़े से?

☐ लाल रंग के बॉक्स में अंदाज़े से ज्यादा डोट्स हैं

☐ काले रंग के बॉक्स में अंदाज़े से ज्यादा डोट्स हैं

2

किस रंग के बॉक्स में ज्यादा बिंदु हैं अंदाज़े से?

☐ लाल रंग के बॉक्स में अंदाज़े से ज्यादा डोट्स हैं

☐ काले रंग के बॉक्स में अंदाज़े से ज्यादा डोट्स हैं

3

Hi- Fi Prototype: Task On mode, simple and clear layout.

Design Prototype I Manage

microjob

बुधवार 16 जून 2010 | ram.kumar@gmail.com

साइन आउट

सेटिंग्स

धन्यवाद

आपका काम जमा हो गया है। आपको इसका परिणाम बता दिया जायेगा।

खाते की जानकारी

काम खोजे

कमाया हुआ पैसा : Rs 300/-

खाता नंबर : XXXXXXXXXXXXX

पुराने काम की जानकारी

	काम	स्टेटस	पैसे	तादाद	जमा तिथि	परिणाम तिथि
1	किस बॉक्स में ज्यादा बिंदु हैं अंदाज़े से	?		12	29/02/10	
2	लेम्प के ऊपर बॉक्स बनाइए	✓	Rs 60/-	12	29/02/10	01/03/10
3	फोटो का चित्र बनाइये	✓	Rs 150/-	10	26/02/10	27/02/10
4	बैंक का नाम खोजे	✗	Rs 0/-	2	25/02/10	26/03/10
5	अंग्रेज़ी भाषा को हिन्दी भाषा में लिखे	✓	Rs 90/-	10	29/02/10	01/03/10

Technology for Emerging Markets, Microsoft Research India

Hi- Fi Prototype: Tasks Information Dashboard.