D'source Project

Open Design School

MoE's Innovation Cell

Artifact, Activity and Spatial Mappings

Design Thinking & Innovation Tools

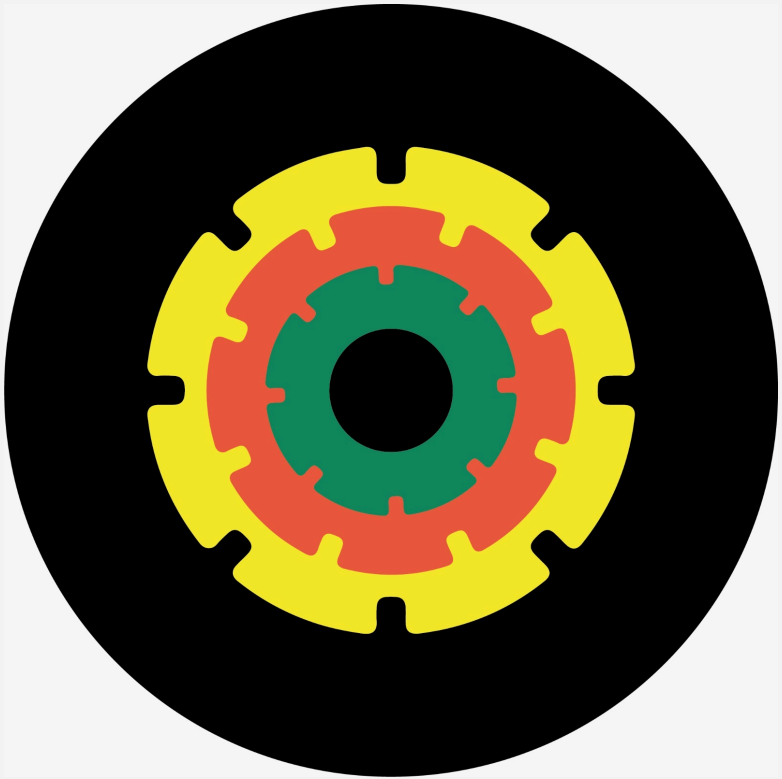
Section: T7, Week 7

Design Thinking & Innovation (DT&I)

Section: T7.0
Week 7

Design Thinking & Innovation (DT&I)

Prof. Ravi Poovaiah
IDC School of Design, IIT Bombay



DT&I Tools

T7 Artifact, Activity, Spatial Mappings

Module T6:

T7.1

What are Mappings?

What are Mappings?

Mappings help you to **visualize the information/data for your topic**.

When information/data is made visible through mappings, it makes it **easier to make cross connections** as well as **see the whole picture at one glance**.

Mappings can be done from **different points of view:**
- Artifacts (include Objects, Media, Services, Built environment)
- Spatial, Temporal
- Cognitive, Behavioral, Sensory
- Social, Narrative and Sustainable

What are the types of Mappings?

For our analysis, we'll look at **3 types of Mappings**:

1. **Artifact Mappings**
2. **Activity Mappings**
3. **Spatial Mappings**

Types of Mappings . . .

Artifact Mapping:

. The various objects/medias/ services connected to the topic are shown in relation to each other

Activity/Temporal Mapping:

. The various activities connected with the topic are shown across the time dimension.

(a) One day in the life of . .
(b) User Journey mapping
(c) Life-cycle mapping
(d) Causal Mappings/Diagrams

Environment/Spatial Mappings:

. The various spaces or environments that are connected with the topic are shown in relation to each other

(a) Physical Spatial Mapping
(b) Spatial Connectivity Mapping

Making the Mappings:

Individually or in groups?

Mappings can be drawn **individually or in small groups**.

Working in groups, you can **share responsibilities** while doing the Mappings.

How many of these mappings?

The mappings are similar to each other in many ways, except that the **focus in each of them varies.**

Hence, the suggestion is that you **select the one that is most relevant to your subject and do one mapping**. Of course, you are free to try out all of them.

T7.2

What are Artifact Mappings?

Artifact Mappings

Artifact Mapping:

- Artifact in our context refers to any of the following

a. Objects

b. Medias

c. Services

d. Built Environment (Buildings and Structures)

- **Artifact Mapping** refers to showing the **Artifacts connected to your topic in relation to each other**

- The Artifact mapping can be organized according to **other Artifacts, Timeline, Location, Costing, Complexity, Types, Usefulness, etc.**

Artifact Mapping Steps:

1. List all Artifacts connected with your topic

2. Make a Mindmap of the different Artifacts

3. Decide the Criteria on which you would like to **organize the Artifacts –** Timeline, Location, Costing, Complexity, Types, Usefulness, etc.

4. Organise the Artifacts in a given Space

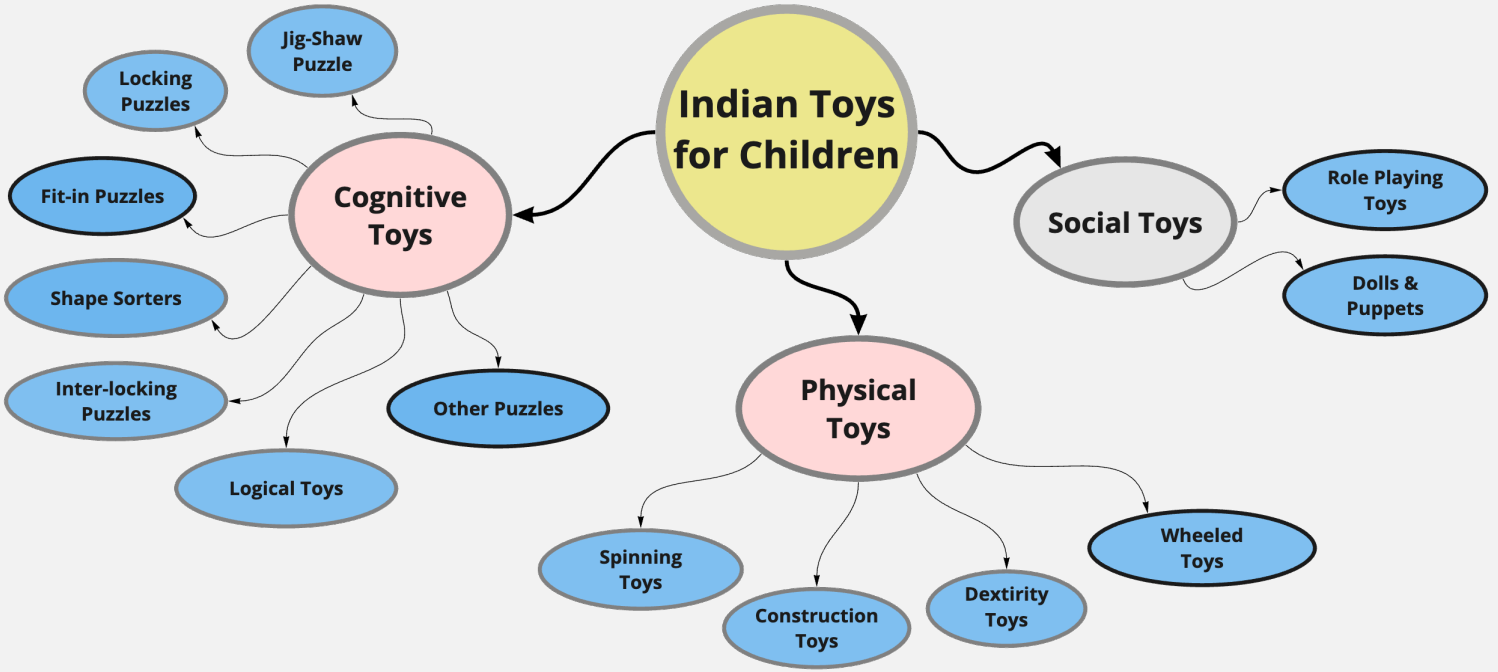
5. Connect them with affinity links if essential

6. Draw inferences from the mapping

7. Make a list of inferences from this Mapping

Artifact Listing through Mind-mapping:

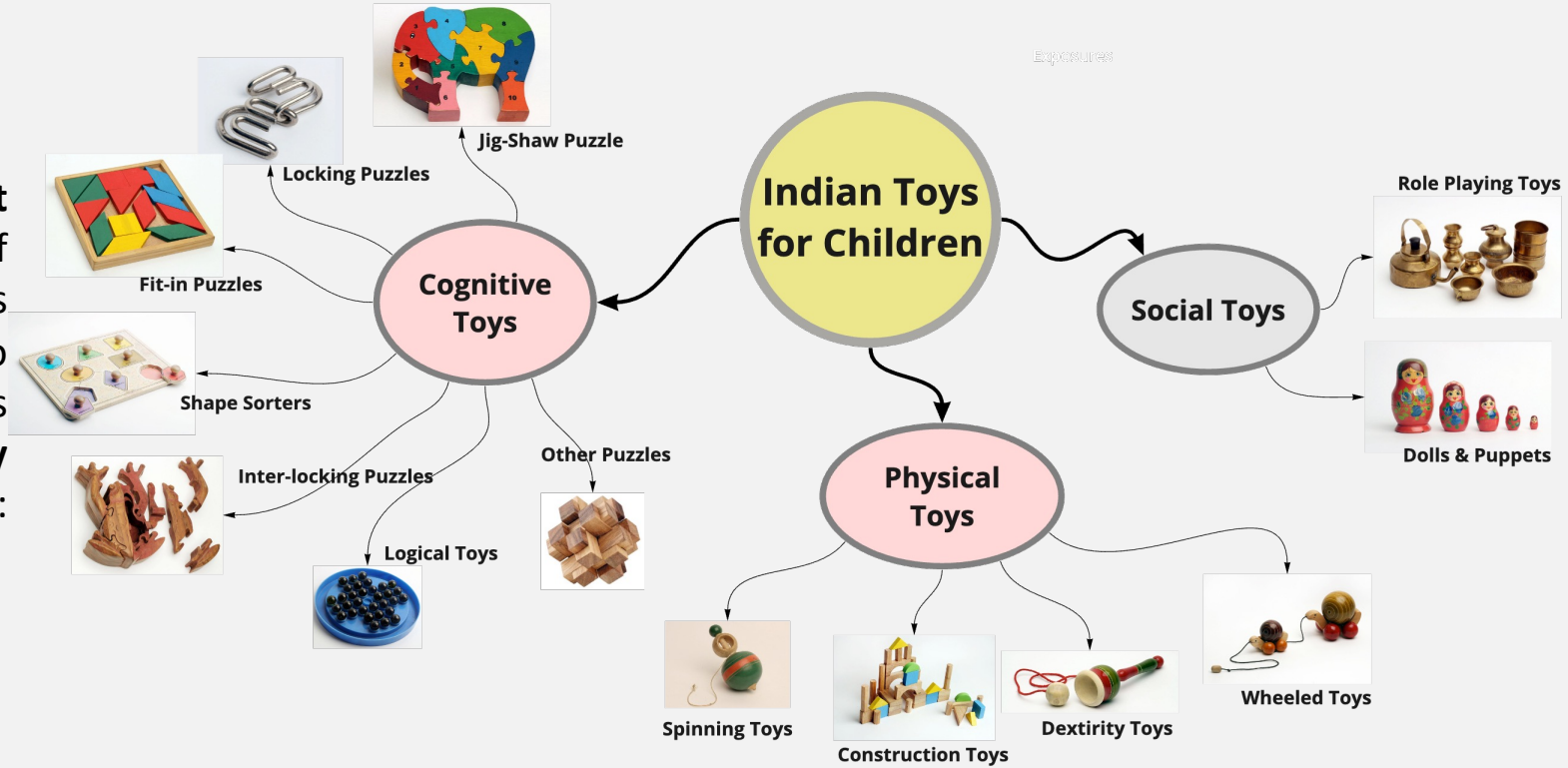
Start with **Mindmapping of Artifacts**:



Artifact Mapping Example 1 . . . (Capabilities)

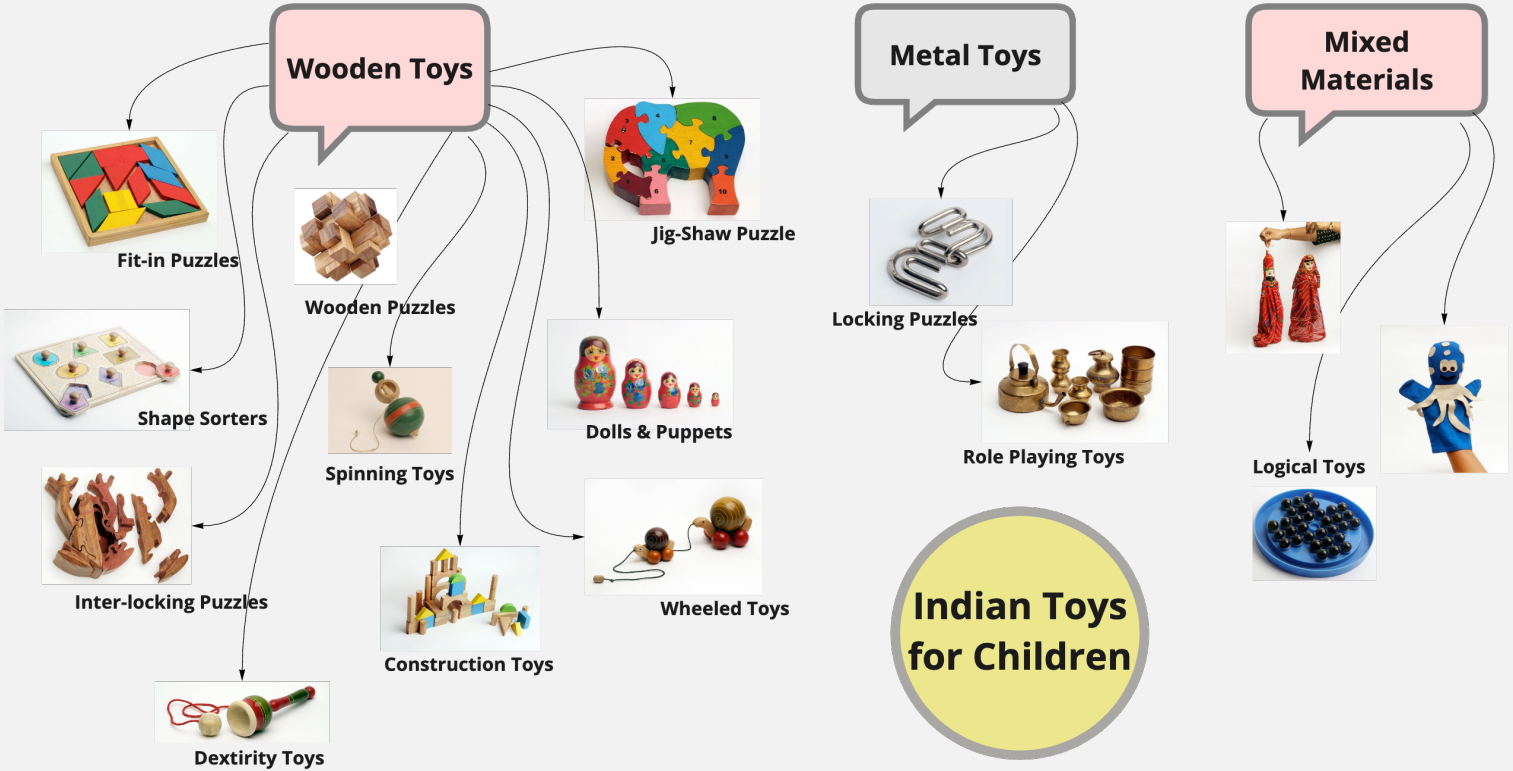
THINK! DESIGN

Artifact Mapping of Indian Toys according to children's **capability categories**:



Artifact Mapping Example 1 . . . (Materials)

Artifact Mapping of Indian Toys for Children in categories of **Materials**:

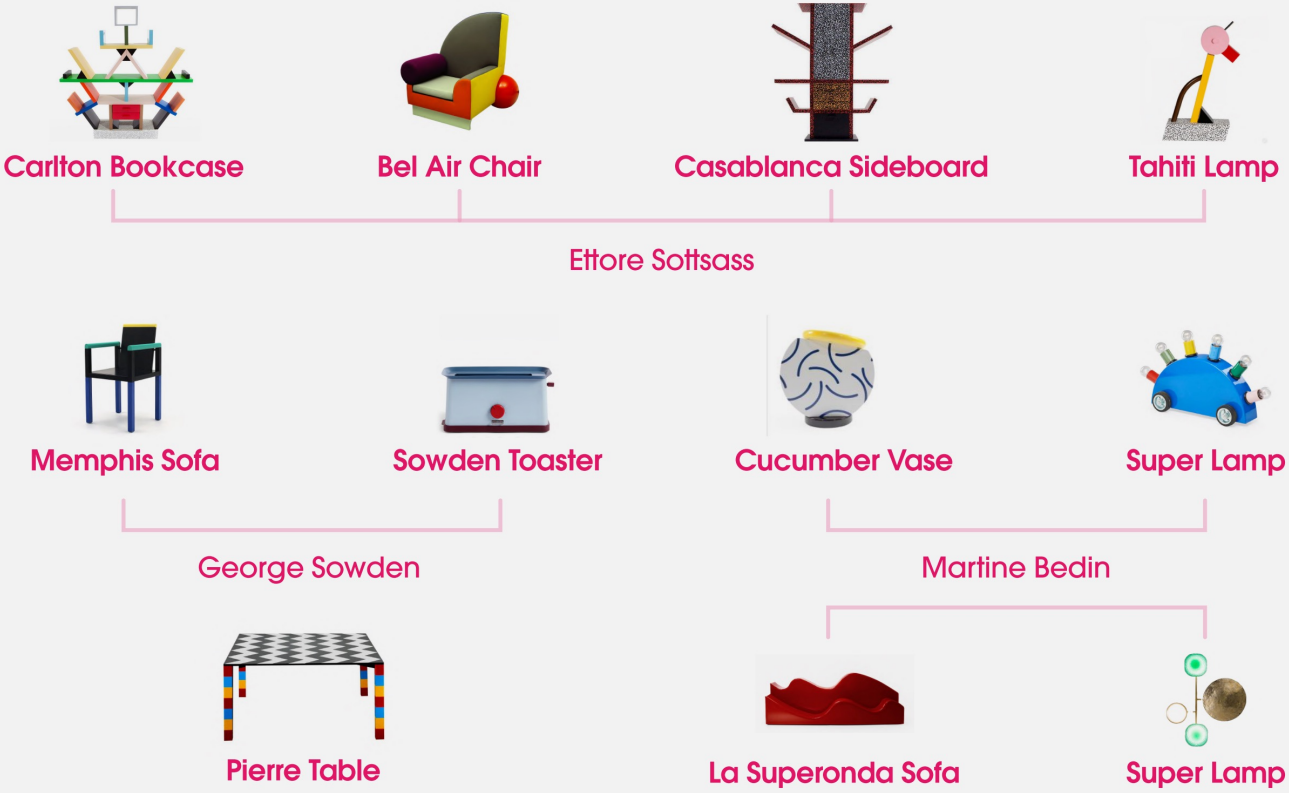


Artifact Mapping Example 1 . . . (Scale)

Artifact Mapping of Indian Toys for Children in a scale of **Simple to Complex** and **Costly to Affordable**:

Artifact Mapping Example 2:

Artifact Mapping related to Artifacts from **Memphis Design Movement** Example 2:



THINK! DESIGN

Artifact Mapping related to **Tea Route across Ages** - objects, medias, services **Example 3:**

T7.2-016

Artifacts related to Tea Route

TEAPOTS

Teapots held significance in Chinese, Japanese, and English rituals. Porters on tea routes used them to brew tea during stops. Yixing's manufacturing in China contributed to their enduring popularity over the years.

YIXING CLAY TEAPOTS

10th Century

Handmade with 'zisha' - purple sand/clay to brew tea.

HANDPAINTED TEAPOT

Chinese porcelain blue and white painted teapot.

MING TEAPOT

Today's round teapot is based on the 'ming' teapot design.

ANCIENT TIBETIAN TEAPOT

1900's

Handmade with cold red copper and decorated with tibetian silver.

CHESTS

Tea chests, vital for transit, evolved from ornate, unlabeled to labeled wood and paper boxes, especially at sea. In the 1800s, adorned trunks were favored for transporting tea and silks, occasionally featuring rare intricate carvings as valuable additions.

LABELLED TEA CHEST

1867-1874

loosely packed leaves were wrapped in foil, or in such chests from India or other producers.

WOOD & LEATHER TRUNK

9th Century

Chinese Wood and Hand Painted Leather Trunk with Nail Head Accents

YOKOHAMA TEA CHEST

1862-1897

A chest from Japan with wood, inlay and lacquer mainly used in trading.

LEAVES IN A BOTTLE

17th dec. 1773

Tea Leaves in a glass bottle found at dorchester neck.

LEAVES

To make transport easy, leaves were packed into bricks, cakes, packets or even sacks. Over the course of travel, freshly packed green leaves would start oxidising- providing the black, green, red and other ranges of teas we now know to love.

TEA BRICKS

Before 19th century packed into bricks for transport.

OLD TEA SAMPLES

141 BC

Some of the oldest tea samples found in a tomb.

BREWED TEA RELICS

475BC- 221BC

Soaked and brewed tea relics.

TEA CAKES

Pressed into cakes for transport.

STORAGE & CUPS

Storage jars and cups were relevant to chinese culture especially during matcha season. Every spring, the stroage jars would be taken to a field and filled with new leaves for the coming year. Concotions were made in the cups, leaves were steeped and matcha powders were mixed with brushes.

PORCELAIN CUP

Found with 2400 years old tea residue

'CHIGUSA'

1350 - 1450 storage jar from china

CHINESE TEA BOWL

12th century

Hare's fur glaze

JAPANESE TEA JAR

14th - 15th century

Tea storage jar

KOREAN TEA VESSELS

Rustic Ceramic vessels from Korea

PORTERS & TRAVEL

Traders employed mules, yaks, horses, and animals for cross-border tea transport. Some, relying on resilience, carried massive loads barefoot on perilous paths. Exhausting and hazardous, these journeys saw groups of porters providing mutual support as they navigated the challenging terrain.

Porters carrying tea in packs pressed togther each porter carried 60 kg' - 125 kgs'

SICHUAN TEA PORTER

Porters carried large sacks on their backs for miles.

ANIMALS AS TRANSPORT

Horses and yaks with porters along with handwoven boxes and baskets of teas strapped on them.

PORTERS RESTING ON THE WAY

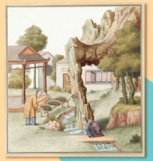
PAINTINGS

Several paintngs were found pertaining to tea cultivation, sorting and manufacturing of tea in China. They depicted scenes of transport, cleaning and often of groups of people with exporters. These paintings give deep insights and act as doors to the past.

SORTING & MEASURING

Sorting through harvested tea leaves (right)

Determining the weight of tea chests (left).



CLEANING TEA

workers washing tea leaves in a stream of fresh water.

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Artifact Temporal Mapping related to Artifacts from Bauhaus School **Example 4:**

T7.2-017

Bauhaus

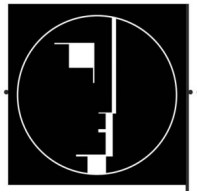
Artefact Mapping

1913

Color Study
Wassily Kandinsky
1913

Red & Blue Chair
Gerrit Rietveld
1917

Bauhaus Manifesto
Walter Gropius
1919



Bauhaus Logo
Oskar Schlemmer
1922

Theatre Costumes
Oskar Schlemmer
1922

Chess Set
Josef Hartwig
1923

Wagenfeld Table Lamp
Wilhelm Wagenfeld
1924

Tea Infuser
Marianne Brandt
1924

Wallpapers
Gunta Stölzl
1920s

Rug
Gertrud Arndt
1923

Exhibition Poster
Herbert Bayer
1923

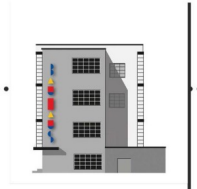
Baby Cradle
Peter Keler
1923

Experimental Photography
László Moholy-Nagy
1920s

Bauhaus Typography
Herbert Bayer
1925

Laccio Table
Marcel Breuer
1925

Wassily Chair
Marcel Breuer
1925



Bauhaus Building Dessau
Walter Gropius
1926

Barcelona Chair
Mies van der Rohe
1929

1926

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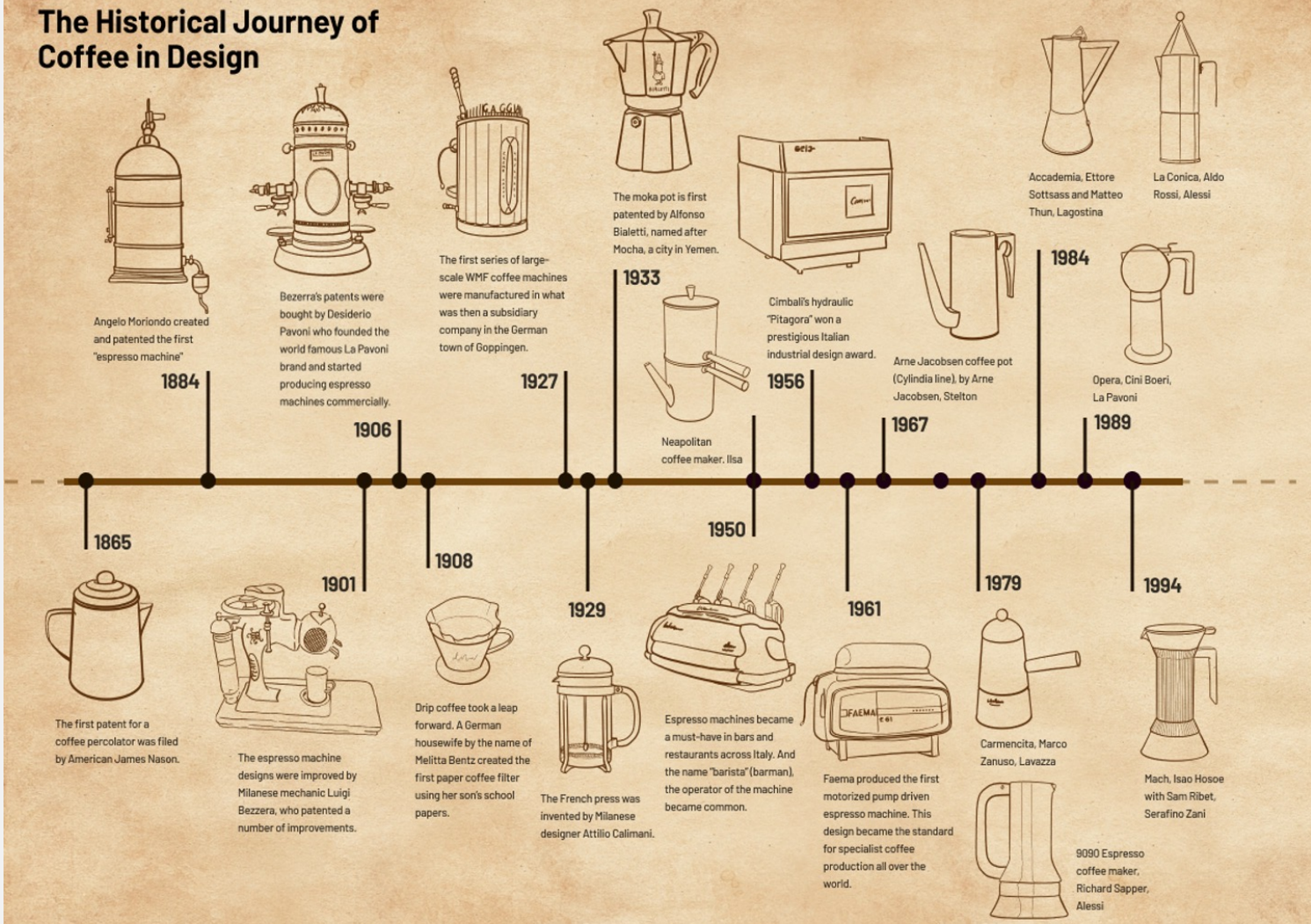
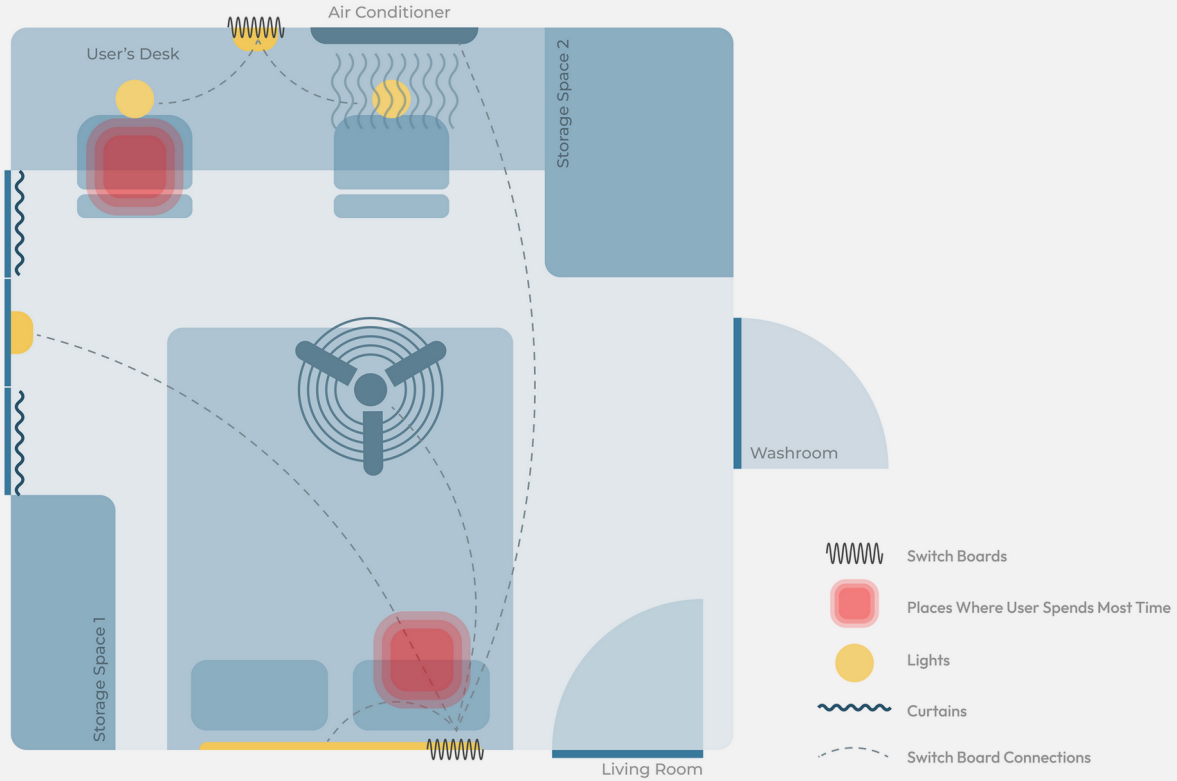
Artifact Temporal Mapping showing **Coffee Makers across Time Example 5:**



Devices in Bedroom:

Artifact Spatial Mapping showing **Devices in Bedroom environment Example 6:**



T7.3

What are Activity Mappings?

What are Activity Mappings?

Activity Mapping:

- Activity as the name refers to an activity or a process done across a timeline.

The different types of activity mappings include:

a. One day in the life of . .
b. User Journey mapping
c. Life-cycle mapping
d. Causal Mappings/Diagrams

- **Activity Mapping** are also referred to as **Temporal Mappings**

Types of Activity Mappings:

1. One Day in the Life of . . . .

One day in the life of could be of an **User, Product or Service**. It documents the **sequence of events from time A to time B**. The time could be the time required to complete an activity – **few hours, a day, a week or even an year or more.**

2. Journey Mapping

Journey Mapping documents the journey of an user, product or service in relation to many other factors that are related to it. It could be the environment, artifacts, time, feelings, other users, feelings, etc.

3. Life Cycle Mapping

Life Cycle mapping is quite similar to 'One Day in the Life of' except that completes a cycle and comes back to the starting point..

4. Causal Mappings

Causal mappings are interconnecting the variables in an activity. The connections could be uni-directional, bi-directional or looped together.

Activity Mapping Steps:

1. Select an Activity connected with your topic

2. Select a Timeline for the Activity
- a day, a week, a month, a year, lifetime

3. Make a Timeline of the different phases of the Activity and note down the keywords

4. Organise the Activities in a given Space
- Time could be either on X axis or Y axis or circular

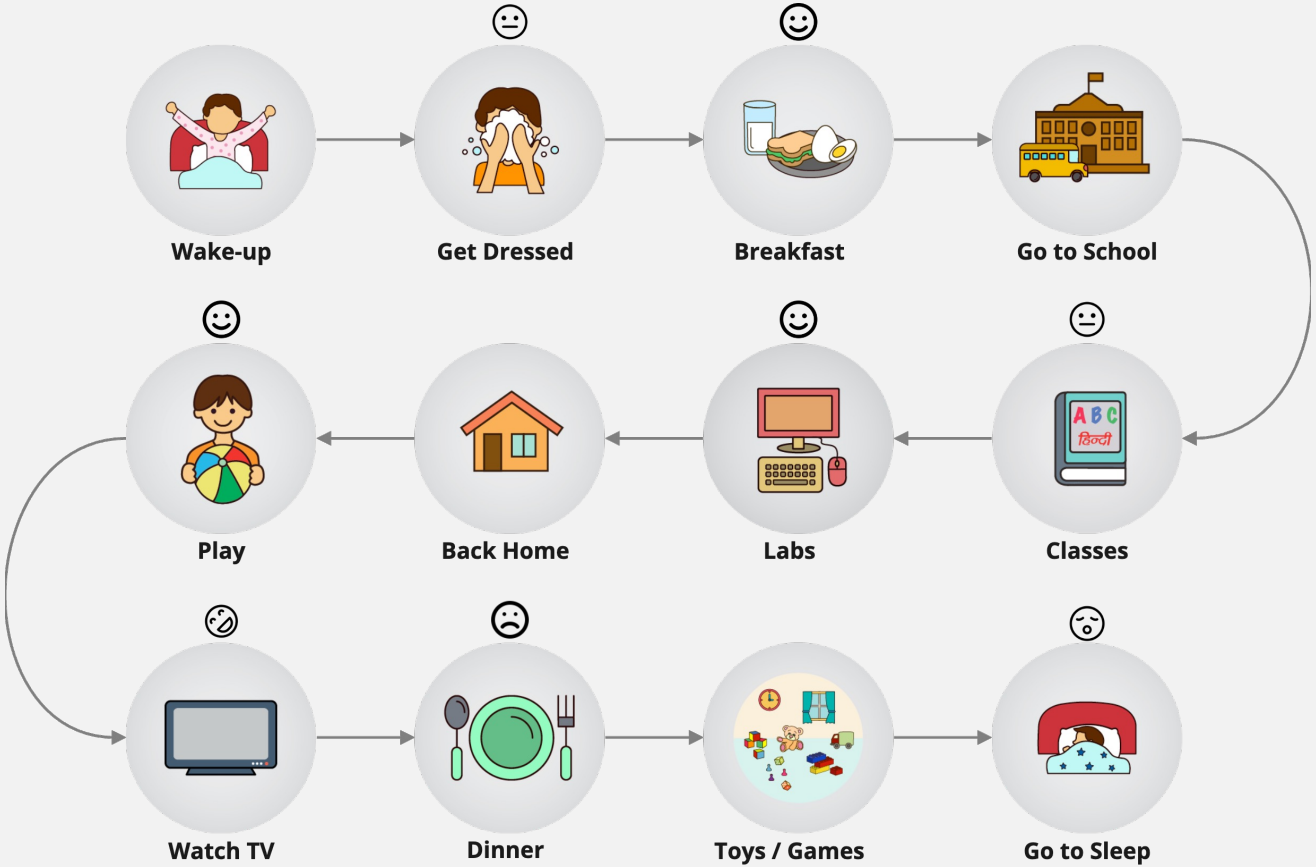
5. Make use of **colours to differentiate** and **arrows to show connections**

6. Draw inferences from the mapping

7. Make a list of inferences from this Mapping

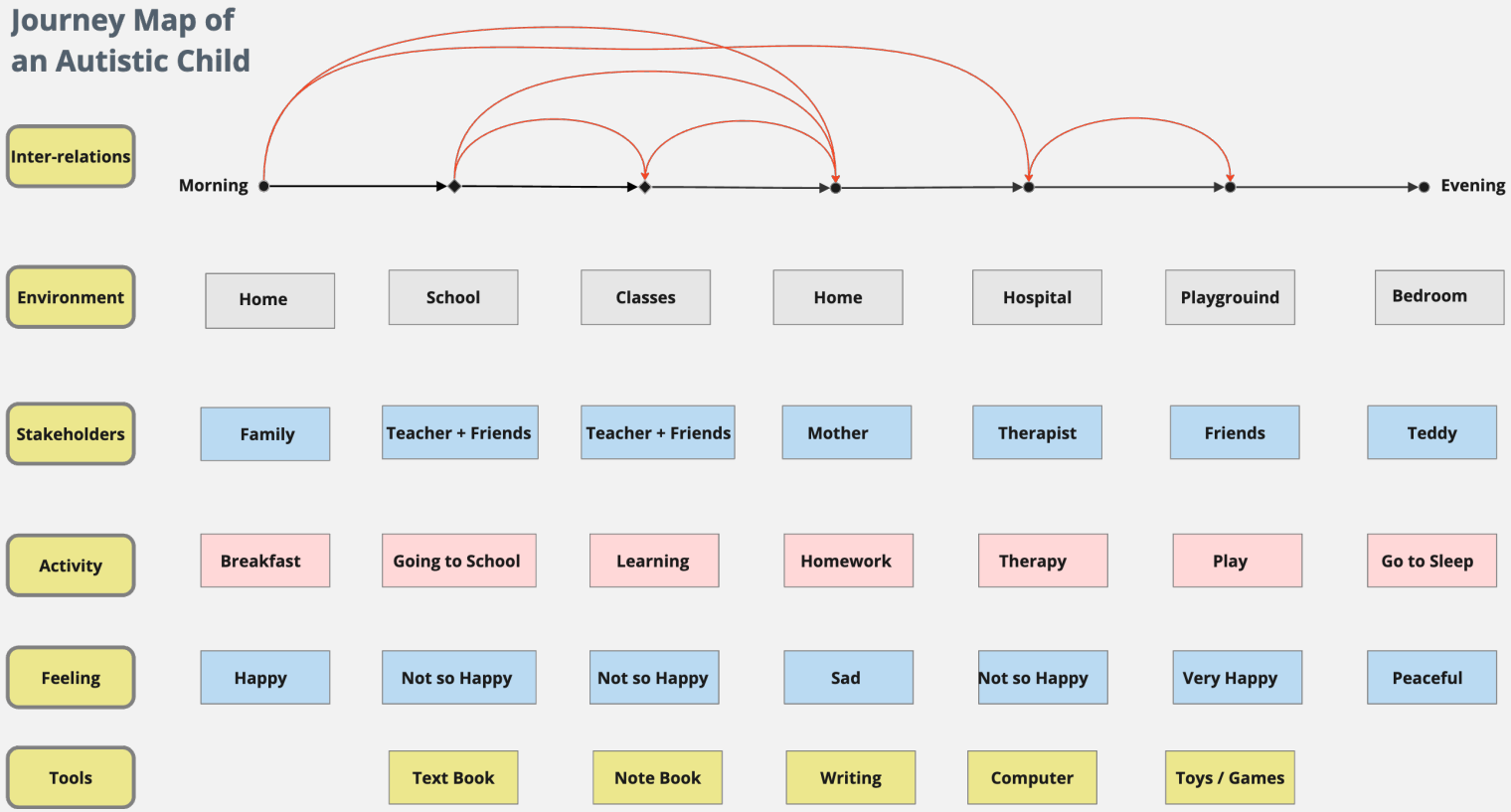
Activity Mapping Example: One day in the Life of a Child

Activity Mapping
- One Day in the life of a Child
Example 1:



Activity Mapping Example: Journey Map of an Autistic Child

Activity Journey Mapping
- in relation to Environment, Stakeholders, Feelings, and Tools
Example 2:



Activity Mapping Example: Journey Map of an Autistic Child

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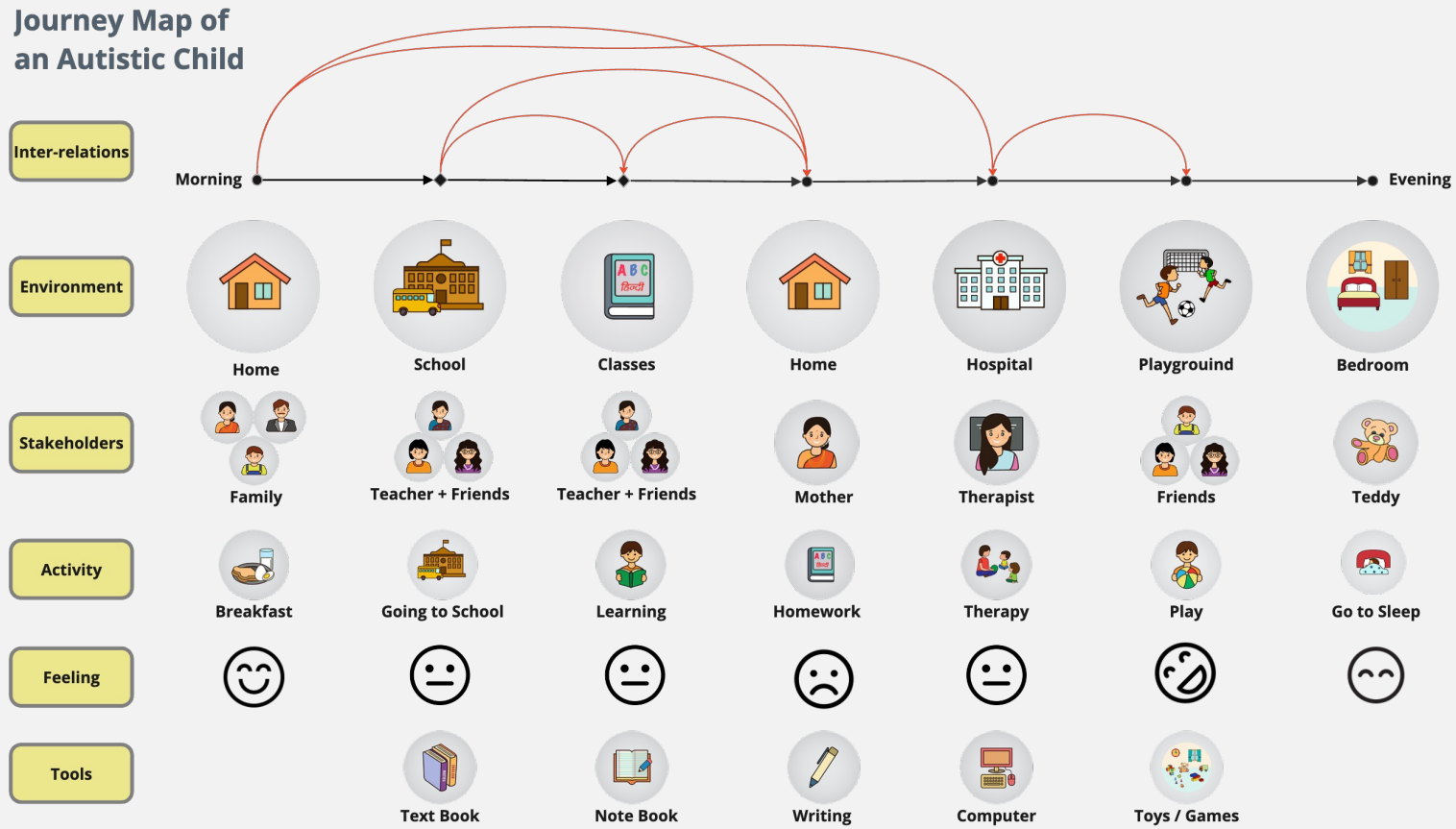
Activity Journey Mapping
- in relation to Environment, Stakeholders, Feelings, and Tools
Example 2:



Activity Mapping Example: Life Cycle Map of a Toy

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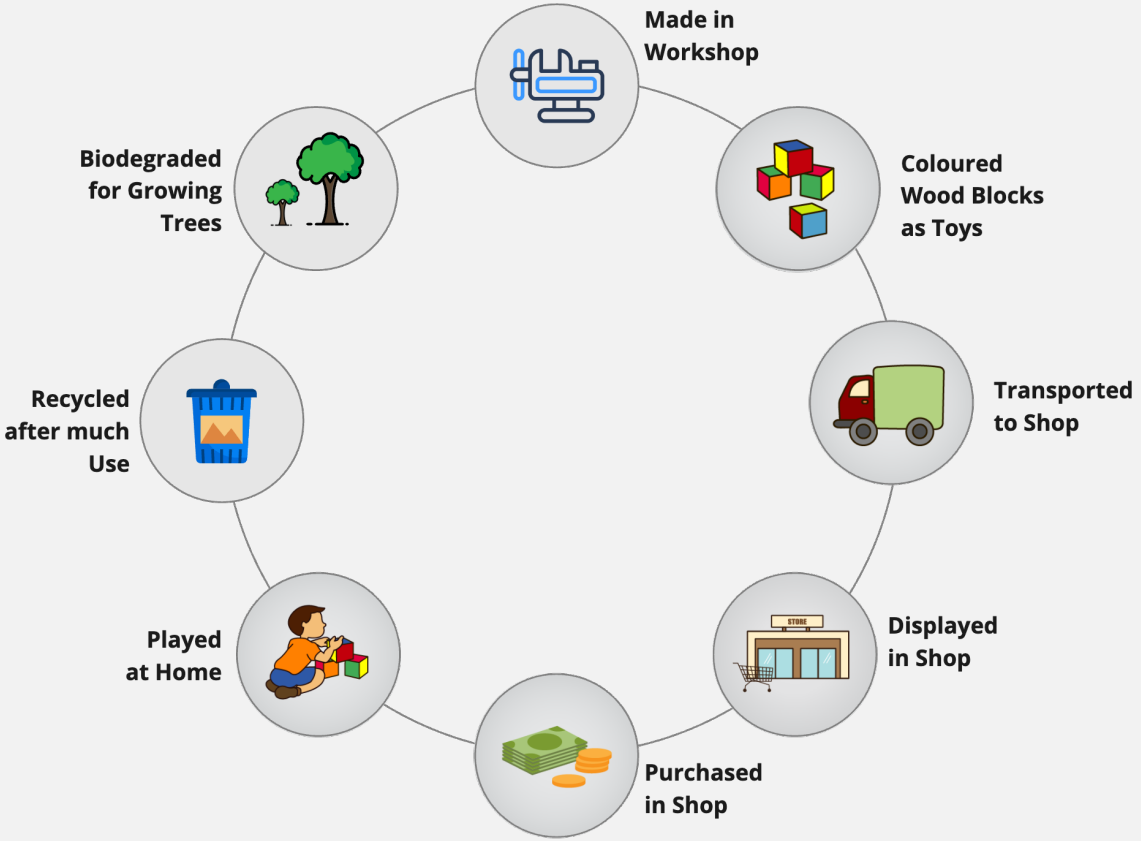
Recycle Toys for Children

Life Cycle Mapping - showing different stages of the Toy Example 3:



Activity Mapping Example: Causal mapping of Healthcare

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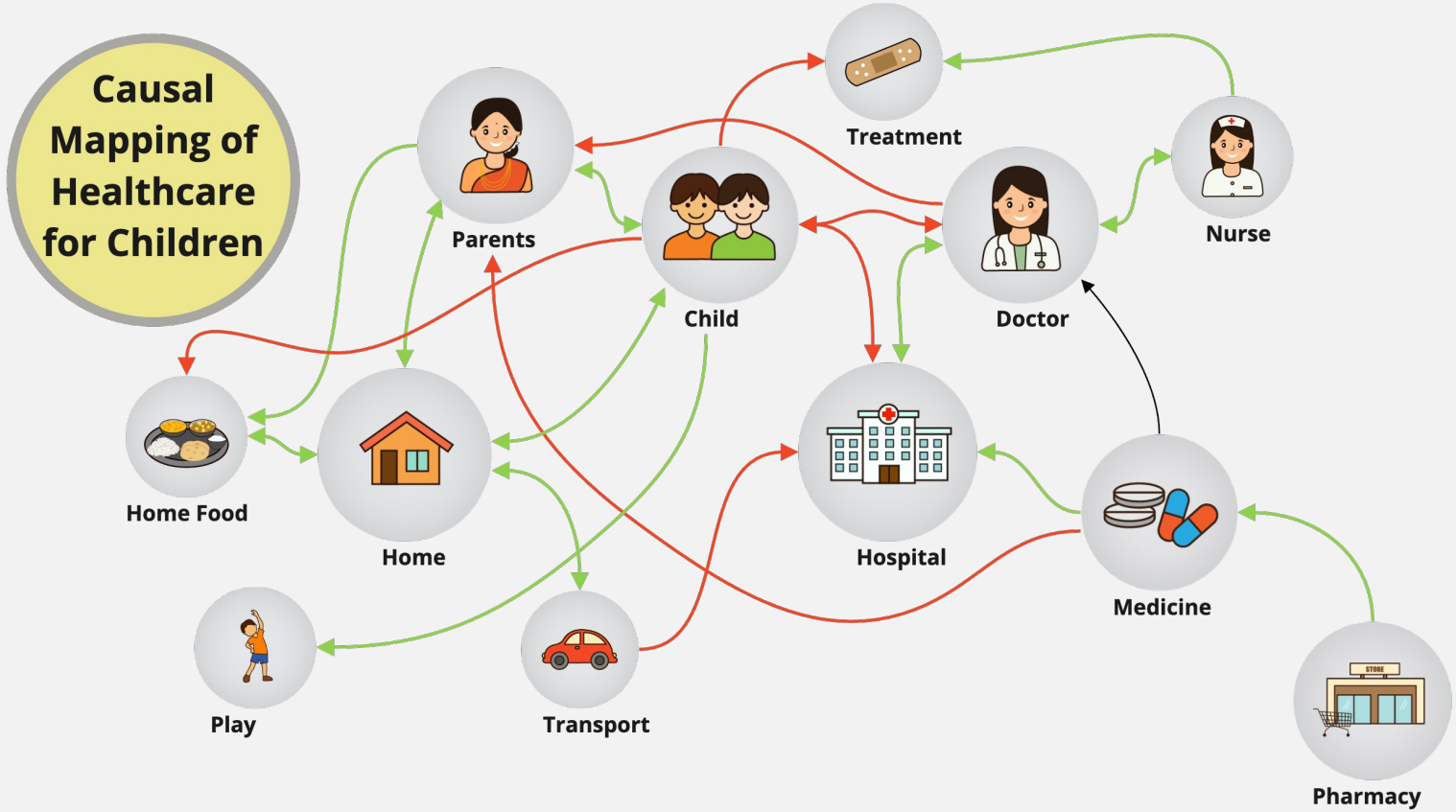
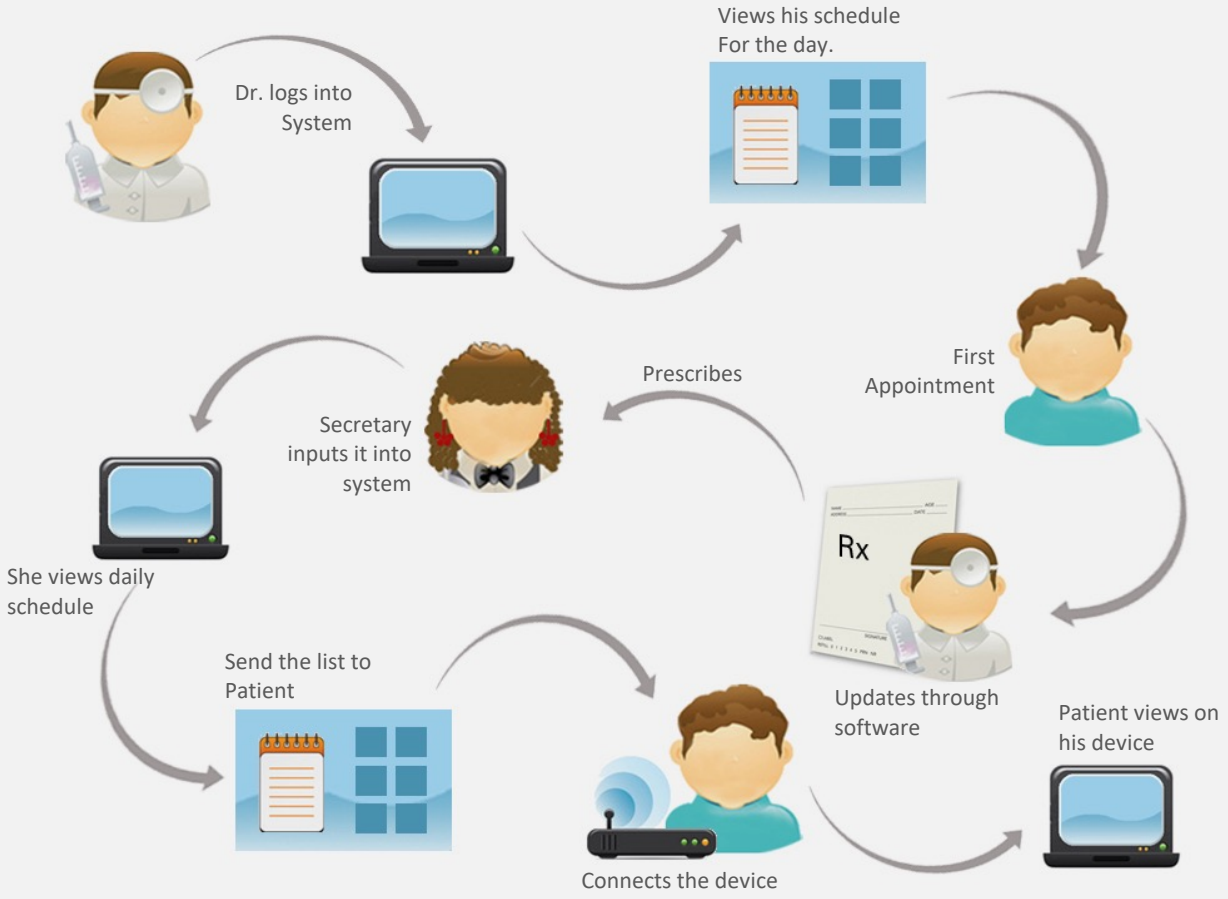
Causal Mapping - showing Healthcare system for Children Example 4:



Activity Mapping Example: Doctor - Patient Interaction

Activity Mapping - Doctor-Patient Interaction Example 5:



Activity Mapping Example: Medicine Treatment Sequence

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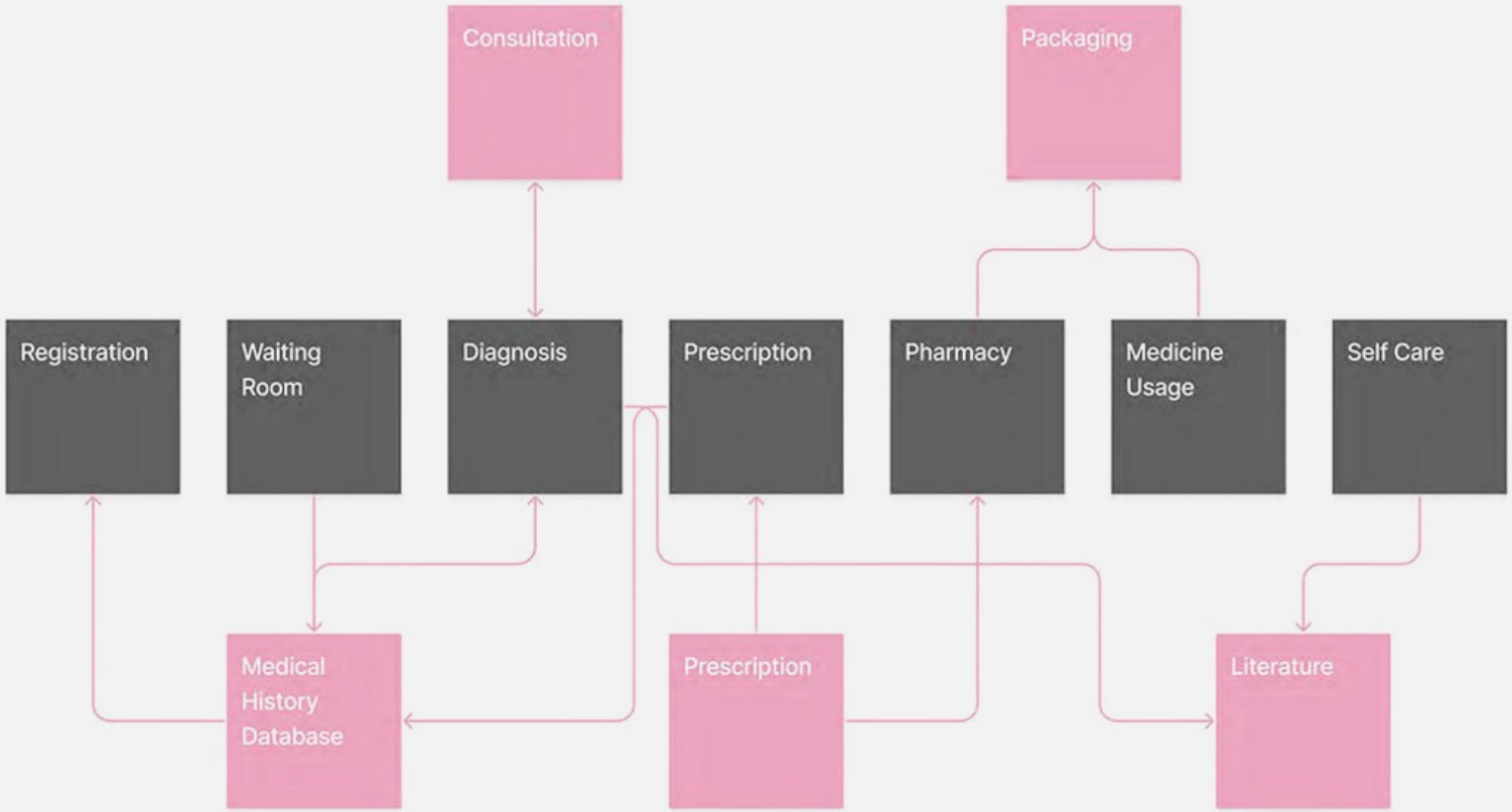
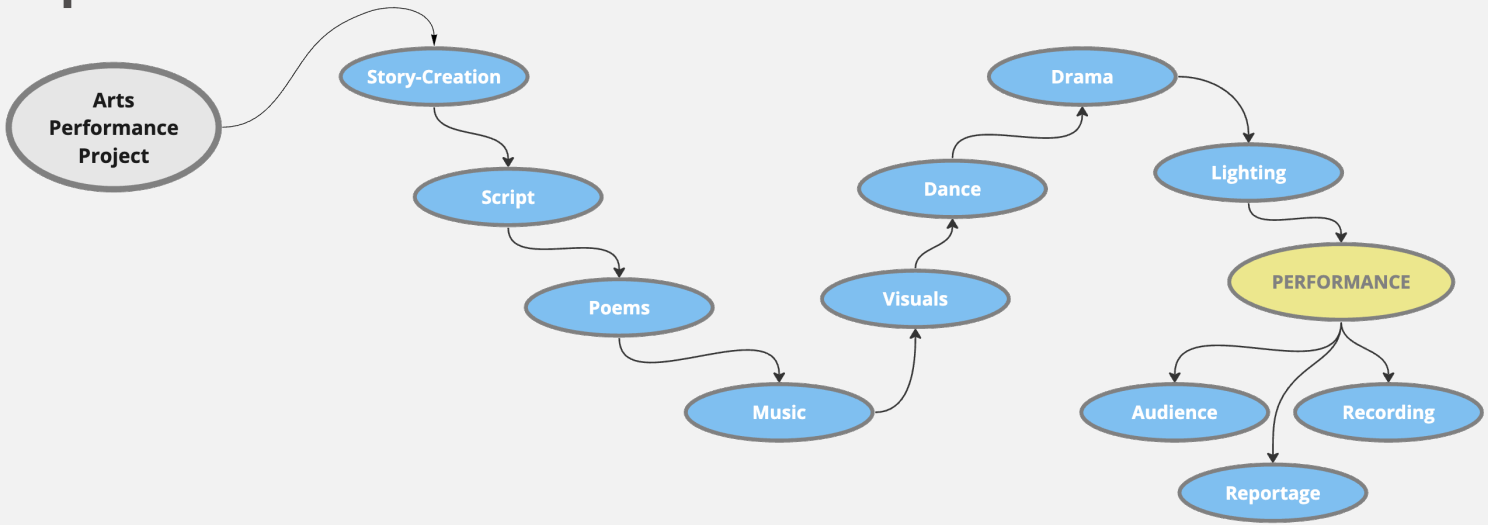
Activity Mapping - Indian Medicine Treatment Sequence Example 6:



Activity Mapping Example: Sequence of a Performance

Activity Mapping - Planning Sequence of an Arts Performance Example 7:

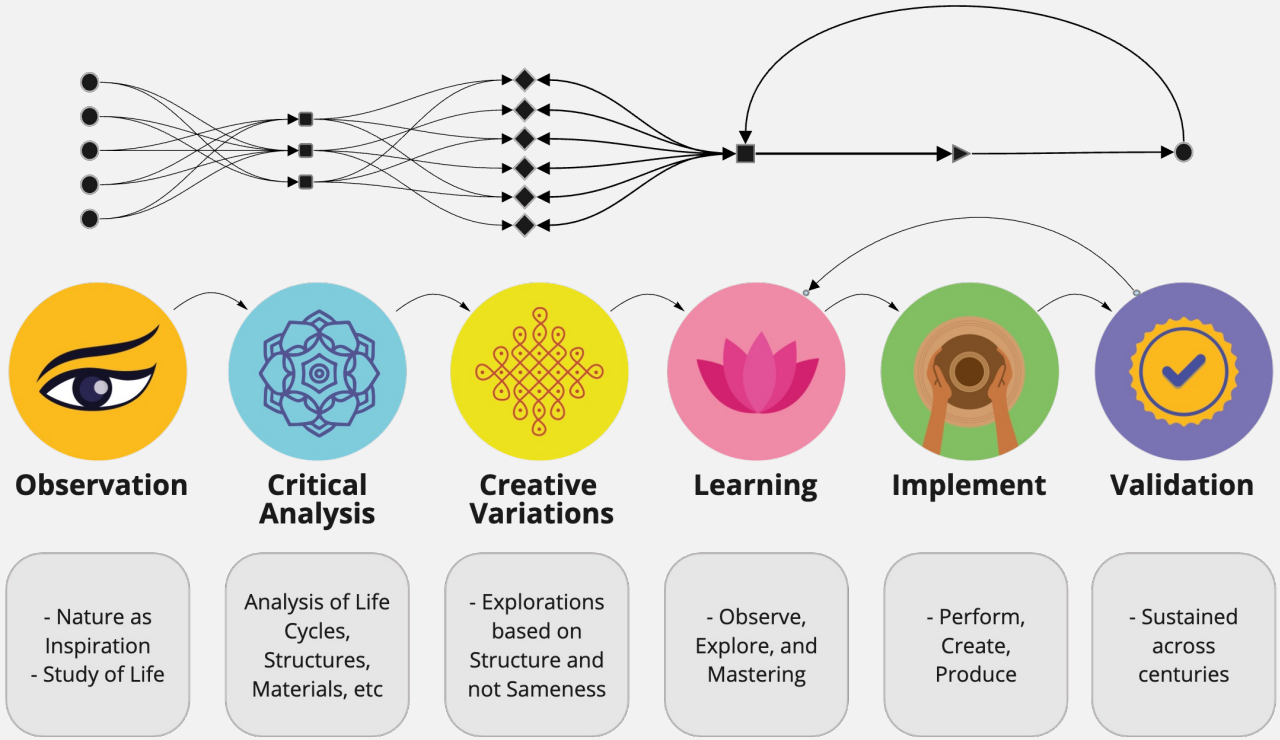
Arts Performance Project Sequence



Activity Mapping Example: Sequence of DT&I Process

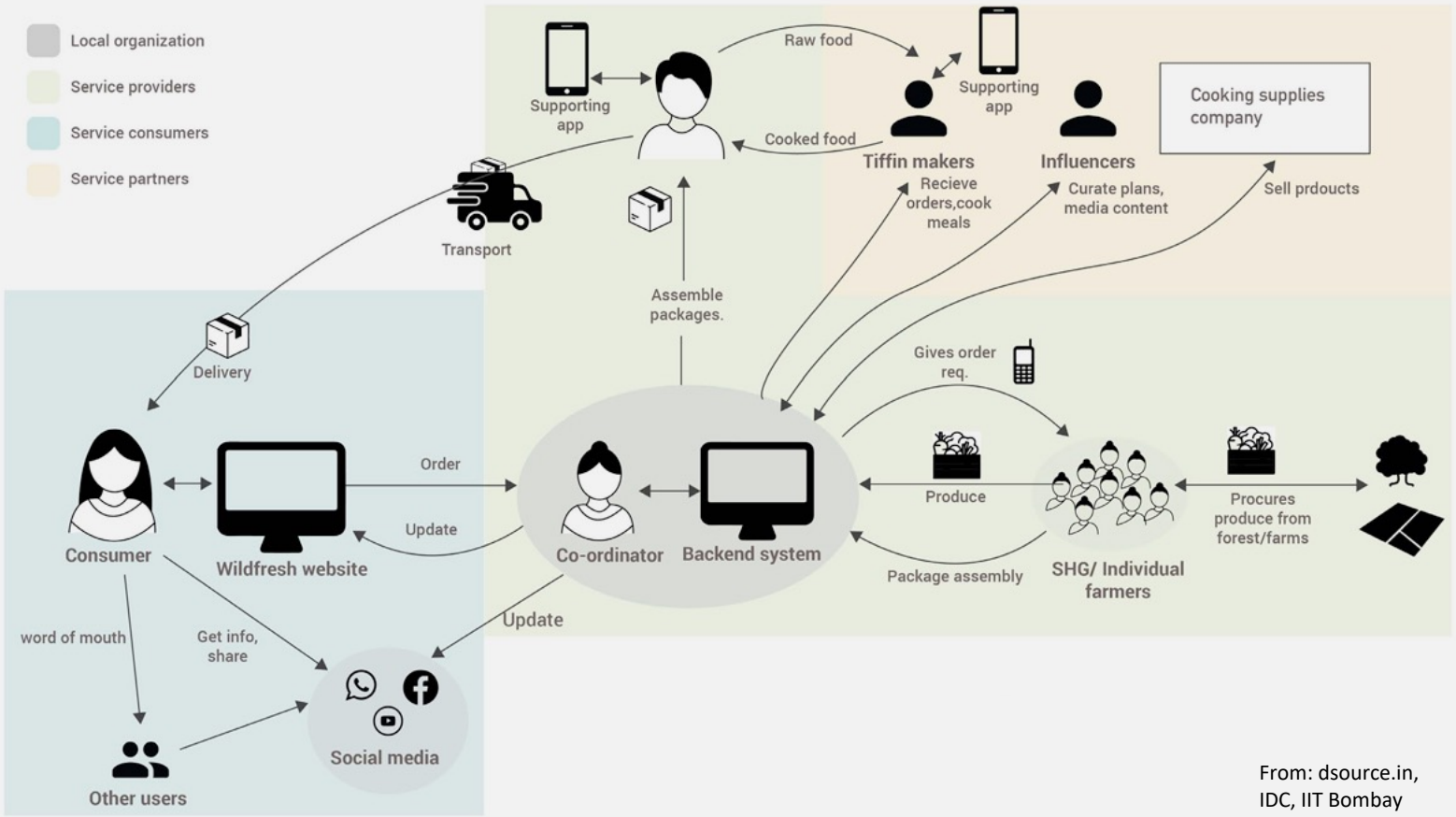
Design Thinking and Innovation as part of
Indian Knowledge System
> Shilpa Shastra
> Vastu Shastra
> Natya Shastra

Activity Mapping
- Sequence of Design Thinking and Innovation process as part of IKS Example 8:



Activity Mapping Example: Vegetable Service eco-system Map

Activity Mapping
- Service Eco-system showing activities for Vegetable as a Livelihood Example 9:



From: dsource.in, IDC, IIT Bombay

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Activity
Temporal Mapping
Documenting the **History of Shintoism**
Example 10:

Shintoism
temporal map

Pre-4th Century
Prehistoric and Ancient Periods

- Practices centered around nature worship, animism, and ancestor veneration.
- Kami (spirits or gods) were believed to inhabit natural elements like trees, rocks, and mountains.

4th to 7th Centuries:

- Influences from neighboring cultures, notably China and Korea, led to the importation of Buddhism and Confucianism into Japan.
- Shinto practices coexisted with these imported belief systems, adopting some of their rituals and structures.

8th to 12th Centuries
(Nara and Heian Periods)

The establishment of the Nara and Heian capitals saw the formalization and organization of Shinto practices.

The compilation of written records such as the Kojiki and Nihon Shoki, which outlined myths, legends, and rituals, contributed to Shinto's codification.

Late 19th to Early 20th Centuries
(Meiji Restoration)

- The Meiji Restoration of 1868 aimed to modernize Japan and promote nationalism.
- Shinto was redefined and used as a tool for state ideology, leading to the separation of Shinto from Buddhism and the establishment of State Shinto.
- Shrines were rebuilt, and Shinto rituals were integrated into public life.

20th Century Mid to Late

- After World War II, State Shinto was abolished by the Occupation forces, and the Japanese government was separated from religious affairs.
- Shinto regained its autonomy and was practiced freely alongside other religions.
- There was a resurgence of interest in Shinto rituals and traditions, although some aspects remained controversial due to their association with Japan's militaristic past.

21st Century

- Shinto continues to be an integral part of Japanese culture and identity.
- Shrines and rituals are still actively maintained and visited by millions of people each year, especially during traditional festivals and ceremonies.
- Shinto's role in modern Japanese society remains diverse, with some adherents emphasizing its spiritual aspects while others engage in cultural practices without necessarily holding strong religious beliefs.

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Activity
Temporal Mapping
Documenting the **Spread of Christianity**
Example 11:

T7.3-036

Temporal Map

18th-19th Centuries: Expansion of Christianity through missionary work.
20th Century: Ecumenical movements, Vatican II, and growth of Protestant denominations.

PRESENT

21st Century: Contemporary challenges and shifts in religious

1600AD

1517 AD: Martin Luther's Ninety-Five Theses, beginning the Protestant Reformation.
1534 AD: Henry VIII's separation from the Roman Catholic Church.

2000BCE

2000-1500 BCE: Abraham's covenant with God.
1300-1200 BCE: Exodus from Egypt and the receiving of the 10 Commandments.
1000 BCE: Establishment of the Kingdom of Israel under King David.

1500AD

476 AD: Fall of the Western Roman Empire.
1054 AD: Great Schism between Eastern Orthodox & Western Catholic Churches.
1096-1291 AD: Crusades to the Holy Land.

4BCE

4 BCE - 30 AD: Birth, life, teachings, crucifixion, & the resurrection of Jesus Christ.
30-33 AD: Ministry of Jesus in Galilee & Judea.

400AD

1st-4th Centuries: Persecutions of Christians by the Roman Empire.
313 AD: Edict of Milan, legalizing Christianity in the Roman Empire.
325 AD: Council of Nicaea, addressing theological disputes (Nicene Creed).

33AD

100AD

33 AD: Pentecost and the coming of the Holy Spirit.
50-60 AD: Writing of Paul's Epistles.
70 AD: Destruction of the Second Temple in Jerusalem

THINK! DESIGN

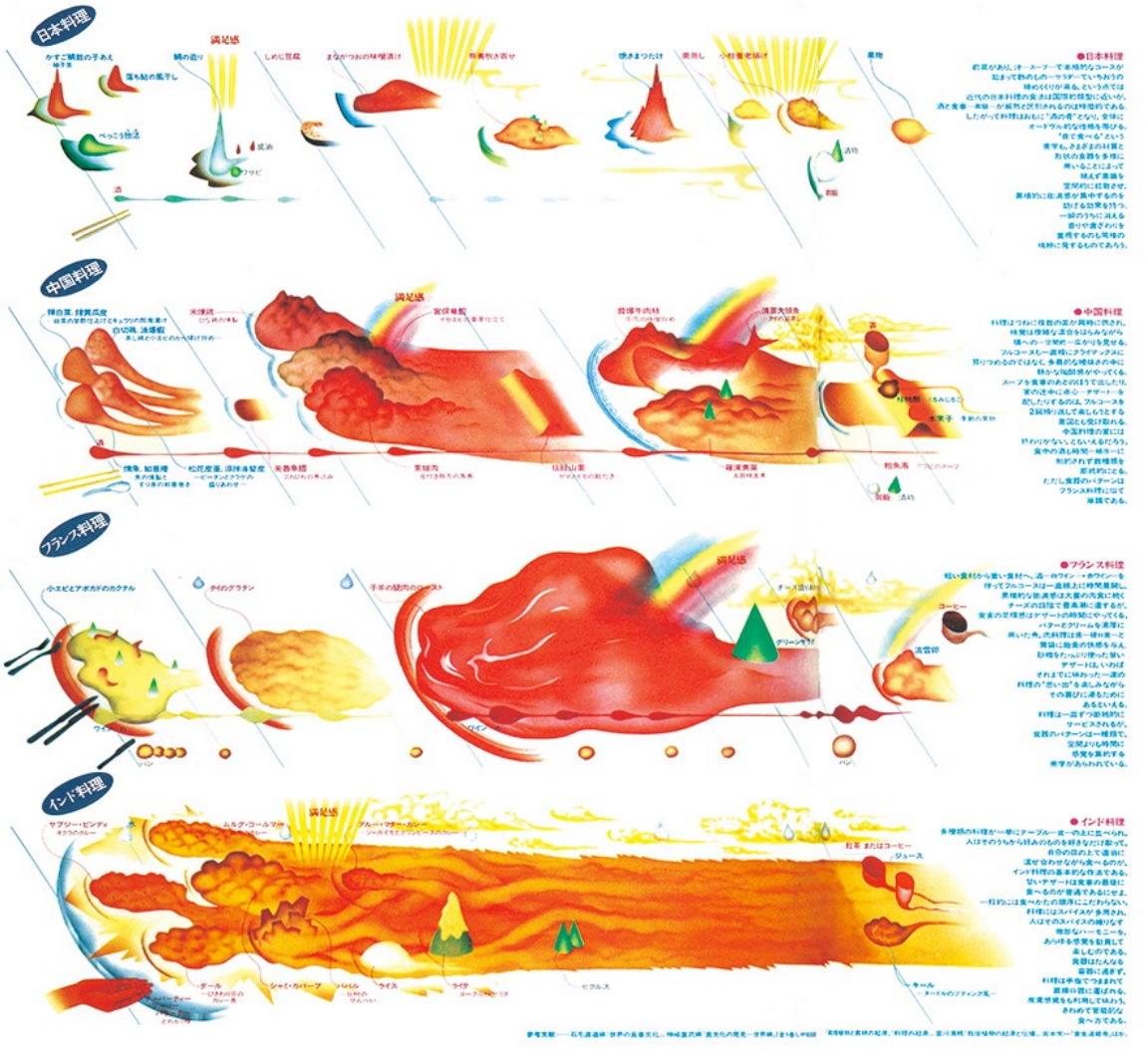
Activity Temporal Mapping Visualizing the **Taste of Food from different Cultures** Example 12:

Japanese

Chinese

French

Indian



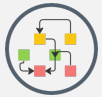
T7.3-037

- by Prof Kohie Sugiura

T7.4

What are Spatial Mappings

What are Spatial Mappings?



Spatial Mapping:

- Spatial Mappings refers to an mapping artifacts, activities and environments connected with your topic and shown in relation to each other on a spatial dimension.

(a) Physical Spatial Mapping
(b) Spatial Connectivity Mapping

- **Spatial Mapping** are also referred to as **Environment Mappings**

Spatial Mapping Steps:

1. Select the different spaces connected with your topic

2. Select a Space or the location - building, neighborhood, town/city, state, country, world

3. Make a list of the different aspects of the space and note down the keywords

4. Organise these in a given Space - These could be mapped on an X Y directions

5. Make use of **colours to differentiate** and **arrows to show connections**

6. Draw inferences from the mapping

7. Make a list of inferences from this Mapping

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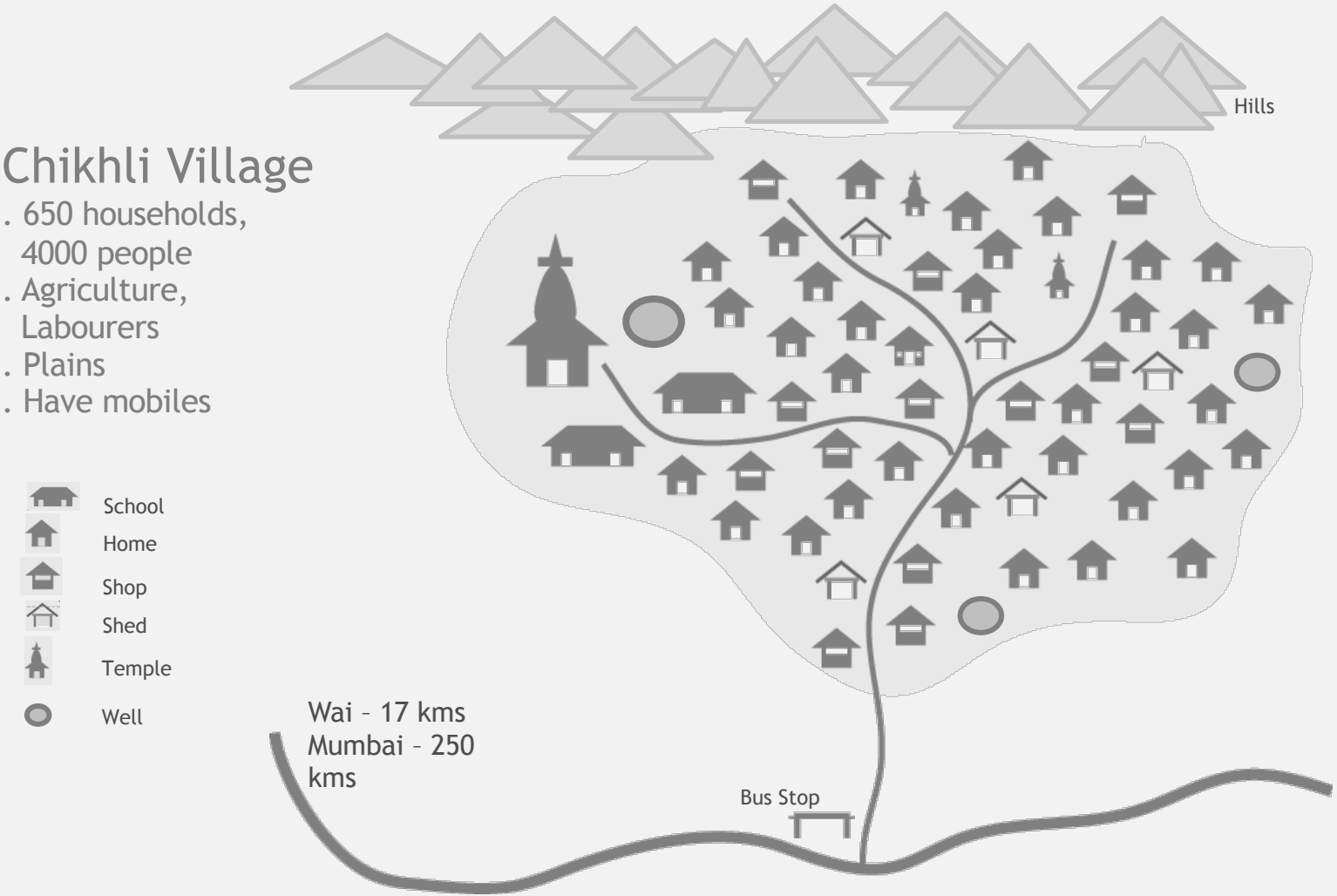
Spatial Mapping
Visualizing the different **facilities in a rural location**
Example 1:

From: dsource.in,
IDC, IIT Bombay

Chikhli Village

. 650 households, 4000 people
. Agriculture, Labourers
. Plains
. Have mobiles



THINK!
DESIGN

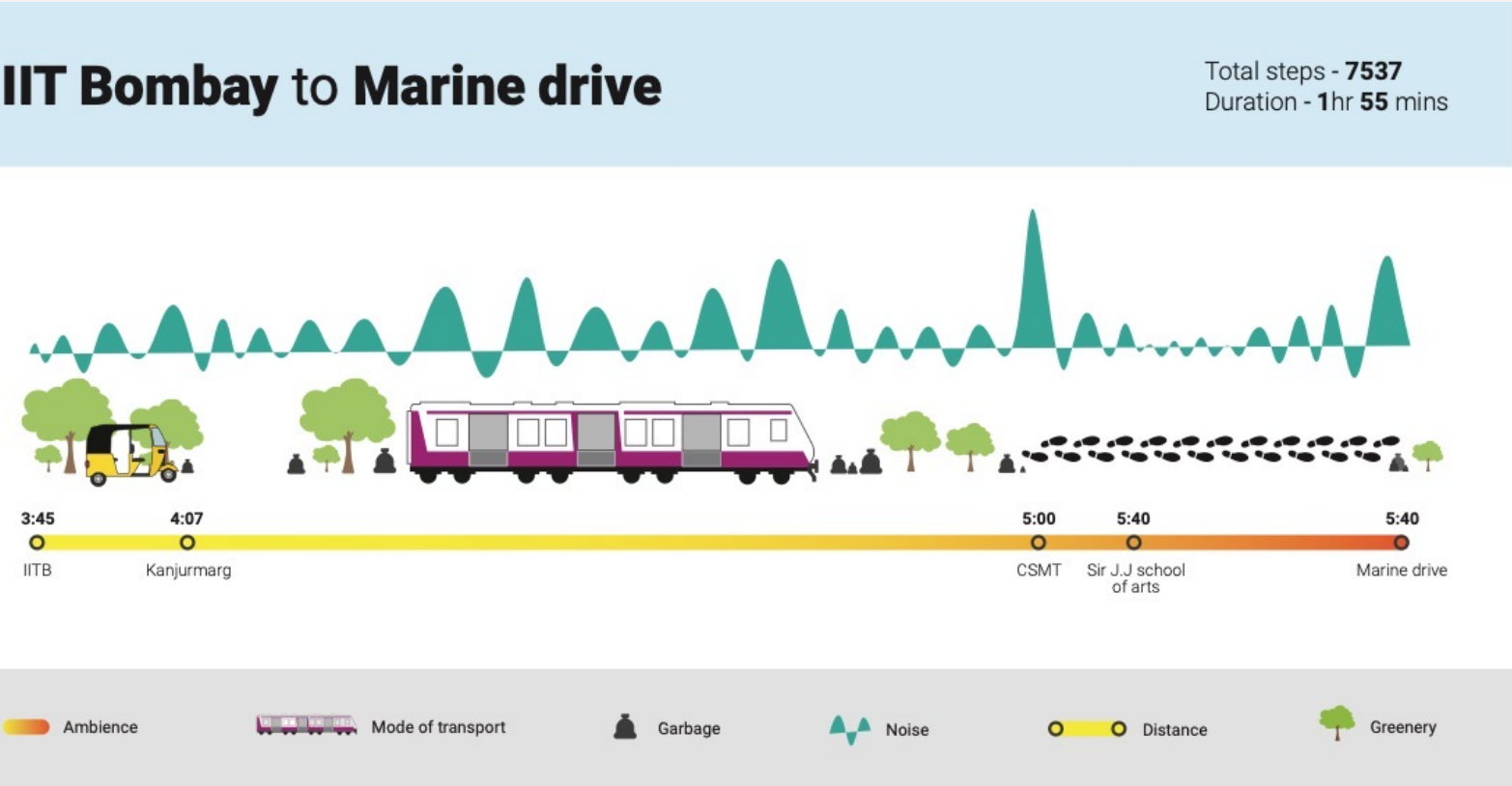
Spatial Mapping
Visualizing the different **facilities in a neighborhood**
Example 2:

From: dsource.in,
IDC, IIT Bombay

THINK!
DESIGN

Spatial Mapping
Visualizing **Journey from IITB to Marine Drive**
Example 3:

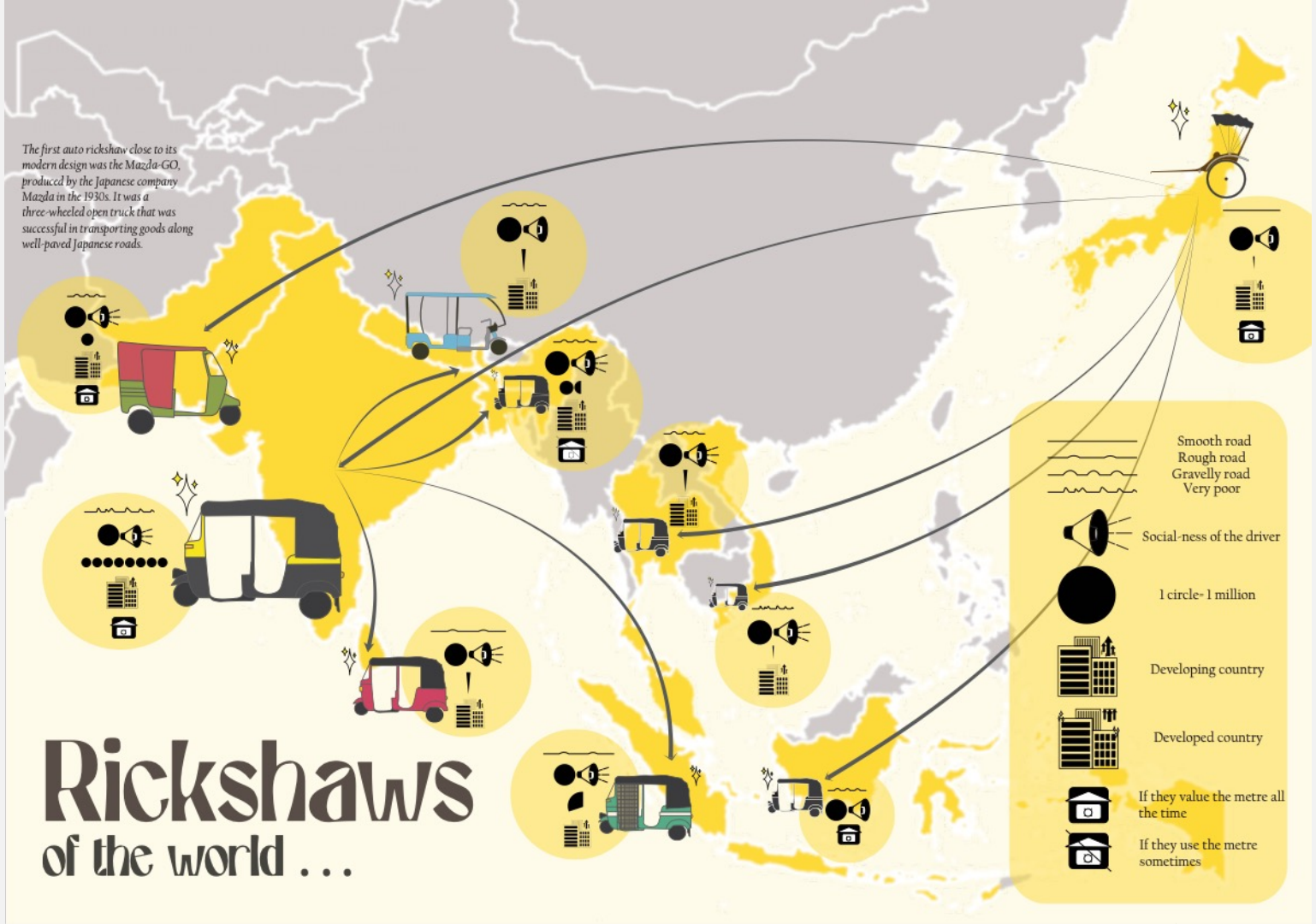
From: Vaibhav Jangid
dsource.in,
IDC, IIT Bombay



THINK!
DESIGN

Spatial Mapping
Visualizing **Rickhaw production and Spread**
Example 4:

Muhammed Fuaad
Upasana R
From: dsource.in,
IDC, IIT Bombay



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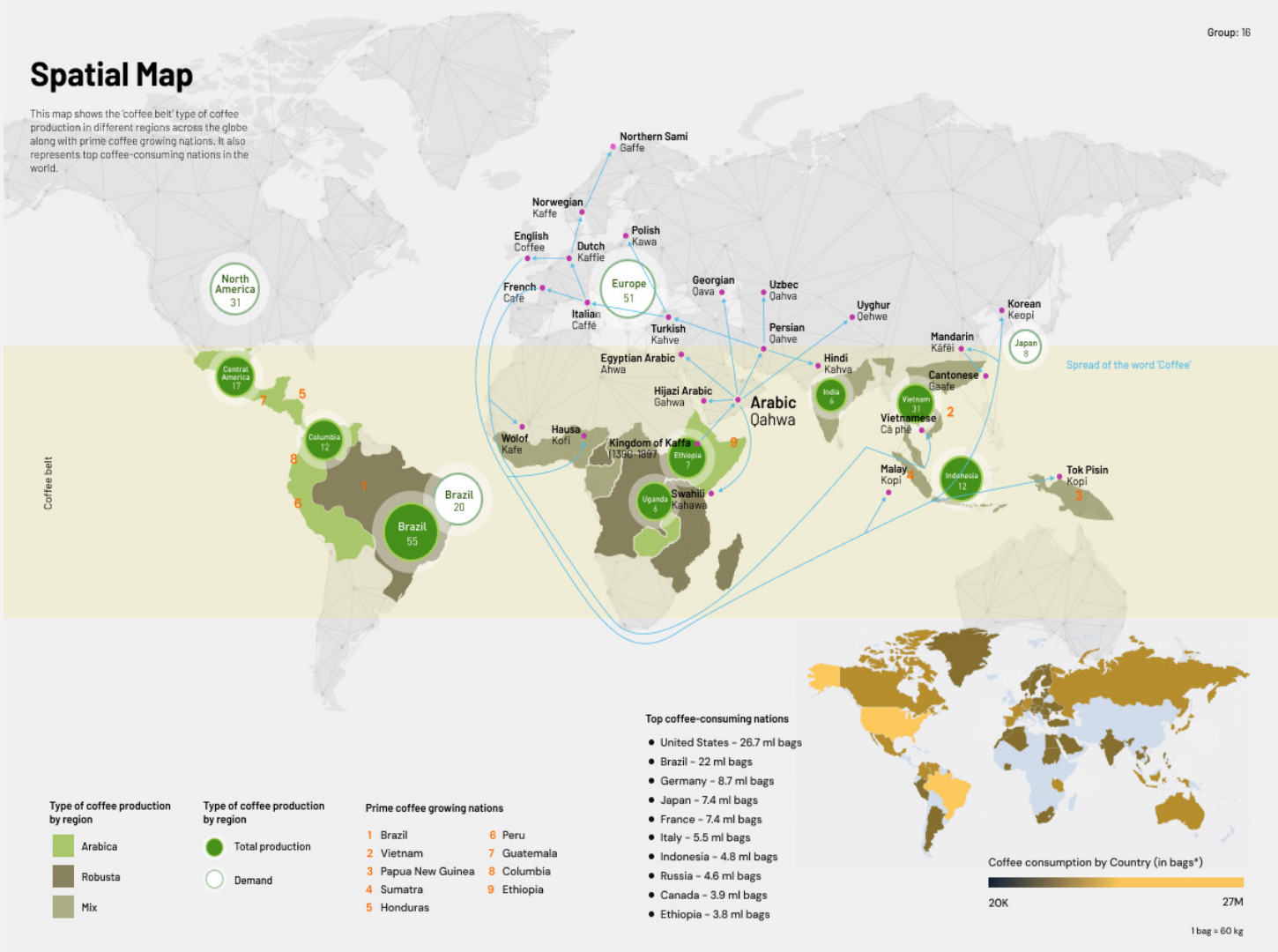
Spatial Mapping Visualizing Coffe Production and Consumption Example 5:

From: dsource.in,
IDC, IIT Bombay

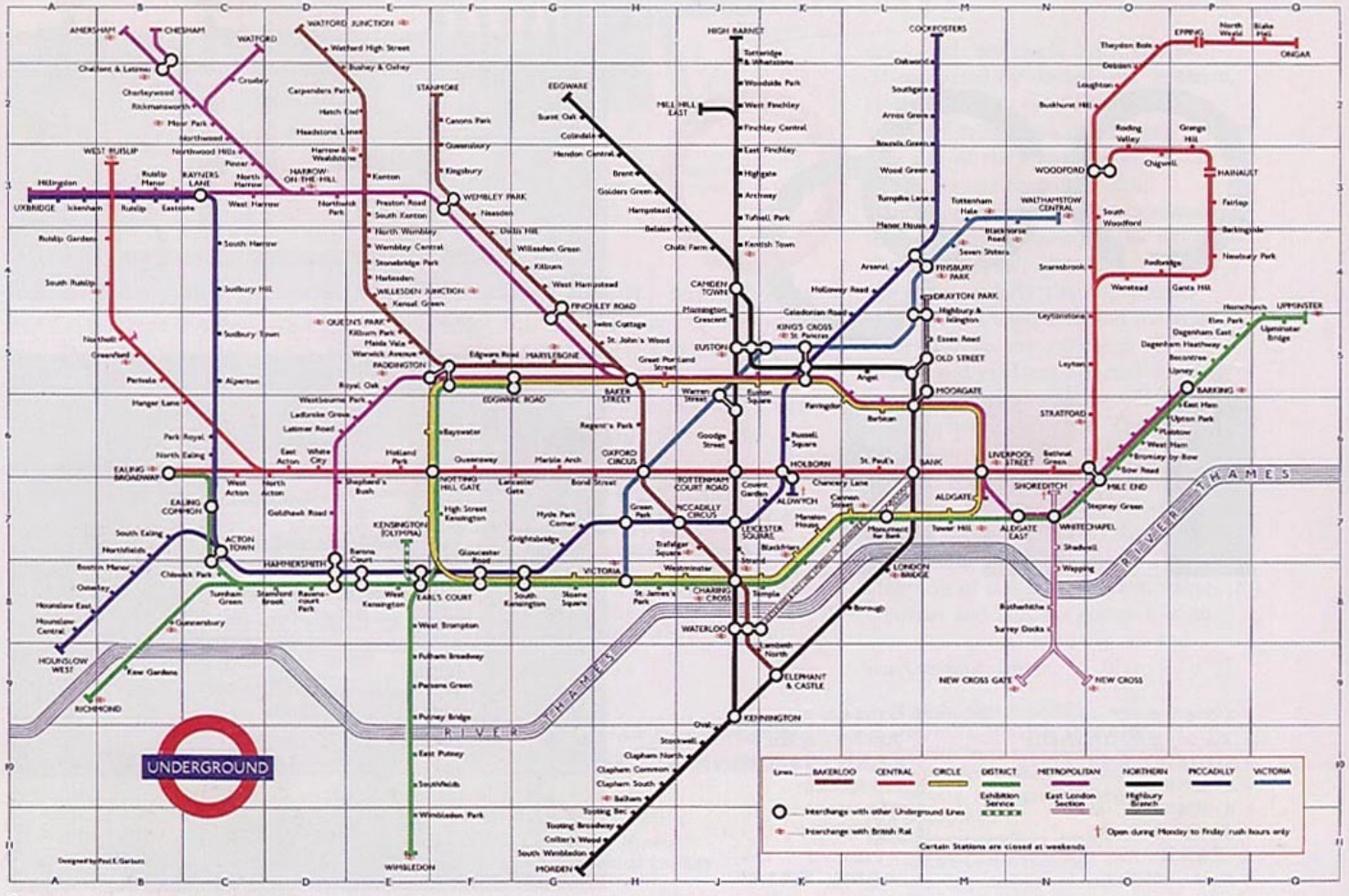


THINK!
DESIGN

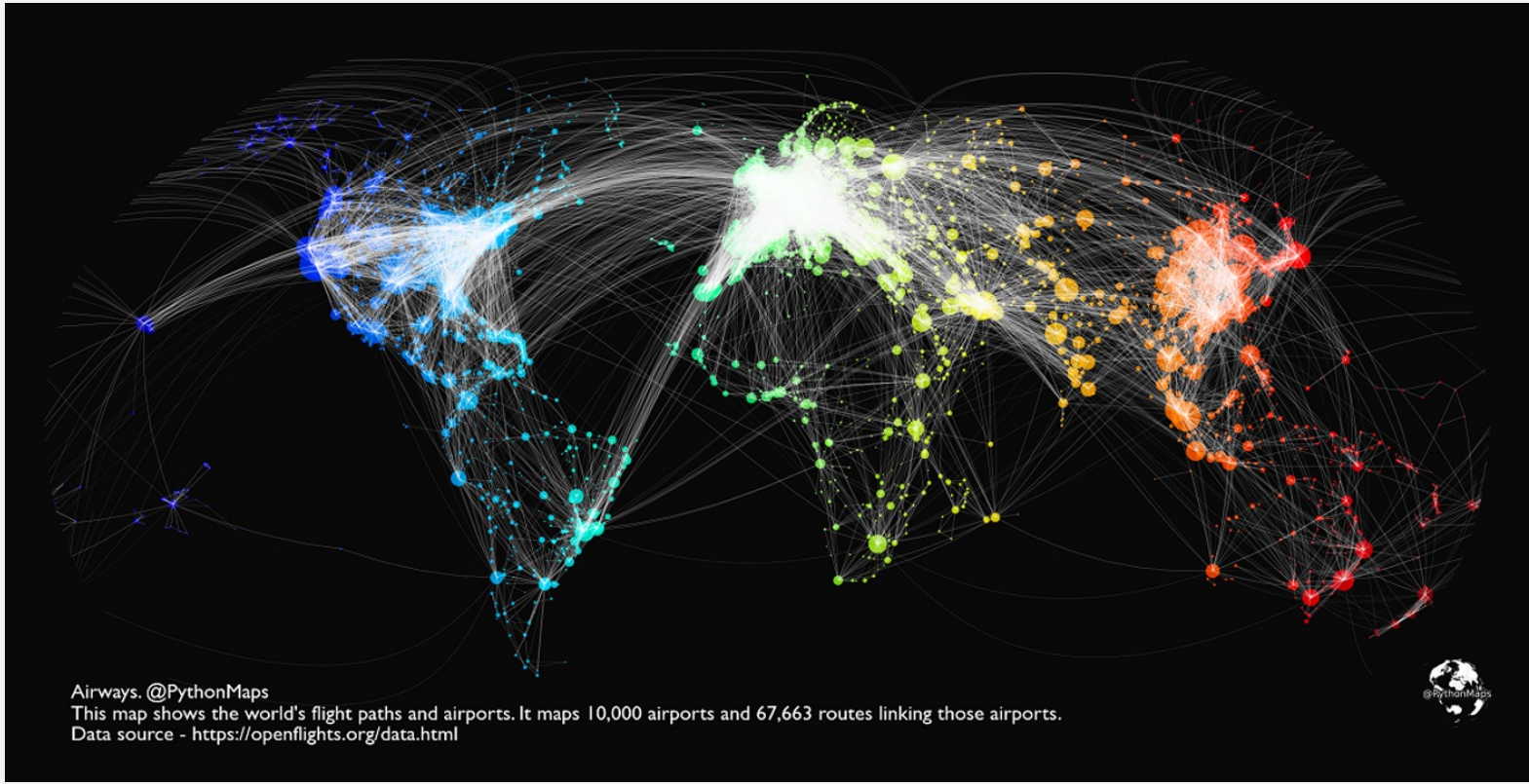
Spatial Connectivity Mapping
Visualizing **Underground Train Connections**
Example 6:

- by Harry Beck, 1933

T7.4-046



Spatial Connectivity map of Flight Paths:



Spatial Connectivity Mapping Visualizing **Flight paths across the globe connecting 10,000 airports** Example 7:

T7.4-047

Spatial Speech map – example:

THINK! DESIGN

Spatial Mapping
Visualizing
Pronunciation of Sound by Human capability
Example 8:

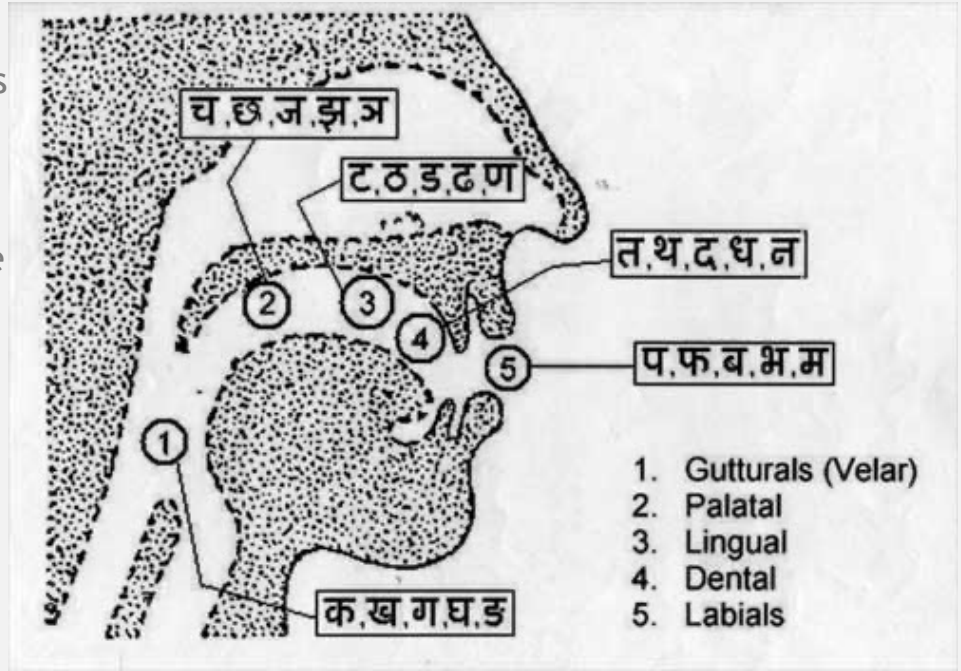
Syntax - sound of letterform
Semantics
pragmatics - pronunciation

The categorisation of devanagiri letterforms is based on the pragmatics of being able to pronounce the sound..

- connection to how humans generate sound

- identified, categorised and structured in a logical manner

Example:
Devanagiri Sound Mapping:



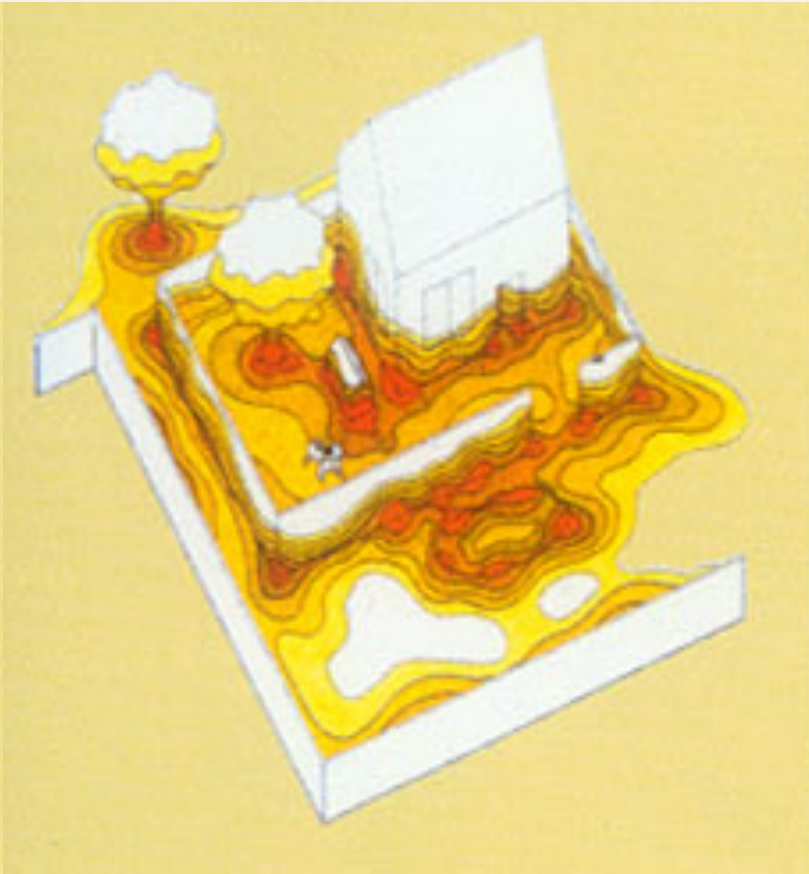
Spatial Smell Map of a Dog:

THINK!
DESIGN

Spatial Smell Mapping
Visualizing **the Sensory world of the Dog**
Example 8:

- by Prof. Sugiura

T7.4-048



Types of Mappings . . . Summing up

Artifact Mapping:

. The various objects/medias/ services connected to the topic are shown in relation to each other

Activity/Temporal Mapping:

. The various activities connected with the topic are shown across the time dimension.

(a) One day in the life of . .
(b) User Journey mapping
(c) Life-cycle mapping
(d) Causal Mappings/Diagrams

Environment/Spatial Mappings:

. The various spaces or environments that are connected with the topic are shown in relation to each other

(a) Physical Spatial Mapping
(b) Spatial Connectivity Mapping

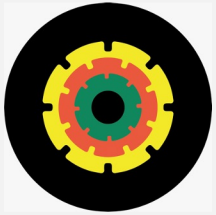
Thanks for Listening

DT&I Tools
Section: T7
Week 7

DT&I Course – Week 7:

DT&I Process
(20%)

> Analysis Part 1
> Information/Data Analysis



DT&I Tools
(20%)

> Artifact, Activity, and Spatial Mappings

DT&I Project
(50%)

> Analysis
> Use of Artifact / Activity / Spatial Mappings

DT&I Cast Study
(10%)

> Case Study Project: Sustainable Housing Society + Coffee, Tea and Spice Stories

THINK!
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Supporting Organizations:

D’source

D’source Project

Open Design School

MoE’s Innovation Cell

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