

# Project 3

## Depiction of Natyashastra using a playful interactive wall

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## Declaration

I declare that this written document 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 the principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission.

A handwritten signature in black ink, appearing to be "@mmu" with a stylized flourish underneath.

# Approval Sheet

The Interaction Design Project 3 titled “Depiction of Natyashastra using a playful interactive wall” by Annu (Roll Number 176330009), is approved, in partial fulfilment of the ‘Master in Design’ Degree in Interaction Design at the Industrial Design Centre, Indian Institute of Technology Bombay.

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Chairperson:



Internal Examiner:



External Examiner:



Date:

26 / 12 / 2018

# Acknowledgements

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I would also like to extend my thanks to ROOTS club of IIT Bombay for helping me understand the contribution of youth in Indian classical performance arts and the measures they have been taking.

I want to thank all my friends and classmates for taking out time to support me with my project with their inputs and concerns. Special thanks to Kiran Prasanth R for helping me understand 3D modeling. I am indebted towards my family for keeping faith in me and for their love and support and encouragement during the tough times of this project.

# Abstract

When we talk about interactive media, we are often referring to the digital world, but interactions aren't just limited to the digital platform, especially when the digital world has fully immersed itself in the physical realm. We have often come across interactive touch button options present in paper magazine advertisements, Physical informative or artistic panels cropping up in front of any landmark, and 3D content which is physically rendered so that users can interact with digital information in a tangible manner.

This medium of interaction which people are now labeling as 'Phygital' is ever more apparent. For this project, I am using the same medium to tell a story that can impact people and be a takeaway as well.

We are primarily narrative beings, and we like telling stories. For centuries we have relied on storytelling mediums to convey expressions, feelings, or to propagate the history to the masses. One such medium of storytelling is the dance. Indian epics have been passed on the generations through stories told by dances so much so that these stories depict God's creation of the world as a dance with Lord Shiva being the performer himself.

Indian classical dance which we see today has gone through its journey of ups and downs to come to the form that we see today. Its propagation throughout time is a story to tell in itself although the dances evolved at different parts of India their roots can be traced back to the Sanskrit text 'Natyashastra' dated back to 200 BCE. These dances preserve the cultural legacy of Indian art and culture.

Using this project, I attempt to spread the grandeur and richness of Indian Classical dance through a physical interactive medium, a wall. This interactive medium takes examples from elements of the digital world and maps them onto the physical world. The interactive wall features the information in a narrative style inspired from Jataka tales. It tells the story of Indian classical dance and its rise and struggles through the time using tangible interactions. I have evolved this work to be socially appealing while not compromising the aesthetics of the elements involved.

As a personal goal wanted to explore the tactile interactions of ever popular installations and ambient displays.

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“Dance as a complete art encompassing all other forms of art - Music , sculpture, poetry and drama.”

- Bharat Muni (Author of Natya  
Shastra)

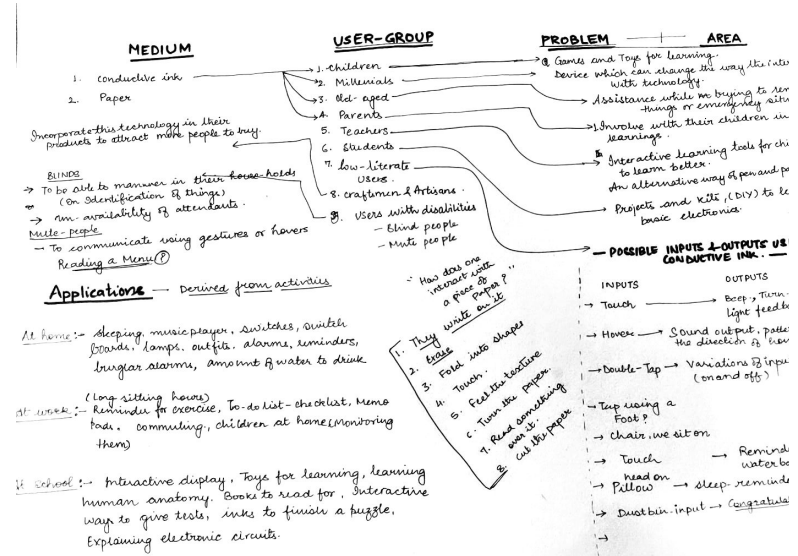
**01**

# **Introduction**

Interactions in physical and digital world  
and their utilisation

What if one could interact with daily objects the way we do with screens. When we think of user experience in terms of interaction design, we often tend to imply solutions involving digital screens. While it is fascinating, the possibilities, a phone has. It is also seen that we are only limiting interactions and feedbacks on a screen. In this era of ubiquitous mobile computing can we design off digital displays. Most importantly, with the objects in their natural forms.

There was a time when real life activities and objects were mapped into digital entities; for example, a recycle bin is transposition as a bin itself or a folder resembling an actual real life folder and document mapped as a system file. In today's world, the reverse is becoming popular as well. You would see physical entities manifesting the interactions of the digital world so much to the extent that these two entities are frequently intertwined in the minds and everyday lives of the people.



## Art Imitates Digital Life: Real-World Google Map Pins

Artist Aram Bartholl decided to bring these digital elements into our real, three-dimensional world. His 'Map' installation series takes 20-foot-tall Google Maps icons into Taipei, Berlin and Szczecin, Poland.[1]

Bartholl says that these pins were dropped at the exact center of the city as depicted by google maps, to project certain questions to the mass and making them realise how much digital life has blended itself into the reality.



Humans are essentially narrative beings. For years Stories have helped us engage and incite our imaginations. In India, stories have been told mainly through performances. If we Indians look at our performance arts like music and dance, we would realize that either they directly tell a story or have outlines of stories. Our whole tradition and culture are based on the stories we tell and the ways these stories are told. Once upon a time, It happened like this, I would like to tell you a story automatically enhances the interest levels in the audience. Few of such storytelling methods are here since around the 4th century BCE [1] telling the folk tales or tales from epics.

# Storytelling In India

Many different mediums have been used in India to tell stories ranging from musical acts to narration of stories using innovative products and installations.

Some of the noted storytelling mediums are :-

**Pandavani** - Narration of tales of mahabharata by singing and musical performance. One lead singer who is usually backed up by a group of musicians and two or three singers for backing vocals. (Figure 1)

**Panduan ke kade** - It is unique storytelling form from rajasthan which are delivered through musical performances which are chronicles of pandavas sung by muslim singers. (Figure 2)

**Yakshagana** - it is a folk tradition that is said to be date back more than 1600 years which tells stories of gods and goddesses in a way that the audience can understand. (Figure 3)

**Kavad** - It is the colorful storytelling box from rajasthan which is painted in rich colors. The box opens into many layers and it symbolizes how story unfolds. Mostly these stories come from Mahabharata and Ramayana. It is the work produced by two different communities of western India.[2] First there are Suthars who construct these beautiful boxes which are then given to kavadiya bhat who use it to tell the stories. (Figure 4)



Pandavani

Figure 1



Pandu ke kade

Figure 2



Yakshagana

Figure 3



Kavadi

Figure 4



Dance is a natural language or art form performed in all cultures around the world. Cultures use dances for telling stories so that they can express feelings, celebrate a festival, maybe for the sake of transmitting the history or for the pure delight of the ability of the movement of the body and its parts. The storytelling of India has more than fifty ways where the same story can be told using these many ways. Dance is one such mechanism to deliver these great stories. Indian epics always followed an oral tradition. This could eliminate the constant need for a storyteller, however retaining the essence of the way these stories are told while focusing on the end goal of uniting people or to pass on messages to them. While the mediums of storytelling have changed with the advancement in technology and availability of sources, the essence and the morals remain the same. The higher aim of these storytelling bards was to connect people, give them a sense of community and culture

In Hindu tradition, God's creation of the world has been depicted as dance. [3] And Lord Shiva as the performer himself in the form of 'Nataraja' with a damru in one hand and Agni in one of the four hands.

British colonial rule had a high impact on Indian art. As a whole, the European advent was marked by a relative insensitivity to native art traditions. They saw these large gatherings as a threat to their propaganda.[4]

They started disregarding devadasis as prostitutes. They also found the moves very erotic and therefore banned the temple dance. These rich art forms are slowly dying and while there is an organization working on it to revive them, modifications like removal of shringar elements, introducing musical instruments and bringing in innovative costumes. However, with little knowledge and a handful of people know these forms in their pure forms.

Also, the youth seem to be disconnected with the classical art forms and often disregard them as dull. Understanding the causes of its decline could help us reconnect it with the youth and ensure the survival of this great form of art. Many believe that classical dance isn't regarded as "cool" by young people to which the cool factor is the most relevant one for adhering to hobbies. Continuous rapid change and globalization have marginalized and weakened the multifaceted Indian culture. The aim here is to preserve and promote the richness of our different culture among the country's youth. It is to make them aware of their heritage, roots, and integrity by utilizing the curiosity embedded in young minds. It is also to educate the people with not only the technicalities but also with the aesthetics and spirituality of such art forms. Here I attempt to excite a more inspired prospect instead of bombarding them with too much information. To take on this difficulty and to understand it better, we must learn the origin of the dance forms.

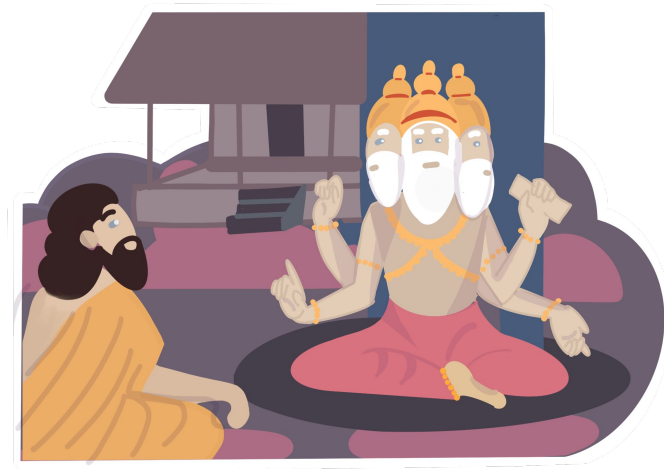
**02**

## **Indian Classical Dance**

Description of various classical  
dance forms

Indian classical dance consists of 8 dances performed all over India and is recognized by Sangeet Natak Academy. It is an autonomous body which has been set up by the government of India for performing arts. These have been derived from the ancient text "Natya Shastra" written by sage Bharata Muni whose compilation is dated to between 200 BCE and 200 CE. This book deals with all aspects of classical dance.

It is stated that the Hindu Lord Brahma himself narrated the story of dance and its elements to sage Bharata Muni who then wrote everything down in the book called Natyashastra.



There are two fundamental aspects of Indian classical dance  
First, one is Lasya - which means Grace and comprises of Bhav, rasa and abhinaya, i.e., Feminine features and Tandava - which essentially means rhythm and movement, i.e., Masculine features  
Apart from two fundamental elements, it has three basic elements

- Nritta - Which is primary dance steps
- Natya - Dramatic representation of the story
- Nritya - Sentiments and Emotions that needs to be delivered

They are combined with nine rasas which are expressed through dance.

# Eight Indian Classical Dances

Figure 5



## Bharatnatyam

Oldest dance form,  
Originated in Tamil Nadu,  
uses lot of mudras and hand  
gestures to tell a story

## Kathak

Stated as temple dance,  
moved on to various parts  
owing to bhakti movement



Figure 6

Figure 7



## Kathakali

Known for its most unique  
and dramatic makeup. Grand  
gestures paired with detailed  
gestures and well-defined  
movements.

## Mohiniattam

Mohini literally means a  
beautiful woman and attam  
means dance, together it is the  
dance of a beautiful woman



Figure 8

Figure 9



### Odissi

Originated in the temples of jagannath puri, known for independent movements of head, chest and pelvis

### Kuchipudi

Originally performed by group of actors going village to village , originated at Kuchelapuram now in Andhra Pradesh



Figure 10

Figure 11



### Sattriya

It originated in sattras which were monasteries which belonged to ekasarana dharma

### Manipuri

Strictly religious and spiritual experience. light foot work, graceful bodily and facial movements are its characteristics



Figure 12

## Instruments used in Indian Classical Dance

Throughout the propagation of Indian classical performance arts, the instruments remained more or less the common. However with the addition of Harmonium and Violin in carnatic music differentiated it a lot from the classical Hindustani music.

But they remained integral part of Indian dance performances. Some of these instruments date as old as 4th century BCE.

The sound they produce is unique and evoke the desired emotions just by one tap or a string.



**03**

## **Research**

Secondary and Primary research  
around the subject and the  
medium

To go ahead with research along with the book Indian art and culture by Nitin Singhania[10], I spoke with members of ROOT - The Classical and Folk Arts club of IIT Bombay[7]. It is an IIT Bombay Initiative that aims to promote classical Indian art forms. They organise workshops all over the year and call notable performers to perform and help spread the art wonder to the young minds.

## **Classical art performer Interviews**

Through expert research I tried to know the fun facts about dance and also to understand what they say when they talk about Indian Classical Dance. I interviewed following people for the expert interviews.

1. Sudhanshu Kulkarni  
Roots Coordinator, Trained Classical Singer, SPICMACAY Organiser
2. Nikita Fatarpekar  
Trained Bharatnatyam Dancer, Cultural Secretary, Hostel - 10
3. Swati Sing  
Trained Kathak Dancer, Former Dance Convenor, PG Cult, IIT Bombay

## **Why is it important to learn about Indian classical Dance**

As said earlier dance is the art of storytelling using your body movements to give meanings to the symbols that you can generate. It is also a great way to express oneself. While it is a strong representation of Indian culture and tradition and is pride of our nation, it adds much more value to an individual character.

Indian classical dance teaches you patience, as it takes long to master this beautiful dance from one may learn that every great thing takes time. It helps maintain a healthier and a disciplined life because it requires you to understand your body when you learn to coordinate with rhythms. This was about practising however learning about these forms can help you understand the propagation of an art form throughout history and its journey through thick and thins. It also helps us appreciate the complexity yet the gracefulness of our performance arts. Lastly, it can help us be informed as attempted by Encounter.

*FUN FACTS: learn about Indian Classical Dance before you come see Encounter! - Encounter explores dance forms from India we rarely ever get to see in Vancouver; it combines exhilarating physical theatre and dance with elements of Indian classical dance, yoga, martial arts, and folk dances. You may be interested to know a little more about Indian classical dance (it's fun stuff to know!), well here is a chance to sound like a pro when you bring your friends to the show.[3]*



## Wait a minute, Don't they all look the same

At first glance these three different dance forms might appear similar and they do have a lot of similarities in their movements and the depictions. However their subtle interesting differences rooting back to their origin make them more special.



The picture on the top left is Kuchipudi dance, the distinctive feature is the loose braid usually ornamented with flowers. The feather which opens up is usually a single one and extends all the way to the bottom with the fall partitioning the fan in the middle. The lady in white is wearing an Odissi costume which can be identified by the use of cotton saree instead of silk ones as in case of the other two dance forms also the distinctive headgear. It is an interesting opportunity to explore the various folds used in these forms.

## **Association with Devadasi Culture**

Devadasi culture dates back to as early as the 7th century[#] Devdasi translates as the servant of gods. This tradition was highly prominent in southern parts of India. Since they were married to a god, they couldn't marry a mortal, and their lives were dedicated to the gods only. Devadasis learned music and dance for their performances, which earned them gold and lands in some cases.

They enjoyed a higher status in society until the demeaning of these forms started during imperialism. These foreign rulers saw the negative side of such a tradition and disregarded them as prostitutes. Although the involvement of devadasis in such practices is debatable, it put the divine artform into a negative light. People started referring these dances as dances of devadasis.

During "Cholas" period while the same concept helped these dances flourish, but in modern times it suffered due to the allegations. People look down upon these dance forms thinking of their association with prostitution

## **Opposition & Ban During Colonial Rule and Revival**

The 18th century saw a rise in British colonial rule in India. This rule made an adverse impact on the various dance forms. These dances saw a massive decline in their performances and faced a lot of discouragement during their time.[5] Even Bharatnatyam, which was exclusively a temple dance, suffered the same fate.

Christian Missionaries and British officials held devadasis as harlots and disregarded such system. Christian missionaries launched an Anti-dance movement in 1892 to stop such practice, later on, Madras presidency which was under British rule at that time banned the dance practices in the temple as well ending an age-old custom.

This was rebelled against by Indian artists. They worked for the revival of these forms. Shringar elements were removed and every dance form was revived in its purest form while keeping alive the basic elements.

# Symbolism in Indian Classical Dance

Symbolism is defined as a decorative and rhythmical movement or style using symbolic images and indirect approach to express Imaginary ideas, emotions, and states of mind. Through dance, the symbolic meaning of the desire of the soul to merge with the super soul God is conveyed. Anyone who has seen Indian classical dance is immediately struck by the use of the hands – the language of hand gestures.[13]

Where they do represent various elements, the combination of these mudras along with Movement of arms, legs, feet and expressions can create a whole variety of meanings.





We all know about the mudras used as gestures to represent a wide variety of meanings. Similarly in dance forms like kathakali, different paints for different characters is used to depict the symbol of good or evil. There are eight different types of basic masks in kathakali which symbolises different meanings as per the story they are enacting. Special elements are added to match the description of character as stated in the epics. Did you know that it can take more than 10 years to master such an intricate artform.

Pachha - the pious one like Lord Rama, Kathi - the evil but powerful person like Ravana, Tadi - Used for cunning sort of a character like Bali, Vella Thadi - The most loyal one like Lord Hanuman, Kari - Completely black in color used to depict Goddess Kali and Minukku is used for pious women like Lady Sita herself.

## **Role of Gender in Indian Classical Dance**

Indian classical dance may seem like women's world. Men cannot go and perform these dances as they involve wearing ghungroos, and these ornaments are supposed to be effeminate. Because of this stereotype, male dancers are often sidelined, and hence, they do not consider dance as a career or performance art.

Many dances in Indian classics are being performed by Men; For example, Kathakali is predominately all male performers even for female characters. During the invasion time, Men dressed up as women in Orissa and performed a dance called Gotipua which is quite similar to Odissi dance; they worked well as trojan horse as their dances involved acrobats and fighting.

Even though the femininity of these forms reflected for long but it evolved with the involvement of men in these forms, and their costumes depicted their masculinity as well.

The trend is changing and we see many classical dancers making a name for themselves. Like Pandit Uday Shankar, Birju Maharaj, Kelucharan Mohapatra, Singhajit Singh, C.V. Chandrashekhar. These people have helped reach Indian Classical dances across the world by breaking all sorts of gender stereotypes. They have also proven that gender cannot be an issue if you are dedicated and determined enough.

## **All classical dances are not same**

Conducted a quick desk research to understand the familiarity and the interest levels of people in Indian classical dance. 9 students of IIT Bombay. 3 From bachelors degree and 4 from masters and 2 from Phd. Previous exposure to Indian classical dance - 3 During CEED preparations, rest - have come across through television and watching other performances.

## **Problem and Insights**

Where most people could identify the distinctive dance forms such as Kathakali and Manipuri it was difficult for them to differentiate between Bharatanatyam, Kuchipudi and Odissi. All of them had no clue about the recently added dance form called Sattriya from Assam except the topper of one of the entrance exams. Also they were shocked to find out that the masks in Kathakali are different for different roles in the story of the dance performance.

People only come across such information when they prepare for competitive exams or when they learn such forms. However, even in learning they are unable to understand the richness and diversity and the reasons for a particular element in the dance.

## Initial Design Brief

- 01 Should trigger the attention of the people
- 02 Should create curiosity amongst users
- 03 Is able to communicate and dispel misconception
- 04 Engage users in groups or individually
- 05 Inform them and motivate them for the contributions

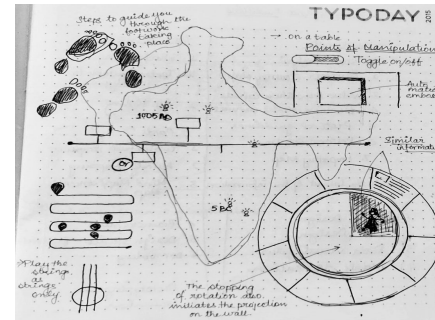
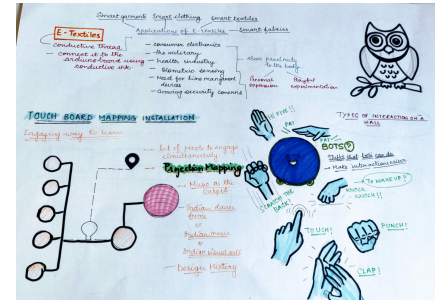
# Interactivity

What comes to your mind when you hear the word interactive ? What could be more interactive than touch ? The feel ? The texture ? The direct accessibility, the three dimensionality of something that you hold in your hands.

Paper is the medium that invented interactivity. Media campaigns are relying heavily of such mediums, I have nothing else to promote than the rich culture our country has to offer.

When we think of interactions using our own hands beyond a screen, we often think of gestures in air which has to be read by high end technical devices such as kinect or AR/VR.

Extending the limits and the tactical ability of the ink , helped me explore one more dimension of the Interaction that is digital to physical interaction. Where digital interactions are mapped onto the physical medium keeping the essence same.



## Secondary Research

### Connect the dots Campaign

It is a fun interactive campaign which allows people to come together and participate in filling an image which will reveal the singer's face. When people contribute they are treated with the music of the new album. It is a fun way of making people collaborate in revealing an information.

#### Pros

1. Easy game, invites collaborations
2. The incentive of listening to latest album is quite appealing to the music lovers.

#### Cons

1. No structured information present which can be a take away.
2. Limited interactivity makes it apt only for one time interaction.

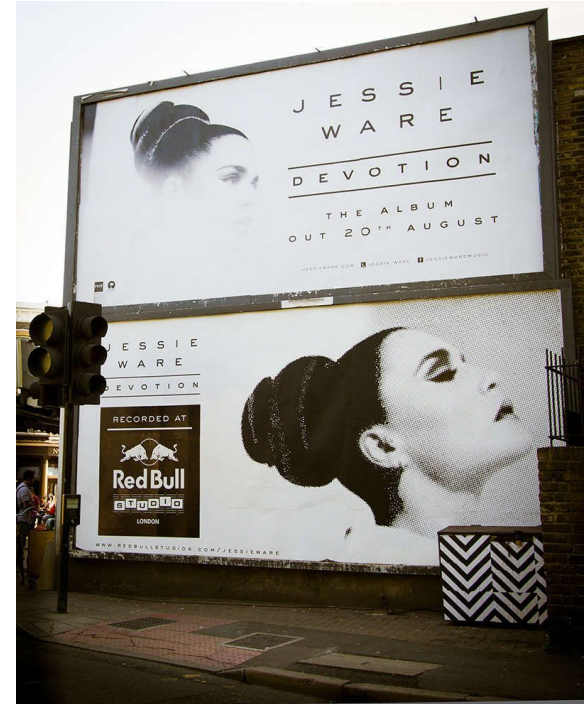


figure 14

## Interactive Wall at Google

Google used thousands of arcade buttons to display a demonstration of the company's new hardware library and open-source software AnyPixel.js. Anyone can play around with the code to create their own super-sized display made from any number of pixels. They went old-school with the arcade buttons and people can interact with it like a massive touch screen.

### Pros

1. Invokes nostalgia , invites people to attempt
2. Great way to display the product by showing its usage at a large scale.

### Cons

1. The output of your touch though personal is random and qualifies only as a fun activity.
2. Only touch interactivity

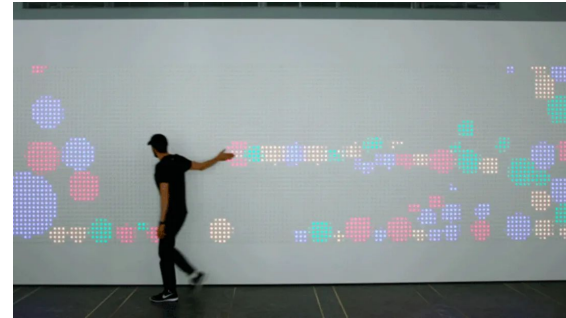


figure 15

## Touch Board Projection Mapping Installation

Ctrl+T.lab designed and built a touch-sensitive wall for an exhibition, so that visitors could learn about the city of Foshan by interacting with an illustrated history of it. They used Bare conductive touch board and paint to draw the illustrations and to make those illustrations interactive. This installation used projection mapping to animate the otherwise still illustrations.

### Pros

1. Dynamic lighting creates interest
2. Great way to display the product by showing its usage at a large scale.

### Cons

1. Limited to only one type of interaction
2. Only touch interactivity



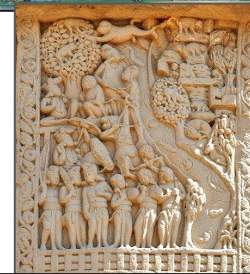
figure 16

## Modes of narrations

Conflated Narrative - This is Similar to the synoptic *narrative*. But with a single *conflated* depiction of the protagonist while the story gets revealed around this large figure. In other words, in this mode, the protagonist does not repeat, but the story is depicted around him.

Continuous Narrative -A continuous narrative is a type of visual story that illustrates multiple scenes of a narrative within a single frame. Multiple actions and scenes are portrayed in a single visual field without any dividers. The sequence of events within the narrative is defined through the reuse of the main character or characters.

Interactive Narration - In works of interactive narration there is only one narrative but the method of delivery requires the user to actively work to gain the next piece of the narrative, or have to piece the parts of narrative that they have together in order to form a coherent narrative. This is the narrative approach of some modern video games. A player will be required to reach an objective, complete a task, solve a puzzle, or finish a level before the narrative continues.[6]



[figure 17]

# Storyline

*"Structure is more visual than logical, a pattern of parts with its own rules for fitting pieces together, and most experienced writers create some sort of visual guide to the assembly of a story," he writes. "Like an architect, they express their structural ideas as a kind of blueprint. They must see their structure in graphic terms." Later, he adds: "A true narrative arc sweeps forward across time, pushing ahead with constant motion. It looks like a wave about to break, a pregnant package of stored energy."*[8]

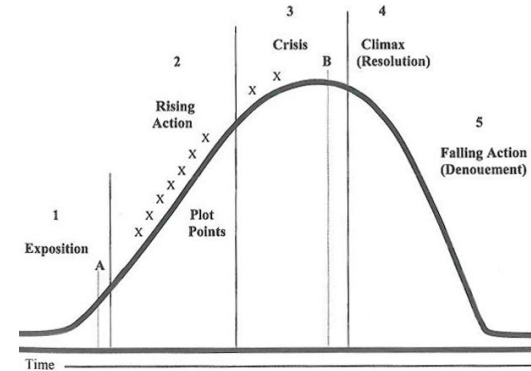
Exposition - Building up the interest by emphasizing on the ancient time period since this art form is alive.

Rising Action - From there the dances flourish and reach to various places within the country. Antiquity of our tradition is not as remarkable as its continuity.

Crisis - The impact of British and Islam rule over these heritage.

Falling Action - The revival of these art forms by Rukmini Devi and establishment of Sangeet Natak Academy

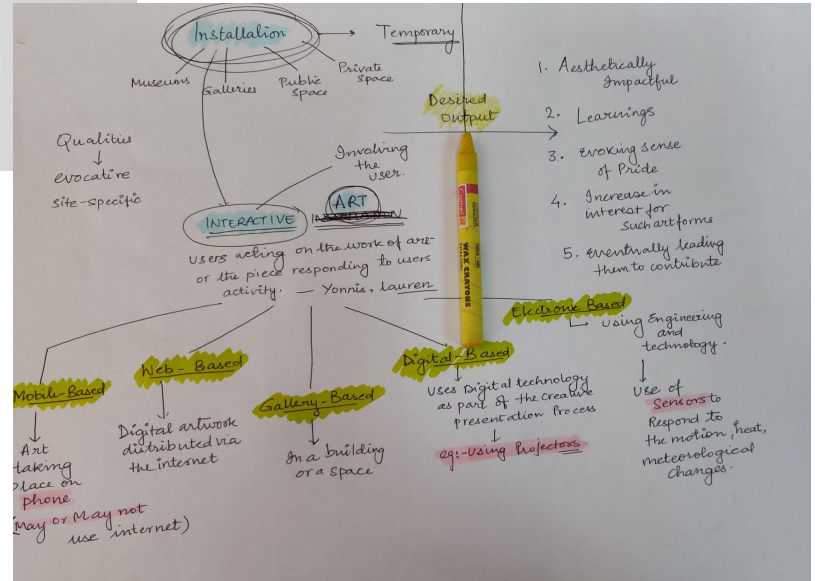
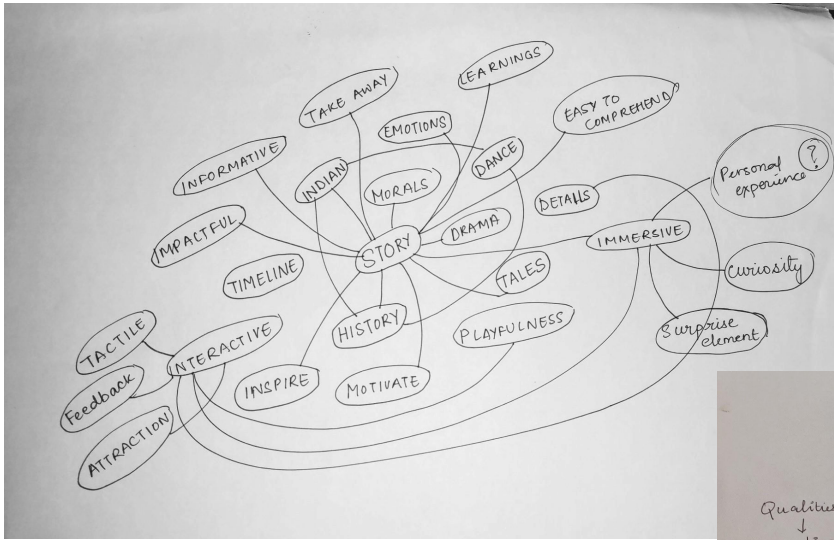
Happy Ending - Establishment of societies like SPICMACAY to promote these forms to larger group of people.



**04**

## **Mapping**

Mapping all the insights gathered  
from research



## Story (Takeaways)

- Inspire
- Engage
- Motivate
- Educate
- Impacting
- Morals
- Emotions

## Diversification + Connection

- Dance
- Drama
- Storyline
- Timeline
- Costumes
- Elements
- Instruments
- Tales

## Interactions

- Attract
- Engage
- Curiosity
- Playfulness
- Learn

Mind Map are drawn to identify the design opportunities and solutions for the roadblocks happening in the current system and the current behaviour, it helped establish a design goal and define the scope of the project. It also helped in establishing the key points to be taken from the story in itself and how the interactions design can enhance the consumption of the story while keeping the connection between the two alive.

There are multiple types of Installation arts, they are :-

1. Web- Based - An artwork which is distributed via internet
2. Mobile - Based - Involves a mobile device, may or may not be connected to the internet.
3. Gallery Based - A planned positioning in a building or a space
4. Digital Based - Usage of digital technology for example Projectors.
5. Electronic Based - Use of sensors and processor which can react to user behaviours.

Since, this artwork is covering an event and can be used as before event trigger , it makes sense that it is physical, Gallery based. However, to make it more dynamic, little components from other types of installation arts will be taken into final design.

## **Goals**

To educate, engage and develop interest amongst youth for Indian Classical Dance by exposing them to the exciting stories around the art forms.

## **Scope**

We are targeting youth to revive the interest and motivate them to take our rich art form forward.

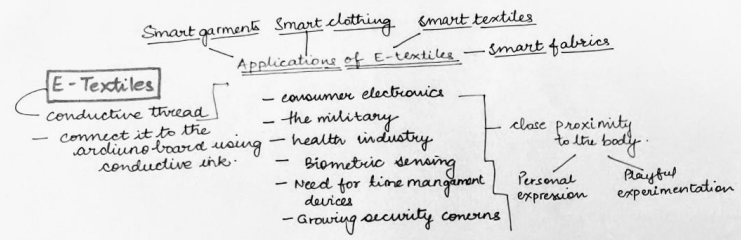
The exhibition cum interactive wall will be displayed at one of the events of ROOTS club where people can know more about the performances that they have come to witness.

To engage others who are not yet part of the club invites, the wall will be placed in Gulmohar cafeteria

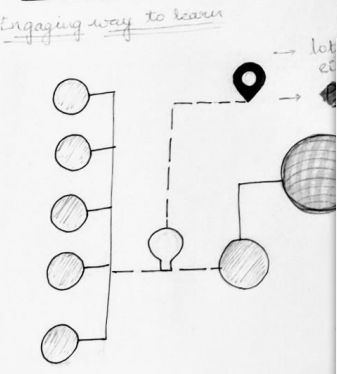
**05**

## **Initial Ideations**

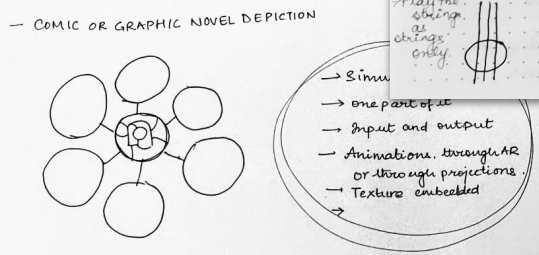
Sketched out initial ideas with  
pros and cons



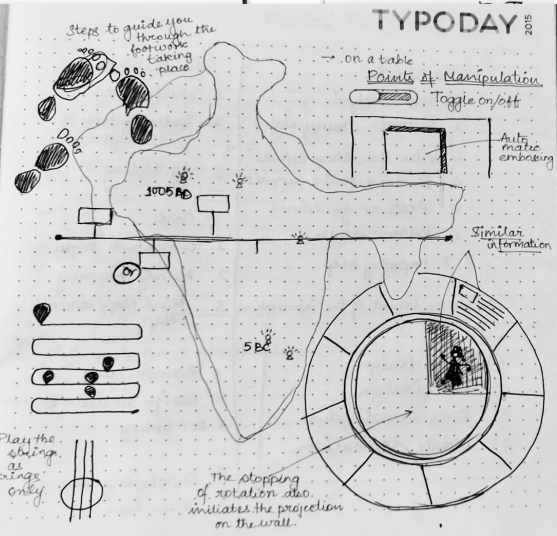
**TOUCH BOARD MAPPING INSTALLATION**



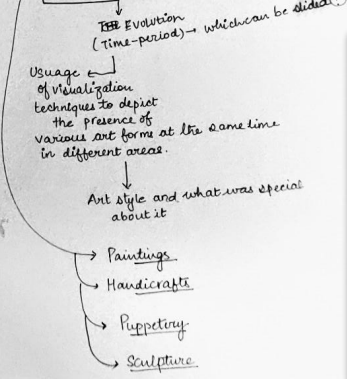
**AJANTA CAVE PAINTINGS**



- A
- Indian narrative structure
  - Structure (non-sequentially)
  - one single frame
- examples of Japanese, Roman works



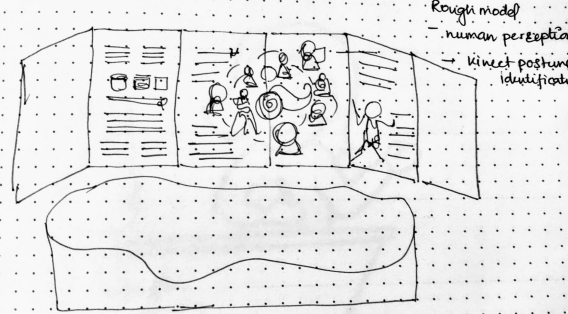
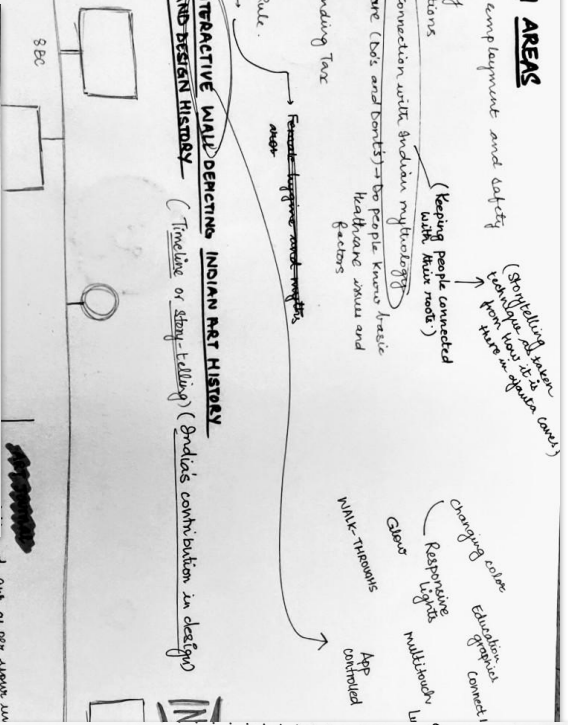
**ART AND MUSIC OF INDIA**



**IGNCA**

Cultural Informatics

Information technologies is used to have visibility of culture.



**Ideations & Concepts**

How to deal with the volume of the data?

## Concept I

### Digital screen with information

A web or operative system based screen where user can interact with the information and can have a takeaway.

#### Pros

1. Can be accessed anywhere and the medium is pretty convenient to use.
2. The takeaway can be browsed anytime.

#### Cons

1. One user at a time, driving force would be a digital ad for him/her to interact.
2. The scale would be too small , a big scale might make a difference.



## Concept II

### Match the following

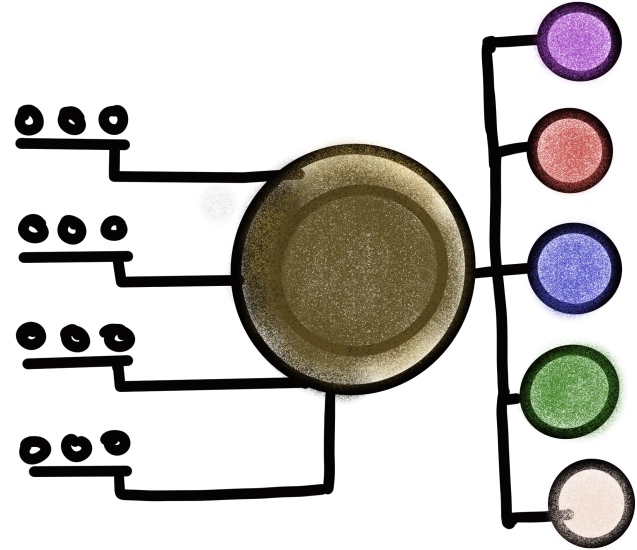
To understand how many people actually know about the information, a game where people could draw the lines connecting the dance form to the details of it.

#### Pros

1. Easy game, invites collaborations
2. People will be interacting with it using pen and leaving their contribution to the artboard.

#### Cons

1. Will be difficult to convey the correct msg if the lines for match the followings are wrong
2. If implemented on digital screen , it will have the same drawbacks as the previous one.



## Concept III

### Kinect based kiosk to try on costumes

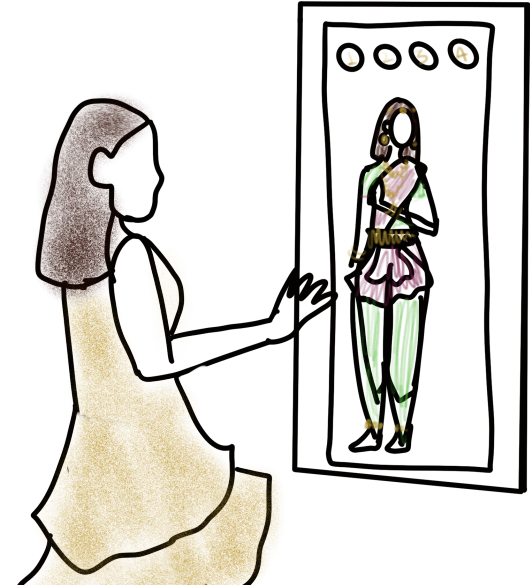
An option to try on different costumes of Indian classical dance and experience the richness of them.

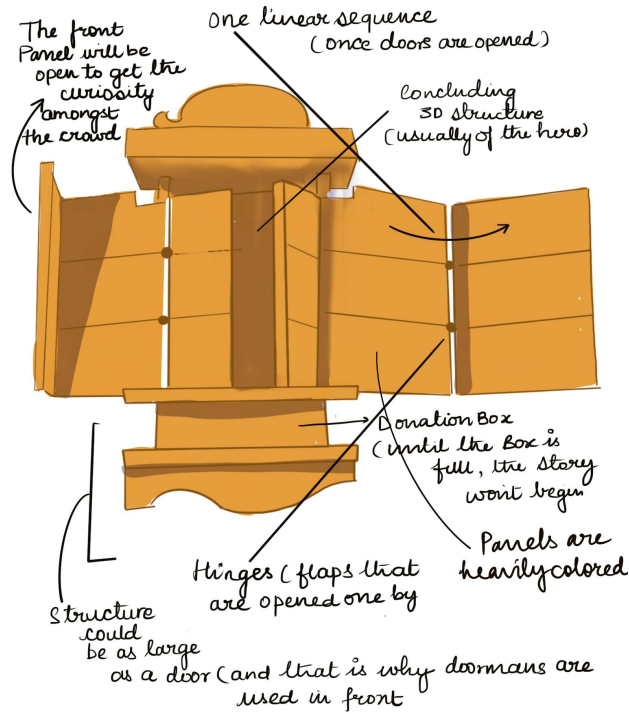
#### Pros

1. Easy game, invites collaborations
2. The incentive of listening to latest album is quite appealing to the music lovers.

#### Cons

1. Will leave out other informations about dance like the struggle through colonisation.
2. Male participants might be hesitant to try on female clothes and vice versa so some options will only be explored passively.



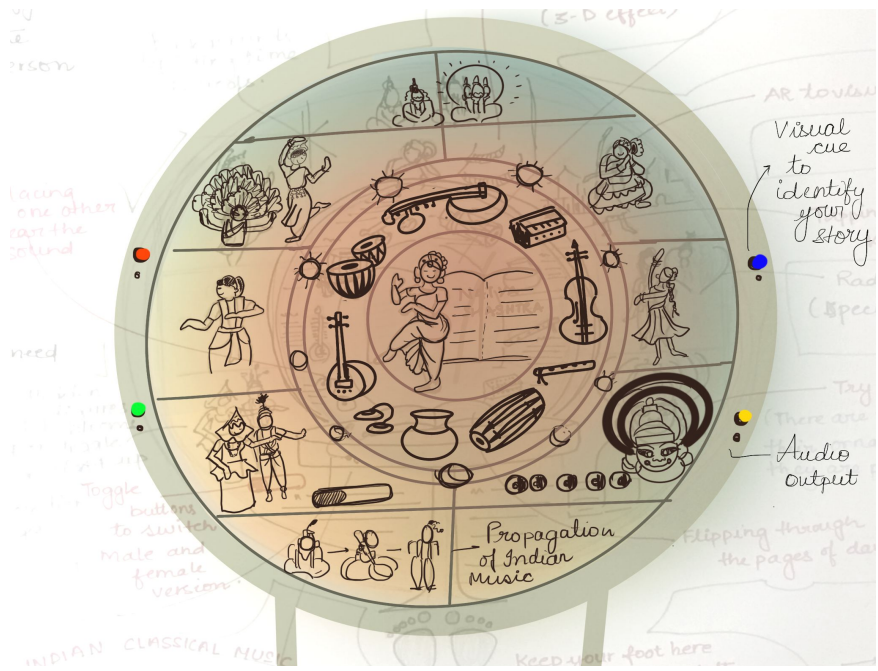


## Electronic Kavad

Kavad is used by traditional storytelling bards back home in Rajasthan. It involves a storyteller who holds the kavad in his lap and open the doors of it to reveal story.

Since present day mediums can be digital, they eliminate the need of a person constantly guiding you. The concept involves opening of the kavad such that each leaflet turned will trigger an action that tells a story. Similarly multiple stories could be told.

However, This structure will limit the consumption of information to just one person at a time. Also the information's visibility will depend on the mechanical movement of the structure.



# Indian Classical Dance History Disc

An interactive wheel which encompasses all the dance forms in the mode of narration as used in Jataka tales. Center of the artwork would be a common significant element around which the story revolves.

This element will be surrounded by different instruments again being common to the other dance forms as well. The disc will have the history of Indian classical dance laid out from top to bottom and one will be able to progress through the story using his/her own visual cue depicted using a colored light.

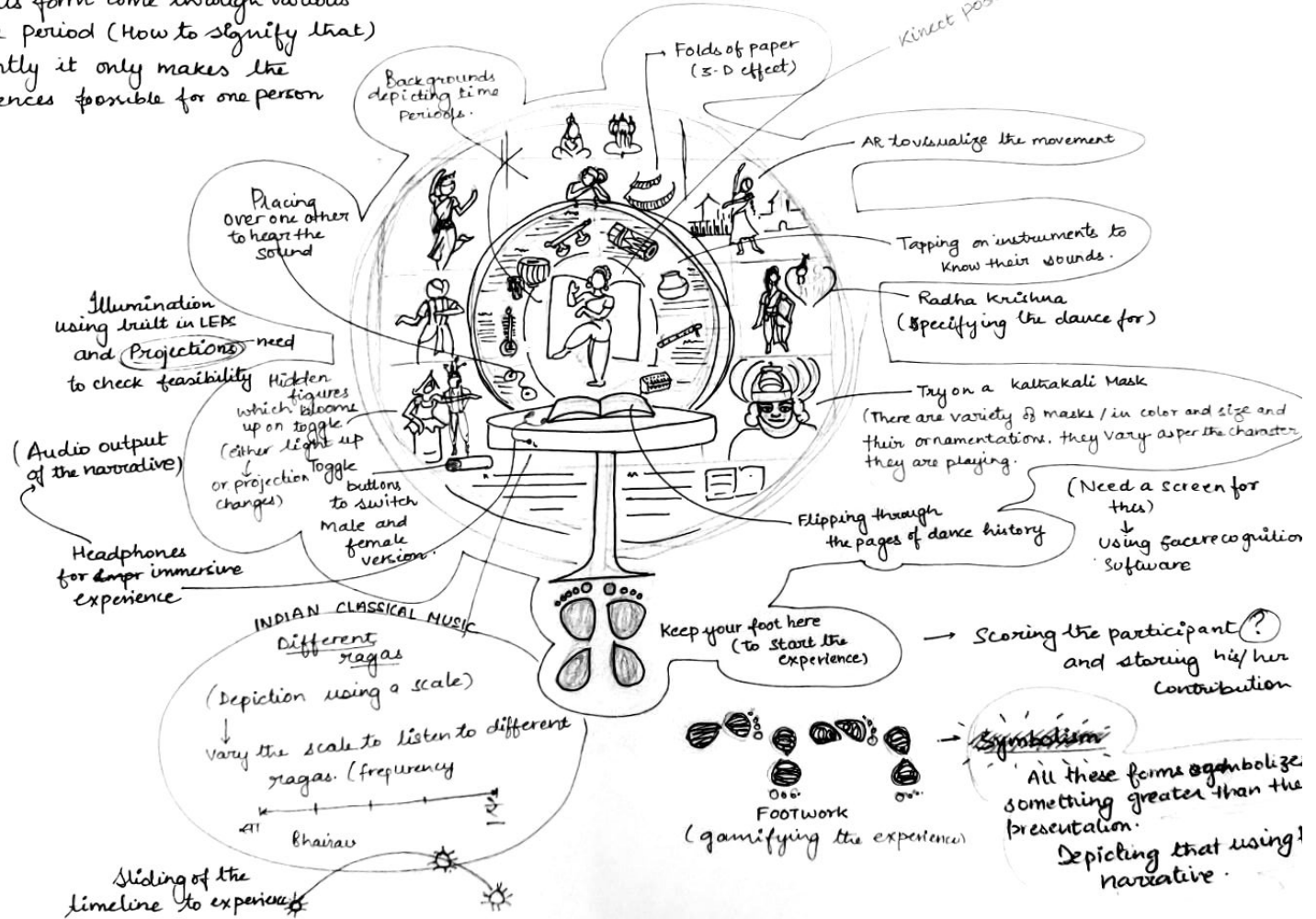
I went ahead and developed this idea and detailed it out.

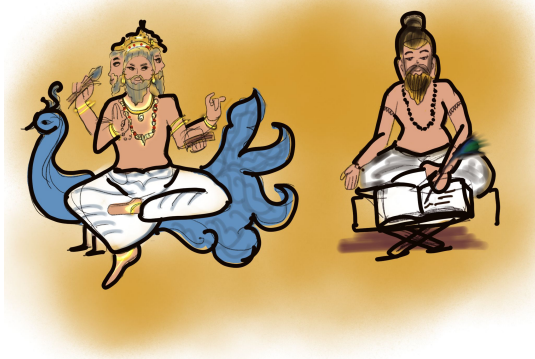
Challenges

1. Various forms come through various time period (How to signify that)
2. Currently it only makes the experiences possible for one person

(Nritya, Nritya and Natya)  
(symbols icons for them)

Kinect Posture Identification





## Illustration style

Initial illustration style keeps in mind the rich colors present in the depiction of Indian costumes by various artists throughout the history. It also takes inspiration from the various paintings which depicts the mythological tales and shows the ancient India and its vibrance.

However, for the theme purpose and to attract the user group. I chose to give a little animated features to the characters representing different dance forms and while illustrating made sure that since I do not have photographic leverage, I will have to utilize the difference in their movements and highlights the key elements by preserving important details.

## Feedback and Considerations

1. The feedback at this stage points out at the circular shape of the disc, while it is interesting it serves no purpose other than laying out the information.
2. Also, since it looks like a disc, there is a false prompt that might make a user want to rotate the disc.
3. Other interactions seemed stationary.
4. Keeping the foot on a specific place will still limit one kind of experience to just one person and might make people wait for their turn. However, passive viewers can nevertheless consume the information and play around with other elements like tap or swipe.
5. While the illustration style keeps the vibrancy of Indian art in mind, they do lack the freshness and relatability with present-day illustrations.

**06**

**Final Idea**

Modifications as per the feedbacks  
received

To Conserve and promote richness of our heterogeneous Classical Dance among the country's youth. It is to make them aware of their heritage, roots and identity by utilising the curiosity embedded in young minds. It is also to educate the people with not only the technicalities but also with the aesthetics and spirituality of such art forms.

### **Redefining the problem statement**

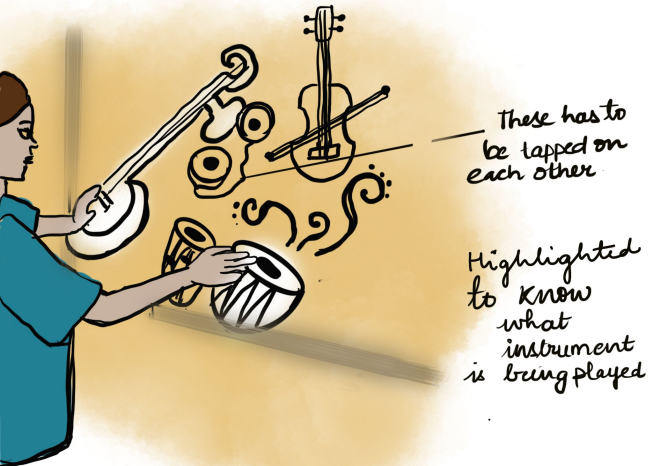
## Primary Aspects

1. A physical layer you are prompted to interact with
2. Operations that manage and animate the entire interactive art.
3. Should look stellar in both day and night

1. Durable and sturdy for multiple interactions
2. Flexible - Mistakes made by users should be easily reverted back.
3. Need not have a constant dependency on a device.

## 1. AR video of a movement

AR video of the form highlighted. Since the artform would be in static mode, the user will be able to view how the dance looks using the device they own. While retaining the temple background.



## 2. Sound on Tap

Click on an instrument to know its sound. The selected instrument will be highlighted using either a backlit or projection. These objects are printed using conductive ink.

### 3. Mask Filter

Using the name of the person , calculate a number from 0-6 and assign a mask to the person as a filter as used in snapchat or instagram. It could be a fun activity identifying your character if its evil or good.

The other method uses Spark AR from facebook development which lets you put your own 3d model on the face.



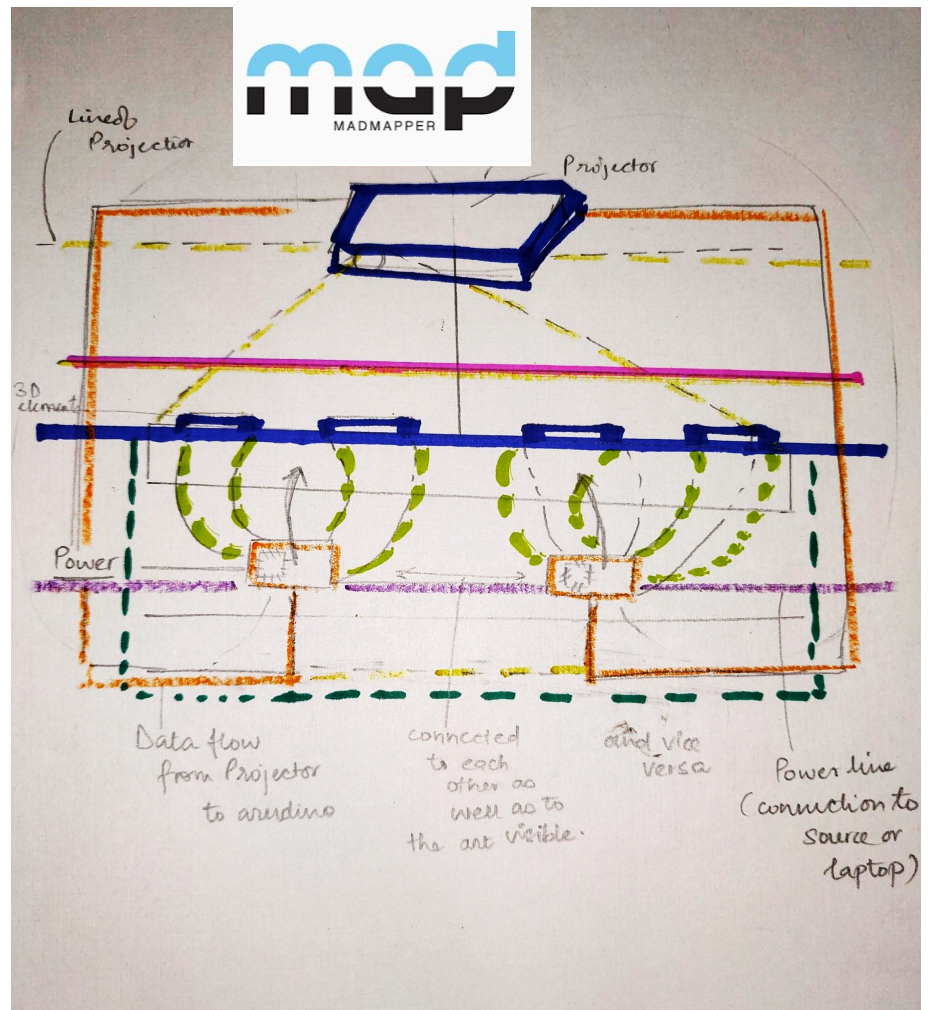
#### 4. Projection

Illuminated projection can be used to add more dynamism in the interactive artwork.

However for this short throw projector is required which needs to be installed at a height so that the projection is slanted.

One Line of projection is decided the animated elements can be mapped using madmapper software.

Cons - If a person is to come in between the screen and the projector, the light gets disturbed.



## 5. Toggle

To switch between men and women Form in the dance. In Manipuri dance, once the outfit is worn, the dancers cannot touch each other as they are portraying god. Usually the character of male is also played by a female dancer.

It will be done using paper



## 6. About difference in elements

Using paper folds or actual cloth folding for tactile interaction and depicting the differences using 3-D elements.



**07**

## **Prototyping**

Final implemented idea with  
detailed description of the parts

## Designing the exhibition (nimlok – Exhibiting advice)

- Display brief - Indian classical dance and its story through various interactions
- Objectives
  1. **What do you want to achieve ?**

Want people to be able to learn about the richness of our dance forms and contribute in preserving them. Desired achievement is the core influencer behind the design decisions.
  2. **How will you measure if you have achieved your desired outcome ?**

I will evaluate the product with people and get a qualitative feedback on how well the intended take away was received.
- Understanding the Audience
  1. **Persona of the user -**

The exhibition could turn out to be gender sensitive as most of the Indian classical dances attract women as read in the article by The Hindu on “The gender conundrum”
  2. **Will it appeal everyone or will it only seek out a few?**

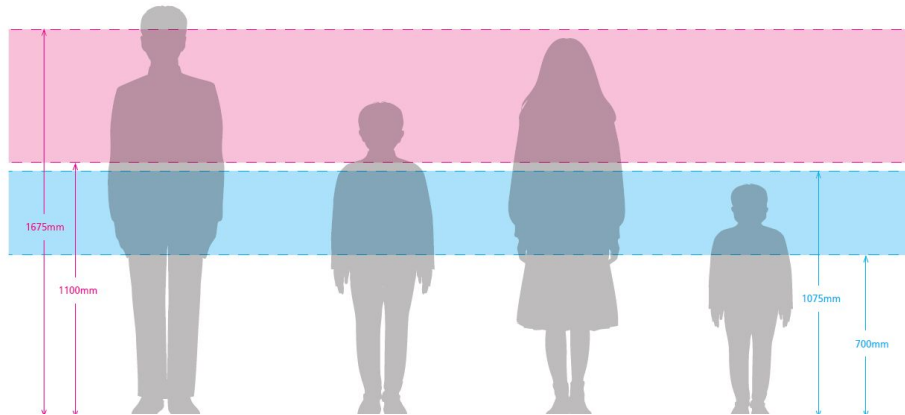
Since it will be installed in a public space, it will aim to attract anyone and everyone. But since some parts of it are delicate and the information is the main take away , I will exclude children below 12 years from the experiments.

- What is my message through this artwork ?
  1. **What is the one thing the user should know after visiting the artwork?**  
Users should be able to feel proud of this rich heritage and learn about the differences in these dance forms.
  2. **How will I communicate the message before , during and after the show ?**  
Before - A mail through “Roots” club of IIT Bombay will invite people to come and visit the interactive wall.  
During - Proximity sensors will identify if anyone comes near the wall, the wall will gradually glow up. After  
- The web take away
  3. **Any other activity that is coinciding which can let people know about this ?**  
Any event that happens from ROOT club can have this as an installation, this could also have selfie booth where people can dress up in certain dance costume.
- On-stand activity
  1. **What's the desired visitor experience on stand look like?**  
Interactive with a physical wall using digital interactions library.
  2. **Prioritise stand activities.**  
The centerpiece will have the main priority as it will be used to convey information about the different dances individually. And then they can move on to other elements and randomly interact with physical elements.
  3. **Are there any specific considerations to facilitate your on-stand activities?**  
People should be guided to touch instruments to hear sounds from them.

## Deciding Height of the installation

How to decide the height for your interactive media in an exhibition or a show.

- Wall/screen-mounted graphics should wherever possible be positioned within the optimum viewing band [1100–1675 mm][#] as suggested by the guidelines for museum display by british council.
- Object labels should be located as near as possible to the object, so that both the object and the label can be seen from the same vantage point.
- Object labels should be positioned consistently next to the object.



### **Immersive Experience**

Indian epics always followed an oral tradition. This installation will eliminate the constant need for a storyteller however retaining the essence of the way these stories are told while focusing on the end goal of uniting people or to pass on messages to them.

### **Other factors to be considered**

An aesthetically pleasing exhibition stand sometimes isn't enough to attract and maintain attention in a busy public space. There is a need to create moments between the user and the artwork so that results can be seen. It's all about user engagement while providing a seamless experience of consuming the information  
To do so users will be presented with surveys at the end where they will have a chance to win framed picture of him or her in the mask.



**Dance as a medium of storytelling**

India is a land of storytellers. We have been using different mediums to tell the same story.

We did not only use music and words to convey a narration. But we have been using dance as a medium of storytelling.

It all started when Lord Brahma narrated the principles of dance to sage Bharat muni.

Although the dances started in temples as the dancers' devotion to the god, later on they progressed to royal courts and common audience. These dances were usually performed by devadasis who were dedicated to the deity in the temple.

He classified them based on three qualities: *Nritya* - pure dance, *Nritya* - Expressive Dance, *Natya* - acting.

Of course like all good students he quickly took down notes and compiled them into this detailed book about classical art called *Natya Shashtra*.

The roots of Indian dance maybe found in Mohenjo-Daro's dancing girl statue. However, the first depiction of classical dance is found in the inscription of Kailash temple, Tamil Nadu.

The difference between these dance forms

While many people do not realise the difference between these dance forms but their distinct qualities are unique to their origin, their purpose and their outfits even though from a distance they look same.

That eventually helped form Sangeet Natak Academy which works for the preservation and spread this art form to countries. In 2000, they added Sattriya.

Revival of these dance forms

But we were quiet for 1920's. Ravi Varma started the art for removing in question.

**Impact of colonists on Indian Classical Dance**

But it wasn't all this glorious for long. colonials did not really see the richness of these performances rather they put a ban on these art forms.

**Iteration 1**

Newest Addition



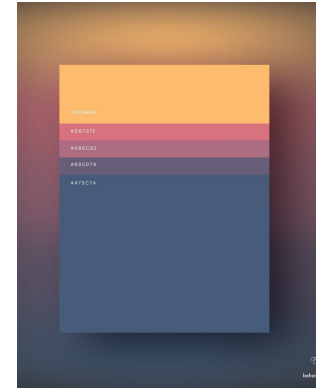
## Material Design

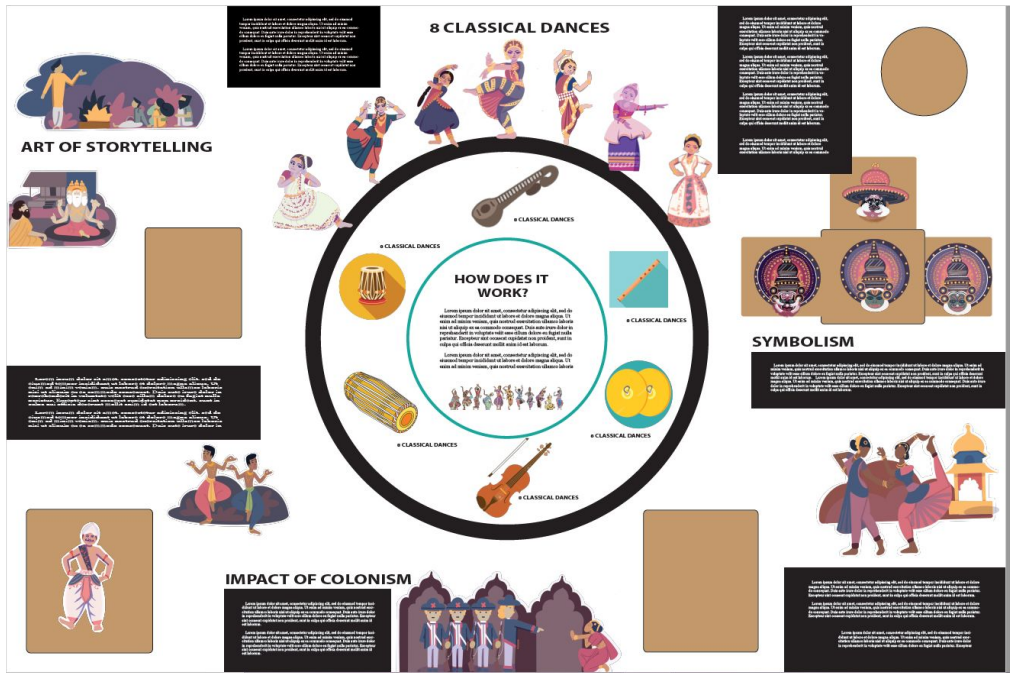
From the feedback received for the previous illustration style, I decided to modify them. Added background where ever the story needed a context. The color is picked from the palette of minimalist design to keep the look and feel of today's illustrations alive.

The style of illustration is personal keeping in mind the aesthetics of the final art

Used Minimalist color palettes by [Ebtihaj Khan](#)

**REDESIGNING THE ILLUSTRATIONS**  
ADDING **BACKGROUND** FOR STORY IN ITSELF





## Iteration 2

For this particular iteration , I put the information as a separate chunk altogether. Adding contrast to it so as to make it more readable and to give emphasis on the content as well.

Instead of each dance form telling its own story in a timeline manner, I kept them grouped on the top of the center circle so that number of dance forms can easily be clear and their subtle differences are visible.



## Feedback from Prototype testing

- 01 Involvement of the organisation
- 02 Storytelling part disjointed, individual chunks do not convey anything.
- 03 Connection to youth, maybe use the trending color scheme
- 04 Engage users in groups or individually
- 05 Inform them and motivate them for the contributions
- 06 People were showing more interest in the Illustrations, wanted to know what has been drawn

## NATYASHASTRA INDIAN CLASSICAL DANCES



ONCE UPON A TIME ..

Men are traditionally seen as dancers. One which tradition and culture is based on the stories we read the mythology written by the poet. One name is that of Bharata Muni who lived 2,500 years ago. He is the author of the Natyashastra, the oldest treatise on drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music.

There are classical dances as recognized by which country. It is said that had before about 1000 years of formation of large number of different forms, which continue to see evolution required for a performance that is no longer just seeing the audience.



WHAT ABOUT MEN IN DANCE ?



In which between men and women there is the main difference. Men are seen as dancers. One which tradition and culture is based on the stories we read the mythology written by the poet. One name is that of Bharata Muni who lived 2,500 years ago. He is the author of the Natyashastra, the oldest treatise on drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music.

There were 10 classical dances in the past. But now only 8 are left. The reason for this is that many of the dances were lost over time. The reason for this is that many of the dances were lost over time. The reason for this is that many of the dances were lost over time.

It is said that the first dance was performed by the poet. One name is that of Bharata Muni who lived 2,500 years ago. He is the author of the Natyashastra, the oldest treatise on drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music.

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IT WASN'T ALL GLORIOUS



HOW DOES IT WORK?

Here we attempt to tell the story of Indian classical dance and the journey from traditional to modern. You can create the wheel to know more about the dance form around. When you are done along that journey on the interactive Indian dance here to tell. Do not forget to interact with the wheel. Hope you have fun.

BUT THEY ALL LOOK THE SAME ..

It is said that the first dance was performed by the poet. One name is that of Bharata Muni who lived 2,500 years ago. He is the author of the Natyashastra, the oldest treatise on drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music.

SCROLL THE IMAGE TO SEE THE VIDEO EXPLAINING SUBTLE DIFFERENCES IN THESE DANCE FORMS



SYMBOLISM



PLAY THE INSTRUMENTS USED

Throughout the presentation of Indian classical performance etc., the instruments used are not the same. However with the addition of them we can play in various ways. It is said that the first dance was performed by the poet. One name is that of Bharata Muni who lived 2,500 years ago. He is the author of the Natyashastra, the oldest treatise on drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music. It is a comprehensive treatise on the art of drama, dance, and music.

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MRIDANGAM



TABLA



VEENA



HARMONIUM

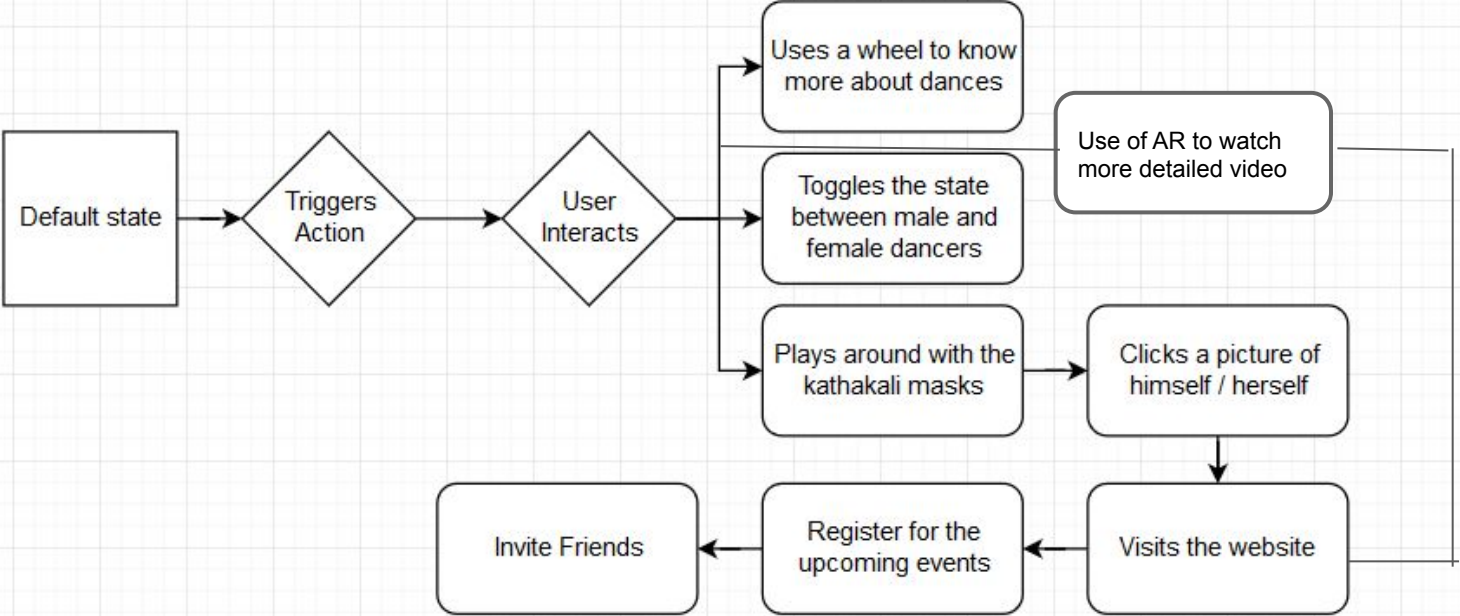


TABLA



VIOLIN

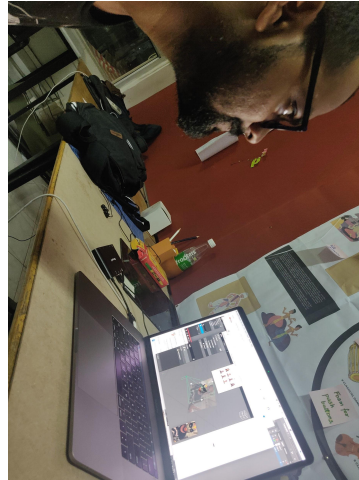
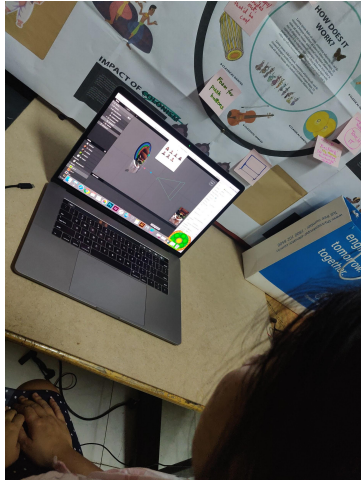
# Idea Flow chart



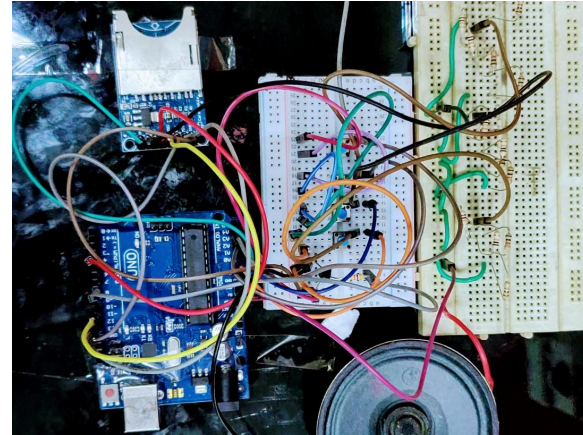
Testing of laser cut materials and their placements.



Trying the AI mask filter of Pacha and Vela Tadi characters of Kathakali

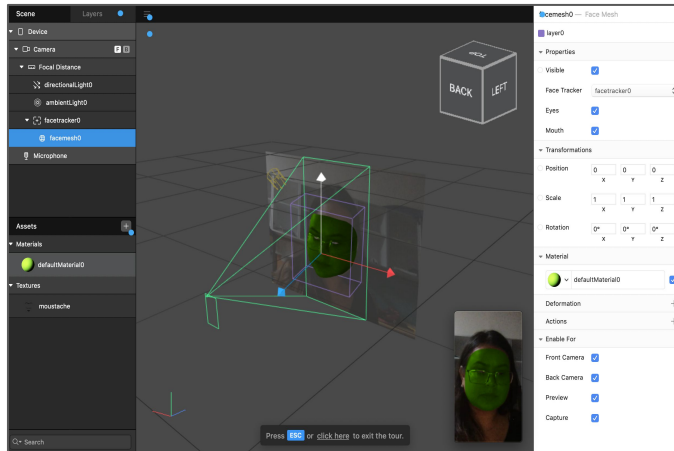


Playing of sound using arduino and touch



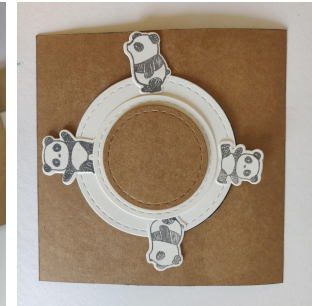
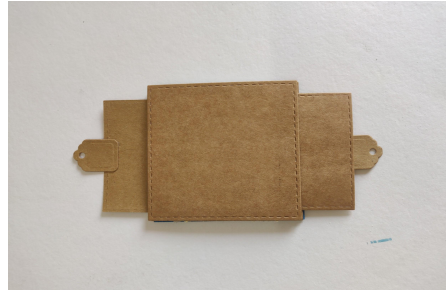
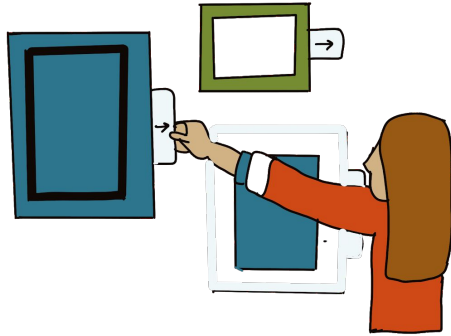


3D model of vella tadi hat and pacha mask developed in blender



Using Spark AR to develop the face mask.



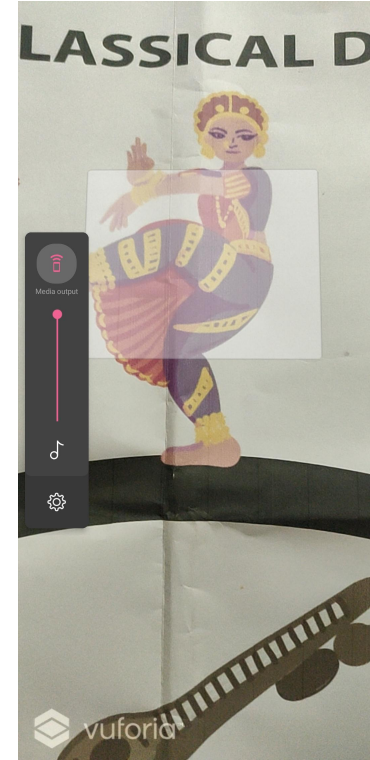


Physical interactions , pull out tab , toggle and rotate implemented using card stock.



vuforia™

Redirecting to a more detailed  
video in web when viewed through  
the vuforia app



**09**

## **Evaluation Plan**

Evaluating the product in  
public space

Key points that will help measure if the desired outcome has been achieved. This will be implemented through a think aloud test with test users in different environment than public space. The users in public space will be observed and following questions will be noted down.

**1. Is the message being communicated ?**

- Are they able to comprehend the information on their own or do they discuss?
- Is the installation able to make people realise the disconnect or connect with the dane forms ?

**2. Is the User being engaged ?**

- How much time does the user stay on the installation ? Does it exceed two minute ?
- Is user interacting with all the interactive elements present ?

**3. Is the User being Informed?**

- Does he go back to the web part to know more?
- Is he/she motivated enough to pass on this information?

## Protocol

1. User in the public space, Introduced if required.
2. Place -
3. Interaction of each participant with installation.
4. Think Aloud Test
5. Feedback from users after the interaction.
6. Evaluation through heuristic principles.

## Heuristics

1. **Visibility of system status**  
Proper feedback on the element being interacted.
2. **Match between system and real world**  
Here its reverse , I will be evaluating the match between the real world as digital world
3. **User control and freedom**  
Can go to any element even from the start.  
(As per availability ?)
4. **Aesthetic and minimal design**  
Feedback on the illustrations and their understanding out of them , preference over images.
5. **Help and how tos**  
Guided instructions to maneuver
6. **Efficiency of system**  
Smooth operation and quick response to digital queries



## Observations

- Legibility of the etched text
- One person tapped on TAP HERE text
- Dancers read the text just to verify, others ignored it. Only read the headings.
- Delicate looking structure , afraid to pull
- Call to actions weren't clearer to 3
- Thought of as an alternative to pamphlet
- Most of them needed the instructions

# References

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- [1] Art imitates digital life, <https://weburbanist.com/2012/04/24/art-imitates-digital-life-real-world-google-map-pins/>
- [2] Nina Sabnani (July 2009), The Kavad storytelling tradition of Rajasthan,
- [3] FUN FACTS: learn about Indian Classical Dance before you come see Encounter!, <https://thecultch.com/fun-facts-learn-indian-classical-dance-come-see-encounter/>
- [4] How Devadasis went from having high social status to being sex slaves and child prostitutes, <https://yourstory.com/2017/04/devadasis-india>
- [5] Bharatnatyam, Opposition & Ban During Colonial Rule, <https://www.culturalindia.net/indian-dance/classical/bharatnatyam.html>
- [6] Continuous Narrative Art In Picture Books, <http://www.slaphappyLarry.com/continuous-narrative-picture-book-illustration/>
- [7] Roots, IIT Bombay, <https://gymkhana.iitb.ac.in/~cultural/web/index.php>
- [8] Jack Hart, Storycraft: The Complete Guide to Writing Narrative Nonfiction, University of Chicago Press, 2011
- [9] Visual Storytelling and Narrative Structure, In Point, <http://thecinematheque.ca/education/wp-content/uploads/2012/02/LanguageofFilm01.pdf>
- [10] Book - Indian Art and Culture , Nitin Singhanian , McGraw Hill Education

- 
- [11] Abhinaya , <https://abhinayaperformingarts.wordpress.com/2017/04/01/hastas-hand-gestures/>
- [12] Connect-the-Dots Campaigns, <https://www.trendhunter.com/trends/jessie-ware-devotion-billboard>
- [13] An Interactive Wall at Google Is Made From Thousands of Arcade Buttons, <http://mentalfloss.com/article/81204/interactive-wall-google-made-thousands-arcade-buttons>
- [14] Touch Board Projection Mapping Installation, <https://www.bareconductive.com/news/touch-board-projection-mapping-installation/>
- [15] Life Lessons from Jataka Tales, <https://madrascourier.com/insight/life-lessons-from-the-jataka-tales/>
- [16] The Phygital, <https://thephygital.com/> accessed on 26th May 2019

### **Tools Used**

Spark AR Studio, <https://sparkar.facebook.com/ar-studio/>

Getting Started with Vuforia Engine in Unity, <https://library.vuforia.com/articles/Training/getting-started-with-vuforia-in-unity.html>

Arduino , <https://www.arduino.cc/>

Adobe Illustrator , Ipad Procreate

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Figure 1 - <https://www.newschrome.com/wp-content/uploads/2018/06/Tijan-Bai-Pandvani-1.jpg>

Figure 2 - <https://indiaodyssey2015.files.wordpress.com/2017/10/jriff-btb-17-dhara-sawai-khan-with-storytelling-group-credit-riff-oijo.jpg?w=1100>

Figure 3 - <https://upload.wikimedia.org/wikipedia/commons/e/e9/Yakshaganads.jpg>

Figure 4 - Arunima Kumar , Veethi.com

Figure 5 - Indian Classical dances , Indian culture study material & notes , <https://www.exampariksha.com>

Figure 6 - classical dances of india , <https://www.Britannica.com>

Figure 7 - Bharatnatyam, <https://www.picswe.com/pics/pada-varnams-bc.html>

Figure 8- Kathak, <http://www.indianlink.com.au/kathak-dance-prerana-deshpande/>

Figure 9- Kathakali, <https://www.pexels.com/photo/kalamandalam-kannur-kathakali-kerala-755059>

Figure 10- Mohiniattam, <https://mynostalgias.wordpress.com/category/art-forms/mohiniattam/>

Figure 11 - Odissi, <http://www.ananyadancetheatre.org/2013/01/beyond-tradition-part-1/odissi-dance/>

Figure 12 - Kuchipudi, <https://en.wikipedia.org/wiki/Kuchipudi>

Figure 13 - Sattriya, <http://picsr.com/photos/krishnakshikashyap?nsid=64216461@N05>

Figure 14 - Manipuri, [https://en.wikipedia.org/wiki/Manipuri\\_dance](https://en.wikipedia.org/wiki/Manipuri_dance)