

Design Portfolio

**CHARUL AGARWAL**

User Experience Design

Interaction Design

Usability

Design Research


Interface Design


Visual Design

# Charul Agarwal



“Hi, I am pursuing Masters of Design from IIT Kanpur, India. I believe in User Centeric Design. Exposure to fields like Technology to Design gave me an interesting viewpoint to the world.”

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## EDUCATION

<b>Masters of Design</b> Indian Institute of Technology Kanpur	2012-14*	8.75/10
<b>Bachelor of Technology</b> (Information Technology) Mody Institute of Technology and Science, Lakshmangarh	2010	8.08/10
<b>12th (RBSC)</b> Maheshwari Girls Sr. Sec. School, Jaipur	2005	75.38%
<b>10th (RBSC)</b> Maheshwari Girls Sr. Sec. School, Jaipur	2003	84.89%

## EXPERIENCE

<b>Media Technology Center, IIT Kanpur</b> Sr. Student Research Associate	May'13-Jun'13
<b>Infosys Technology Limited, Mysore</b> System Engineer Trainee	Jun'10-Nov'10
<b>Hindustan Zinc Limited, Gulabpura</b> Student Intern	May'09-Jul'09

## ACHIEVEMENTS

- **Design Project selected** to work in collaboration with Hindustan Unilever Ltd.
- CODE'13 (48 hrs Design Jamming organised by Hindustan Unilever Ltd.) - **Jury Appreciation Award**
- Samsung USID Smart TV App Challenge'12 - **Finalist Top 17**
- Secured **62nd Rank** All Over Rajasthan in Class X and awarded State Government Scholarship

## SKILL SET

- Adobe Photoshop CS5, Flash CS5, Dreamweaver CS5
- C, Core Java, HTML5, CSS

# Pehchaan Kaun? - Samsung Smart TV App

Urbanisation has created a grey layer between human and nature. Kids of new age are barely aware of the birds, animals, insects and their environment. **'Pehchaan kaun'** is an educational app which is based on the concept of listening and identifying the animals/insects. The audio is the clue to find them.



## Initial Wireframes

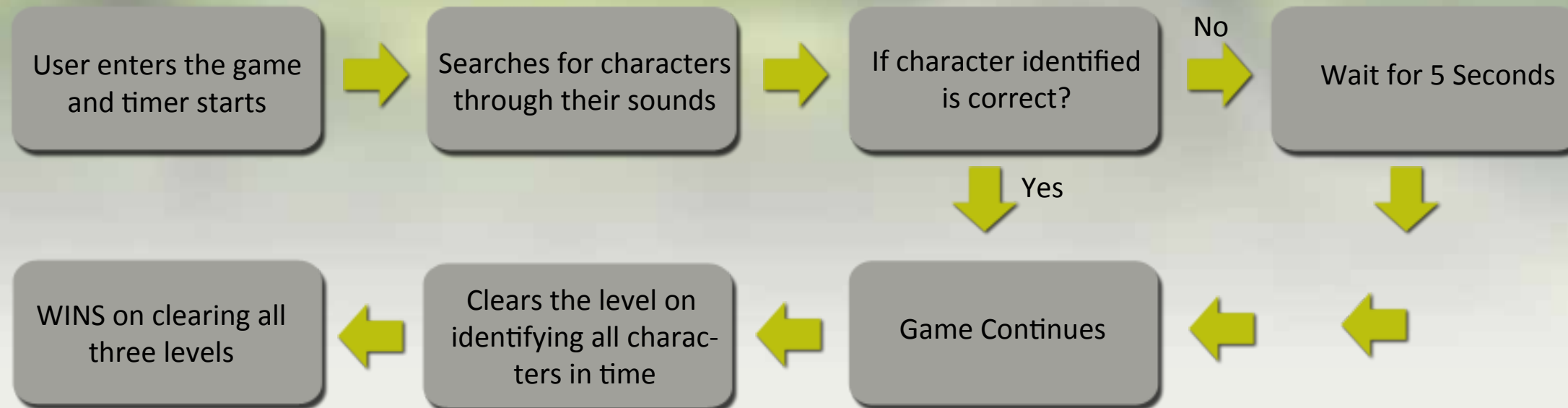


*Awarded amongst best 17 TV apps in Samsung Splash India TV Contest' 2012.*

# Pehchaan Kaun? - Samsung Smart TV App

## Concept

The app is portrayed in the form of story of a boy and his dream



## Screenshots



Level 1 is 'Room'



Level 2 is 'Garden'



Level 3 is 'Pond'



Wait screen when the character identified is incorrect



On clearing all the three levels, the player wins and is notified by a dialog box

## Tools Used :



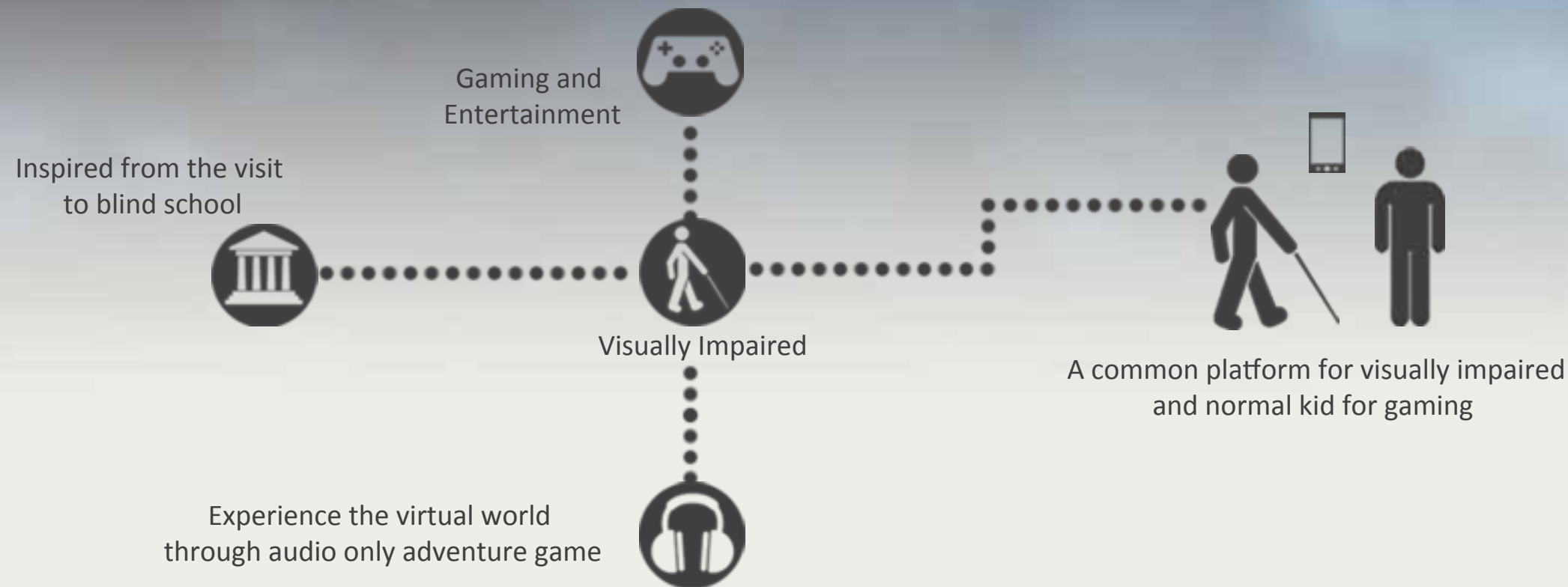
Link : <http://www.youtube.com/watch?v=cCH-SR9bJ-4>

# Dark Rush - Android Platform App



UI/UX  
Mobile App Design

'*Dark Rush*' was a 24 hour design and development effort as a part of 2013 edition Hack U! -University Hack Event organised by *Yahoo!* India. The main purpose behind this android gaming application is to provide a common entertainment platform to visually challenged kids and normal kids.



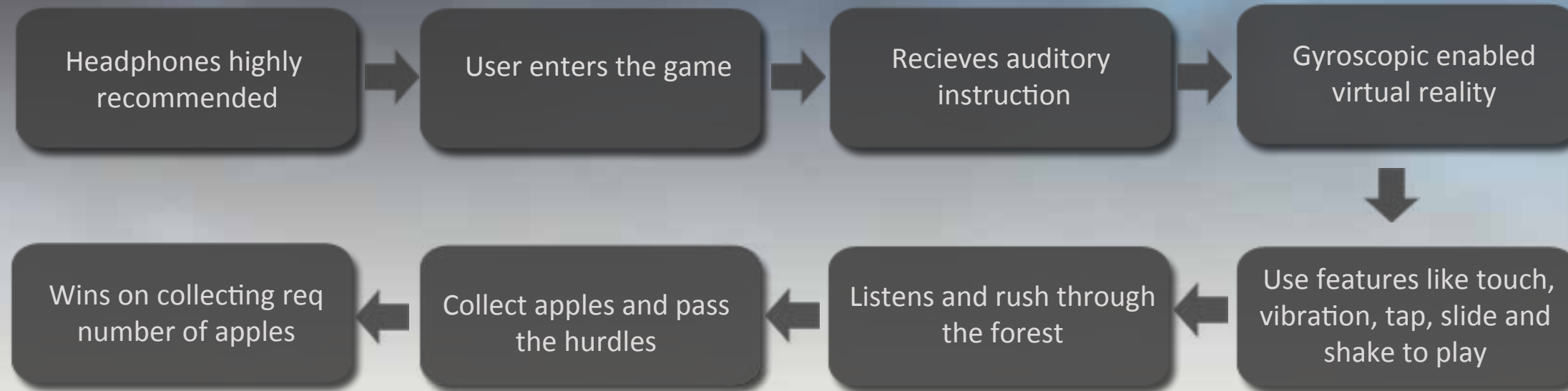
Mobile application is developed using android technology on Eclipse as an IDE. We have used Gesture Recognition API to trace the phone movements. Alongwith this, the audio and the user movements are coordinated by using tagging method through code.



# Dark Rush - Android Platform App

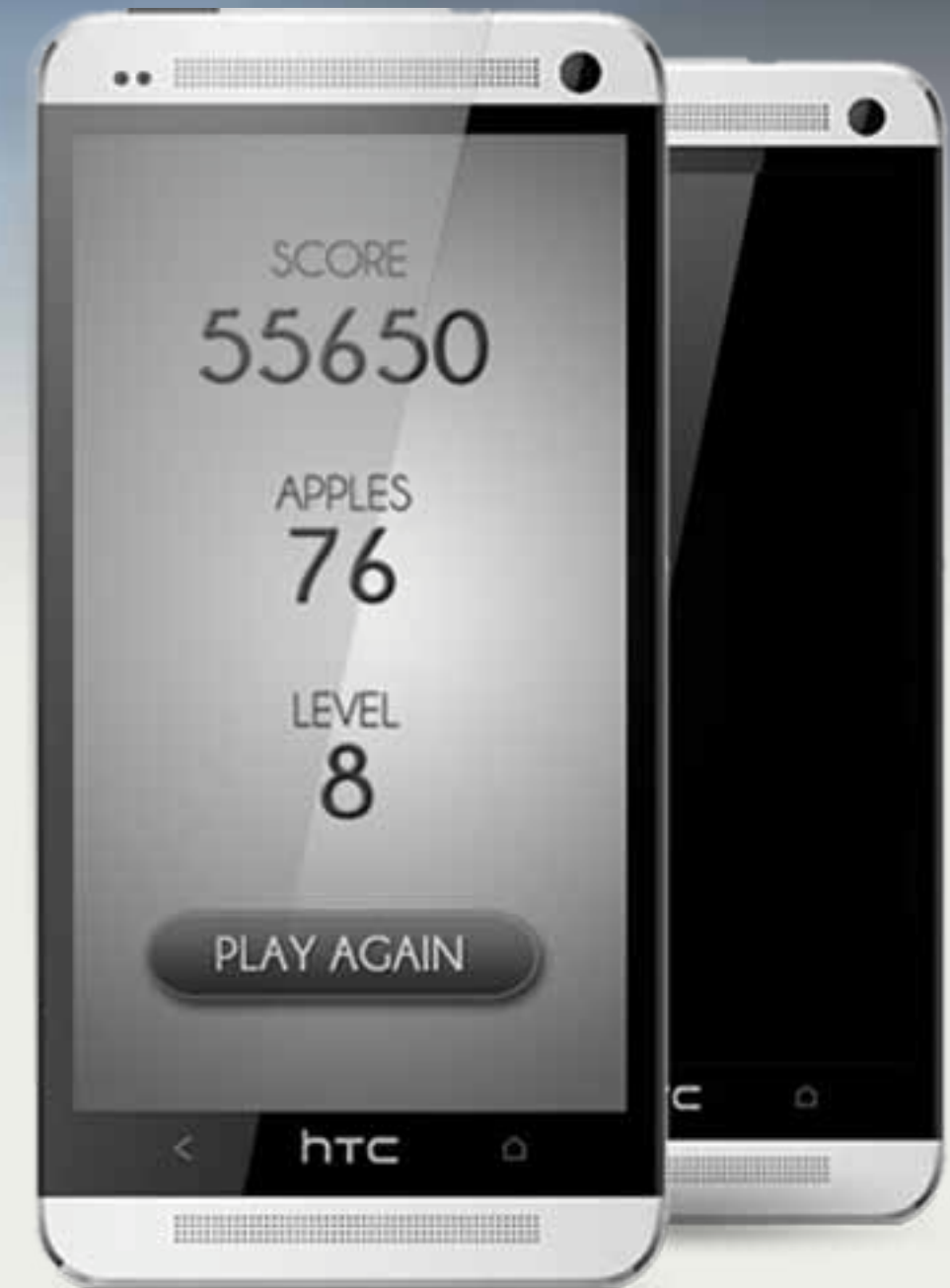


**Concept :** The gameplay is in the form of story of a boy lost in the dark forest



As the game is designed to provide a common gaming platform to both visually impaired and normal kids, hence, no visuals are used for the application except the start screen and the score screen.

Hence, the interface is kept plain Black to provide the same gaming experience to both the segments driven through auditory system.



Final Score Screen



# Gift'emotions : Gifting Experience

**"Gift'emotions"** is a **service based web application** that provides a complete gifting experience to an emotionally oriented gifter who is looking forward for a heart warming essence beyond the obvious.

## 1 The Problem



Lack of emotive essence



Lack of time



Confusion on what to gift



Increased Distances

## 2 User Research

Primary Research was conducted to understand the gifting behavior and psychology of people while gifting.



Informal Talks



One-on-One Interviews



Telephonic Interviews



Online Survey



Literature Research

Secondary Research was conducted to study the existing 'Web Solutions' and to know the 'state of art of Internet' in India

## 3 Benchmarking of Existing Solutions



Local Shops  
Time Consuming  
Decision Making



Online Shopping  
Lack of Customisation  
Looses gifting essence  
Lack of trust



Gifting Websites  
Lack personal touch  
Commercially oriented



Mobile Apps  
Limited Options

## 4 Touchpoints



Mobile Apps



Shops



Individuals



Websites



Delivery Boy



Media



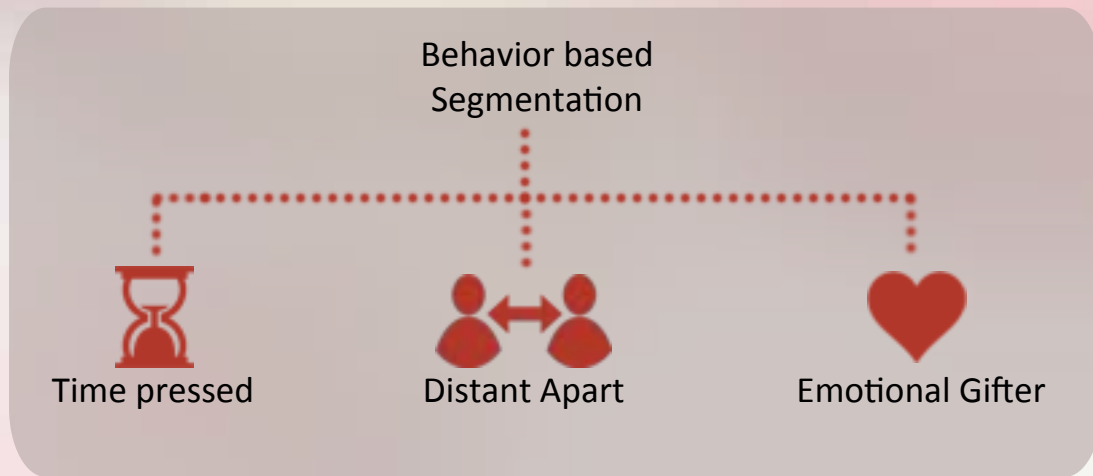
Mailing Services

# Gift'emotions : Gifting Experience

## 5 Redefining Design Brief

The design brief was redefined and the problem statement was formulated.

## 6 Potential User Group



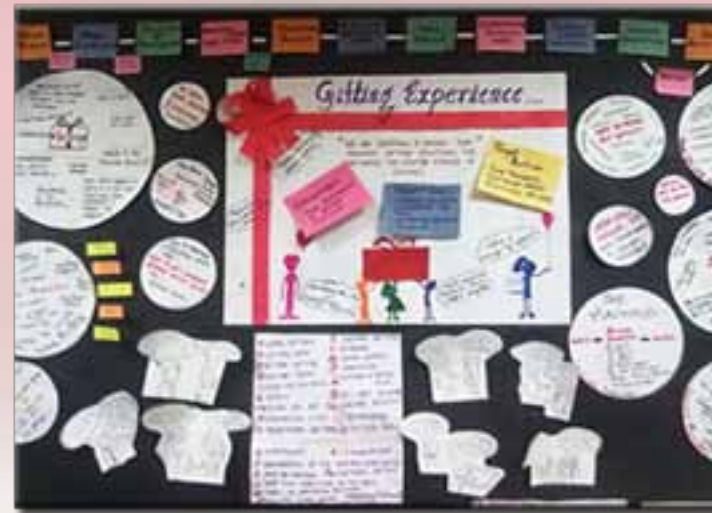
## 7 Persona and Scenarios



Lover Boy : Abhinav  
 Age : 25 years  
 Software Engineer

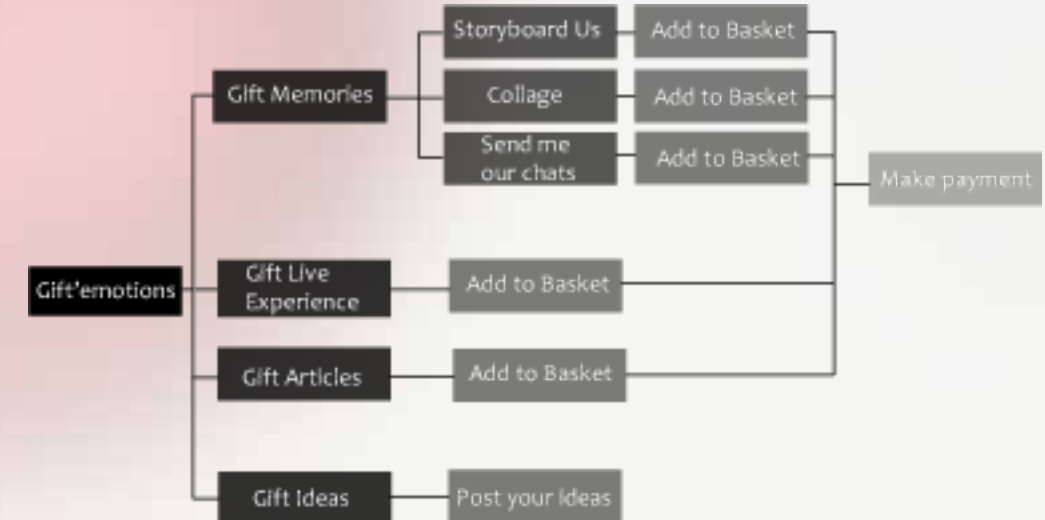


## 8 Ideation



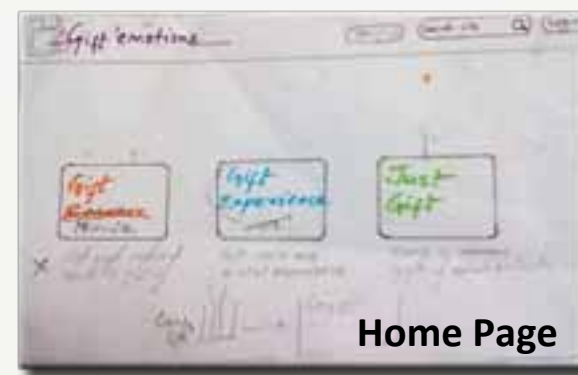
Brainstorming and Concept Generation

## 9 Implementation



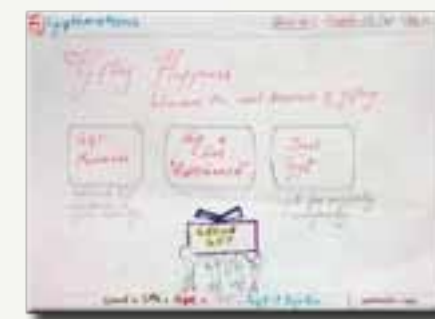
Information Architecture

## 10 Paper Prototypes and User Testing



Home Page

First Paper Prototype



Home Page



Gift Memories Page



StoryBoarding Page

Second Paper Prototype





## 11 Final Concept and Design



Home Page



Gift Memories Page



StoryBoarding Page



Gift Experience Page



Gift Articles Page

# IIT Kanpur Website Redesign

Web Design  
Web Content Design  
Information Architecture

The design of information space should be intuitive and consistent such that it allows non technical users to update the website whenever needed and should be easy to access for the intended user.



## Process Followed



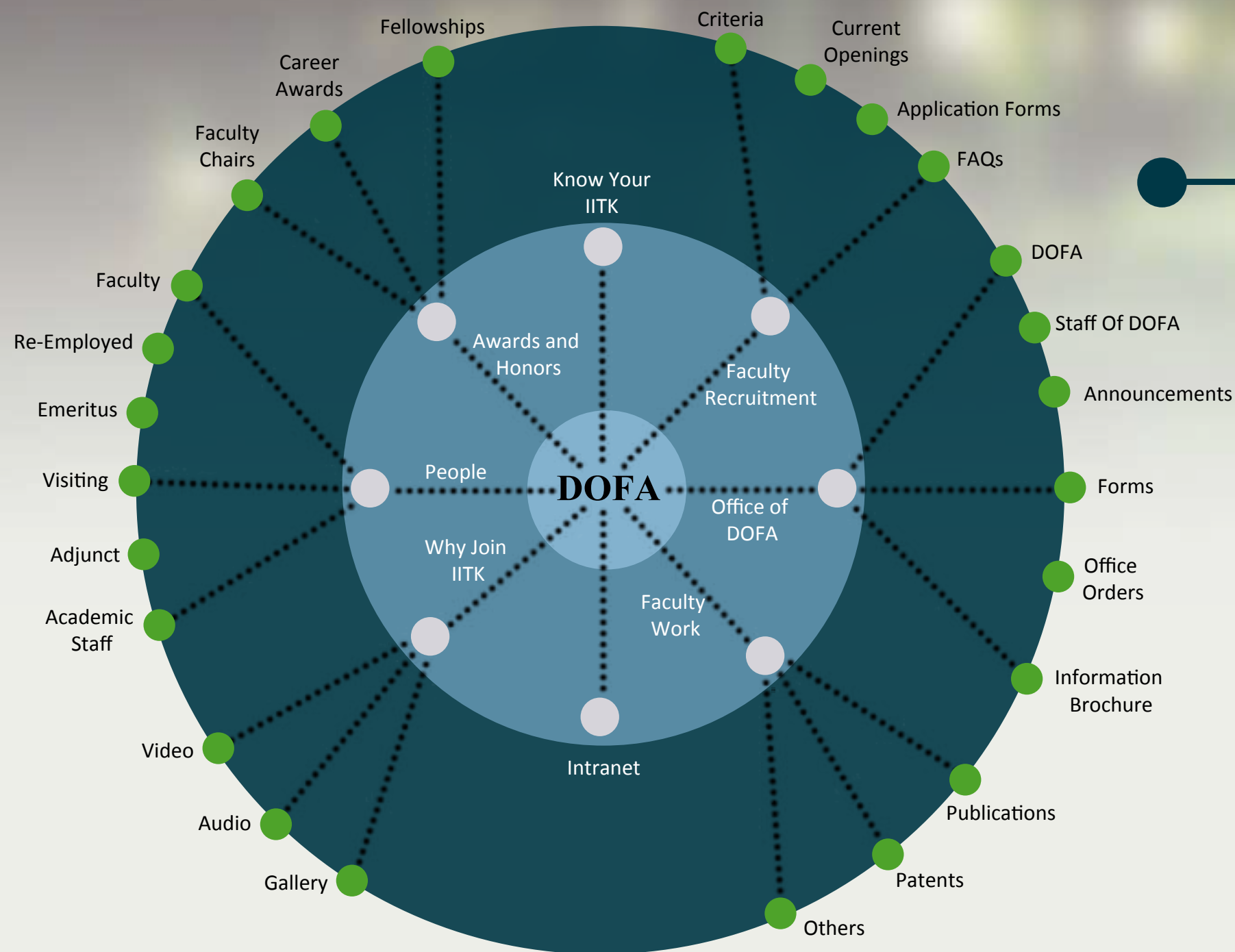
Individual Work • Internship Project

# IIT Kanpur Website Redesign



Web Design  
Web Content Design  
Information Architecture

## Final Information Architecture of DOFA (Dean of Faculty Affairs)



The new architecture is made by keeping the university web standards and requirements into consideration. The new design is more *intuitive, structured and usable*.





This movie was made to promote tourism. It is basically meant for students coming to institute through foreign exchange program. This movie is present in the 'International Relations' Sub Webpage of IITK website.



Tools Used :



Link : [http://www.iitk.ac.in/oir/index.php?option=com\\_content&view=category&layout=blog&id=93&Itemid=86](http://www.iitk.ac.in/oir/index.php?option=com_content&view=category&layout=blog&id=93&Itemid=86)



# Future of Email - Ozchi 24 hrs Design Challenge



Interaction Design  
UI/UX

**The Challenge** - To design the 'future of the email' as part of OZCHI24, an annual international student design challenge.

## Process -



- Literature Review** to study **State of Art** and **Brainstorming Session**
- Analysis** of findings and jotting down points
- User Study**, Developing **Personas** and **Scenarios**
- Ideation** and **Conceptualisation**: Building concepts, vision and refinements
- Rapid illustration/prototyping** of the concepts and proposal of a model
- Final Design**



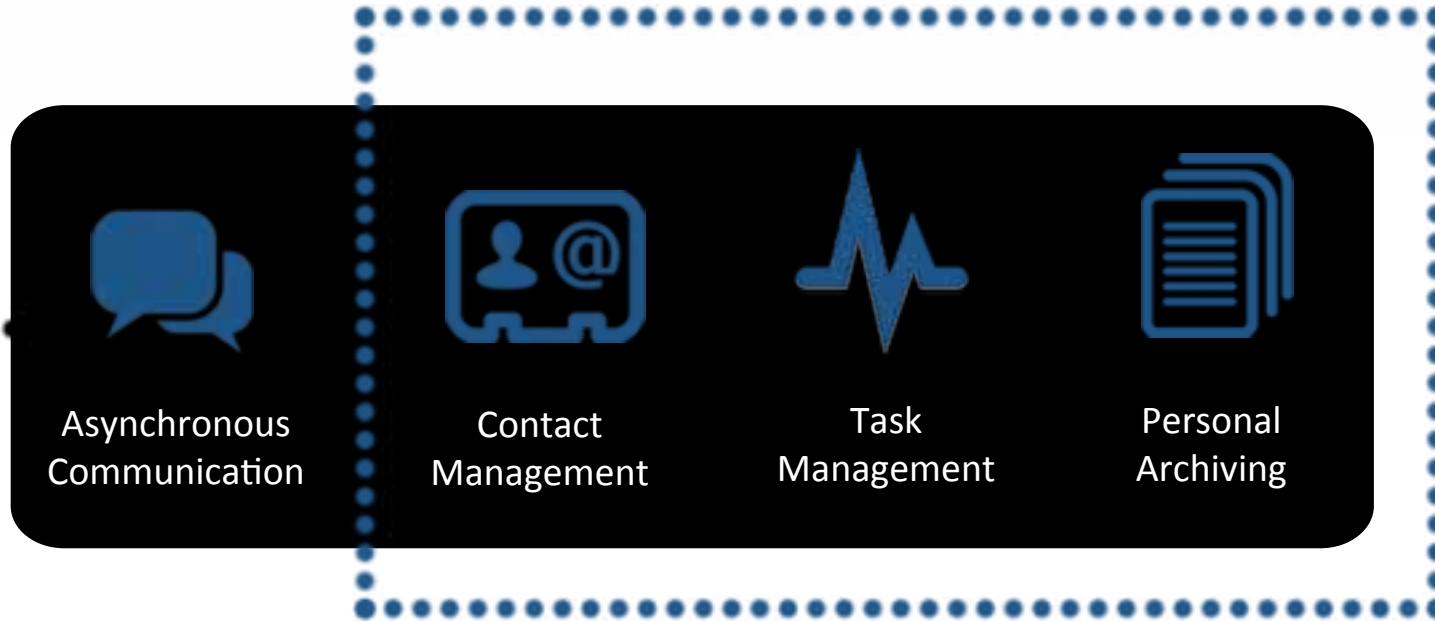
## Evolution of Email System



Tool of **Communication**



Tool of **Data Management**



**Personal Information Management**





“Chatting, sending and receiving files”

“Accidental loss of important information”

“An integral part of daily life”

“SPAM is a nuisance”

“Ecosystem of Service”

**User Findings**

“Interface should be easy”

“Archives some old messages for longer duration”

Analysis

## Problems With Current System

1. Cluttered Information
2. Spamming
3. Lack of Customization
4. Personal Archiving
5. Filing problems
6. Cognitive Overload
7. Missing Important Information

## Final Proposed Concept

The final design basically deals with the issue of information and data management across email services.

High priority mail ids always at top irrespective of received time as compared to other mails and marked 'yellow' **7**

**6** Tagged important dates shown at the top to remind

**5** All files, links, drafts, contact no exchanged with a contact is saved at one place in chronological order

**1** 'Man Mapping' to manage the inbox

**2** Set the email ids as 'High Priority' or 'Others'

**3** Every message exchanged with a contact is stored at one place in form of threads

**4** Tag important dates in the calendar

# Pizza Takkar : Board Game Design



'Pizza Takkar' is an inquisitive game that can be played by 1-4 players. It's a game that enhances the strategic and logical thinking of kids. The board is designed in the shape of a pizza to make it appealing to kids.

## Design Inspiration :



The design idea came from a class group activity where we were asked to play 'chinese checkers' by forming two groups and standing one by one facing each other.

## Concept :

The game is based on the 'leap frog' concept. There are three variations of the game possible on the same board. The toppings are placed on their respective positions on the board initially.

### First Concept



**Players:** 2-4

**Aim:** Move all your toppings to your opposite side.

**Winner:** Invade opponent's side first.

### Second Concept



**Players:** 1-4

**Aim:** Eliminate all your opponent's toppings.

**Winner:** Retain maximum number of toppings.

### Third concept



**Players:** 2-4

**Aim:** Vacate your home either by elimination or moving to opponent's slice.

**Winner:** Vacate first.



"Pizza Takkar" Board Game

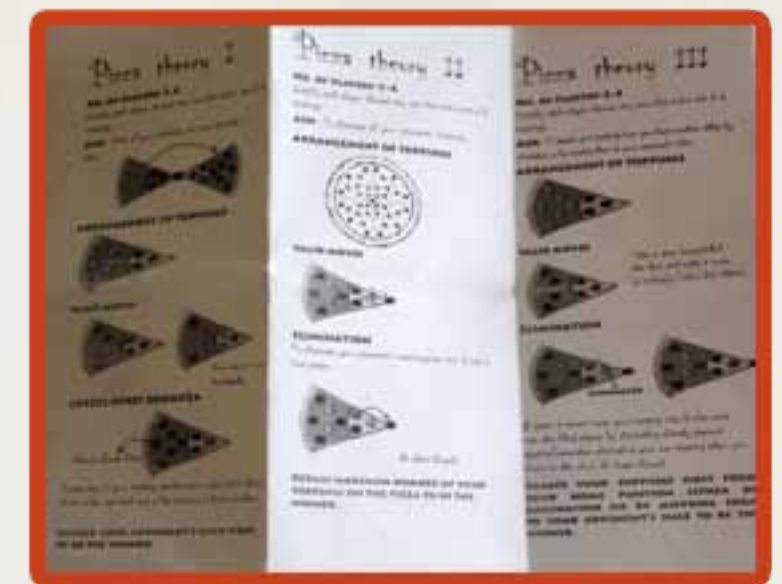


Board and Game Coins



Game Packaging

The complete package contains a Board, a die, 4 different set of coins 6 in each, an instruction manual and dice rules.



Instruction Manual

It includes graphics of the moves and set of rules for playing 3 different variations



As a part of Typography Workshop conducted in IITK by Dr. Udaya Kumar, we learnt basics and different aspects of typography.

Expressive Typography :

SLOPE

SNK

DIVIDE

<sup>c</sup> O<sup>n</sup> F U<sup>s</sup> E d

To visualise a brand name and design a type logo for the brand for its different domain functions. My Brand name is : **AMIGO - Friend in Need**

*Amigo*

**Automobile** : Speed  
Motion  
Dynamics

Amigo

**Circus** : It says all about the  
fun, entertainment  
and Excitement in  
circus

AMIGO

**Construction** : It represents geometric  
shape, strength, stability  
and balanced structure

*Amigo*

**Flower Shop** : Fragile, Fresh,  
elegant, curls





# Explorations : Storyboarding and Scenario Building



Visual Design  
Graphic Design

Stop "Sex Selective Abortion"



Scenario Building for a mobile app

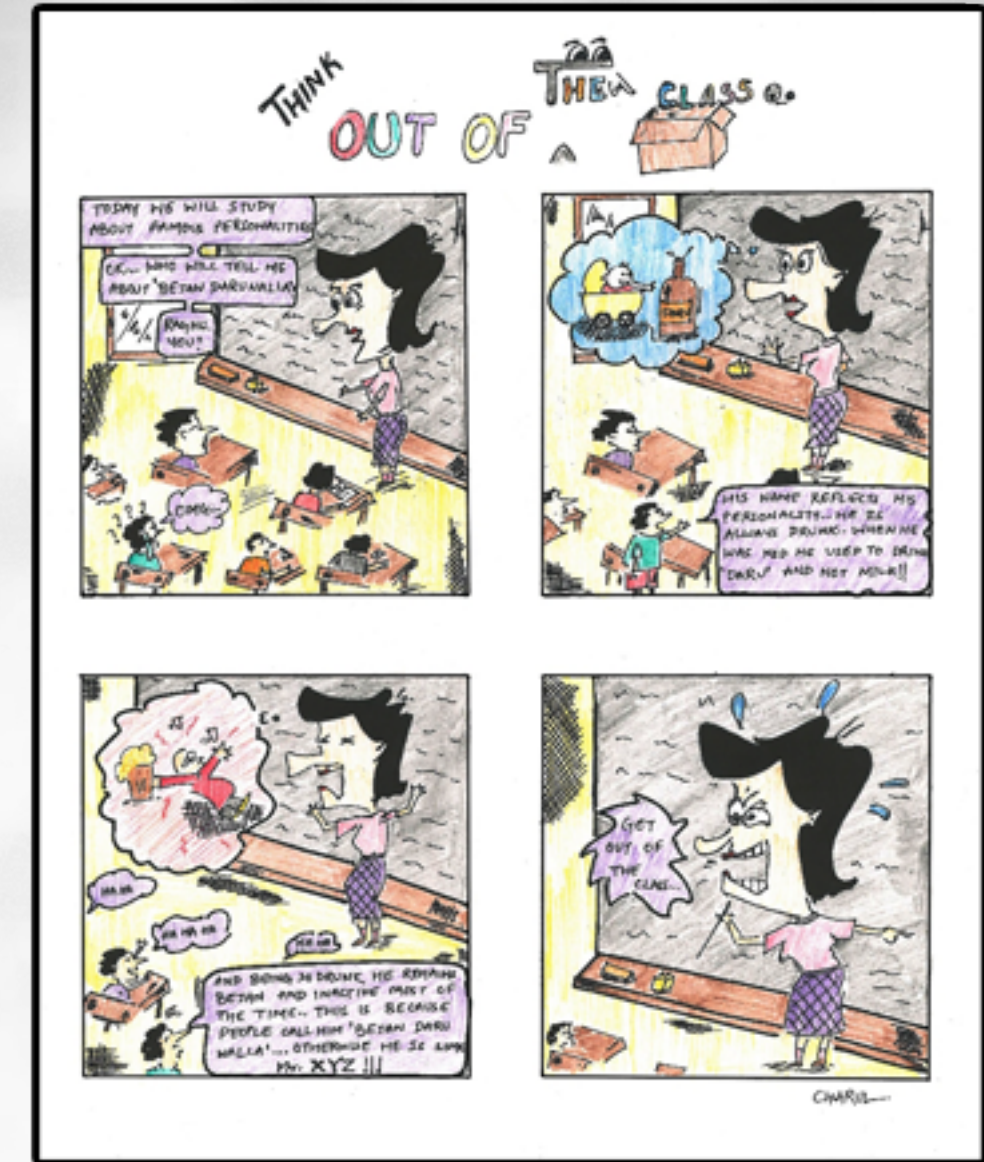


Individual Work



Visual Explorations

Scenario Building for a mobile app



A little humor !!!

# Explorations : Logo and Icon Design



Visual Design  
Graphic Design



'Dark Rush' - An android Mobile App



'Dark Rush' - An android Mobile App



'Yogaasan' - An android Mobile App



RuTAG Logo



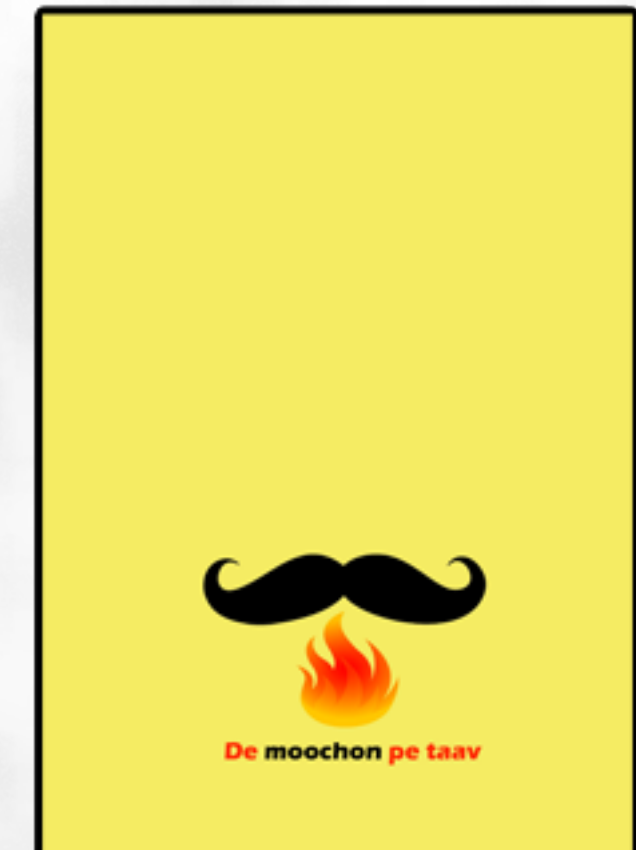
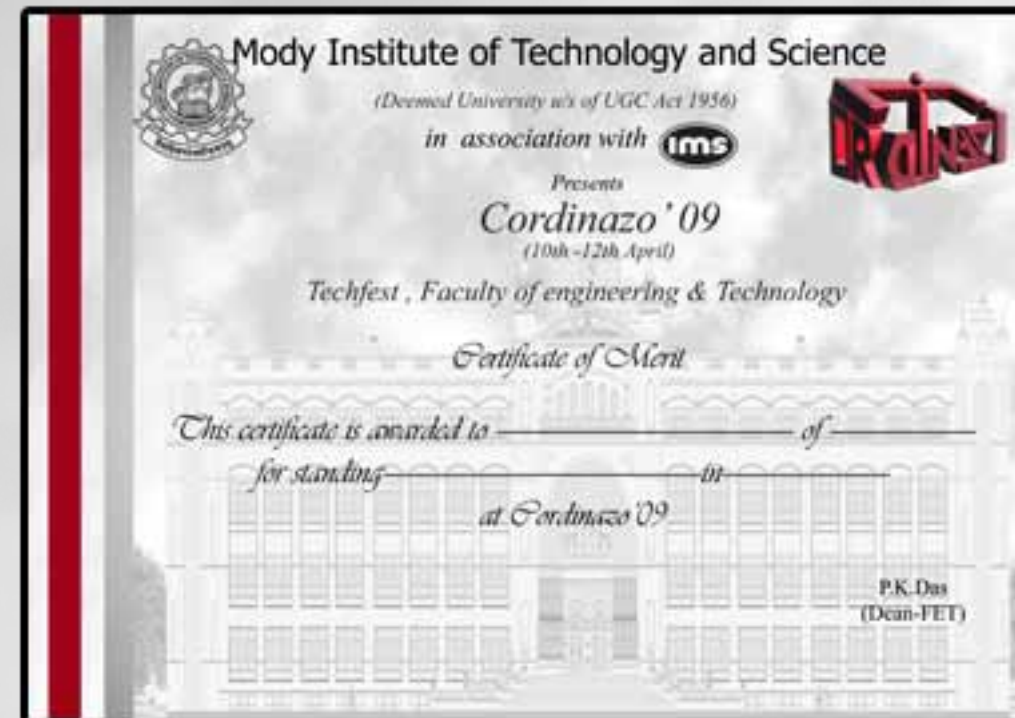
RuTAG Typographic Logo



# Explorations : Posters and Certificate Design



Visual Design  
Graphic Design



Individual  
Work

Visual  
Explorations

# Economic Air Cooler



Designing an economic air cooler for '**people living in rural areas of India**' and making it available to them at least possible price keeping in mind the 'customer comfort'.

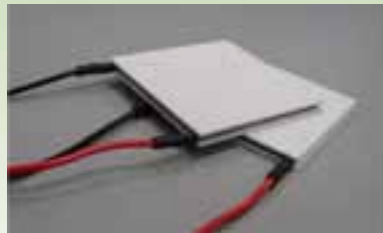
## Shades, Reflective Surfaces

Low Priced but inefficient cooling



## Thermoelectric Cooling

Very Expensive  
Poor Power Efficiency



## Whole House Fans

Sufficient ventilation needed  
Hums while running  
Fan brings dust, dirt indoor



**Benchmarking  
(Studying Existing  
Cooling Solutions)**

## Air Conditioners

Most Efficient  
Most Expensive



## Evaporative Air coolers

Efficient Cooling  
High Cost  
Expensive material used



## Solar Coolers

Expensive and huge setup  
Slow Process  
Ineffective in cloudy days



India has Rs. **94,000** crores worth COOLER industry



As of Mar'2011, **70%** of Indian Population lives in RURAL areas of country

## User Survey Findings :

"They are using **locally available materials** like husk, jute bags, cinder walls , etc to keep their places cool"

"People do not own coolers because of **low affordability**"

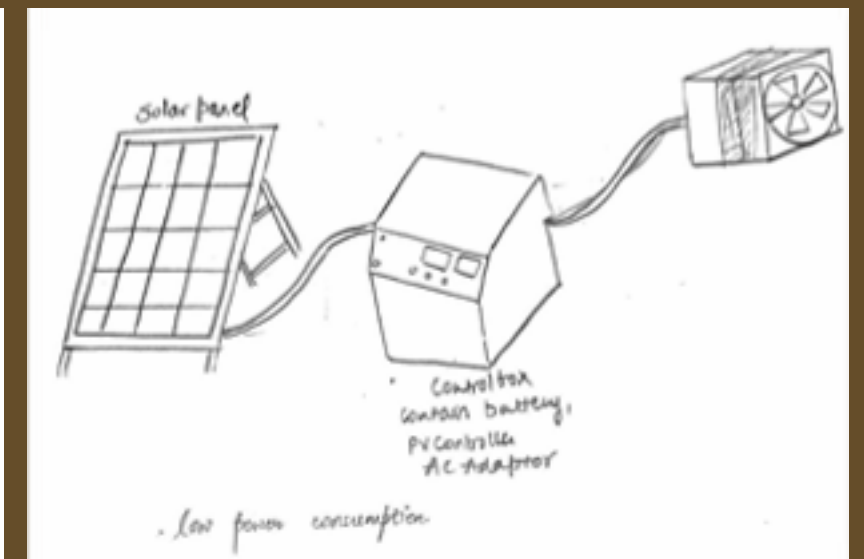
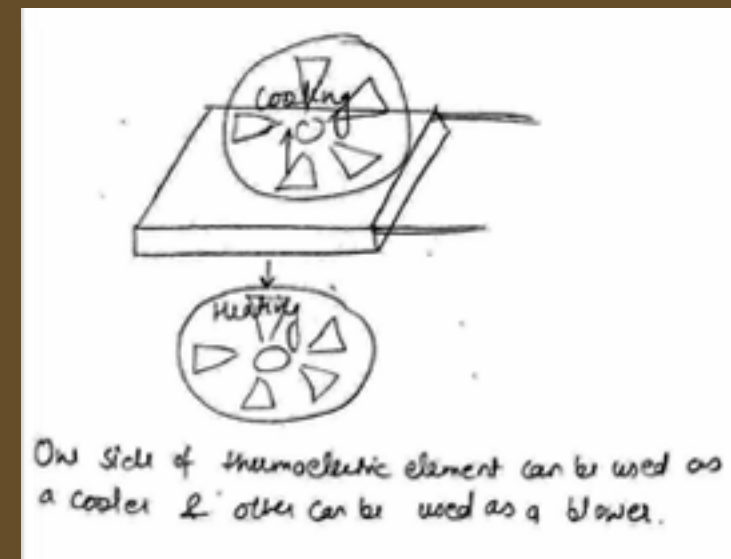
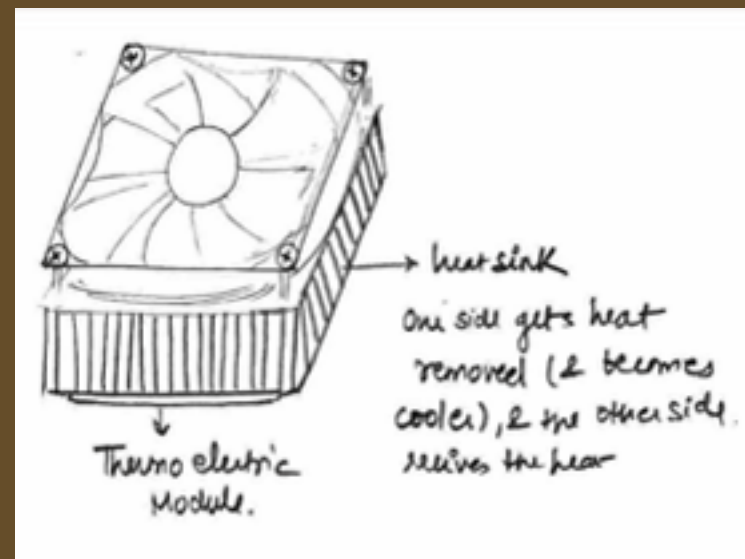
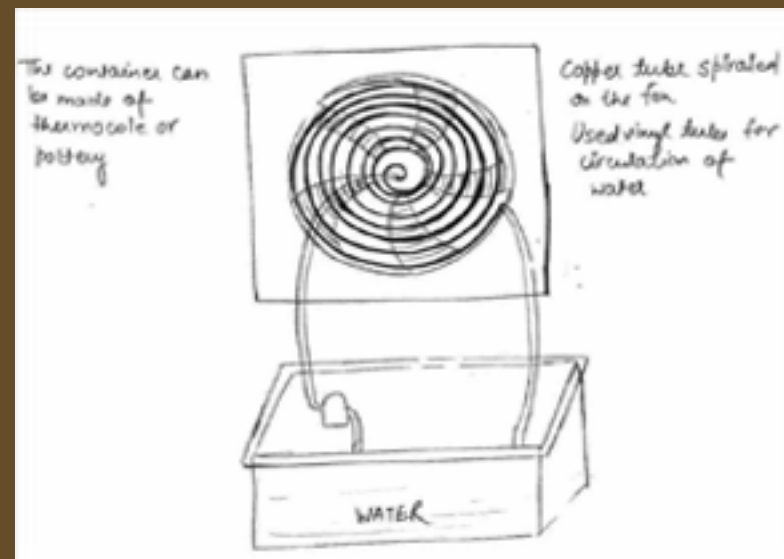
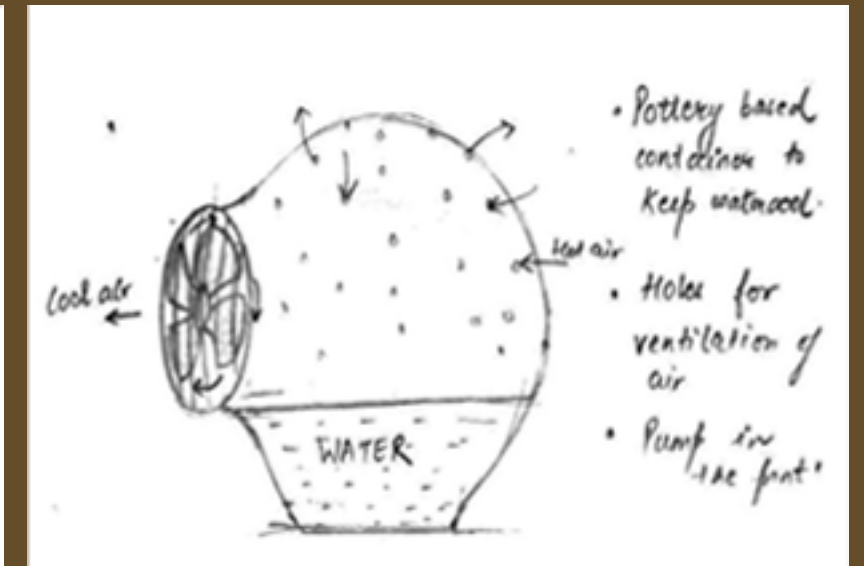
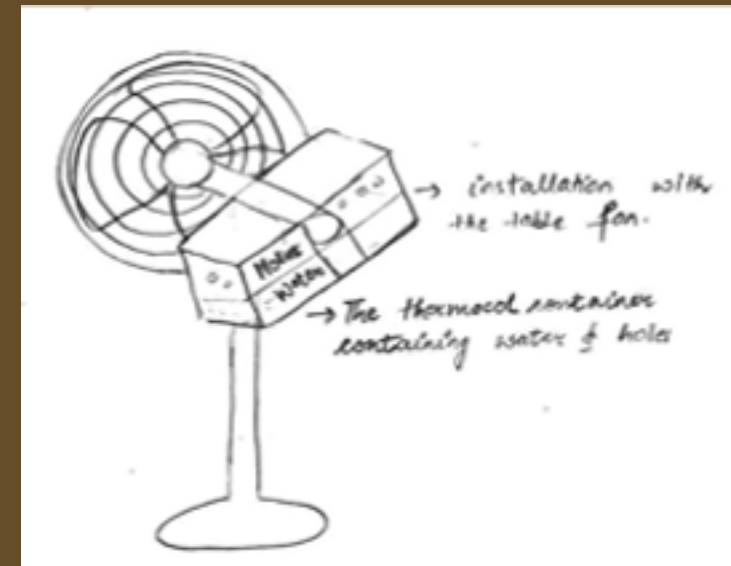
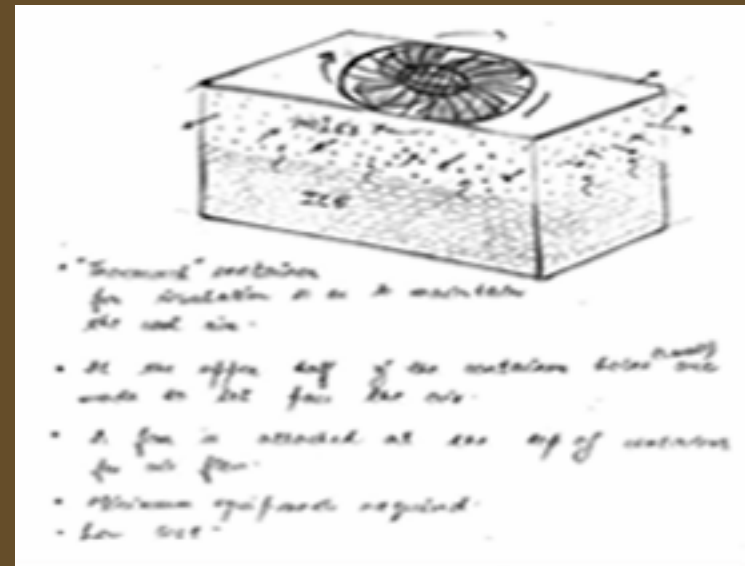
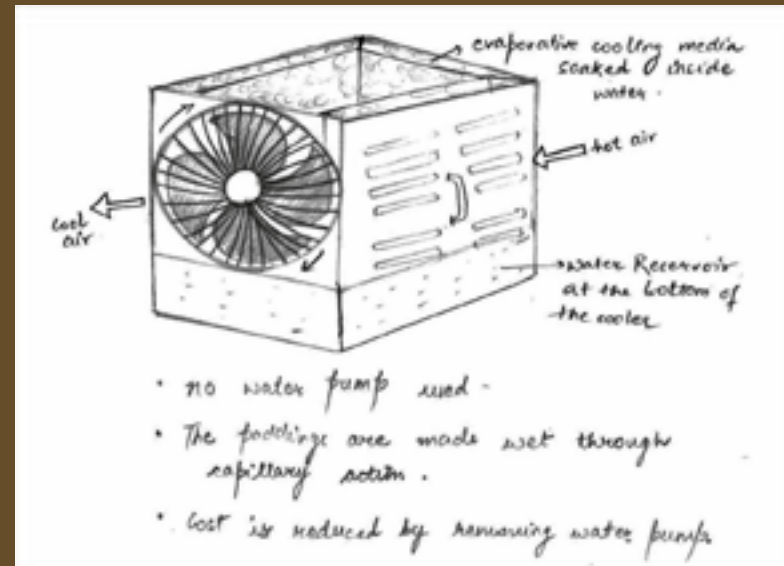
"People use **table fans/ ceiling fans** even in scorching summers"

"Some have a single cooler in a family of ten and **sleep in single room**"





## Concept Sketches :



The benchmark for our product comes out to be cost efficiency, power efficiency, easy assembly, reusability and resources availability. The final concept selected was based on the method of **“Evaporative Air Cooling”** as it is the best and cheapest technology available till date. It is well suited for people living in rural areas because of its low cost technology and flexibility to experiment with different materials.



# Economic Air Cooler



Product Design

## Iterative Prototyping :

1



The lower and above water reservoirs made up of pottery

Support of upper and lower part with the help of bamboo

Sliding side frames using jute and bamboo sticks

Less expensive but Use of so much materials and different components made system **heavy and complex** and **low durability.**

2



Clay based pottery as body of cooler

Fan at the opening

Holes at one end of pot and water at another

Cost effective but **low strength and stability, Less portability, Inefficient Cooling**

No water pump needed  
Hot air enters through holes and gets moisture from pot surface

## Final Design :



Lid provided to fill water and change husk pads. Pipe to keep pads wet is placed at the upper part



The water reservoir can be made of pottery for more efficient cooling

The water reservoir can be replaced by a pit dug in the mud ground and then mounting the complete structure over it.

Modified the conventional square structure to semi cylindrical as it requires less living space, easy to change husk pads and uses its complete surface area for cooling



Husk and bamboo as manufacturing materials

The final solution is based on **Evaporative Cooling** technique. Cost of the system is reduced by using bamboo, husk and pottery as manufacturing materials. These are readily available in rural areas free of cost. The system is **modular and can be assembled locally as well.**



