

Course: COMP1649

Interaction Design

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1. Introduction:

Interaction design subject's assignment has four parts such as, part-1: discuss the key issue in cognitive psychology and how theses feed into development prototype., Part-2: investigate current issue in tablet and mobile design and explain main result into final design.,Part-3:fully justify design principals and methods used and Part-4: create and evaluate a high level prototype using software . In this assignment I have make up prototype for institution local service. This name is **Budio scaling user interface**. This will be all the information in institution. By the game the new staff had known all the information in the institution. This assignment I have applied knowledge of **different interaction design to solve** the problem described in the assignment situation. I had to go through different researches from web sites to several books for the achievement in this assignment. I have tried my best to fulfill all the requirement of the assignment.

2. Identifying problem space:

This is main part of the **scenario in this application**. Here I have describing application with different types **of terminology; problem, assumption, etc. also described** who the user and what type of technology will be used.

2.1 Defining the terminology:

Defining key point of scenario is referred as terminology. This is for personalized game based application. Firstly we need to **identify what the most important content of the scenario**. All the key point below-:

- Game place
- User/staff
- Type of application
- Personalization
- prototype fidelity Highly
- Smartphone
- Recommendation

Here I have described all the key points including this:

Game place:

Game place is an institution where the new staff joined their job then the staff will play game for known local service and area. The game will help them know much information about institution.

User/staff:

The user uses an application for **gaining information purpose**. For making this application the user and developer are benefited for keep information.

Type of application:

The application is one type of program that is developed to make a many user of action. There are many **kind of application such as-desktop based application, mobile apps, wed based application, gaming application, calculating application, multimedia** application and providing information application etc.

Personalization:

Personalization is one part of the required task of this program. ***Personalization is the perform of dynamically*** and that different from one to one.

Prototype fidelity highly:

Here my application to design a ***high fidelity prototype for a personalization game***. Which it is used by many staff. High fidelity prototype means the prototype design is not the final application but it is similar to final product. It is user friendly.

Smartphone:

We know Smartphone is a portable wireless device. There are many kind of service provide this Smartphone. ***Such as-touch screen, making calls, multimedia message, text message, web browsing, camera, music and video player, game playing etc.***

Recommendation:

Reformation means one type of ***proposal and suggestion***. Which it can be complete by authorize person.

2.2 Clarifying the assumptions & claims:

This Application for making we need some assumptions. If we use this assumption than this application will be successful and more **good-looking.the assumption are below-**

- User/staff
- Game
- Device platform
- Operating system platform
- personalization

Here I have describing all assumptions such as:

User/staff:

This application for new user. It is game based application. Which provide much information about institution? when a new staff come from other place than the staff don't know how the system running in this institution .than the staff will be playing game and then they **known all the information about institution by the playing game.**

Game:

The game it is very important for staff because the **staff know all information about institution** by the game. The games will help solving many problems.

Device platform:

Now days the **Smartphone is very popular in our country** rather than desktop. It is user friendly so that I have to choose the Smartphone for this prototype.

Operating system platform:

In the present situation very popular is **android rather than blackberry**, ios etc. so that I have to choose android for this prototype.

Personalization:

The prototype must be personalize because there must be will many option like-setting option, change color option, sound option's have to choice all this option for this prototype.

2.3 Defining the problem domain:

This application problem domain is the game must be ***personalizing based application***. And the staff needs any information ***than they will be playing game***. Without playing game the staff doesn't gather any information ***from instruction because the application requires this***. So that the application prototype will be design consider that requirement. So it is very difficult for grating knowledge of new user.

3. How will cognitive psychology affect the user?

3.1 Cognition:

Cognition has to do with how human beings understand the world as well as acts in it. It is the put of mental abilities or processes to be **part of virtually each human action** at the same time as we are wakeful. Cognitive abilities are brain-based skills we require to take out any task from the simplest to the most difficult. They have added to do with the mechanisms of how we **learn, problem-solve, remember, and pay attention, rather than with some actual knowledge.** For example, answering the telephone involves **perception (hearing the ring tone), motor skill (lifting the receiver), social skills (interpreting tone of voice and interacting properly with another human being), decision taking (answering or not), language skills (talking and understanding language).** Cognitive abilities or skills are support by explicit neuronal networks. For example memory skills rely mostly on parts of the temporal lobes as well as parts of the frontal lobes (**behind the forehead**).we will also come across brain teasers that will help us implement the cognitive abilities describe.

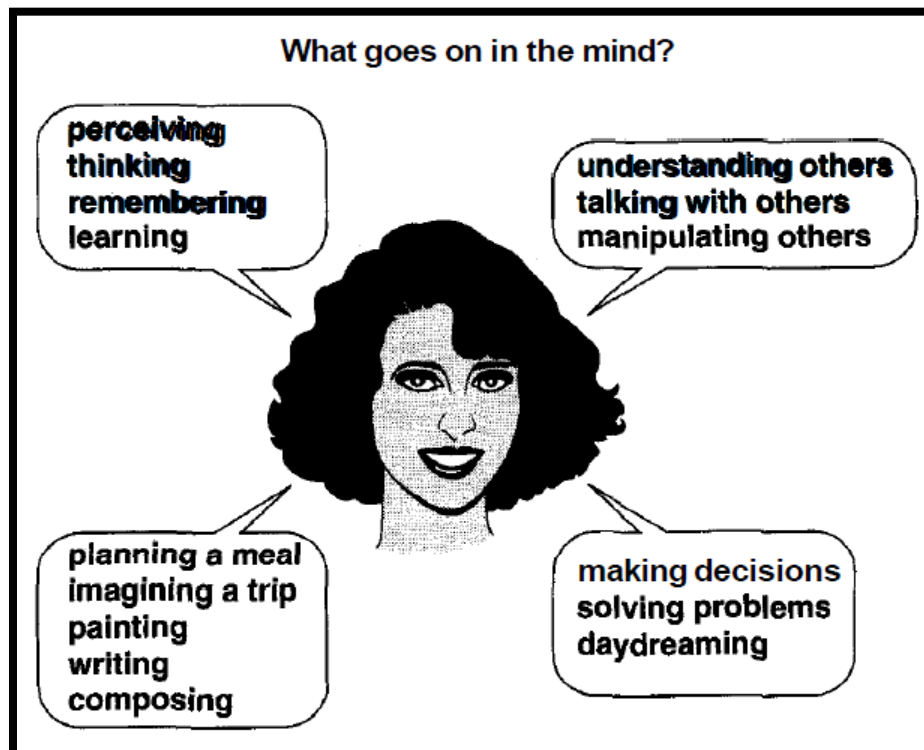


Figure 1-picture of what goes on the mind

3.2 Cognitive psychology:

Cognitive psychology offers the academic foundation. It attempts to give explanation how human beings achieve the goals they set. Such goal-oriented action is comprised of performing arts cognitive undertaking that **involve processing information.** it is additional familiarly connected to the design of computers than to that of established technology, like automobiles as well as home appliances. There are a number of reasons. **First of all a new information technology is so flexible to functions modify with confusing frequency.** It's still take away feasible to count on the actuality of knowledgeable operator's .different typewriters and automobiles, it seems improbable that information technology of the future will wait the equal extended sufficient for public school training to prepare people for all-time careers based on their use. Therefore easy learning or self-evident operations are serious. Second, and regularly vital, the tasks for which computers are the tools are usually ones in which the human's thinking processes themselves are being aided. The, **maturation of computer applications** is charming us still beyond in this way. The first jobs for computers concerned schedule in order tasks like bookkeeping, in which mechanical actions once done by humans could just be understood by machines. Computers more and more are used to support dynamic interactive tasks, like text **editing and financial simulation**, in which the user's brain is an vital and active factor of the total system. Designing tools for this kind of activity is an closely cognitive - psychological activity. Its achievement can no longer be viewed as that of first designing a machine to do impressive, after that designing the gearshift by which the worker guides the machine.



Figure 2-picture of perspective in psychology

Applying Cognitive Psychology to User-interaction Design:

Interaction design is disturbed with **designing interactive products** to carry people in their daily and working lives. Interaction design is at the present big company: several companies want it but don't identify how to do it. Interaction design is multidisciplinary, connecting a lot of inputs from **wide-reaching disciplines** and fields. **Optimizing the interaction connecting** users and interactive products requires captivating into explanation a number of mutually dependent factors, including background of use, task type, and kind of user. Interactive products necessitate to be designed to game usability goals like ease of use and learning.

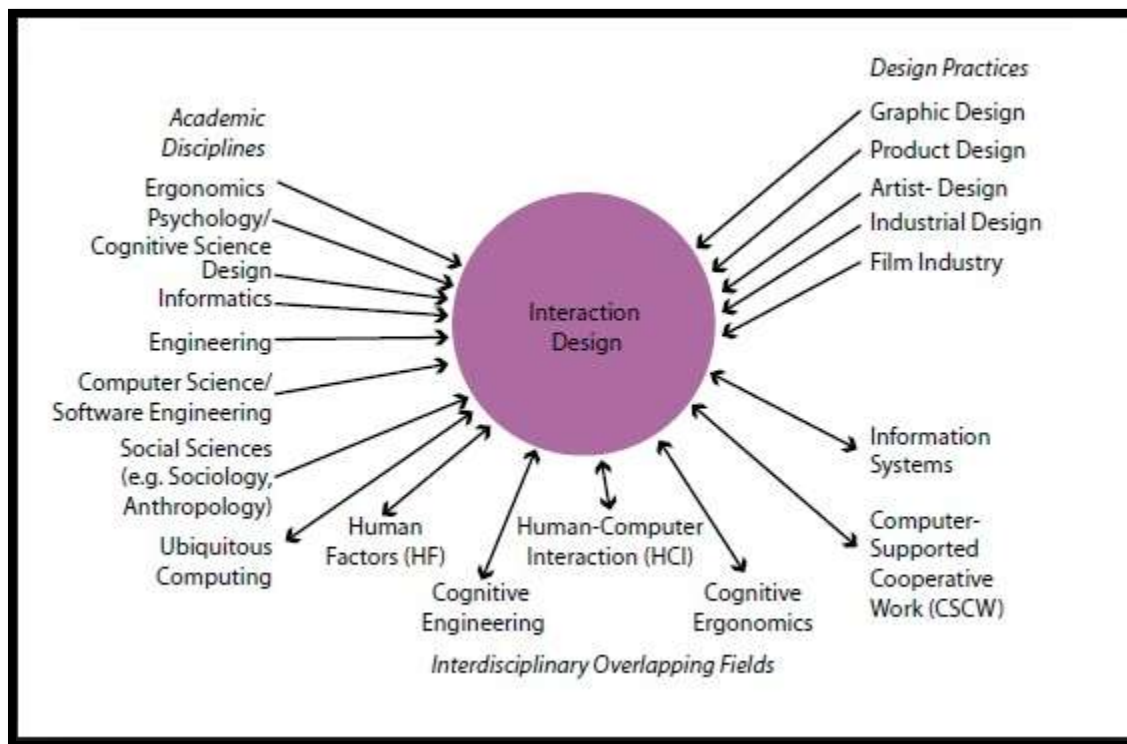


Figure 3- picture of interaction design

Day by day our **information technology is developed deeply**. Nearly all of the system are digital. For that every people have to managed their worked by own way. Including the people managed their digital application by own hand. So that the developer need to the fear about thinking of the user. Their thinking ability will be like a cognitive psychologist. For the reason if they not capable to create attention of the user than their application might be failed. In this

application **most important part is design**. If the part can draw user than the application might be professed by the user.



Figure 4-picture of Applying cognitive psychology process

3.4 Cognitive processes

The definition of cognitive processes is the ***presentation of a cognitive activity*** and faction that affects the mental contents of a person like the process of thinking or the cognitive operation of ***remembering something***.

The cognitive psychology followed some process. Including this:

- Attention
- perception and recognition
- memory
- learning
- reading, speaking and listing
- problem-solving, planning, reasoning and decision making

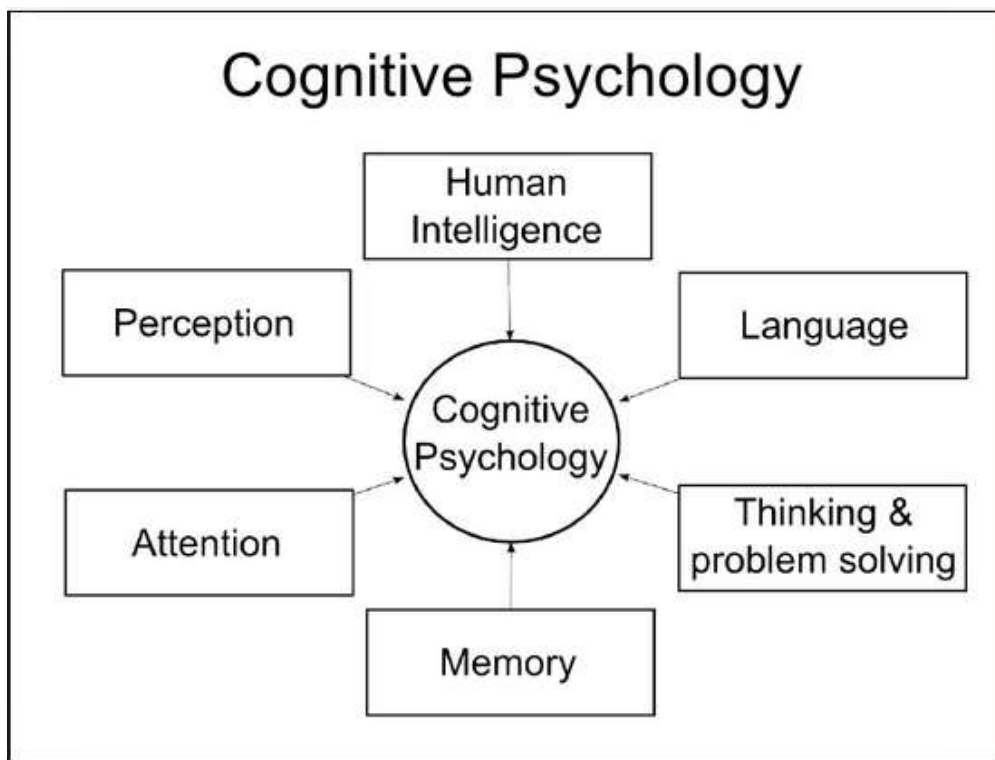


Figure 5- picture of cognitive psychology

here now discuss all the process and what the process work, Applying to introduction design, better introduction design for guideline as well as seniors based guideline. All the process including this:

Attention:

- The psychological definition of attention is "A state of ***focused alertness on a subset of the accessible perceptual information***".
- select things to focus on at a point in time from the collection of stimuli about us
- Involves audio and visual senses ***Focused as well as separated attention enables us to be careful in provisos of the collection of challenging stimuli although limits our ability*** to remain follow of all actions
- Allows us to focus on information that is appropriate to what we are responsibility
- Information at the interface must be planned to capture users attention
- Example: use perceptual boundaries (windows), sound ,color reverse video and flashing lights

The key function of attention is to separate between irrelevant data and filter it out, enabling the preferred data to be ***distributed to the extra mental processes***. The human brain can, at times, simultaneously receive inputs in the form of ***auditory, visual, taste, olfactory, and tactile information***. With no the ability to filter out a number of or mainly of that simultaneous information and focus on one or usually two at the majority, the brain would turn into overloaded as a person attempted to process that information.

Attention can be divided into two major attention systems. Such as:

- ***exogenous control*** and
- ***endogenous control***

Exogenous control:

- ***Exogenous control works*** from bottom-up
- and is responsible for ***alertness, orienting reflex, arousal, spotlight*** attention
- and pop-out effects

Endogenous control:

- ***Endogenous control*** works top-down
- and is the more deliberate attention system,
- responsible for selective ***attention, divided attention, local and global attention,***
- as well as conscious processing

Attention tends to be either visual or auditory. **One main important point involving to attention** inside the sports ground of cognitive psychology is the thought of divided attention. A number of early studies dealt with the ability of a person trying headphones to divide important conversation when accessible with different messages into every ear this is known as the dichotic listening task.

Key result concerned an enlarged understanding of the mind's ability to both focus on one message, while unmoving being rather aware of information being taken in from the ear not being knowingly attended to.

Example, participants (wearing earphones) may possibly be told to they will be hearing divide messages in every ear as well as that they are expected to attend only to information connected to basketball.

When the testing starts, the message about basketball will be obtainable to the left ear and non-relevant information will be accessible to the right ear. At some point the message linked to basketball will button to the right ear and the non-relevant information to the left ear. When this happens, the listener is typically intelligent to do again the complete message at the end, having attended to the left or right ear only when it was suitable. The capability to attend to one discussion in the face of a lot of is known as the cocktail party effect.

Further main findings include that participants can't understand both passages, when following one passage, they can't description contented of the unattended message, they can shadow a message improved if the pitch in each ear are different. **Though, while deep giving out doesn't happen, untimely sensory dispensation does.** Subjects did notice if the playing field of the unattended message distorted or if it cease in total, as well as a number of constant leaning to the unattended message if their name was mention.

Perception and recognition:

Perception involves both the physical senses (sight, smell, taste, touch and hearing) as well as the cognitive processes involved in interpreting those senses. **Basically, it is how people come up to recognize the world just about them through explanation of stimuli.** Present perspectives on insight within cognitive psychology are likely to focus on exacting ways in which the human mind interprets stimuli from the senses and how these interpretation influence activities.

Example

The way in which present psychologists approach the study of perception is the look into being complete at the ***midpoint for Ecological Study of Perception and Action***. One study at institution concerns behavior in which individuals identify their physical environment and how that influences their direction-finding during that environment.

Memory:

- **Involves initial programming** and then retrieving knowledge
- We know effects a lot improved than human being able to remind effects
- **We don't memorize the whole thing involves processing** and filtering what is attended to
- Framework is vital in affecting our memory. example: when, where

There are two main types of memory. Such as: short-term memory and long-term memory. However, short-term memory has become better understood to be working memory. **Cognitive psychologists normally study memory in conditions of working memory.** Here discuss about working memory. Including this:

Working memory:

- Although working memory is **frequently thinking of as just short-term memory**
- it is more obviously define as the ability to keep in mind information in the face of interruption
- The prominently identified ability of memory of 7 plus or minus 2 is a combination of both memory in working memory as well as long term memory.

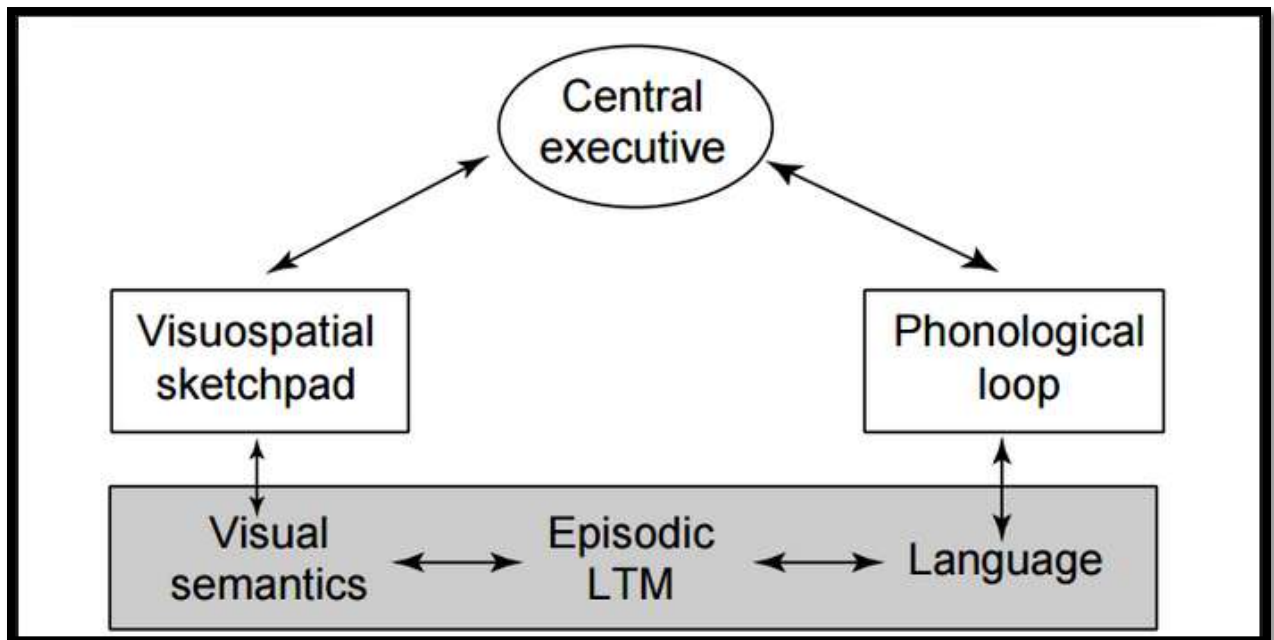


Figure 6- picture of working memory

The game Model of Working Memory

- ***Various models of working memory*** have been complete
- It takes into account both auditory stimuli and visual, long-term memory to use as a mention, as well as a middle processor to mix and recognize it every one.
- A ***big part of memory is forgetting, as well as there is a big contest between*** psychologists of fester theory versus interference theory.

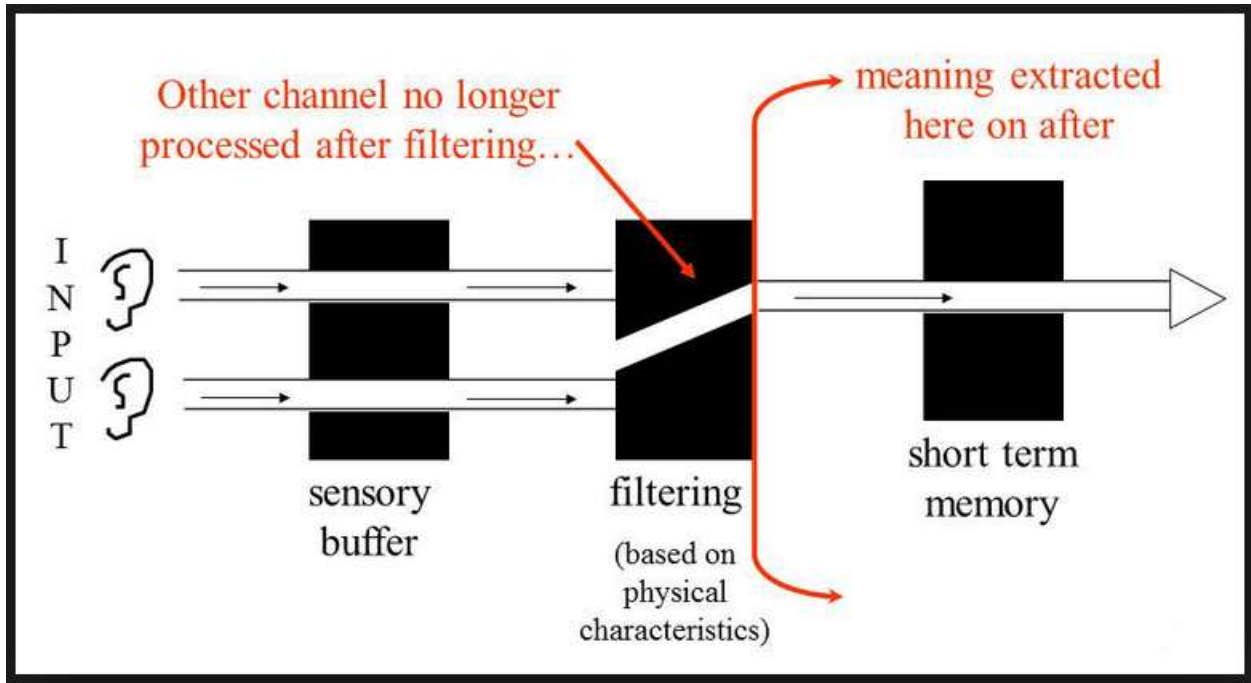


Figure 7- picture of working memory for game

Long-term memory:

Present conceptions of memory are **typically regarding long-term memory** and break it down into three main sub-classes. These three classes are rather hierarchical in nature. Such as:

- Procedural memory
- Semantic memory
- Episodic memory

Here I have to discuss about all the three main sub class memory. Including this:

Procedural memory:

- technical memory is **memory for the presentation of exacting types** of act
- It is repeatedly activate on an intuitive stage and at mainly requires a minimal quantity of mindful attempt.
- It is also stimulus-response-type information, which is activating throughout connection with **exacting everyday jobs, routines, etc**
- A person is use technical knowledge while they apparently "automatically" take action in an exacting way to an exacting condition or process.

Semantic memory:

- Semantic memory is the encyclopedic knowledge with the intention of a human being possesses
- way in of semantic memory range from to some extent to extremely **effortful, depending on a number of variables including** other than not imperfect to regency of encoding of the information
- Number of relations it has to extra information, frequency of access, and levels of import

Episodic memory:

- Episodic memory is the memory of **autobiographical actions to can be clearly confirmed**
- **It contains all recollections that are sequential** in nature
- It is naturally requires the earnest stage of mindful thinking, as it frequently pulls jointly sequential information and semantic memory to formulate the whole memory.

Learning:

We know that learning means **long term process**. It passes on mental represent and association owing to understanding. It is the function based on how a person process and reasons information. It revolves about a lot of factors such as, **memory retention, problem-solving skills, thinking skills and the perception** of learned material Cognitive learning happens equally consciously and unconsciously, sense information is acquired and processed at all times. Those are different after conscious learning occurs a few people are visually cognitive. Although others learn greatest from investigation the information.

Example:

This is study a **video lesson on how to use a tool**, because different to analysis the instruction manual. Used for persons with challenge in learning. Changes in how in sequence is usual can enhance maintenance.

There are many type of ***learning strategies***. Such as:

- visual
- kinesthetic
- auditory
- solitary
- social
- logical and verbal

Every human being prefers a positive learning method to help him know his study. Here I have discussed some learning strategies.

Visual:

It method entail the utilize of charts, graphs and pictures. A human being can keep in mind and recognize things simply by this policy.

Kinesthetic:

This learning policy involve the make use of a practical move toward to study latest material.

Auditory:

Entail the make use of of sound and music to help in memorize things.

Solitary:

a human being prefer individual by yourself, because they come across that's the most excellent method to recognize their study.

Social:

Students who favor living being in the company of others.

Reading, speaking, listening:

Language process is rule by reading, speaking and listing. It is taken by user how information is really. It will be mobile application. ***The main problem will be about the skill*** To read the test on serene. The quality of the video and audio files could be in use into thoughtfulness. Different culture has different language. Other than no issue what language it is. For the reason all of the language have some commonalities such as:

Arbitrarily symbolic:

It is refer the connection between our thinking, idea and shred system

Structure at multiple levels:

It is Patten and structure of language can be inspect with additional than one level.

Such as:

- word sentence
- meaning unit
- sound unit etc

Dynamic:

It is refer the property and evolutionary nature of language. It is always developing.

Problem-solving, Planning, Reasoning, Decision-making:

Problem solving one kind of mental process where analyzing, solving and discovering process. Decision making and planning of the partisans possibly will be depends on the perceptual part of the problem. There are six steps of solving and making decision such as:

- ***expect or identify problems***
- create different solution
- make use of information starting diverse sources to appear at a clearer thoughtful of the difficulty as well as its starting place causes
- Select an alternative that is most appropriate to goal, context, and available resources
- Evaluate ***strength and weaknesses of alternatives*** like, benefits, potential risks and short- and long-term consequences
- Set up criteria for evaluate usefulness of key or choice.

3.5: Cognitive frameworks:

A cognitive framework is set of consistent concepts and detailed questions for “what to look for”. There are many interaction designs. **Such as- benford’s trajectories and norman,s conceptual models.** It provides advice on how to design. Like - steps, questions, challenges, tactics, principles, concepts and dimensions. Cognitive framework lessons are interconnected to human computer interface. This will guide to investigate the human cognitive thoughts model to get together information regarding how a human being will respond to positive interface relations. There are many kinds of cognitive framework. Such as-

- Mental Models
- Theory of Action
- External Cognition
- Information processing
- Distributed cognitive

Here I have described some cognitive framework. Including this:

Mental Models:

Mental model is one cognitive human behavioral component to describe how a human being creates a **arrangement of process and approach in her/his previous too difficult to do the task. Human mental model of cognition typically precious by before knowledge and experience.** Mental model refers to two kinds of knowledge. It depends on scenario because the user/staff how to use system and how the system works. Users make use of mental models for the system information and their functions. It will help gather information in the system. The model helps identify the action, startling and unknown incidents.



Figure 8- picture of Applying mental model

Theory of Action:

The theory of action is clarification of a experience. Such as-information processing and the explain how the brain as well as a few feature of it. It is unspecified to effort. It identifies factors.

Like- social and affective, cognitive, important to the design and evolution of interface products.

There are seven theory of action by "Norman". Including this stage:

- step of the world Interpreting
- step of the world Perceiving
- intension Forming
- goals Forming
- outcome Evaluating
- an action Executive
- an action sequence Specifying

External Cognition:

People work together with or make information from side to side by a variety of external representation. Such as-

- maps
- notes
- books
- diagram
- multimedia
- newspapers
- drawings
- web pages

Also a moving choice of tools has been developed all through the past to aid cognition. Like-

- calculators
- pens
- computer-based technologies

The mixture of physical tools and external representations have really supported and extended people's capability to take out cognitive behavior definitely, ***they are such an central part to it is hard to visualize how we would go regarding greatly of our daily life without them.***

External cognition is disturbed with clearing up the cognitive processes complicated when we work together with unusual external representations. A major goal is to explain the cognitive profit of using unusual representations for unusual cognitive behavior with the processes concerned. The major ones including this:

- annotating and cognitive tracing
- computational offloading
- externalizing to reduce memory load

Here I have described all this key points.

Annotating and cognitive tracing:

There are two type of alteration are called annotating and cognitive tracing. Like-

- Annotating involve modify outside representation. like- underlining items or crossing off
- Cognitive tracing invades on the outside manipulate things into unusual structures or orders.

Computational offloading:

It is occurs when we make use of a ***tool or device in combination with*** an outside representation to help us take out a calculation. Like-paper and pen to resolve a math problem.

- ***attempt responsibility*** the similar two math use Roman numeral
- Using roman numerals to do the similar sum is much harder. 2 by 3 becomes 11 x 111, as well as 234 by 456 become CCXXXIII X CCCCXXXXXVI. The initial calculation may be possible to complete on a bit of paper, but the next is very hard to complete on a part of paper.

Externalizing to reduce memory load:

Externalizing can help reduce people's memory load by-

- remind them of what to do like- to ***purchase a certificate***
- remind them of while to perform great (mail it by a firm day)
- remind them to do impressive like- to search out impressive for their mother's birthday

New framework for human computer interface:

No	Concern	Past	Future
01	Frame of reference	User/staff	Context
02	Method, theory and perspective	-interaction design - approach of scientific	-Mixing -pluralistic
03	Output	-analysis models and tools -guideline design -ethnographies	-New way of experiencing creating -analysis value base -insights

Figure 9- table for human computer interface

(John wiley & son, n.d.)

4 Mobile Design issues:

The quantity of smart phone client has been growing day by day. it has lots of advantages and weakness like- **advantage is communicating friendly, internet access from anyplace any time, easy to carry etc.** weakness is its small screen, security and privacy leaking etc.

In the current situation I have research mobile issues. Including this:

- No hover state
- Slow and error-prone typing
- Less context
- Inaccurate clicks
- Poor connectivity
- Slow hardware
- User situation
- No right-click

Here I have described all this issues. Below-

4.1 No hover state

On smart phones there's no hover state not so far anyways. On mobile some element or information should be access in two ways. Like-

•**Visible** – the feature or content is available from visual income. It may possibly be nested in child pages or sub-sections.

•**Convention** – through relying on mobile design conventions we can hide content and just display it while the user use certain gestures like, vibrate or run off with.



Figure 10- picture for no hover state

4.2 Slow and error-prone typing

Typing going on a touch keyboard is a slow and error-prone keep fit so create positive to stay our form fields to total least amount and pre-select smart default. As we ***surely want to contract with incorrect data in desktop designs too, there will be still other errors*** in forms filled out on touch strategy due to the touch keyboard and smaller screen size. Use optimized touch keyboard are key. We can as well think about auto-complete functionality, the use of geo-***data, inline validation, and other methods for suggestive of and correct user inputs as they are typed.***



Figure 11- picture for slow and error prone typing

4.3 Less context:

The smaller screens on touch devices outcome in review context. This tends to create it other complex for the client to ***get a general idea of the page, contrast various options***, and keep in mind previous content. Think about a long form. As the user scrolls down, the heading of the form disappears next to with before entered data. Without this context it gets considerably other complex to understand the significance of the at present visible form fields. It too makes it hard to mark errors on second thoughts.

(Anon., n.d.)

The image shows a screenshot of an iPhone screen displaying a registration form. At the top, the status bar shows 'TDC' as the carrier, a Wi-Fi signal, and the time '9:05'. The form consists of three input fields: 'Confirm Password' (filled with eight dots), 'Display Name' (empty), and 'Country of Residence' (a dropdown menu showing '--- Select One ---'). Below these fields is a 'Submit' button. At the bottom of the screen, a standard iPhone keyboard is visible, featuring a 'Previous' button, a 'Next' button, an 'AutoFill' button, and a 'Done' button. The keyboard layout includes letters Q through P on the top row, A through L on the second row, and Z through M on the third row, with a 'space' bar and a 'Go' button at the bottom.

Figure 12-picture for less context

4.4 Inaccurate clicks:

On touch strategy public use their fingers to click links and buttons on the screen, which considerably reduce the correctness of clicks. This is too recognized as the **“fat finger problem”**. In apply, this resource you should think the size and closeness of all clickable elements, creation sure they're big enough to consistently touch with a human finger and far enough separately to users won't by accident touch the wrong element. Navigation and control bars are of exacting significance as they take in many clickable elements that all have important penalty to the page.



Figure 13- picture for inaccurate clicks

4.5 Poor connectivity:

It's not unusual with flashing connectivity issues and slow download speeds on smart phones. It's actually a joint issue:

- No connection** – as users almost surely won't expect offline mode from your website then you must at rest try to handle lost relations **kindly**. **AJAX-enabled skin tone** is mainly prone to unforeseen performance and silent failures “observe guide online”.

- Slow download speeds** – If you're on **a mobile EDGE network download** speeds will be beautiful unhappy. In new words, if your location must be working on slower relations too then are positive to make its footprint as small as probable by implementing violent asset caching, by CSS3 property in its place of images, etc.



Figure 14- picture for poor connectivity

4.6 Slow hardware:

Whilst the presentation of touch devices is humanizing quickly, they are at rest slow devices compared to desktop computers. This way that page initialization knows how to be disturbingly slow – particularly if you carry out a lot of JavaScript on page load. a different issue of slow **hardware is that transitions and new animations can be “leggy” which** – as well creature aesthetically unpleasing – can destroy the user’s brains of virtual space .In mutually luggage, good programming is principal. late JavaScript implementation joint with open-minded use hardware accelerated CSS animations will do the deception in the majority luggage while implemented correctly.



Figure 15- picture for slow hardware

4.7 User situation:

Given that the extremely nature of smart phones is mobility you have to think the impact of “real world” distractions – a orator statement, walking in traffic, etc. one more and probably better groundwork of distraction are the digital interruptions – ***text messages, phone calls, two-taps-away-from-Angry-Birds-syndrome, push notifications, and so on.*** These two source of interruption build the “come back capability” of your location more and more vital.



Figure 16-picture for user situation

5. Identify the user & platform:

5.1 Research User:

This is one kind of personalized game. These applications provide knowledge about local service. There are many kinds of games in our country. Including I have provide **company map, and some manufacture percentage of top 200 game and their payment account** which they are related different company.

(Anon., n.d.)



Figure 17- picture for institution map

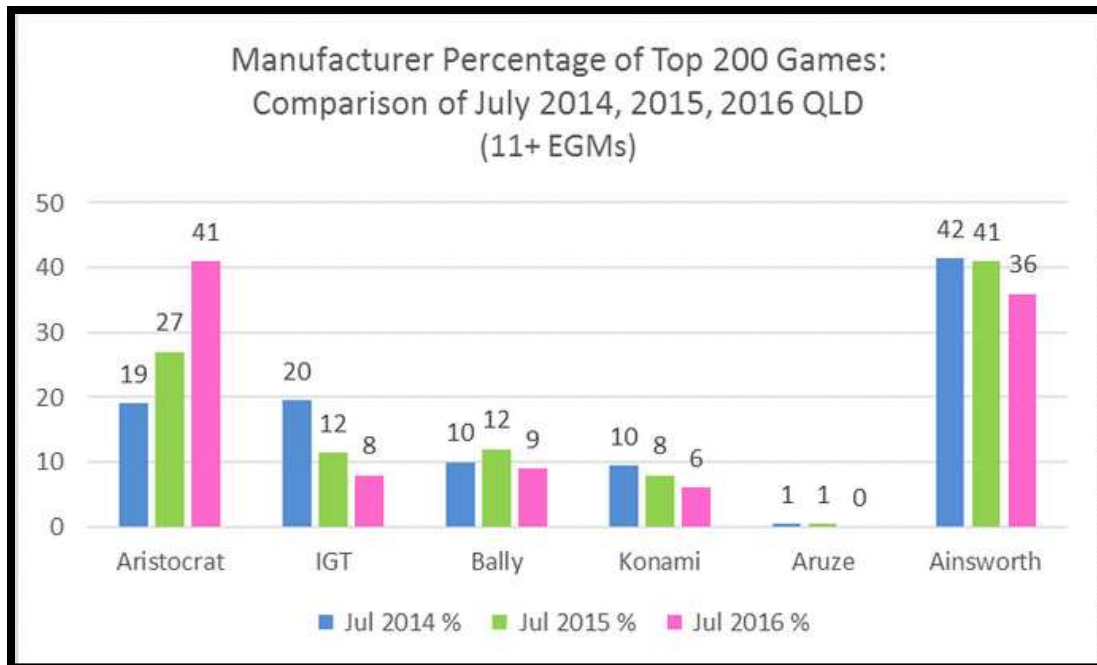


Figure 18- picture for manufacture percentage of top 200 games

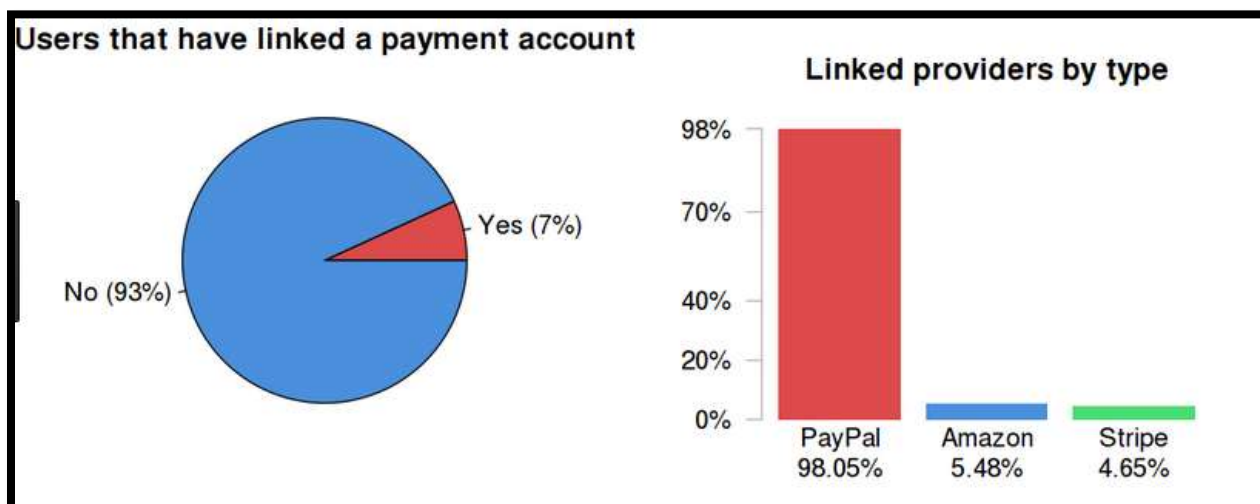


Figure 19- picture for user payment account linked

5.2 Device platform chosen:

This Application Can Create For Different ***Type Of Device Such As- Smartphone, Desktop And Tables Etc.*** Including These Are:



Figure 20- picture for desktop, Smartphone, iphone, ipad, tablet pc, Samsung mobile phone

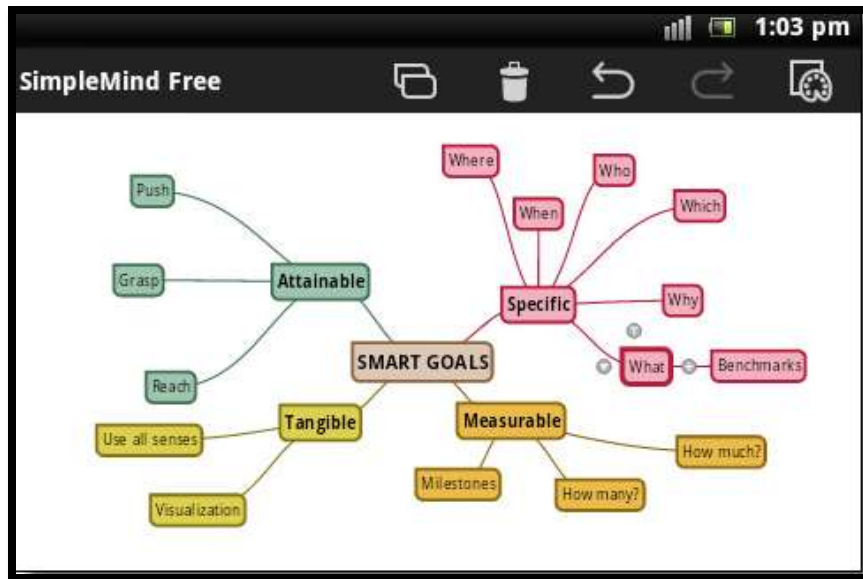


Figure 21- picture for simple mind

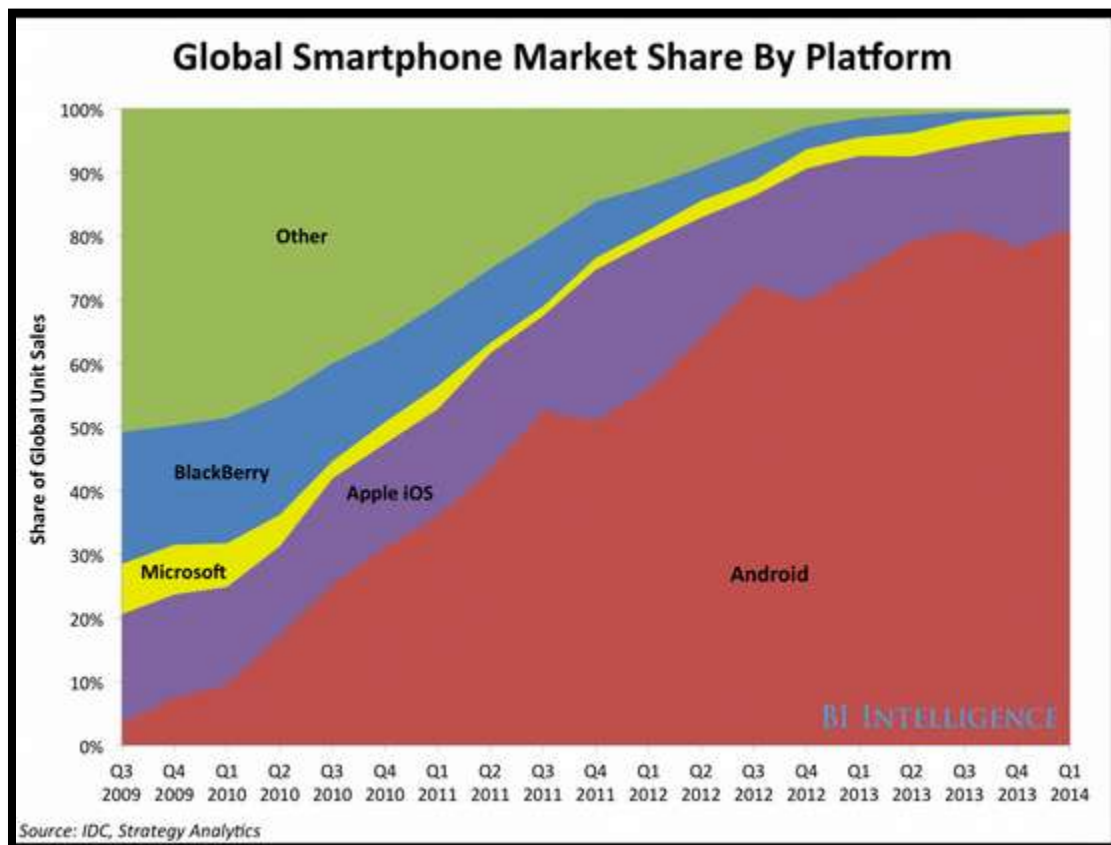


Figure 22-picture for global Smartphone market share by platform

(Anon., n.d.)

6. Design principles and methodology:

The principles of design clarify the performance to user use the elements of game in a effort of game. ***Strength is the allocation of the visual weight of objects, colors, texture and space.***

Design principles resources system of interface design. Which the interface necessity shows on significant interaction with user. It is too primary design. How the user observation is affect the interface paying attention on. The prototype will be developing mobile device based.

6.1 mobile Design principles:

When we create a prototype for mobile design interface then we follow some principles. Including this:

6.1 .1Functionality:

Functionality means the quantity of features are built-in a application to permit user achieve their goals. There is some functionality available for designer. Such as-make sure optimization must be complete carefully. Such as: data connection, loading time and multimedia etc.

- functionality **more visible** to the user
- Institution and **platform follow when we developed mobile design.**
- present staff thought regarding what the function are available to do
- Personalized location must offer base on the user who logged in

(Anon., n.d.)

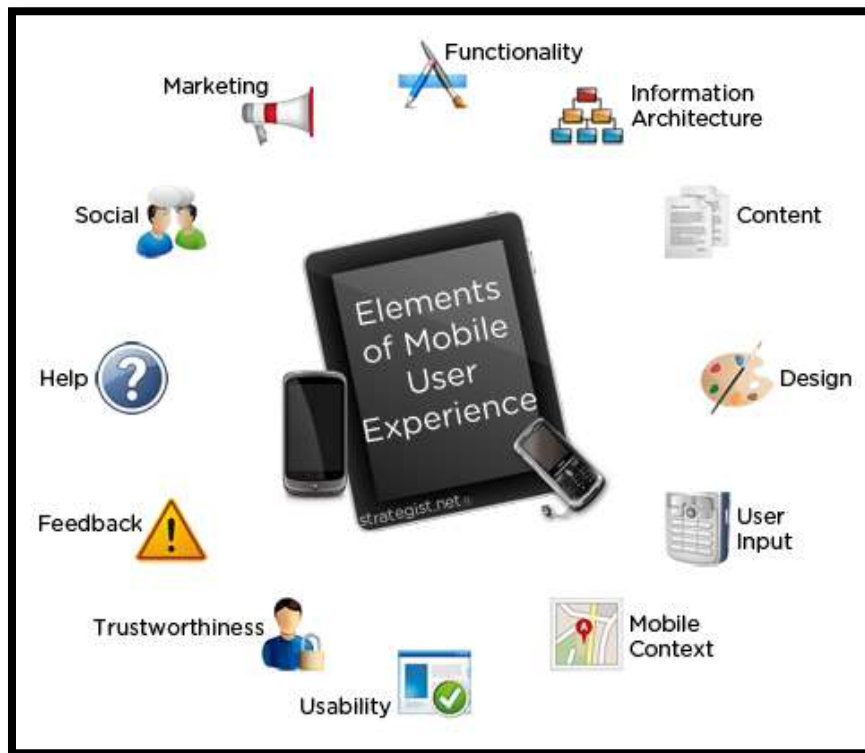


Figure 23-picture for mobile user elements

6.1.2 Information Architecture:

Mobile devices contain their human being set of Information Architecture patterns. Even though the arrangement of a quick to act in response site possibly will go behind other typical patterns. Like- native apps. Navigational structure there is no correct method to architect a mobile site or function. The pecking order pattern is a normal site structure with an index page and a progression of sub pages. If you **are calculating a quick to react site** you can be secret to this, though introducing more patterns might allow you to change the accepting for mobile. Mobile First draw near helps us focus on the very important things opening -skin tone and user journeys with the intention of will help out us build huge user experience.

(Anon., n.d.)

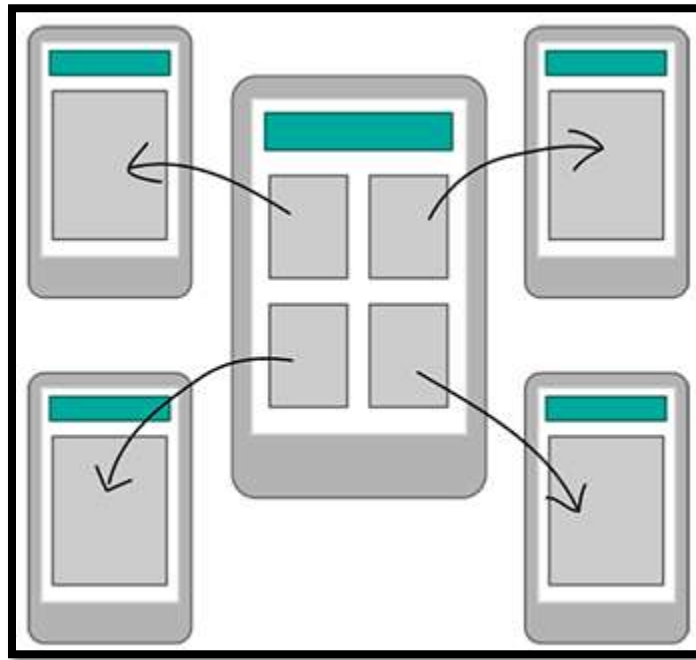


Figure 24-picture for Information Architecture

6.1.3 Content:

Content strategy for the curtain, creation, and maintenance of, images, text, video and audio. It too defines the conjugal and **quality of an manufacturing, in order to attach exact user groups and achieve manufacturing objectives**. In this thing, we'll get a look at happy policy to make easy mixture of intended thoughts, digital publishing, and point of view method and information architecture.

(Anon., n.d.)

6.1.4 User input:

Types stink smooth on the most excellent devices. So you must do what we can to build it easier for our user. Including this:

- There are regarding a dozen keyboard variation on accepted smart phones. **Like-number, text, email and URL**. Think every of our input field and be definite to show the keyboard to will be the majority helpful for the data entry being complete.
- Auto-correct container is so side-splittingly trying that there is a website faithful to it. Think about our entire input field and make a decision which auto entry options must be enabled. Like-auto-capitalization, auto-correct, and auto-complete.
- If our app invite a lot of typing we must make sure they support setting course for fat-thumbed people like them .example of the different keyboards available on iOS.



Figure 25- this picture for is default keyboard



Figure 26- this picture for email

Email



Figure 27- this picture is for URL



Figure 28- this picture is for Phone

6.1.5 Context:

Context is surely one context, but it's not the only one. It is classify any information to can be use to describe the location of one access. The access person can be location or a few goals to is careful applicable to the interaction between a user and application. There are many type of context. **Such as- Face book, Trip It, email, calendar, Twitter, Angry Birds, web browser, banking, Maps, Yelp, Foursquare and game.** Some point should be present in mobile. Including this:

- There is zoom in and zoom out option it is make sure when that is needed. Like-maps, when we are very closely want to view the maps then the zoom in needed for clearly location.
- It is should be needed change based function. Because the time and date will be change when the user use apps.

6.1.6 Usability:

Usability criteria that give explicit objectives to allow the usability of a manufactured goods to be assess in requisites of how it can improve or otherwise a user's performance.

- It is has **been good utility** for staff
- Easy to learn for new user
- Easy to **remember for user how to use the application**
- It is also use to helpful new user
- capable to use
- Safe to use



Figure 29- picture for user usability

6.1.7 Navigation:

There are prosperity of work of fiction navigation model for mobile apps other than if we are leaving to use one of ordinary navigation model, be clear in our mind to choose the one that make the majority brains for our app.

None: utility apps for single screen, like- Weather app on android.

Tab bar: content areas of Three to six distinct; like-Twitter for android

Drill down: detail content hierarchy and *List, like- Settings app on android*

6.1.8 Orientation:

- Representation is by far the majority accepted orientation so optimize for this crate first.
- If our app invites lots of typing, you must maintain scenery orientation so staff can right of entry the larger keyboard.
- Whilst **orientation changes suddenly, it's well disorienting**. If we imagine our app will be use for long periods of time such as- the Kindle Reader app, judge adding an orientation lock right in the app.

6.1.9 Color Contrast:

Color contrast is very important thing for graphics. A number of specifics color hold a number of specific implications. I have used many color buttons for defining interaction.



Figure 30- picture for color contrast

6.1.10 Button function:

Button is very **important part in game design**. Because the interface maintenance some regulation for button. My prototype is used many button.



Figure 31- picture for button function

(Anon., n.d.)

6.1.11 Icons:

Icon means representation of some information within small variety. The game must will be made by some icon. I have use icons in my prototype for the reason user understand easily and use friendly as well as it is take less space on screen. Including some icon name with image:

No	Icon image	Icon name
01		Drop box
02		Search
03		Dictionary
04		Downloads
05		drop sync
06		Email
07		Face book
08		Cancel

Figure 32- table for icons

(Anon., n.d.)

7. Requirements Analysis:

A requirement is a report about a proposed creation that specifies. What it must do or how it must execute. One of the aims of the requirements, Movement is to create the requirements as detailed, definite, and clear as Achievable. ***This part is for identify the entire requirement in this scenario. There are two type of requirement. Like- functional and non functional requirement. Including some requirement steps:***

7.1 Data Gathering Techniques:

In adding together to the best part general forms of data-gathering techniques listed greater than, if a scheme is presently prepared then data classification may be use. This involves incrementing the software to record users' movement in a log that can be examined later. Each of the techniques will give up different kinds of data and are helpful in different situation. Such as- questionnaires interview and focus group and workshops. Describe including this:

7.1.1 Questionnaires:

It is Most of us are recognizable with questionnaires. They are a sequence I of questions intended to draw out detailed in sequence from us. ***Stylish questionnaires*** are high-quality at receiving answers to exact questions from a big group of people, and particularly if that group of people is increase crossways a broad physical part creation it infeasible to appointment them all.

7.1.2 Interview:

Interviews involve asking an important person a situate of questions. It can be generally classify as prepared, formless or partly prepared, depending on how thoroughly the interviewer brushwood to a ready set ***of questions. In the background of establish necessities***, it is regularly vital for progress team members to get together stakeholders and for users to experience concerned. This on it's possess may be enough incentive to position interview. Including interview table:

Interview No	Interview of person name	Analyst	interviewee
01	Office manager	Hello sir, how is you?	I am fine thank you.
		Actually I want to take to about your office information. May I?	Of course why not.
		How long are you in this office	I am here since 20 years.
		How do you fine the working environment?	The working environment is very good.
		What do you think if you need an application?	Yes, I think we needed application.
		Forthe office what type of application you needs?	When our office joined a new staff they play one game for office information known. This type of application we needed.
		Ok, fine thank you for your information.	Ok Thank you.
02	Office staff	Hello, how are you?	I am fine
		How long are you in this office	I am here since 10 years.
		I need your help. May I?	Yes, please talk me.
		What type of information you office new staff needed?	First of all the staff needed all information of office, then they know what type of work in this office different roll that means the staff known all the information playing game. We need it that type application.
		Thank you.	welcome

Figure 33-table for interview

7.1.3 Focus group and workshops:

As a choice or as validation, it can be extremely helpful to contract a group of stakeholders ***jointly to talk about issues and necessities***. These sessions can be extremely planned with set topics for conversation, or can be formless. In this later case, a catalyst is necessary who can remain the argument on follow and can give the needed focus or redirection when suitable. In the necessities action, focus groups and workshops are high-quality at in advance an agreement outlook and importance areas of difference and strangeness.

7.2 Task Descriptions:

Here I have described the entire task based on the data get-together methods. Recognize information requirement ***two person form the focus user group*** will be requirement analysis their interview.

7.2.1 Developing Personas:

There are two person represent a user thinking, goals, behaviors, activity and liking etc. they are liking design judged. Detail two people including this:

First persona details:


Name: Reykjavik Grapevine	Motivation:
Age: 47	He passes his time by playing game, watching TV etc. he is company officer so he like smart phone because it is carry easily.
Gender: male	
Country: Iceland	
Occupation: still officer	
Image:	Chosen Games Criteria
	He likes playing game with friends in online and he likes to play game that are free download.
	Dissatisfaction With Games
	He does not choose game buying as well as he does not like game with too a lot of classified ad that distracts him from playing.

Figure 34- table for first persona

Second persona details:


Name: jerery	Motivation:
Age: 45	She passes his time by playing game, watching TV etc. she is company staff so she like smart phone because it is carry easily. she liking game but not too much.
Gender: female	
Country: Espn	
Occupation: staff in private company	
Image:	Chosen Games Criteria
	He likes play fish game. She chooses playing free game.
	Dissatisfaction With Games
	She is concerned about his privacy and does not want to share his personal information

Figure 35- table for second persona

(Anon., n.d.)

7.2.3 Use Cases:

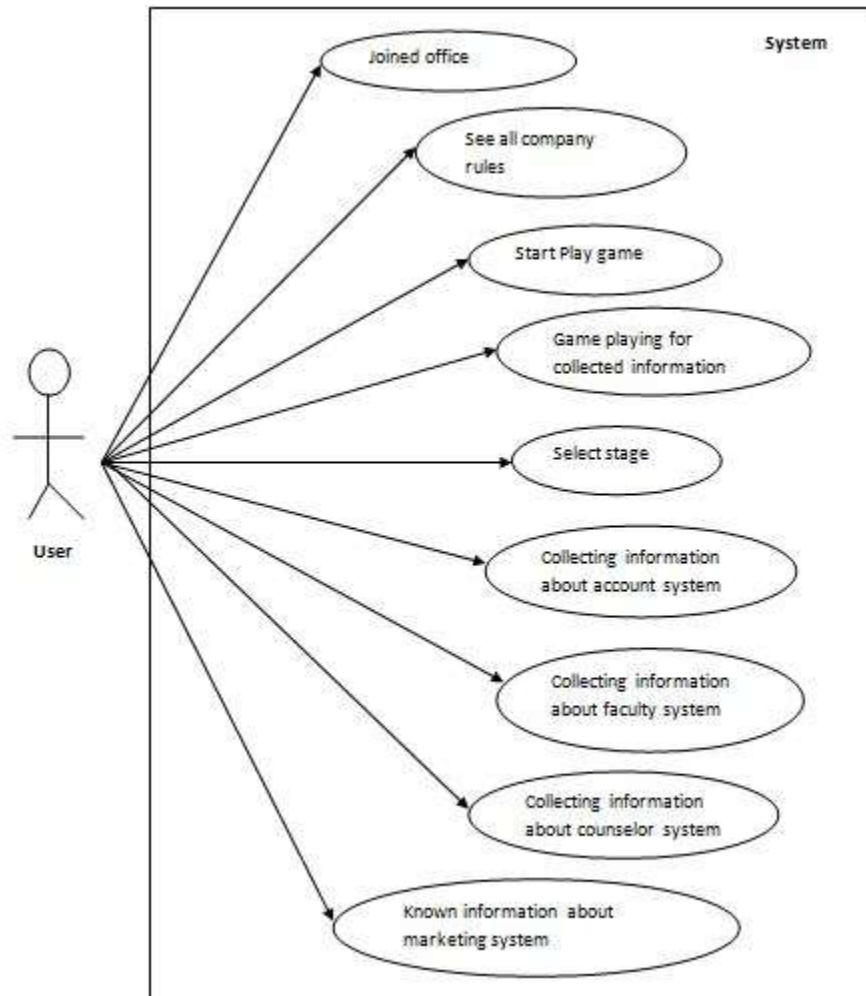


Figure 36- use case for user

8. Task Analysis:

This task for scenario will be described with Hierarchical task analysis and Hierarchical diagram.

8.1 Hierarchical diagram:

Here Including Hierarchical diagram for application:

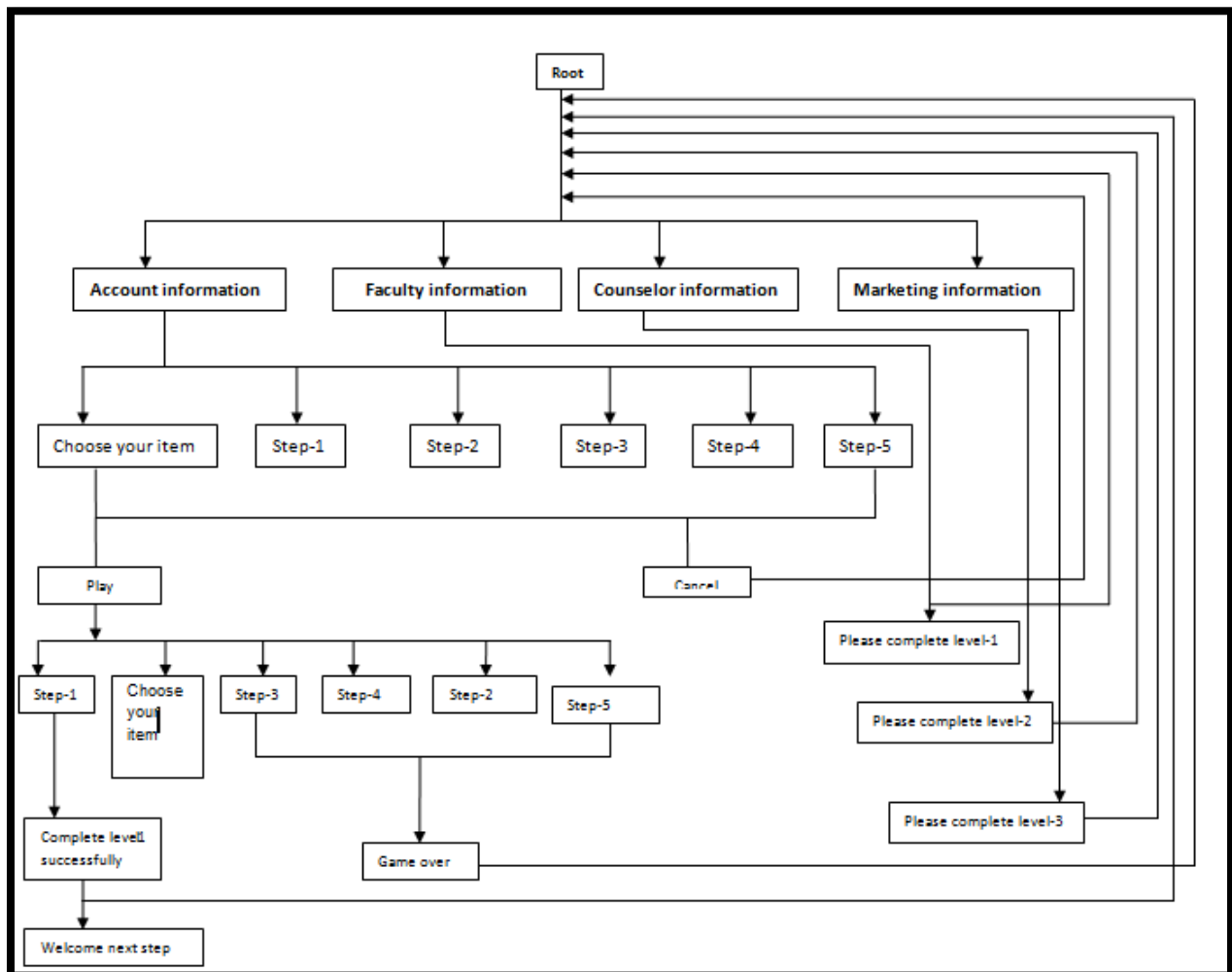


Figure 37- Hierarchical diagram for user

8.2 Hierarchical task analysis:

Step-1: this page for cash amount

Step-2: this page for money received from

Step-3: this page for lesser book

Step-4: this page for data entry software

Step-5: this page for end successfully

9. Requirement list:

There are different kinds of requirement. ***Such as- functional requirement, non-functional requirement and user data requirement.*** Describe all type of requirement including this:

9.1 Functional requirement:

Functional requirements, which speak what the system, must do.

Application Functional requirement are:

- Playing game
- Information provide
- Provide knowledge
- Personalized

9.2 Non-functional requirement:

Non-functional requirements, which speak what constraint there are on the system

And its progress

Application Non-Functional requirement are:

- Security maintained personal information
- Run should be for better performance
- Available when wanted

9.3 User data requirement:

Data requirements capture the type, size amount, volatility, persistence, accuracy,

And worth of the amounts of the required data.

Application User data requirement are:

- Data about account
- Data about faculty
- Data about counselor
- Data about marketing

10. Design artifacts:

Design artifact help to explain the structural design and the drawing of one application or item for consumption. ***It is required as it describe the deliverables of one system.*** This design artifacts part contains the low fidelity and the high fidelity design. Including this:

10.1 Low fidelity design:

Low fidelity means firstly prototype sketched on paper as a primary task. Including low fidelity picture:

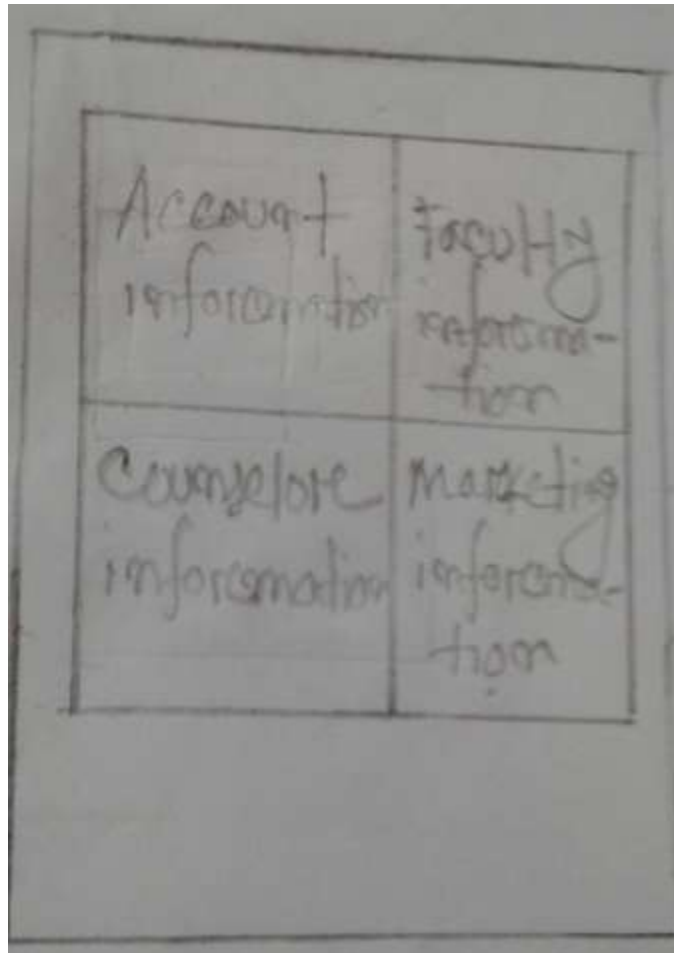


Figure 38- screen for starting page



Figure 39- screen for item display page

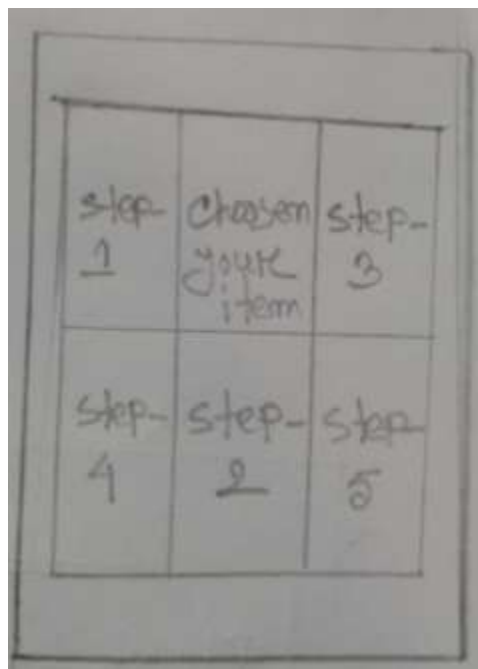


Figure 40- screen for play page

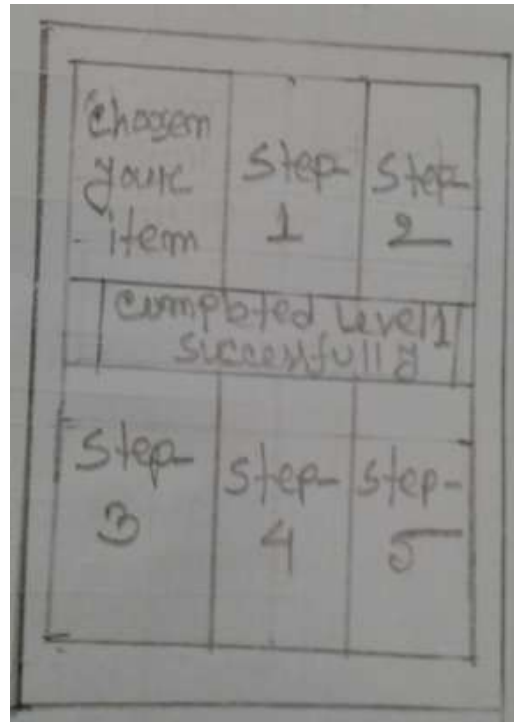


Figure 41- screen for completed level1 successfully page



Figure 42- screen for welcome next page

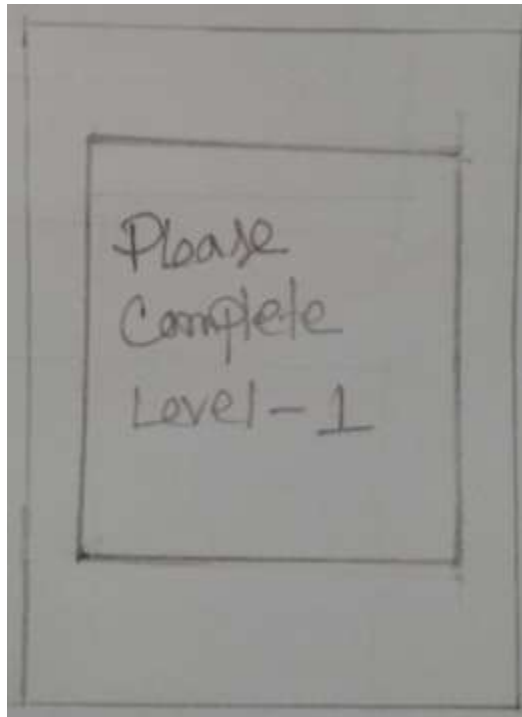


Figure 43- screen for please complete level-1 page

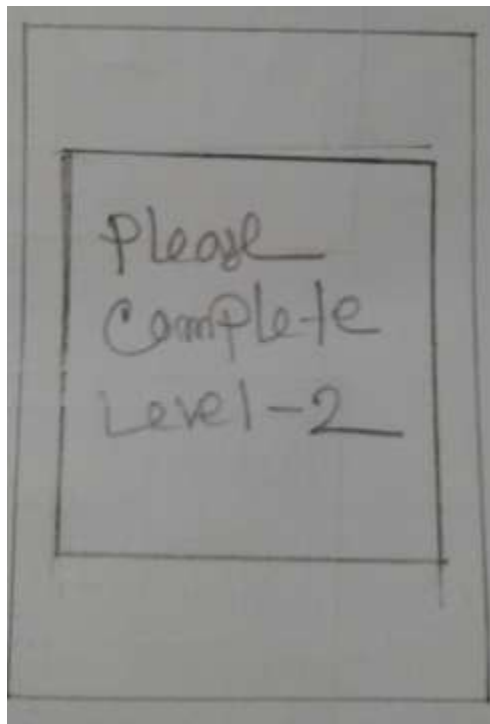


Figure 44- screen for please complete level-2 page

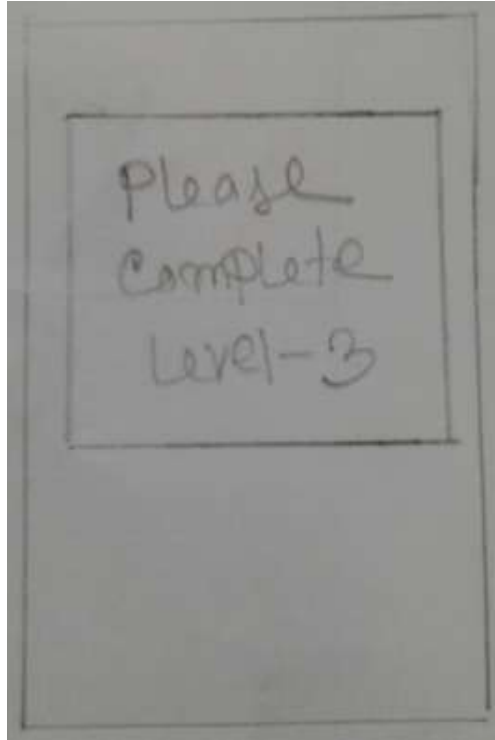


Figure 45- screen for please complete level-3 page

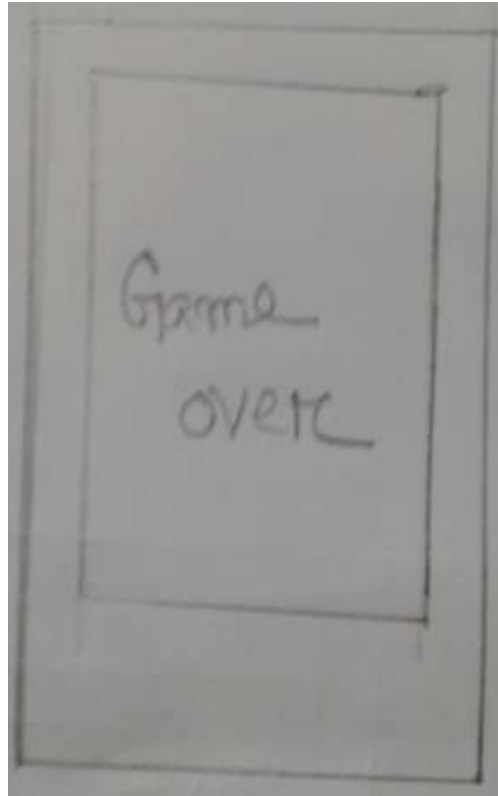


Figure 46- screen for game over page

10.2 High fidelity design:

High fidelity means after low fidelity sketched the High fidelity build up. Including High fidelity picture:



Figure 47- after develop screen for starting page



Figure 48- after develop screen for item page



Figure 49- after develop screen for play page



Figure 50-after develop screen for completed level1 successfully page



Figure 51- after develop screen for welcome next step page



Figure 52- after develop screen for game over page

11. Evolution:

It is user friendly because it is carrying out easily. In the present solution the mobile is the most popular thing in our country. We can be used this application mobile phone, tablets and desktop. But I prefer mobile phone. This application very helpful for user because they play game and they know all the information in that institution. But it has many advantage and disadvantage. Including:

Advantage:

- Carrying easily
- User friendly
- Information known easily
- Known all the local service easily
- All information known a few time, etc.

Disadvantage:

- Security risk
- Data deleted
- Information missing
- Connectivity problem
- Don't understand correctly, etc.

12. Conclusion:

I have completed this application and I have much lesson gain. Completed this application I have research many web site, many book, for gaining experience. In this application I have give my effort. I know many things in this application, like user interface, interaction, prototype, etc. So over all I have many experience gain in this application. That will give me knowledge for further development.

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Appendix-A: prototype function page



Figure 53- picture for icon



Figure 54-- picture for start page



Figure 55- picture for play



Figure 56- picture for chosen step



Figure 57- picture for step-1



Figure 58- picture for completed level1 successfully next



Figure 59- picture for welcome



Figure 60- picture for faculty information



Figure 61- picture for marketing information



Figure 62- picture for counselor information and 5



Figure 63- picture for step-1, 2, 3, 4,



Figure 64- picture for game over

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