Developing Hangman Game in Android using Android Studio

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Abstract—**This paper focusses on the development of Hangman Game from initial stages of coding to the final states of implementation. We had abstracted the same idea of developing the game as, but the platform opted is Android, which looks upon for pre-requisites of this operating system knowledge that helps us to develop modules in it. The basic requirement for development of this game is mostly same, that is fetching the most repetitive and redundant alphabets from English language and the other one is requirement of at least 2 or more than 2 players. In future the same can be extended in mobile applications.**

Keywords— Android, Hangman Game,Letters, TAM(temporary acceptance model),Android SDK.

I. INTRODUCTION

Today's world is full of infinite number of games, even we cannot make out the strength of total number of games, as day- by day new games are added-on. Even the craze of playing games had been reached up to that level where we can sense and go for developing these games in mobiles in the form of applications. And on other side, the contrast scenarios the golden era is hitting us back again, and the developers had started re-introducing the concept different by on developing these games on different platforms which could be on different operating systems, programming languages, software and many more [7]. This word to guess is represented by a row of dashes, representing each letter of the word. In most particular thing is something that has a different form to that thing, proper nouns, such as names, places, and brand, are not allowed. If the guessing player1 suggests a letter which occurs in the word, the other player2 writes it in all its correct positions. If the player1 suggested letter does not occur in the word, the other player2 draws one element of a hanged man stick figure as a tally mark [1].

The Hangman is proposed date is obscure but it had been predicted around the Victorian Times. The synonyms of games could be Hanger, Gallows or Games of Hanging. Figure 1(a) display the screen of a puzzle that will comprise of question and the Figure 1(b) display the screen of clue that will act as a hint for the question, which reader must go and access in order to solve the puzzle.
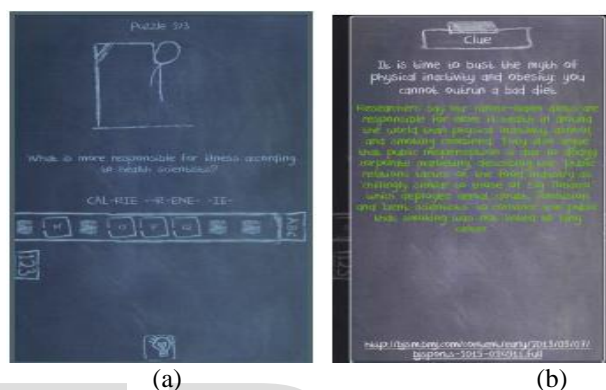

(a)   (b)

Figure 1: Puzzle with a Question and a clue

The player1 guessing the word, at any time, attempt to guess the whole word. If the player guess word is correct, the game is over and the player1 wins. Otherwise, the other player1 may choose to penalize the guesser by adding an element to the diagram. On the other hand, if the other player2 makes enough incorrect guesses to allow his opponent to complete the diagram, the game is also over, this time with the guesser losing [4]. However, the guesser can also win by guessing all the letters or numbers that appears in the word, thereby completing the word, before the diagram is completed. As the name of the game suggests, the diagram is designed to look like a hanging man. Although debates have arisen about the questionable taste of this picture, it is still in use today.

A common alternative for teachers is to draw an apple tree with ten apples, erasing or crossing out the apples as the guesses are used up. The exact nature of the diagram differs; some players draw the gallows before play and draw parts of the man's body (traditionally the head, then the torso, then the arms and legs one by one). Some players begin with no diagram at all, and drawing the individual elements of the gallows as part of the game, effectively giving the guessing players more chances. The amount of detail on the man can also vary, affecting the number of chances. Some players include a face on the head, either all at once or one feature at a time [2].

Some modifications to game play to increase the difficulty level are sometimes implemented, such as limiting guesses on high-frequency consonants and vowels. Another alternative is to give the definition of the word; this can be used to facilitate the learning of a foreign language [8].

The section 2 here describes about the concepts in detail, whereas perspectives of SH Section 3 gives the details about SH prototype with the focus on design and user experience. Section 4 discusses gamification elements within the application, and Section 5 evaluates this paper with the results. We conclude in Section 6 at last but not the least concluding with references.

II.   BACKGROUND AND THE STATE OF ART

The main idea for the application is to use the traditional game of hangman to communicate scientific evidence. Hangman is a game which people of all ages are familiar with and is easy to understand and enjoyable with no problem. We use Hangman in combination with the content from the research articles available online. The user's goal is to find the right answer to the puzzle question in order to solve the puzzle [6]. The user gets a clue from the research article which is the abstract and a link to the full article for the details.

2.1. Content Generation
The two different ways of generated:-
 (i) Applying simple techniques to summarize the abstract of a publication by highlighting the important and meaningful phrases in it [3].
 (ii) Providing a web-based user interface for authors of the publications who are interested in putting their work to an extended use of learning to upload some simplified version of the publication.

III. DESIGN AND USER -EXPERIENCE

 Hangman, based on a traditional hangman game for information flow by using the content from research articles, goal is to make scientific literature interesting as well as easy for the general public to understand. For this purpose, the design should be simple yet appealing. We went through multiple iterations for the designing of the application which resulted in two prototypes that were used in user studies.

The user interface that we had designed for developing this game are represented by taking screenshots in Figure 2.
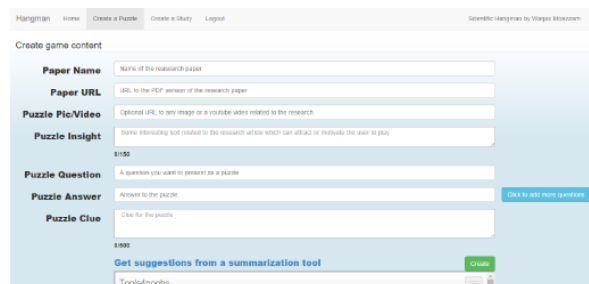
2(a)
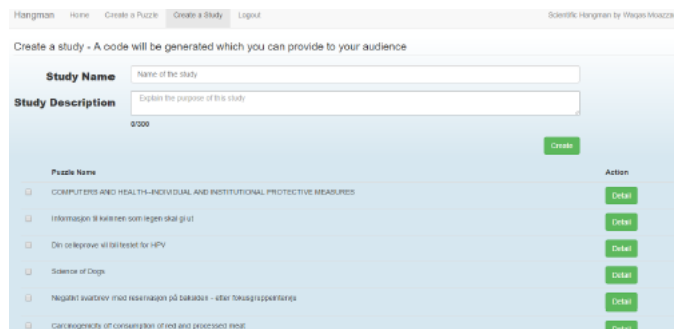
2(b)

Figure 2: Screenshot to create puzzles and studies.

The given below is a rule set that needs to be followed each and every time whenever we pay the game. The Rule Book is as follow [4]:

1. You can play this game individually or in groups.

2. Now select a letter of the alphabet.

3. If the letter is contained in the word/phrase, the group or individual takes another move guessing a letter. To reveal a letter (depending on which slide template is used), either:

    1. Click on the square with appropriate letter in it to reveal the letter within the word/phrase [9].

    2. Click on the letter in the alphabet area which will then trigger the letter to be revealed if it is contained in the word/phrase or change the color of the Try Again button indicating that the letter is not contained in the word/phrase [10].

4. If the word is not contained in the phrase, click the Try Again button, a portion of the hangman is added.

5. The game continues until the result not came:

    1. If you guessed correct word (all letters are show) – WINNER or,

    2. If you can't guessed all the word then you will lose the game (it will show the correct answer)– LOSER

SOFTWARE REQUIREMENTS

1. Java

2. Android Studio

3. Android SDK

HARDWARE REQUIREMENTS

1. Microsoft® Windows® 7/8/10 (32- or 64-bit) [3].

2. 2 GB RAM minimum, 8 GB RAM recommended [5].

3. 2 GB of available disk space minimum,
   4 GB Recommended (500 MB for IDE + 1.5 GB for Android SDK and emulator system image)

4. 1280 x 800 minimum screen resolution

5. For accelerated emulator: 64-bit operating system and Intel® processor with support for Intel® VT-x, Intel® EM64T (Intel® 64), and Execute Disable (XD) Bit functionality [12].

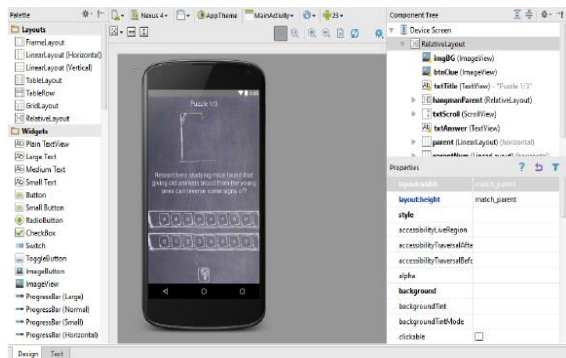In figure 3 we took a snapshot of the Layout design tool in Android.

Figure 4: Android Layout Design Tool

V. STRATEGY

In English words, the twelve most commonly occurring letters are this (in descending order): e-t-a-o-i-n-s-h-r-d-l-u. This and other letter lists are used by the guessing player to increase the odds when it is their turn to guess. On the other hand, the same lists can be used by the puzzle setter to stump their opponent by choosing a word you planned avoids common letters (e.g. *hangman* or *apple*) or one that contains rare letters (e.g. *mango*) [11].

Another common strategy is to guess vowels first, as English only has five vowels (a, e, i, o, and u, while y may sometimes, but rarely, be used as a vowel) and almost every word has at least one.

Example game

The following example will explain a player how to guess the word *hangman* using a strategy based solely on letter frequency.

0
Word: _ _ _ _ _ _ _
Guess: E
Misses:

1
Word: _ _ _ _ _ _ _
Guess: T
Misses: E

2
Word: _ _ _ _ _ _ _
Guess: A
Misses: e,t

3
Word: _ A _ _ _ A _
Guess: O
Misses: e,t

4
Word: _ A _ _ _ A _
Guess: I
Misses: e,o,t

5
Word: _ A _ _ _ A _
Guess: S
Misses: e,i,o,t

6
Word: _ A _ _ _ A _
Guess: N
Misses: e,i,o,s,t

7
Word: _ A N _ _ A N
Guess: H
Misses: e,i,o,s,t

8
Word: H A N _ _ A N
Guess: R
Misses: e,i,o,s,t

9
Word: H A N _ _ A N
Guess:
Misses: e,i,o,r,s,t

Guesser loses - the answer was **HANGMAN**.

VI. CONCLUSION

In this paper we had discussed the work done in fulfillment of Bachelor's Degree which comprises of merging of 2 subjects knowledge that is Programming Language, Operating Systems, Networking and many more. In this at last can mention the framework that can be used to improve the existing framework. Both components and gamified mobile applications have vast platform that can be used for modifying [6].

We can categorize the Future Work in 3 different categories which are discussed below:

1. Social Integration: this gaming application somewhere helps us to connect with each other more and more socially, and through social websites, they could improve the existing working area.

2. Customizing Internet: This comprises of the stuff that need to be filtered from time to time based on the services available on the Internet that needs customization service from time to time and also looks upon for timely update.

3. Extending Gamification: Based on the responses and the timing it used to take, and the design layout that is available with us, we can extend it up to any level, depending on our choices [5].

4. Cloud Messaging Service: it used to target the mobile based service applications and store all the data on clouds. These could be easy one and the most opted one option to send the data.

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