WINDOWS PHONE APPLICATION

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ABSTRACT

The sole purpose of this project is to create a smartphone application for the Windows phone platform (RT). We decided to make a game that will run on the Windows RT utilising the c# coding language, a multi-paradigm programming language, with the aim of enhancing a player's memory and reaction time, hence ultimately allowing one to be able to act more acutely in life. However, due to the limitation of time and ability of coding, the current version of the game will be only equipped with one level, four tiles. Throughout the process of the game, the player will be encouraged to memorize tiles to win the game. Since every square will only show the pattern for 1.5 seconds, the player will be required to memorize every relevant detail of the tile. Various pieces and genres of music will be played through the progress in the game to enhance the user's experience of this game.

INTRODUCTION

The smartphone is one of the most essential gadgets for people of all ages. Smartphones have become popular, not because of its convenient function to send texts or call others, but because of the endless variety of applications and games one can find on these smartphones. The smartphone world is expanding at a rapid pace. More than 60% of smartphones users today play games and use downloaded applications. The five main operating systems for smartphones are iOS for iPhone, Android, Microsoft, Symbian and RIM. More than 50% of Singaporean smartphone users play games on these smartphones. The interest in games is becoming more popular throughout the world, and therefore we decided to create a game. The game we created is "Mix n Match". The main idea is to mix the tiles randomly and position them with back on screen. When the player clicks any two tiles, the two tiles will turn on with pictures. If the two pictures are the same, it is considered a match, and when all four tiles are matched, the level is completed. If the player is fortunate enough, he or she only needs two chances to finish the game. Different music will be played for a correct guess, wrong guess, and completion of a level. Textbox is shown at the top of the screen concurrently with the sounds. Though our game only has one level with four tiles, we tried to make it more enjoyable and challenging by designing the following three features. Firstly, at the start of each round of the game, the four tiles will be positioned randomly, hence providing players with different experiences. Secondly, a movement counter was input into the game to keep track of the number of movements one makes during the game. One click is considered as a move. Thirdly, the timer we put in records the time taken for the whole level to be completed. This makes the game more challenging and enhances the gamer's experience.

METHODOLOGY

Expression Blend is used for the design and animation of the buttons. We used it to colour our buttons and design the shape of them. For the animation part, we have timeframe which is the amount of time we want for the buttons to turn if it is selected.

Fig 1.1

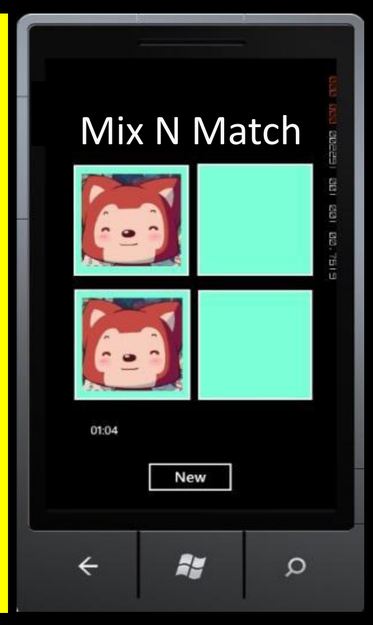
```
Class variables
int moves = 0;
        int first = 0;
        int second = 0;
        Button firstButton;
        Button secondButton;
        int[,] board = new int[2, 2];
        List<int> matches = new List<int>();

DispatcherTimer timer = new DispatcherTimer();

//randomise the position of the contents in each tile
private List<int> Random(int start, int finish, int total)
        {
            int inumber;
            List<int> inumbers = new List<int>();
            Random random = new Random();
            while ((inumbers.Count < total)) // Select Numbers
            {
                // Random Number between Start and Finish
                inumber = random.Next(start, finish + 1);
                if ((!inumbers.Contains(inumber)) || (inumbers.Count < 1))
                {
                    inumbers.Add(inumber); // Add if number Chosen or None
                }
            }
            return inumbers;
        }

// decide on the contents for each of the tiles
 private void SetPictures()
        {
            List<int> ivalues = new List<int>();
            List<int> iindices = new List<int>();
            int icounter = 0;
            while (ivalues.Count < 5)
            {
                List<int> _numbers = Random(1, 2, 2); // Random 1 - 2
                for (int _number = 0; (_number <= 1); _number++)
                {
                    ivalues.Add(_numbers[_number]); // Add to Cards
                }
            }
            iindices = Random(1, 4, 4); // Random 1 - 2
            for (int Column = 0; (Column <= 1); Column++) // Board Columns
            {
                for (int Row = 0; (Row <= 1); Row++) // Board Rows
                {
                    board[Column, Row] = ivalues[iindices[icounter] - 1];
                    icounter++;
```

Fig 1.2



RESULTS

We tried playing the game ourselves using the smartphone –Windows Phone. It's really very easy and casual. While playing the game, we don't need to think much, it's very relaxing. The images are vibrant, adorable and it reminds us of our childhood, clearly a time where most people wish to go back to. In this case, we are able to play a game like we had during our childhood except this is more advanced as we can play it anywhere and anytime, on a smartphone. Another good point about this game is that no Wi-Fi or internet connection is required, so even when there is extremely low connectivity where we can't even entertain ourselves with other games in our phone, this game provides the entertainment which a lot of games cannot provide as most requires internet connectivity or Wi-Fi. It doesn't take up much space in our smartphone as well, as it is a relatively simple game.

CONCLUSION

After a few months of work, the final version of our game is successfully launched on a real phone. Although we are not satisfied with the game since one level is not interesting enough, we had learnt some basic skill in coding and equipped the games with basic elements such as audio sounds, pictures, textboxes, movement counter and a timer. Meanwhile, we get to know about the coding language, c#. Because of the inconvenience of meeting of four members and the limitation of our ability, this game is not as perfect as we first thought of. In our ideal game, there should be more levelswith 2*2, 4*4 and 6*6 tiles in terms of difficulty levels to enhance better experience of the users. Additionally, there are still some flaws in the game such as the overlapping of audio sounds and the ornament of the screen, which lower the performance of the game. In a nutshell, this game achieves the basic expectation we have but it still has a large space for improvement.