Bo Fu

Pablo Rivas

Project 2-Milestone

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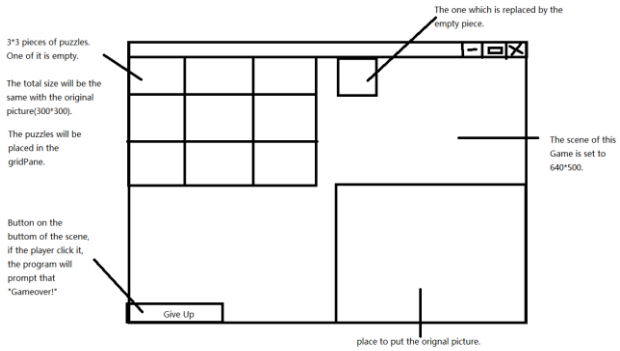
Milestone: Puzzle Game

Abstract:

For the Project-2, I am going to design an application program of puzzle game. Within this paper, I am going to explain the process of each step from I have come up with this idea, to what I have already achieved.

Introduction:

The subject for this Project is a puzzles game. The game will be generating random ordered pieces of picture, and player will try to repair the picture into the original picture. After few tries of design, I have come up a draft layout. The motivation for me to design a program of Puzzle game is because I would like to learn the game design concentration and become a game designer, the process of design a game through the self-learning process will help me get deeper understanding of Java.



Detailed System Description:

The puzzle game is a game played on a 3*3 square, the pictures are divided into 9 pieces, and one of it will be empty. The puzzles will be random ordered; player are allowed to switch the pictures which is surround the empty one. If the player has win this game, the program will prompt to them that a window showing “Success!”. Here is the UML diagram of this program.

PuzzleGame	
m	int
n	int[ ]
random()	int[ ]
random_num()	int[ ]
iso(int[ ] num)	boolean
swapping(int, int)	
issucc()	boolean
findmun(int[ ] n)	int

myevent	
handle(Mouse Event)	

The PuzzleGame class contains the main function program, the myevent class is only a class deal with the Mouse Event when clicked. Within PuzzleGame, m is an integer that represent for the number of empty puzzle, n is an array which has the picture place into it. Random() is to generate Inversion sequence of number, random_num() is to generate 8 numbers without repeat, iso() is to make sure that the Inversion pair of the sequence of number will be an even number (but not zero). The swapping() is use to swap the puzzles which is been clicked and also place around the empty one. The issucc() is always check for the puzzles if they are in the right place after each click.

Requirement:

This game will be designed by using the knowledge of JavaFX, array, Java.Math.random, Inversion. So far, I have already learned the array in class, which means to create a matrix of array is not a big problem. However, since the JavaFX is not belonging to the knowledge will be discussed in class, so I have to self-learn this part. Starting from the easy parts, I have learned how to show stage, pictures, create button in pane. And now learning the part for the pane, which I believe I should use the GridPane in my program. After I done some research through internet, I have find that the order of the puzzles cannot be generated randomly, because that will have 50% of chance the last two puzzles are in opposite place and can never finish the game. In order to make sure the puzzles are all generated both randomly and it can be work every times, there is a mathematic theory called Inversion pair can help me resolve the problem.

Literature Survey:

With the brief understanding of the game, I find that I still need to work on the JavaFX parts to support all of my idea come into real.

User Manual:

Conclusion:

References: