**TP1 Design Proposal**

**Project Proposal**

**1. Project Description**

name: Hungry Panda

short description:

It’s a game about a panda trying to find the bamboo and win by eating the bamboo. During this process, it will meet with many obstacles, and after each round the panda(player) will get important hint about where to go and how to finish next step. I plan to design 3 steps for this little game:

Step 1: Cross the river (The panda needs to jump across the river, and the player has to move the mouse to control the movement of the wood so that the panda won’t jump into the river.)

<http://www.4399.com/flash/50905.htm#search3>

Step 2: Avoid attacks from other animals (There is a path across the board, and the panda needs to avoid attacks and passes to the end of the path.)

<http://www.4399.com/flash/50750.htm#search3>

Step 3: Shoot a bamboo with bows and arrows, shoot one and win (shooting game, the player can adjust the shooting angle and shooting speed)

<http://www.4399.com/flash/74839.htm#search3>

**2. Competitive Analysis**

|  |  |  |
| --- | --- | --- |
| step | Online game | Hungry Panda |
| 1 |  | Quite similar with this online game, and there is only one panda that needs to cross the river. |
| 2 |  | The panda has to fight against other animals (a fighting game where the panda need to avoid attacks and win.  There are many different kinds of animals(enemies) with different kinds of attacks. |
| 3 |  | Similarly, by using bows and arrows, the panda can shoot the bamboos. |

**3. Structural Plan**

By using tkinter and other materials given by the course, this game is designed to contain SplashScreenMode, GameMode, HelpMode, GameOverMode and GameWinMode with setActiveMode to change between these modes.

The SplashScreenMode contains the game cover, game background introduction and related instructions, and if the player use the mouse to click the start button, game will start. The GameMode is the main body and core part of this game, of which the map is big enough to make the panda take adventures under the control of the player with keyboard and mouse. So it contains appStarted, makePandaVisible, movePanda, checkCollision, mouseMoved, mousePressed, keyPressed, isGameOver, timerFired, redrawAll etc. HelpMode can pause the game and change to another board and give necessary hints, such as what the panda should do in this step, how to move the panda and when to use the mouse. GameOverMode and GameWinMode will show different pictures where panda will smile to win and cry for failure.

**4. Algorithmic Plan**

The trickiest parts of the project will be in the GameMode. Firstly, I need to draw the map and make the boundaries between each part obvious. Moreover, I am going to set the background music changing as the panda arrives in different steps. Secondly, in the first step, the panda needs to jump down towards the river and when it touches the wood, it will bounce up, which means the panda should not only jump up and down but also jump towards the other side of the river. Thirdly, in step3, player need to control the shooting angle and speed with mouse, in which case I have to make every change of the bows and arrows visible in the board. Last but not the least, there are many cases in my game calling for a true parabola simulation.

**5. Timeline Plan**

Nov 20 - Nov 21 Complete the board’s drawing & Complete the part of all the classes’ code

Nov 22 - Nov 23 Complete the part of all the classes’ code & Solve the jumping parameters’ setting in Step1

Nov 24 - Nov 25 Solve the jumping parameters’ setting in Step1 & Finish Step1&2

Nov 26 - Nov 26 Complete Step3 & Debug and writing other modes

Nov 27 - Nov 28 add bgm into the game

Nov 29 - Dec 3 Last decorations

**6. Version Control Plan**

I will store all of my TP code in Github: <https://github.com/faye19940619/TP_LifeiZhu>

**7. Module List**

I am not planning to use any additional modules.

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