CS 106 Winter 2017

Assignment 07: Randomness

There are many games that use randomness as part of the game. In this question we will use the techniques that are used in gambling games, such as slot machines, to design a game.

You will have sprite sheets with the images: goldBars, cobra, monkey, and compass.

You will generate three random selections of either goldBars, cobra, monkey, or compass.

As examples: you may have

- goldBars, goldBars, goldBars
- cobra, compass, monkey
- compass, compass, compass

If there are three of the same, then you win a prize.

Three goldBar pays 100 as a prize

Three cobra pays 20 as a prize

Three monkey pays 40 as a prize

Three compass pays 60 as a prize

To play you press 'p'.

To "cheat" press 'c' which gets you a higher probability of getting three goldBar. Press 'n' for no cheat.
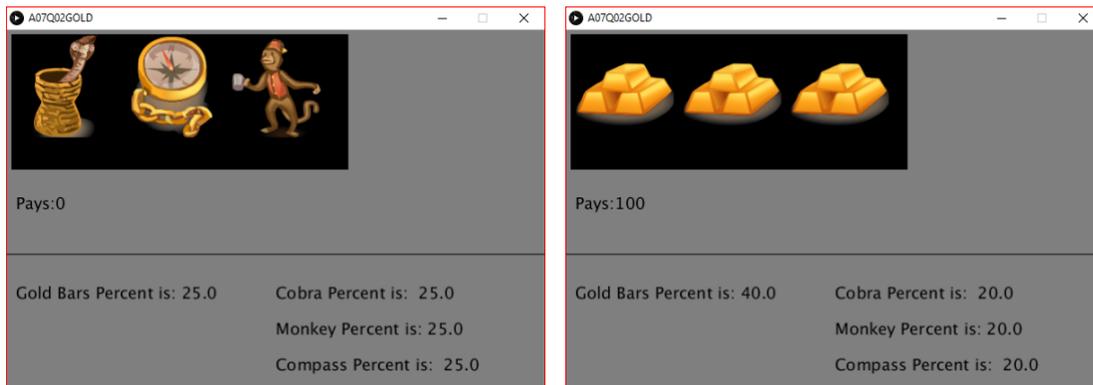
Make a "honk" sound for small wins (20, 40, 60).

Make a "horn" sound for the largest win (three GoldBar which is 100).

The following is a link to the game being played: https://youtu.be/7TLGUiDs9r4

Below are screen shots.

You are to write code to meet the requirements above and produce a result similar to what is seen in the youtube video.

Requirements and Grading

QUESTION ONE: (12 marks)

[8 marks] Correctness

- The sketch must meet the following requirements:

    ○ The three symbols for the resultLine[] must be generated randomly.

    ○ The three symbols must be displayed correctly.

    ○ translate() must be used to display the three symbols in the above point (this is mostly to get you to practice using translate).

    ○ The amount of the win must be determined accurately.

    ○ The key 'p' must cause the game to be played once. That is, three symbols are generated and the results are shown in the sketch window.

    ○ The key 'c' must change the probability of getting the symbols from .25 each to .4 for goldBars and .2 for each of the other.

    ○ The key 'n' must return the game to the equal probabilities of .25 for goldBars, cobra, monkey, and compass.

    ○ The text at the bottom of the sketch window which shows the probability of each symbol appearing must be displayed properly.

[2 marks] Coding Style

- Comment your code appropriately. Avoid superfluous comments.

- Correctly and consistently indent your code blocks.

- Use correct inline spacing in function calls, function definitions, and variable declaration and assignment.

- Use good line spacing to chunk sections of your code.

- Pay special attention to inline spacing for your conditional statements

- One or more marks may be deducted for solutions that have obvious inefficiencies.

- Variables that are declared or assigned, but not used.

- Unnecessarily repeating the same code in multiple places.

[2 marks] Visual Design and Creativity

- Higher marks will be given to sketches with extra details for creativity and artistic appeal.

Submitting

Create a folder "A07_username", but replace "username" with your UW id. So if your email is "jac926@edu.uwaterloo.ca" you would create a folder "A07_ jac926".

SAVE your sketches in that folder as "A07Q01_username". Again, replace username with your UW id.

Zip your "A07_username" folder (with "username" replaced by your UW id) and submit it the correct assignment dropbox.

It is your responsibility to submit to the correct dropbox with the correct files before the deadline. Otherwise you will have marks deducted.

Academic Integrity

All assignments in CS106 are done individually. Group work and sharing of code is not allowed.

Detecting Plagiarism:

- We monitor Reddit, File Trading Sites, past year CS106 assignments, etc.

- We use Measure Of Software Similarity (MOSS)

    - automatic system for determining the similarity of code

Discipline

Discipline (Policy 71)

    - https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71