

CS250 Assignment 3

Pig: The Die Rolling Game

Date assigned: Wednesday, February 19, 2014

Date due: Friday, February 28, 2014

Points: 30

Pig is a die rolling game of greed and strategy. The goal of Pig is to accumulate as many points as possible during a turn until the player voluntarily quits or a skunk roll (a roll of 1) comes up, which resets the players points back to zero.

Pig is normally played between two players, but for this assignment you will implement a one-player version of the game. At any point in the game, the player can choose to save their high score to a file if their score is higher than the high score in the file.

A sample run of the game is shown below. The game is paused and the screen is cleared between each screen using `system("pause")` and `system("cls")`.

The image displays four sequential screenshots of a Windows command prompt window running the Pig game. Each window title is "C:\Windows\system32\cmd.exe".

- Top-left screenshot:** Shows the game title "PIG" in a decorative border. The current state is: Player Name: (blank), High Score: 0, Your Points: 0. The menu options are S>ave, R>oll, and Q>uit. The prompt "Select: _" is shown.
- Top-right screenshot:** Shows the same menu, but the user has selected 'r'. The prompt is "Select: r". Below the menu, it says "You rolled: 6" and "Press any key to continue . . .".
- Bottom-left screenshot:** Shows the game state after the roll. "Your Points" is now 6. The prompt "Select:" is shown.
- Bottom-right screenshot:** Shows the user has selected 's'. The prompt is "Select: s". Below the menu, it says "Please enter your name: Stella", "SUCCESSFUL SAVE", and "Press any key to continue . . .".

```
C:\Windows\system32\cmd.exe
*****
*          PIG          *
*****
Player Name:   Stella
High Score:    6
Your Points:   0

S>ave
R>oll
Q>uit

Select: s
You do not have the high score
UNSUCCESSFUL SAVE
Press any key to continue . . .

C:\Windows\system32\cmd.exe
*****
*          PIG          *
*****
Player Name:   Stella
High Score:    6
Your Points:   0

S>ave
R>oll
Q>uit

Select: r
You rolled: 1
Resetting Score to 0
Press any key to continue . . .
```

```
C:\Windows\system32\cmd.exe
*****
*          PIG          *
*****
Player Name:   Stella
High Score:    6
Your Points:   0

S>ave
R>oll
Q>uit

Select: q
Thanks For Playing
Press any key to continue . . .
```

Your program is to implement a Die class and a Game class.

The interfaces for each class are stored on Turing in the CS250-02Public folder. You are to copy these interfaces into your new project. Do not modify these interfaces.

Goals for Assignment 3

1. Write your first Object-Oriented Program using two classes, random numbers, and files
2. Break up a program into well-defined functions
3. Test your program one function at a time

To complete this assignment you must submit the following:

1. An electronic copy of your program on Turing
 - a) Add a project **03_Pig** to your solution **PUNetIDAssignments**. It is vital that you name your solution and your project correctly!
 - b) Type your program (fully documented) into the project. You need to follow the coding standards from the CS250 Web page. These coding standards have been modified to include additional C++ language features introduced in CS250, so please be sure to read the new coding standards.
 - c) Pay attention to the example output! Your program's output must look exactly like the example output! The spacing and newlines in your output must match exactly.
 - d) Make sure that your program compiles without errors & warnings and runs correctly. If you get any errors or warnings, double check that you typed everything correctly. Be aware that C++ is case-sensitive. You will lose 10% if there are any warnings and 70% if your program does not successfully compile.
 - e) Once you are sure that the program works, it is time to submit your program. You do this by logging on to Turing and placing your complete solution folder in the proper Drop folder.
 - f) The solution must be in the drop folder by time class starts on the day the assignment is due. Anything submitted after that will be considered late.
2. A hard copy of your program
 - a) The hard copy must be placed on the instructor's desk by the time class starts on the day that it is due. Print out your solution in the following order: main.cpp, Die.h, Die.cpp, Game.h, Game.cpp.
 - b) The hard copy must be printed in color, double-sided, and stapled in the upper left corner if your solution contains multiple pages. I do not bring a stapler to class.

More than likely, you will see new compiler errors that you are not familiar with. Please start this assignment early and come and see me early. If you want me to look at code:

- 1) Place a copy of your solution on Turing (or on a flash drive),
- 2) Bring in your class notes,
- 3) Bring in your textbook.

Good Luck!!!! ☺