Lab #7: Captain Jack

Introduction

In this lab, you will write a Graphical User Interface program that solves the Captain Jack problem.

Before writing this program, review the pseudo-code that you completed in the previous lab. You will use your pseudo code in this lab.

The problem

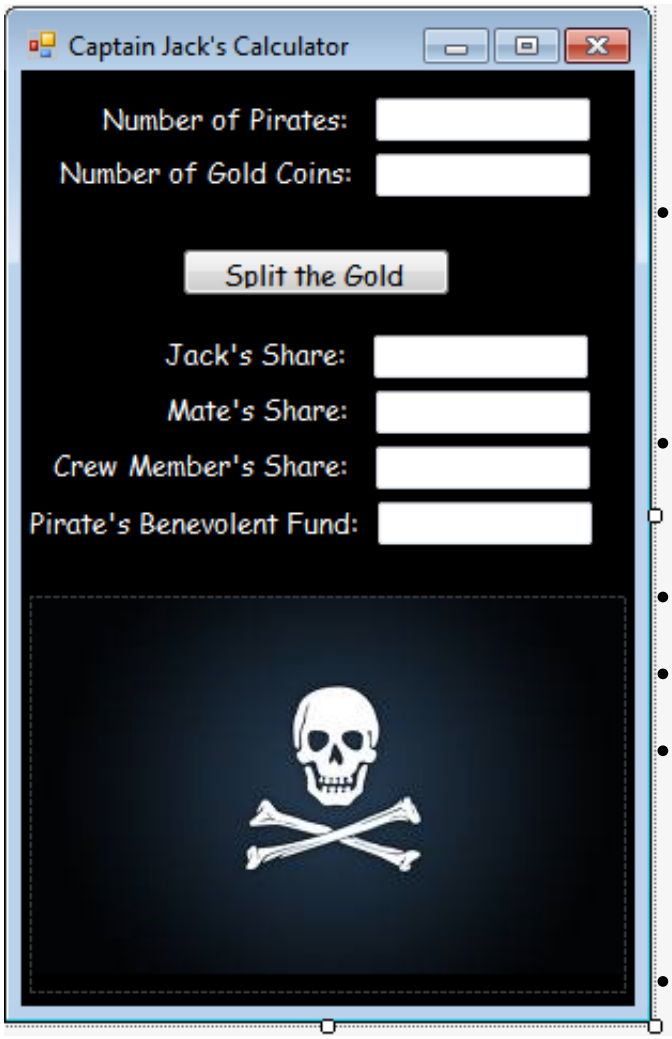
Captain Jack and his crew of pirates arrive in Tortuga after several weeks of plundering the high seas. Since the crew has been at sea for nearly a month, they are ready for a night of celebration. Captain Jack doesn't want to divvy up the treasure just yet, so he gives each man in the crew (except for himself and the first mate) 3 pieces of gold and sends them into town to celebrate. After the crew has gone he and the first mate count what's left and decide how to split it up among the crew. Captain Jack decides that he'll take 12% of the gold. He counts out his gold and hides it in his cabin. The Captain agrees to give the first mate 8% of the **remaining** gold. The first mate counts out his coins and hides it in his cabin. The next morning, the gold that is left is divided evenly among the members of the crew, including Captain Jack and the First Mate. Little do they know that Cap'n Jack and the first mate have already taken a cut. If the remaining treasure can't be split evenly, the bits that are left over are given to the Pirate's Benevolent Association.

The problem is to compute how much gold each person gets, and if any, how much goes to the Pirate's Benevolent Association. Keep in mind that a piece of gold cannot be split, so if some calculation yields a number that contains a fractional part, you can only give that person the integer part of the value. For example, if your program computed the captain's share as 25.67 pieces of gold, you could only give him 25 pieces of gold, **not** 25.67 pieces of gold. Warning, when you do any calculations do not round up. Simply drop the fractional part.

The Interface

You should design your own interface for this problem. It need not look like the one shown here, but it must contain the required information.

Your interface should have a menu strip with a menu item for exiting the application and one for showing your about box.



The interface should also have the following Text Boxes, appropriately labeled:

- A Text Box for inputting the total number of pirates in the ship. This number will include the Captain and the First Mate.
- A Text Box for inputting the number of Gold Coins the ship came into port with.
- A Text Box for displaying Captain's Jack's Share.
- A Text Box for displaying the First Mate's Share.
- A Text Box for displaying what each crew member (including Jack and the First Mate) gets when the gold is divided up in the morning.
- A Text Box for displaying how many gold coins the Pirate's Benevolent Fund gets.

Finally, add a button that will cause the calculations to be performed.

Your program should ask the user for two pieces of information:

- How much gold the pirate ship came into port with, and
- How many pirates are on the ship, including Captain Jack and the first mate.

Your program should work for any reasonable set of inputs. Here is an example of what your program should produce.

With 20 pirates and 1000 pieces of gold:

Captain Jack	113 gold coins (or 151 including the 38 coins divided among the crew)
First Mate	66 gold coins (or 104 including the 38 coins divided among the crew)
The Crew	38 gold coins each (don't count the 3 coins each took into town)
The PBA	7 gold coins

Writing the Code

Create Event handlers for the exit menu item, the about menu item, and for the button. Before you fill in the code for the button's event handler, copy the pseudo-code that you wrote in the previous lab, and paste it inside the curly braces for the button's event handler. This is where most of the action will take place in your program. Now fill in the actual code statements that do what your pseudo-code asked for.

Sample Program

You can find a sample executable program here.

File(s) to Submit:

Place the entire project folder for this lab into a zip file and name the zip file lab_07_your-initials_V1.0.zip. For example, I would name my file lab_07_RKD_V1.0.zip. Submit this assignment as Lab #7 on Canvas.

Grading Guidelines

Description	**Points possible**
Assignment meets grading guidelines: o Source code files contain a declaration that you did not copy any code, except that provided. o Assignment has been properly submitted to Canvas o Code meets style guidelines	2
Program executes correctly and meets all requirements.	3
Total	5