

## Program #4: Craps, Part 2

This assignment is designed to give you practice with program design, control structures, using class definitions, and random numbers.

### The Project

In this assignment, you will complete your interactive program that plays *craps*. You will probably want to begin with your previous version by first correcting any problems you have. Next, you will replace the calls to the code supplied for the first version with the newly supplied dice class code. Finally, you'll need to add code for betting. While casino craps have complicated betting rules, we'll just assume that you place a bet before each set of rolls.

Attached is a sample game. You'll notice that the output includes customized text depending on the progress of the game. Your program should do the same. As before, it should identify rolls by name. It should recognize doubles and comment accordingly. It should also keep track of the total amount that has been won or lost and print appropriate messages, e.g., "you have won ...", "you are even with the bank", etc.

You can download the Dice class from the course home page. (You will need to complete the definition for this class.) If you wish, you may also make other modifications to the supplied code. The supplied class will roll and display ASCII art versions of the dice. You'll need to complete the rest of the program. Since some of the coding has been done for you and you have already done some of the coding, your code should show a great deal of polish.

### What to Hand In

1. Turn in *all* code files used for your project and the corresponding project file by attaching the files to an email. This should be done by the start of class on the project due date. Be sure to keep archival copies of your files!
2. At the start of class on the due date, turn in a copy of the printout of your source code.
3. At the start of class on the due date, turn in a copy of the printout of sample output for your code.
4. You should also turn in the answers to the following questions in your email.

### Questions

1. How much time did you spend planning before you started coding?
2. How much time did you spend coding?
3. How much time did it take to correct the errors in your program?
4. What problems did you have getting your code to work?

### Grading

The program will be graded on the following basis:

1. Error-free. The program should compile without error or warning messages.
2. Documentation. The main program and every function should be properly documented. The comment for the main program should include your name, the date, and a brief description of what the program does. Each function should include a comment that includes a brief description of what the function does. Each function should also include a comment listing preconditions and post conditions.
3. Programming style. Did you use appropriate indentation and white space?
4. Completeness and correctness. Does your program fulfill all the requirements of the assignment correctly? Did you turn in everything including the questions?

Be sure to review the checklist on the class website before you submit your code.

**Due:** Start of class, Wednesday, March 29.

## Sample Run

Welcome to computer craps!  
Lets get started! Place your bets!

What would you like to bet? **10**

And here is the roll ...

```
|=====| |=====|
| *      | | * * *  |
|         | | * *    |
|         | | * *    |
|         | | * *    |
|=====| |=====|
```

You rolled a seven.

You win!  
The bank owes you \$10  
Keep playing? (1 for yes, 0 for no): **1**

\*\*\*\*\* A Real Sport \*\*\*\*\*

What would you like to bet? **10**

And here is the roll ...

```
|=====| |=====|
| * * *  | | * * *  |
| * * *  | | * * *  |
| * * *  | | * * *  |
|=====| |=====|
```

You rolled an eleven.

You win!  
The bank owes you \$20  
Keep playing? (1 for yes, 0 for no): **1**

\*\*\*\*\* A Real Sport \*\*\*\*\*

What would you like to bet? **10**

And here is the roll ...

```
|=====| |=====|
|         | |         |
|         | |         |
|         | |         |
|=====| |=====|
```

You rolled Snake Eyes!

You crapped out!  
The bank owes you \$10  
Keep playing? (1 for yes, 0 for no): **1**

\*\*\*\*\* A Real Sport \*\*\*\*\*

What would you like to bet? **10**

And here is the roll ...

```
|=====| |=====|
| * * *  | | * * *  |
| * * *  | | * * *  |
| * * *  | | * * *  |
|=====| |=====|
```

You rolled a nine.

You are trying for a nine.  
Rolling again!

And here is the roll ...

```
|=====| |=====|
| * * *  | | * * *  |
| * * *  | | * * *  |
| * * *  | | * * *  |
|=====| |=====|
```

You rolled a seven.

You crapped out!  
You are even with the bank!  
Keep playing? (1 for yes, 0 for no): **1**

\*\*\*\*\* A Real Sport \*\*\*\*\*

What would you like to bet? **-3**  
Whadda' you mean? \$-3. Get with it!  
Whadda' you bet? **10**

And here is the roll ...

```
|=====| |=====|
| * * *  | | * * *  |
| * * *  | | * * *  |
| * * *  | | * * *  |
|=====| |=====|
```

You rolled a seven.

You win!  
The bank owes you \$10  
Keep playing? (1 for yes, 0 for no): **0**  
The bank owes you \$10

You can collect from the cashier!  
See you around!