

PROGRAM TWO
CSC 2100 / Spring 2016
MASH

Assignment Date: Monday, February 15, 2016

Due Date: Monday, February 29, 2016

Purpose of Program:

The purpose of the program is to play the game MASH (Mansion, Apartment, Shack, House). This program asks the user multiple questions and then randomly generates answers based on the answers to predict the user's future. By the time you finish this program, you will have learned how to make a menu based program, use switch statements, validate user input with while loops, use strings, and mix cin>> and getline() intermittently in a program.

Input:

- 1 Names of three people (using strings)
- 2 Three integer numbers between 1 and 100
- 3 Three locations including city & state (using strings)
- 4 Three job titles (using strings)
- 5 Three companies or restaurants (using strings)
- 6 Three integer numbers between 10000 and 500000
- 7 Three types of cars (using strings)

Calculation:

You will be predicting the user's future by selecting one of their three choices randomly. You will need to create a random number for each "prediction".

Output:

- 1 The user's type of house (mansion, apartment, shack, or house)
- 2 The user's spouse
- 3 The number of children the user will have
- 4 Where the user will live
- 5 Where the user will work, their job title, and their salary
- 6 What the user will drive.



Specifications:

- Indentions & Commenting – refer to separate sheet on “Commenting in Your Programs” and “Indention in Your Programs”.
- MENU - You will have a main menu that will ask the user to either 1) Play MASH or 2) End the program. You must have a **switch** statement to figure out which choice the user selected. The program should run over and over until the user selects to end the program.
- You **MUST** validate all user input if the input is a number. This must be done with a while loop to force the user to enter valid data.
- Variables –
 - You will have a variable for each piece of data that you get from the user. Many of these are going to be strings.
 - You will also need a couple of integers to read in the user's choices during the program.
 - You will need an integer that will hold a random number.
 - You will need a Boolean to control the main **do-while** loop that will allow the user to play MASH as many times as he or she wants.
- Input
 - Except for the numerical data, the user must enter two things they like and one they dislike for each “category”. This makes the game much more interesting. Also, do not tell the user why they are entering in this information. For example, for the number of children you should write “Enter a number

between 1 and 100” and for spouse you should write something like “Enter in a person that you like”. This also makes it more fun. Categories include spouse, number of children, job title, place of employment, salary, where they live, and what car they drive.

- When reading in their answers, remember to use `getline` if you are reading in a string of data that could have spaces and `cin>>` if it is numerical data (no spaces).
- Look at your notes to remember what you have to do in your code when you put `cin>>` and `getline()` together in the same program.
- Numerical Data:
 - Salary – should be between 10000 and 500000 and you have to validate input for all three numbers.
 - Number of children – should be between 1 and 100 and you have to validate input for all three numbers.

- Calculations/Output:

- How to generate a random number:
 - First, you have to include the `<cstdlib>` header and the `<ctime>` header.
 - Second, you have to create an integer to hold the random number (I called mine `randomInt`).
 - Third, every time the program runs again (inside the while loop – at the top of the while loop), you have to “seed” the number generator with a random number. It is best to seed with the computer’s time because it will never be the same each time the number is ran. This is how you do that:
`srand((unsigned)time(0));`
 - Now, before printing out each result you have to generate a random number to know which of the three user’s answers to pick. You will assign this random number to `randomInt`:
`randomInt = (rand() % n) + 1;`

replace the `n` with a 3 if you want a number between 1 and 3

replace the `n` with a 4 if you want a number between 1 and 4

- How to print out results.
 - For housing you are not asking the user for the data. The words MASH stand for the different types of housing. There are four choices (Mansion, Apartment, Shack or House). You will need to generate a number between 1 and 4. If it is a 1, you will print out that the user will live in a mansion. If it is a 2, you will print out that the user will live in an apartment.....and so on.
 - For all the other “categories” you have three choices, not four. So you will need to generate a number between 1 and 3. If it is a 1, you print out the first one, 2 the second one, and 3 the third one. For example, for spouse – generate a number between 1 and 3. If it is a 1, then print out the first person that the user said they like. If it is a 2, then print out the second person that the user said they like. If it is a 3, then print out the third person that the user dislikes.
 - For the answers you should say something like:
 - You will live in
 - You will be happily married to ...
 - You and your spouse will have children.
 - You will live in (name city, state here)
 - You will work at (place) as a (job title) making \$ (salary) a year.
 - You will drive a

Sample Program Output

```
Command Prompt

E:\CSC Spring 2011\PROGRAMS\ProgramTwo>program2

Pick from the following menu:
1. Let's play MASH!
2. End program.
1
You chose to play MASH!

Enter in one person you like: Jason Crockett
Enter in another person you like: Roland Dechain
Enter in a person you hate: Peter Griffin
Enter three numbers between 1 and 100, seperated by a space.
7
2
99

Enter in one city, state you like: Cookeville, TN
Enter in another city, state you like: Knoxville, TN
Enter in one city, state you hate: St. Louis, MO
Enter in an awesome job title: CEO
Enter in another awesome job title: President
Enter in the worst job title ever: Toilet Cleaner
Enter a company or restaurant you like: Google
Enter another company or restaurant you like: Jewelry Television
Enter a company or restaurant you hate: McDonalds

Enter three numbers between 10,000 and 500,000, seperated by a space.
938483
399990
10001
The first number you entered was invalid.
Enter a number between 10000 and 500000.
435678

Enter in a car that you like: Yellow Lamborghini
Enter in another car that you like: Cobalt Blue Lamborghini
Enter in a car that you hate: Orange El Camino

***** MASH RESULTS *****
You will live in an apartment.
You will be happily married to Jason Crockett.
You and your spouse will have 2 children.
You will live in Cookeville, TN.
You will work at McDonalds as a Toilet Cleaner making $399990 a year.
You will drive a Yellow Lamborghini.

Pick from the following menu:
1. Let's play MASH!
2. End program.
2
You chose to end the program.
Bye!

E:\CSC Spring 2011\PROGRAMS\ProgramTwo>
```

The user can hit enter (like I did) or separate numbers by a space. Both ways work.

The user may enter just a car type (truck, car) or a specific company (GM, Toyota, Voltzwagon) or a specific model (Lamborghini, Camaro). As a user, I added a color because that is important to me, but the user doesn't have to.