

CSC 1300 LAB 6 PURPLE

FALL 2024

CONCEPTS

- Menu based program
- Functions, returning data from a function, sending data to a function
- Loops, nested loops

- Switch statement
- Running total
- Formatting output, escape characters
- Input Files/Output Files

HALLOWEEN TOWN - MONSTER TOYS

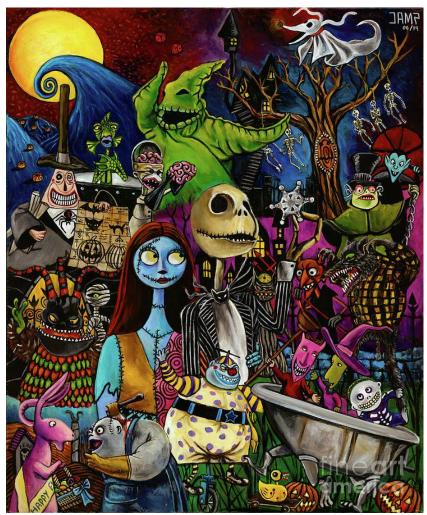


Image found on Google by Jose Antonio Mendez

NO PAIRED PROGRAMMING OPTION

This is an <u>individual assignment</u>. As per the syllabus, you may still talk with other students about the assignment, **however**, you are not allowed to share more than a few lines of code with them.

DESCRIPTION / SPECIFICATIONS

- 1. Create a source file named lab6.cpp.
- 2. Complete the program for Halloween Town. The program will first display a menu giving the manager three options 1 Enter Monster Toys, 2 Display Something Cool or 3 End the Program.
- 3. If the manager chooses 1, then the program will prompt the user for the number of monsters that worked each of the last three years. For each teller the program should ask for the number of toys for each of the last three years. The output should provide the number of monsters and the total number of toys by all the monsters over the last three years. This information should be outputted to a file.
- 4. If the manager chooses 2, then you will display ASCII art using files and you will keep track of how many times your user enters this function.
- 5. If the manager chooses 3, then the program should print how many times the user chose to display the ASCII art and then say "Bye!" and end.

FUNCTIONS

MAIN FUNCTION

- 1. Use a loop to continue running the program until the user selects to end the program.
- 2. Call the function **DisplayMenuGetChoice**:
 - a. Arguments: none
 - b. Returns: user's menu choice
- 3. Use a switch statement to determine what to do with the user's choice.
 - a. If the user selects 1, then call a function named **MonsterToys**:
 - i. Arguments: none
 - ii. Returns: none
 - b. If the user selects 2, then call the function named **DisplayCoolMessage**:
 - i. Arguments: current number of times the cool message has displayed
 - ii. Returns: updated number of times the cool message has displayed
 - c. If the user selects 3, then print out how many times the user displayed the cool message and then print "Bye!" Refer to the sample output for the format.

DISPLAYMENUGETCHOICE FUNCTION

1. Print out the menu of choices:

WELCOME TO HALLOWEEN TOWN!

Please choose one of the following options:

- 1 Enter number of Monster toys
- 2 Display Something Cool
- 3 End the Program

CHOICE:

- 2. Read in the user's choice.
- 3. Validate the user's choice with a loop.

4. Return the user's choice from this function.

MONSTERTOYS FUNCTION

- 1. Ask user for number of monsters.
 - a. For each monster you need to ask how many toys the monster made for year 1, year 2, & year 3. You will print this information to a file.
 - b. Keep a running total of how many monsters there are in these three years and how many total toys were made by all the monsters over the last three years. You will print these totals at the end of the file.
- 2. Refer to sample output to see how your output should look.

DISPLAYCOOLMESSAGE FUNCTION

- 1. Ask the user for the .txt file name and check to see if the file can be opened. If the file can't be opened, the function should return without adding to the total times something cool was displayed.
- 2. Loop through each line of the file and print it.
- 3. The art is given to you in iLearn (3 text files), however feel free to change it. To change it, you can get ideas & help from here: http://patorjk.com/software/taag/#p=display&f=Big%20Money-ne&t=Gringotts

SAMPLE OUTPUT

User input is highlighted in yellow.

```
WELCOME TO HALLOWEEN TOWN!
Please choose one of the following options:
  1 - Enter number of Monster toys
  2 - Display Something Cool
  3 - End the Program
CHOICE: 5
Invalid choice. Please choose 1-3.
CHOICE: 2
What is the name of the text file with the ASCII image? sally.txt
......$@@@@$-::::---*$$$@+:::::::::::::::::::::::::#=:$::-=:+@@@@@*.....
.....8@@@@-::-=:::%=:::*%+=:::::::::::::::::::-=-=#%@%###+#-::-@@@@@e+....
....#@@@*::::+%+==@@#+=@*::=+#-::::::::::::::::+*#:::@=-=#@+-=*#-%@@@@=...
...+000+::--::-#0+:...:-*0*8*:==:::::::::::::-+::0=#0#=:..:-+%8-:-%00000...
..:@@@*::::+@#.
               .:#@-=-:::::::::-*:#@*.
                                    .+@#=@@@@%..
..*@@@-::#++@-
                 . % @ : : : : : : : : : : : % @ % .
                                      .%+-@@@@:.
..%@@#::::-@:
                 .#%::::::=@=
                                       .%#%@@@*.
.:000=::::%=
                  .%+::::::::
                                       :%-00000.
.+000-::::%.
           .:**-.
                  : @ - : : : : : : : += .
                                       *+%@@@-
                               . == .
.#@@@-:::#.
           .000%.
                   .%+::::::-@.
                               #@@@-
                                       +#*@@@-
.#@@@-:::=*
                  .+*::::::=#.
                                       -8:+000-
                                     .:#+::=@@@-
.*@@@=::::-%*..
                   .+*::::::=#.
.=@@@#:::::-#%+..
                                    .=%=:::=@@@:
                   .%=:::::-%.
..@@@@::::::::-+%#=..
                  :#:::::::*-
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...%@@@=::::::::::::=+*######%##:::::::::::+%#+==+*#%#*-:::::::*=*::#@@=.
```

```
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.....-@@@@@-::::::::+=++-=#@%%%%%%%%%%%%%%%%#+@==%::#*-::::::#@@#......
.....#@@@@@@#+-:::::::::::::::=#@@@@@@#*...............
WELCOME TO HALLOWEEN TOWN!
Please choose one of the following options:
  1 - Enter number of Monster toys
  2 - Display Something Cool
  3 - End the Program
CHOICE: 1
How many monsters worked on toys in Halloween Town during each of the last three years?
How many toys did Monster 1 make, during year 1 ?
How many toys did Monster 1 make, during year 2 ?
19
How many toys did Monster 1 make, during year 3 ?
How many toys did Monster 2 make, during year 1 ?
How many toys did Monster 2 make, during year 2 ?
How many toys did Monster 2 make, during year 3 ?
How many toys did Monster 3 make, during year 1 ?
63
How many toys did Monster 3 make, during year 2 ?
How many toys did Monster 3 make, during year 3 ?
The 3 Monsters made a total of 199 toys during the last 3 years
WELCOME TO HALLOWEEN TOWN!
Please choose one of the following options:
  1 - Enter number of Monster toys
  2 - Display Something Cool
  3 - End the Program
CHOICE: 2
What is the name of the text file with the ASCII image? something silly
```

Oh no! Looks like the file could not be opened

```
WELCOME TO HALLOWEEN TOWN!
Please choose one of the following options:
   1 - Enter number of Monster toys
   2 - Display Something Cool
   3 - End the Program
CHOICE: 2
What is the name of the text file with the ASCII image? jack skellington.txt
*************************
...-*************
*******
**************
                               ..=*************
*************
                                 .******
*******
                              .-+*+: .=*********
*******
                            .##: .+:.+********
                               .. ..********
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***********..*@@@@%=..
**********:.+%=....:=*%+..
                          =: .=@@@@*. .=*******
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                          . .%@@@@@@: .:******
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                          :00000000000000000*
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****:..*.
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                                     .88. .****
                                     ::*== :****
****+..%#..
*****-. .#=...
                                   ...%#.
******=..:.%@: .=.
                               : .+*. . .*****
**********. .+...#=%@@*=*%===%*--=@*++#@@*+*@@%#+*.. .
                                   .-********
_+*********
                                :+**********
*******
                .:.
***************
                             .:-**************
******************************
*************************
WELCOME TO HALLOWEEN TOWN!
Please choose one of the following options:
   1 - Enter number of Monster toys
   2 - Display Something Cool
   3 - End the Program
CHOICE: 3
You chose to display the cool message 2 times.
```

Bye!

```
X
     monsters.txt
                                   +
File
      Edit View
Monster 1, year 1: 8 toys.
Monster 1, year 2: 19 toys.
Monster 1, year 3: 4 toys.
Monster 2, year 1: 6 toys.
Monster 2, year 2: 21 toys.
Monster 2, year 3: 58 toys.
Monster 3, year 1: 63 toys.
Monster 3, year 2: 12 toys.
Monster 3, year 3: 8 toys.
The 3 Monsters made a total of 199 toys during the last 3 years
```