CS 111 - Homework 7

Deadline

11:59 pm on **Friday, October 24, 2025**

Purpose

To get more comfortable and familiar with C++ simple expressions and basic data types, and to practice again compiling and running another (provided) C++ program in the CS50 IDE at https://cs50.dev/.

How to submit

You complete **Problems 1, 2, and 3** on the course Canvas site (short-answer questions on C++ simple expressions and basic data types), so that you can see if you are on the right track.

Then, you will submit your work for **Problem 4**, in your files **`111hw7.cpp`** and **`111hw7-out.txt`**, on the course Canvas site.

Important notes

- If you did not complete the Week 8 Lab Exercise, follow the link "Week 8 Lab Exercise" on the course Canvas site, under Modules, in the Lab Exercises section, for instructions on getting a GitHub account, which is used as part of the CS50 IDE setup.

Problem 1 - 20 points

Problem 1 is correctly answering the "HW 7 - Problem 1 - Short-answer questions on C++ simple expressions and basic data types - getting started" on the course Canvas site.

Problem 2 - 32 points

Problem 2 is correctly answering the "HW 7 - Problem 2 - Short-answer questions giving the types for C++ simple expressions - multiple-choice" on the course Canvas site.

Problem 3 - 32 points

Problem 3 is correctly answering the "HW 7 - Problem 3 - Short-answer questions giving the types for C++ simple expressions - short-answer" on the course Canvas site.

Problem 4 - 16 points

Practice, again, compiling and running a provided program that you modify slightly in the CS50 IDE, as you did in the Week 8 Lab Exercise.

- Open the CS50 IDE: https://cs50.dev/
  - You probably will **not** have to log in again -- but if you are asked to, sign in with your GitHub login.
- There is a file **`111hw7.cpp`** posted along with this handout.
  - COPY its contents into a file in the CS50 IDE, and name that file **`111hw7.cpp`**.
  - EDIT your **`111hw7.cpp`** to contain YOUR NAME in the comment in the beginning (about line 14), and to contain YOUR NAME in the `cout` statement on about line 80,

    and **SAVE** your file (File menu -> Save, or type Control-S (Windows) or Command-S (Mac))

- READ through it -- we'll be talking about the syntax for declaring C++ named constants and functions this week, and you can see some examples here.

  - OPTIONAL: IF you would like, you can add additional **`cout`** statements at the end of the **`main`** function to try out printing the values of different expressions to standard output.

- RIGHT-CLICK on the file's name **`111hw7.cpp`** on the left-hand-side,

  SCROLL down, and select "**Open in Integrated Terminal**" -- this opens a Terminal whose current folder IS the folder with your file **`111hw7.cpp`**

- To **COMPILE** your program, IN the Terminal, enter:

  `g++ 111hw7.cpp -o 111hw7`

- IF you have no compiler errors, then to **RUN** your program, IN the Terminal, enter:

  `./111hw7`

  (there are **NO** BLANKS here!)

- When you are satisfied with your program's output, go to the next step.

- In the Terminal, you can **redirect** the (standard) output of a command to a file by following that command with:

  `>` *desired_file_name*

  - So, create an example output from running your program to submit to Canvas by running the following command in the CS50 IDE Terminal (open in the folder/directory with your program in it!):

    `./111hw7 > 111hw7-out.txt`

- RIGHT-CLICK again on the file's name **`111hw7.cpp`** on the left-hand side,

  SCROLL down, and select "**Download**" to download a copy of your **`111hw7.cpp`** to the local or Google drive folder of your choice.

  Also download a copy of your file **`111hw7-out.txt`** the same way.

  - Now **SUBMIT** your downloaded files **`111hw7.cpp`** and **`111hw7-out.txt`** to Canvas as your Homework 7 - Problem 4 submissions.