COMP2710 – Frequently Asked Questions About Homework 3

1. When I do the srand(time(0)); command I get a warning about converting from time_t to unsigned int could be loss of data. I understand what the warning means, but I can't seem to find a fix for it. I'm thinking I should cast it to a more precise data type, but I'm not sure what I need to cast it too. Any help would be great.

   Answer: The prototype of srand is given below:
   ```
   void srand ( unsigned int seed );
   ```

   You can convert the data type to unsigned int.

2. I'm having an issue with initializing the "srand(time(0))" for our homework 3. I get a compiler error (using the Linux remote servers) about expecting a constructor (or a destructor, but I'm guessing that's not relevant here). The line of code is merely:

   ```
   "srand(time(0));"

   And I've included the following above it:

   # include <iostream>
   # include <stdlib.h>
   # include <assert.h>
   # include <time.h>
   ```

   Answer: you must include the following library:
   ```
   # include <cstdlib>
   ```

   Sample source code – rand. cpp – can be found in Canvas.

3. I am having a problem with the "press any key to continue" function. I can get it to work if I hit the enter key but any other key will not work. It also only is working for me when I do not put it in a function. Is it a problem that the enter key is the only one that works? Do you have any other tips that could help solve this problem?

   Answer: Sample source code – pressanykey.cpp – can be found in Canvas.

4. For those functions, if the player hits the target, why should I change the "a_alive" or "b_alive" to true? should it be false?

   Answer: It should be false.

5. Can I add more parameter at Strategy2 function. I mean like this?
   ```
   void A_shoot2(bool& B_alive, bool& C_alive, int first);
   ```

   Answer: Yes, you can.

6. How to tell Aaron to miss his first shoot intentionally in the second strategy?

   Answer: You may either temporally set Aaron's accuracy rate down to zero, or do nothing but keeping the Charlie_alive's value unchanged (i.e., true).

7. Do I write a whole different c++ program for test cases or write the test cases in the same program?

   Answer: Please write one test driver (i.e., one function) for each tested function.

8. Will it be a problem if the program is printing over 10000 lines when it is looped?

   Answer: Your main function can simply include a release version, which will not print over 10000 lines when it looped. The test drivers can be maintained in your debug version.

9. Is it mandatory that I use the functions given or would it be ok to implement a Shooter class?

   Answer: You are strongly recommended to follow the suggested functions to implement homework 3. This is because we have suggested how to build test drivers for the recommended functions in the description.

10. Whenever I try to run the function, I have to press enter in the console before it will run, then it runs through the pressanykey function without stopping. I have tried implementing the code in my hw3 code and in a separate pressanykey.cpp file; in the latter, I copied and pasted the exact program that you posted and it still didn't work for me. I'm using Eclipse on Windows. Do you know what I'm doing wrong? Is it a problem because I'm trying to run it in Eclipse??

    Answer: The sample code (i.e., pressanykey.cpp) was successfully tested on a Linux machine using g++ and vi as an "IDE". If you are using an IDE on a Windows or Mac machine, the pressanykey() function may not work. pressanykey() is tested on Linux machines. If you are using a C++ compiler on Mac and Windows machines, this function may not work. There are two solutions: (1) compile your program in Linux or (2) use cin to replace pressanykey() on your Mac or Windows machine.

11. What is the difference between "void getNumbers (int& input1, int& input2)" and "void getNumbers (int input1, int input2)"? Essentially why is the "&" character there after the data type?

    Answer: "void getNumbers (int& input1, int& input2)" is considered as "call by reference"; whereas "void getNumbers (int input1, int input2)" is referred to as "call by value". Please click this link http://www.codingunit.com/c-tutorial-call-by-value-or-call-by-reference for details on the differences between "call by value" and "call by reference".

12. Can we put the function declarations inside the main function?

    Answer: No. Please don't put function declarations inside the main function. Please follow pressanykey.cpp as a good example.

13. Are we allowed to make any more functions than the five functions, the five test functions, and the main function? Does that mean that if we use the pressanykey.cpp method of continuing after a key press then that it needs to be implemented in the main function?

Answer: You can create other functions, but please use the suggested functions as a good starting point. You are free to copy, paste, and use the pressanykey function from the sample source code. You also need one main function.

14. What do you mean by heading information? I originally thought that meant prototypes of the functions but on number 7 in the homework 3 information document it shows that the prototypes under the include statements. Is that wrong?

Answer: Heading information includes your name, homework ID, and other information related to this assignment. Heading information doesn't contain the function prototypes. Your "include" statements should be placed below the heading information.

15. How to get the predefined void functions to alter variables outside their scope. I'm trying to make those shooter functions change a variable in main() that tells whether or not the person in question is still alive. Do you have any recommendations for how to do this?

Answer: We use "call by references" to solve this problem. Please see the `Aaron_shoots` () function in the sample source code `test_Aaron_shoots.cpp` for an example of "call by references". Please see then answer of question 11 on this page.

16. I only used two const variables as I do not know what the other two variables should be. I used the const on the duel variable holding 10,000 and the rate variable for converting to percentage. Can you give a hint for what the other const variables should be?

Answer: You declare a hit_rate constant for each shooter, then there are three hit_rate constants for three shooters. The number of simulated duels is a fourth constant.