

Intro to Computing—CSCI-1310

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Mon, Mar 16, 2015 · Lab

Lab 10—Header files & standard I/O operations

Objectives

Learn to create user defined header file

Use different datatypes like `int`, `float`, `double`, `char`

Use `cin` and `cout` commands

Part 1

Create three files:

`speed.h` - Contains function declarations for functions `fast_car()` and `slow_car()`.

`speed.cc` - Contains function definitions for functions `fast_car()` and `slow_car()`.

`Lab10.cc` - Contains the `main()` function.

Functions

There are three functions to write for this program.

fast_car()

Takes `distance` as a parameter.

Initialize `speed = 217mph`

Calculate `time` as a float value.

Return the calculated `time`.

slow_car()

Takes `distance` as a parameter.

Initialize `speed = 60mph`
Calculate `time` as a float value.
Return the calculated `time`.

main()

Takes `distance` in miles as input from user.
Calls `fast_car()` and `slow_car()` functions and passes `distance` as argument.
Compares time for both `fast_car()` and `slow_car()` and prints out which is faster than the other.

Input

```
Enter distance for the car chase game: 100
```

Output

```
Time taken by slow car: 1.66667  
Time taken by fast car: 0.460829  
Ferrari, the faster car has won the car chase !!
```

Hint

Write the entire program first in `Lab10.cc` file then extract speed calculation part and separate it out into `speed.h` header file and `speed.cc` file.

Compiler instructions

Use the following steps to execute your program from command line or terminal.

```
g++ -c speed.cc  
g++ Lab10.cc speed.o -o carChase  
./carChase
```

Zip and submit

To get credit for this lab exercise:

Submit all the three files to Moodle as a zip file named `Firstname_Lastname_Lab10.zip`
Show the TA your code and run your program.

