CS 150 Lecture 3 Exercises

Complete each of the exercises below and upload to Canvas before the deadline.

|  |
| --- |
| *Exercise 1 - a screenshot of your results here* |

|  |
| --- |
| *Exercise 2 - a screenshot of your results here* |

|  |
| --- |
| *Exercise 3 - Copy and paste a screenshot of your source code for mets.cpp here* |

|  |
| --- |
| *Exercise 3 - Copy and paste a screenshot of your test code passing here* |

Exercise 1 - Different Integer Literals

Using what you’ve learned about declaring integer variables and the syntax for integer literals, provide the correct explicit variable types for each of the eight variable declarations in [this program](http://codecheck.it/files/1802022147dhrqbim51zfbijfs8iy6jmny9). You can assume that ints are 32 bits and that shorts are 16 bits. Use the smallest legal type that will correctly store the subsequent value. Shoot a screenshot of your results and paste in the top text area.

Exercise 2 - Types and their Representations

# Follow along with the instructor as you examine different types, their sizes and bit patterns. Display the following output and shoot a screenshot showing the bit patterns for:

1. The char 'A'
2. The unsigned char 65
3. The short 32768
4. The unsigned short 32768
5. 15
6. -15
7. 3.5F
8. 3.5
9. -3.5

# 

# Exercise 3: Input, Processing & Output Review

**Basic IPO Programs**: in your homework and in class you've learned how to write Input, Processing and Output programs. Design, code and test the problem shown here.

Here is the problem:

*One way to measure the amount of energy that is expended during exercise is to use metabolic equivalents (****METS****). Here are some METS for various activities:*

* *Running 6 MPH: 10 METS*
* *Basketball: 8 METS*
* *Sleeping: 1 MET*

*The calorie to MET conversion factor is .0175. The number of calories burned per minute may be estimated using the formula:*

***Calories/ Minute = factor × METS × (Weight in kilograms)***

*Write a program that inputs a subject’s weight in pounds, the number of* ***METS*** *for an activity, and the number of minutes spent on that activity, and then prints out an estimate for the total number of calories burned. One kilogram is equal to* ***2.2*** *pounds.*

Here is what the program should look like when it runs:

|  |
| --- |
| Your weight in pounds: 250  Number of METS for the activity: 6  Minutes spent exercising: 90  You burned an estimated [1073.86] calories. |

Once you’ve **tested the program**, then shoot the screenshots requested.