

# EET 2350 Assignment 1 Points\_\_\_/100

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## **Problem 1: 5 points**

What types of programming languages do we have? Please list the type names and show some programming languages for each type.

Machine language

Binary

Hardware programming

VHDL, Verilog

Low level programming

Assembly, MIPS, Arm assembly, x86, RISC

High level language

C/C++, java ,c#, python

Scripting language

JavaScript

Markup language

Html

**Problem 2: 5 points**

Please define to compile. Does compile mean the code works?

Translate to machine code.

A compiled code may compile although it may not do what the writer intends.

**Problem 3: 10 points**

What are the basic components in C code?

Please indicate the corresponding components in the following code.

```
1  #include <stdio.h>
2  int main(void) {
3  printf("This is the first homework");
4  }
```

Line 1 library

Line 2 function name and encapsulation start.

Line 3 command printf with string input “This is the first homework” to be outputted.

Line 4 function encapsulation end.

**Problem 4: 10 points**

How many bytes does a float and double number use on the disk? How many bits does an int number use on the disk?

Float = 4 bytes

Double = 8 bytes

Int = 4 bytes \* 8 bit /byte = 32 bit

**Problem 5: 20 points**

How to determine the range and precision of float and double number in C? Also, what are the ranges and precisions for float and double number?

Float range

1.175494e-038 and 3.402823e+038

Double range

3.205261e-317 and 3.205253e-317

Float precision

$2^{23} = 8388608$  7 digits

Double precision

$2^{52} = 4503599627370496$  16 digits

**Problem 6: 10 points**

Which name of the variables are wrong? Why?

*Abc*

null

*123*

Starts with a number.

*\_underscore*

Null

*?name*

Starts with a symbol.

*name\_3*

null

*4name*

Starts with a number.

*auto*

null

**Problem 7 (code):      40 points**

Write a program to implement the comparisons of three integer numbers by conditional operator. Please ask the user to input random three integers. Then display the minimum, middle, and maximum number in one line. Also, please calculate and display the sum and the average value (save 2 digits after decimal point) of these three integers. Please write the comments line by line. Otherwise, you will not have any point without comments. Do not forget save the screen snap of the results after running the code.

Note: Paste your code and the screen snap of the running results here. Please use the **conditional comparator** to solve problem 7. If you use if statement, you will not get any point. Please watch this [video](#) if you do not know how to download your code from the REPL website.

### **Canvas submission:**

Please submit your **report (PDF)** and compress your **codes** into a **“.zip”** file.

Please submit your report **alongside** the zip file.

What needs to be included in your report:

- 1.Screenshots of the results you get after running each program.
- 2.Copy and paste your code. And write comments for each function.
- 3.Please write a short analysis of each problem, mainly explaining how you think about the design of the function, what troubles you encountered during the design process, and how you finally solved them, etc.

What needs to be included in your “.zip” file:

Your C programming code (.c file) for each problem.