CS2020 FALL Assignment 11

December 11, 2020

Instructions: There are five questions in this assignment. Each carries 10 marks. You need to answer all of them. Its due date is **December 18, 2020**.

Question 1

(a) Fibre optic, copper cable and radio wave are three communication media supporting the Internet infrastructure. Order these media in term of their channel noise levels. The channel with the lowest level of channel noise is placed first. [2 marks]

(b) What is the full name of DNS [2 marks] and what is it used for [2 marks]?

(c) If the DNS of a domain does not have the information regarding the IP address of the destination domain, what will it do? [4 marks]

Question 2

Search over the Internet for the answers of the following questions.

(a) What are the port numbers for (i) hypertext transfer protocol, (ii) file transfer protocol and (iii) simple mail transfer protocol? [4 marks]

(b) In each network domain, it must have a powerful machine serving as a front door for receiving (resp. sending) messages from (resp. to) the Internet. What is the name of this machine? [2 marks]

(c) What is the use of a router? [4 marks]

Question 3

(a) Which type of programming languages requires a translator to be running to support its execution? [2 marks]

(b) Which type of programming languages requires a translator to convert it to an executable file and save it in a computer? [2 marks]

(c) Name two programming languages which are interpreted languages. [4 marks]

(d) Name two programming languages which are compiled languages. [4 marks]

Question 4

Please refer to the lecture material *C Programming* to answer the following questions. It is better to compile the program code and then run it by typing its filename on the command prompt like below. Let say, the source code files are located in the following path.

```
C:\Users\john\sample_program\
```

The program to be running is `ifthen.exe`. Then, you need to type what you have seen like below.

```
C:\Users\john\sample_program>ifthen
Which course you would like to register?
a: Marketing, b: Accounting
Please enter your choice (a or b): a
You have successfully registered Marketing.
You are now the 46 number of student.
C:\Users\john\sample_program>
```

(a) For the program listed in P.5, what will you see if the user enters 'b'? [3 marks]

(b) For the program listed in P.5, what will you see if the user enters 'c'? [3 marks]

(c) Remove the \n from the first `printf` command and re-compile the program. What will you see if the program is re-ran again? [2 marks]

(d) Remove the & character from the first `scanf` command of the original `ifthen.cpp` program. Compile and re-run the program. What will you see? [2 marks]

Question 5

In the `ifthen.cpp` program, there are three lines of code for data declaration.

```
int SNM;
int SNA;
char Choice;
```

(a) What are the data types of the variables *SNM*, *SNA* and *Choice*? [3 marks]

(b) What happens if the declaration is changed to the following? [4 marks]

```
int SNM
int SNA
char Choice
```

(c) In this program, a header file `stdio.h` has been included. State the reason why we need to include this header file. [3 marks]]