WEEKLY-EXERCISE - 07

ICS 365-51 **Metropolitan State University/MN**

Week 8 **Due 11:59pm, Sunday, Oct. 16, 2022** **Fall 2022**

Name:_____Pong Lee_____ Score: _____

Please complete both Parts I and II and then upload the results to D2L under the dropbox for Weekly Exercise 07 before the deadline (total 20 points).

Part I: Based on the discussion in Lecture 7, please either **bold** or highlight your answers below, only one answer per question. (1 point each, total 10 points)

1. Based on the discussion in Chapter 8, "`()`" defined in counter-controlled loops in `F#` means _____

   A) to decrease the loop variable by 1;

   B) to do nothing and return nothing;

   C) to generate an error message;

   D) to call the empty method.

2. Based on the discussion in Chapter 8, what are the two general categories of the selection statements?

   A) Entry-decision checking and exit-decision checking

   B) If-statements and While-loops

   C) User-defined selections and system-defined selections

   D) Two-way selectors and multiple-way selectors

3. Which of the following programming languages can use indentation to define either a then-clause or an else-clause in an if-statement?

   A) C

   B) Java

   C) Perl

   D) Python

4. Based on the discussion in Chapter 8, which of the followings is not one of the design issues for two-way selection statements in the early development of programming languages?

   A) How are the "then" and "else" clauses specified?

   B) How should the meaning of nested selectors be specified?

   C) Whether to allow to declare a variable with a selection statement?

   D) What is the form and type of the control expression?

5. Based on the discussion in Chapter 8, which of the following design issues is considered in logically-controlled loops but not in counter-controlled loops?

   A) Should it be legal for the loop variable or loop parameters to be changed in the loop body, and if so, does the change affect loop control?

   B) Should the control variable/expression be pretested or post-tested?

   C) What are the type and scope of the loop variable?

   D) Should the loop parameters be evaluated only once, or once for every iteration?

6. Based on the discussion in Chapter 9, defining two or more constructors for a class in Java is an example of _____.

A) method overloading
B) method ambiguity
C) method overriding
D) invalid definition

7. Based on the discussion in Chapter 9, which of the followings is not one of the fundamentals of subprograms?

A) The calling program is suspended during execution of the called subprogram;
B) Control always returns to the caller when the called subprogram's execution terminates;
C) The number of the parameters allowed in a calling program is limited to 2;
D) Each subprogram has a single-entry point.

8. Based on the discussion in Chapter 9 about `C` language, which of the following statements is true about the `C` program list on left?

```
#include <stdio.h>

int fun(int *i) {
  *i += 5;
  return 4;
}
void main () {
  int x = 1;
  x = fun(&x);
  printf("x = %d\n", x);
}
```

A) Variable `x` is passed by value;
B) Variable `i` is a formal parameter;
C) Function `fun` returns an integer value of `6`, not `4`, because that variable `x` is passed by reference;
D) Variable `i`'s address is passed to variable `x`.

9. Based on the discussion in Chapter 9, Which of the following programming languages is the language where the pass-by-reference can be specified by preceding the formal parameter with `inout`?

A) C#
B) Fortran 95+
C) PHP
D) Swift

10. Based on the discussion in Chapter 9, which of the following statements is not true?

A) A subprogram call is an explicit request that the subprogram be executed;
B) The signature of a subprogram is the number, order, and types of its parameters;
C) A subprogram declaration provides the protocol, but not the body, of the subprogram;
D) A formal parameter represents a value or an address used in the subprogram call statement

Part II: Please study the lecture slides and handouts covered this week to complete the following tasks: (Total 10 points)

Given a C program as shown below, please write similar programs in Java and Python on our Linux server, *sp-cfcsc01.metrostate.edu*. Please "*cat*" your programs before either compiling and executing or executing it with the testing case provided, and then include the corresponding screenshots below:

A *C* program, *myFileD.c*, which is *a simplified version of the C program provided in HandoutB,* with its execution on `/etc/hosts`

```
[ics365fa2235@sp-cfsics:~/wk08$ cat myFileD.c
#include <stdio.h>
#include <string.h>
#include <stdlib.h>

#define MAXLINE 130

void main(int argc, char *argv[])
{
  char myLine[MAXLINE];
  FILE *fp;
// Open the file
  if ((fp = fopen(argv[1], "r")) == NULL) {
      printf("cannot open file %s\n", argv[1]);
      exit(1);
  }
// Read and then display the file
  printf("\nThe content of the provided file, %s, is displayed as follow:\n\n", argv[1]);
  while (fgets(myLine, MAXLINE, fp) != NULL) {
     printf( "%s", myLine );
  }
// Close the file before ending the program
  fclose(fp);
}
[ics365fa2235@sp-cfsics:~/wk08$ gcc -o myFileD myFileD.c
[ics365fa2235@sp-cfsics:~/wk08$ ./myFileD /etc/hosts

The content of the provided file, /etc/hosts, is displayed as follow:

127.0.0.1   localhost
199.17.228.216 sp-cfsics.metrostate.edu sp-cfcsc01.metrostate.edu
10.1.215.11    sp-cfcsc01
10.1.215.51    sp-cfsics

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
[ics365fa2235@sp-cfsics:~/wk08$
```

2.1) Please provide the screenshot of a similar program in **Java** with its execution on `/etc/hosts` below (5 points):

```
ics365fa2215@sp-cfsics:~/wk08$ ics365fa2215@sp-cfsics:~/wk08$ javac myFileD.java
ics365fa2215@sp-cfsics:~/wk08$ java myFileD
/etc/hosts
127.0.0.1   localhost
199.17.228.216 sp-cfsics.metrostate.edu sp-cfcsc01.metrostate.edu
10.1.215.11    sp-cfcsc01
10.1.215.51    sp-cfsics

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
ics365fa2215@sp-cfsics:~/wk08$
```

```java
import java.io.*;
import java.util.Scanner;

public class myFileD {
        public static void main(String[] args) throws Exception
        {
                Scanner myObj = new Scanner(System.in);
                String fileName = myObj.nextLine();
                File file = new File(fileName);
                BufferedReader br = new BufferedReader(new FileReader(file));
                String st;
                while ((st = br.readLine()) != null){
                        System.out.println(st);
                }
        }
}
```

2.2) Please provide the screenshot of a similar program in **Python** with its execution on `/etc/hosts` below (5 points):

```
ics365fa2215@sp-cfsics:~/wk08$ python3 myFileD.py /etc/hosts
127.0.0.1   localhost
199.17.228.216 sp-cfsics.metrostate.edu sp-cfcsc01.metrostate.edu
10.1.215.11    sp-cfcsc01
10.1.215.51    sp-cfsics

# The following lines are desirable for IPv6 capable hosts
::1     ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

ics365fa2215@sp-cfsics:~/wk08$
```

```python
import sys

fileName = (sys.argv[1])
fileOpen = open(fileName)
print(fileOpen.read())
```