# CSCI 145 PA __1___ Submission

Due Date:_Mar , 2023_  Late (date and time):_____

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Exercise 1 --  need to submit source code and I/O
  -- check if completely done __x__ ; otherwise, discuss issues below

Pseudocode below if applicable:

Source code below:

```
package pa_1;

//*****************************************
//Problems.java
//
//Provide lots of syntax errors for the user to correct.
//
// *****************************************
public class Problems
{
    public static void main (String[] args) {
        System.out.println
("!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!");
        System.out.println ("This program used to have lots of
problems,");
        System.out.println ("but if it prints this, you fixed them
all.");
        System.out.println ("             *** Hurray! ***");
        System.out.println
("!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!");
    }
}
```

Input/output below:

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

This program used to have lots of problems,

but if it prints this, you fixed them all.

              *** Hurray! ***

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

Exercise 2 --  need to submit source code and I/O
  -- check if completely done __x__ ; otherwise, discuss issues below

Pseudocode below if applicable:

Source code below:

```java
package pa_1;

//Coding template goes here
//A source of some useful facts.
public class Facts
{
//Prints some simple facts.
    public static void main(String[] args)
    {
        System.out.println("Author: Your name");
        System.out.println();
        System.out.println("Some useful facts:");
        System.out.println("   Practice makes perfect.");
        System.out.println("   Hard work does pay off.");
        System.out.println("   C++ is the best!");
    }
}
```

Input/output below:

```
Author: Your name
```

Some useful facts:

   Practice makes perfect.

   Hard work does pay off.

   C++ is the best!

Exercise 3 --  need to submit source code and I/O
  -- check if completely done __x__ ; otherwise, discuss issues below

Pseudocode below if applicable:

Source code below:

```
package pa_1;

public class PrintName {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        // 1st Row
        System.out.print("IIIIIIIIII  LLL");
        System.out.println();
        // 2nd Row
        for (int i = 0; i < 7; ++i) {
            System.out.println("    III      LLL");
        }
        System.out.print("IIIIIIIIII  LLLLLLLLLL");
        System.out.println();
    }

}
```

Input/output below:

```
IIIIIIIIII  LLL

    III      LLL

    III      LLL
```

```
     III       LLL

     III       LLL

     III       LLL

     III       LLL

     III       LLL

IIIIIIIIII   LLLLLLLLLL
```

*Add more exercises as needed*

Exercise 4 --  need to submit source code and I/O
  -- check if completely done __x__ ; otherwise, discuss issues below

Pseudocode below if applicable:

Source code below:

```java
package pa_1;

public class PrintTriangle {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        for (int i = 0; i < 6; ++i) {
            for (int j = 5 - i; j >= 0; --j) {
                System.out.print(" ");
            }
            for (int k = 5 - i; k < 6; ++k) {
                System.out.print("*");
            }
            System.out.println();
        }
    }

}
```

Input/output below:

```
      *
     **
    ***
   ****
  *****
 ******
```

Answer for Question 1

I only know C++ so I will compare Java to C++. I would say that most of the flow control statements are very similar to C++. The for loop in Java is exactly the same as C++. For the process of compilation, C++ compiler translate the source code into executable code that may not be executable on other machine while Java compiler translate the source code into bytecode then the Java virtual machine translate into the appropriate executable code according to the processor on the machine.

Answer for Question 2

IntelliJ is a popular IDE for developing computer software written in Java and other Java virtual machine based language. Another popular IDE is NetBeans. NetBeans is open source and free to use.

Extra Credit – provide if applicable

Pseudocode below if applicable:

Source code below:

```
package pa_1;

public class PowerOfTwo {
```

```
    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int val1 = 1;
        int val2 = 40;
        int val3 = 128;
        int val4 = 4096;
        String str1 = " is a power of two!";
        String str2 = " is not a power of two!";
        if (powOfTwo(val1)) {
            System.out.println(val1 + str1);
        }
        else {
            System.out.println(val1 + str2);
        }
        if (powOfTwo(val2)) {
            System.out.println(val2 + str1);
        }
        else {
            System.out.println(val2 + str2);
        }
        if (powOfTwo(val3)) {
            System.out.println(val3 + str1);
        }
        else {
            System.out.println(val3 + str2);
        }
        if (powOfTwo(val4)) {
            System.out.println(val4 + str1);
        }
        else {
            System.out.println(val4 + str2);
        }
    }

    public static boolean powOfTwo(int val) {
        return (val & (val - 1)) == 0;
    }
}
```

Input/output below:

1 is a power of two!

```
40 is not a power of two!

128 is a power of two!

4096 is a power of two!
```