SWEN20003
Object Oriented Software Development
Workshop 1 (Solutions)

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Problems

1. Write a program to print a triangle of some constant size. For example, a triangle of size 5 should look like this:

```
#
##
###
####
#####
```

Solution:

```java
public class Program {
    public static void main(String[] args) {
        int N = 5;

        for (int i = 1; i <= N; ++i) {
            for (int j = 0; j < i; ++j) {
                System.out.print("#");
            }
            System.out.println();
        }
    }
}
```

2. Write a program to print a diamond of some constant **odd** size. For example, a diamond of size 5 should look like this:

```
  #
 ###
#####
 ###
  #
```

Solution:

```java
public class Program {
    public static void main(String[] args) {
        int N = 5;

        for (int i = 1; i <= N; i += 2) {
            int numSpaces = (N - i) / 2;
            for (int j = 0; j < numSpaces; ++j) {
```

```java
                System.out.print(" ");
            }
            for (int j = 0; j < i; ++j) {
                System.out.print("#");
            }
            System.out.println();
        }

        for (int i = N - 2; i >= 1; i -= 2) {
            int numSpaces = (N - i) / 2;
            for (int j = 0; j < numSpaces; ++j) {
                System.out.print(" ");
            }
            for (int j = 0; j < i; ++j) {
                System.out.print("#");
            }
            System.out.println();
        }
    }
}
```