

**Montgomery College, CMSC 203**  
**Worksheet 1**  
**Module 4**

**Objectives**

- DialogBox
- System.out.printf() method
- Random numbers
- Using API

**Warm-up Question – (for loop)**

1. How many times will the following loop run?

```
int counter = 10;
for(int i = 0; i < counter; i = i+2)
    System.out.println("Hello World");
```

**Concept Questions**

1. Display a “Hello World” message using a DialogBox.

2. Prompt a user to enter a String using a DialogBox.

3. Which one of these lines of code converts a String into a Double?

- a) double dVar = Double.parseDouble("10.6");
- b) double dVar = (Double)"10.6";
- c) double dVar = String.toDouble("10.6");
- d) All of the above
- e) Both a and b

4. Prompt the user to enter their age using a DialogBox, then convert the entered String into an Integer.

5. Which of these printf statements will output a number with a 2 decimal places precision.

- a) System.out.printf("Total: %5.2f", total);
- b) System.out.printf("Total: %.2f", total);
- c) System.out.printf.setPrecision(2, total);
- d) Both a and b

6. Using `printf`, write code that will display your name and age.

7. Which library needs to be imported in order to be able to generate random number?

- a) `import java.lang.Random;`
- b) `import java.util.Random;`
- c) `import Random;`
- d) All of the above

8. Which line of code will successfully generate a random `Integer`?

- a) `int r = rand.next();`
- b) `int r = rand.nextRandomNumber();`
- c) `int r = rand.nextInt();`
- d) All of the above

9. Write java statement(s) to randomly generate an integer between 1 and 7 (inclusive).

10. Write java statement(s) to randomly generate an integer between 4 and 15 (inclusive).

### **Programming Questions**

1. Write a program that does the following:

- Prompt the user to enter their name and age into the program using `DialogBox`.
- Generate a random number from 1 – 10 that represents number of cats.
- Show the following message using `DialogBox`:

“My name is \_\_\_\_.”

“I am \_\_\_\_ years old.”

“I will have \_\_\_\_ cats in the future.”

Replace the blanks with your own information.

2. Write a program that does the following:

- Prompt the user to input a positive integer in a loop until a negative number or zero is entered.
- On every iteration, if the number is positive, generate a random integer between 1 and the inputted value. If the number is negative or zero, exit the program
- On every iteration, output the generated value using `printf` that is left justified by 5 spaces and make sure every iteration starts on a new line.

Ex:

```
Enter a positive integer:
```

```
9
```

```
The random number is:      5
```

```
Enter a positive integer:
```

```
10
```

```
The random number is:      7
```

```
Enter a positive integer:
```

```
100
```

```
The random number is:     29
```

```
Enter a positive integer:
```

```
-9
```

```
GoodBye!
```