Week 2

1. What is the String class in Java? Is String a data type?
= String class in java represent sequence of char values. Yes, String is a data type.

3. Can you use String in switch case in Java? Explain it briefly.
= Switch case in java is a multi-way branch statement. In simple words, it executes one statement from multiple conditions.

2. How can you make a String upper case or lower case in Java?
= Sting upper case

```
public class c
{
public static void main(String[] args)
{
String txt = "Hello World";
System.out.println(txt.toUpperCase());
}
}
```

Output:

```
HELLO WORLD
```

=String lower case

```
public class c
{
public static void main(String[] args)
{
String txt = "Hello World";
System.out.println(txt.toLowerCase());
}
}
```

Output:

```
hello world
```

4. Explain different types of conditional statement in java.

```
public class Uc {
    public static void main ( String [] args ) {
  int time = 22;
if (time < 10) {
  System.out.println("Good morning.");
} else if (time < 18) {
  System.out.println("Good day.");
} else {
  System.out.println("Good evening.");
}
    }
}
```

Output:

```
Good evening.
```

5. What is the value of the variable num after the following is executed?

```
public class  v{
    public static void main (String[] args){
    int k = 5;
    int num = 0;
    int num1 = num + k * 2;
    int num2 = num + k * 2;
     System.out.println("the first  number is ="+num1);
     System.out.println("the second number is ="+num2);
    }
}
```

Output:

```
the first  number is =10
the second number is =10
```

6. How do you split a string in Java?

```
public class Uc {
    public static void main ( String [] args ) {
    String A="My-name-is-Abhishek";
    System.out.println(A);
      String[] newStr = A.split("-",5);
        for (String a : newStr)
            System.out.println(a);
    }
}
```

Output:

```
My-name-is-Abhishek
My
name
is
Abhishek
```

7. How do you check if two Strings are equal in Java?

```
public class Uc {
    public static void main ( String [] args ) {
    String first  = "hello";
    String second = "hello";
     System.out.println(first==second);
    }
}
```

Output:

```
true
```

Group B

1. Find the difference between Beth's age (57) and Tom's age (34).

```
public class  v{
    public static void main (String[] args){
    int beth = 57;
    int tom  = 34;
    int Difference = beth - tom;
     System.out.println("the difference is ="+Difference);
    }
}
```

Output:

```
the difference is =23
```

2. Develop a system to store your name as variable.

```
public class  v{
    public static void main (String[] args){
  String name = "Abhishek";
     System.out.println(name);
    }
}
```

Output:

```
Abhishek
```

4. Find the difference between 7 factorial and 5 factorial.

```
public class Uc {
    public static void main ( String [] args ) {
     int n,factorial;
     n=7;
     factorial = 1;
     for (int i=1 ; i<=n ; i++){
         factorial=factorial*i;
     }
     System.out.println("the Factorial of 7 is " +factorial);
     int n1,factorial1 ;
     n1=5;
     factorial1 = 1;
     for ( int i=1 ; i<=n1 ; i++){
      factorial1=factorial1*i;
     }
     System.out.println(" the Factorial of 5 is " +factorial1);
     int diff = factorial-factorial1;
     System.out.println("the Diference of 7f and 5f is = " +diff);

     }
}
```

output:

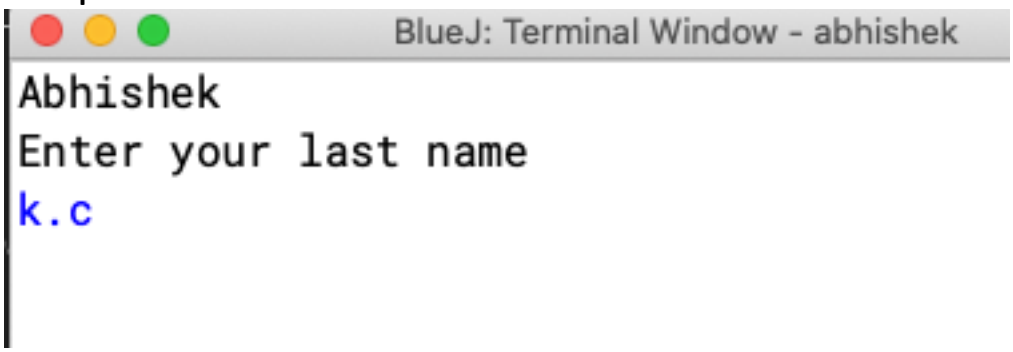
```
the Factorial of 7 is 5040
 the Factorial of 5 is 120
the Diference of 7f and 5f is = 4920
```

5. Complete the following questions by taking user input.

- Write a Java program that prompts a user for their last name and stores it in a variable named last_name.

```
import java.util.Scanner;
public class v{
public static void main( String [] args){
String fname ="Abhishek";
System.out.println(fname);
String lname;
System.out.println("Enter your last name ");
Scanner in =new Scanner(System.in);
lname = in.next();
}
}
```

Output:



. Give an instruction that prompts a user for their age and stores it as an integer in a variable named age.

```
import java.util.Scanner;
public class v{
public static void main( String [] args){
    int a ;
    Scanner in = new Scanner (System.in);
    System.out.println("enter your age ");
    a =in.nextInt();
    int age =a;
System.out.println("your age is "+age);
}
}
```

Output:

```
enter your age
20
your age is 20
```

.Give an instruction that prompts a user for their temperature andstores it as a float in a variable named current_temperature.

```java
import java.util.Scanner;
public class v{
public static void main( String [] args){
double temp;
Scanner in = new Scanner(System.in);
System.out.println("Enter the temperature");
temp = in.nextDouble();
double current_temperature =temp;
System.out.println("the temperature is" +current_temperature+ "degree celcius");
}
}
```

output:

```
Enter the temperature
90
the temperature is90.0degree celcius
```

6. Give a call to printf that is provided one string that displays the
following address on three separate lines:

John Doe

```
 import java.util.Scanner;
public class cc {
    public static void main(String[] args) {
        String fname ="john";
        String lname ="doe";
        String name = fname +"" +lname ;
        System.out.println(name);
    }
}
```

Output:

```
Senior Status
johndoe
```

123 Dudley Street

```
 import java.util.Scanner;
public class cc {
    public static void main(String[] args) {
       int fname =123;
       String a =Integer.toString(fname);
       String mname ="Dudley";
       String lname ="Street";
       String Name = a +""+ mname + "" +lname;
       System.out.println(Name);
    }
}
```

Output:

```
123DudleyStreet
```

7. Write a java program in which:

c) A student enters the number of college credits earned. If the number of credits is greater than or equal to 90, 'Senior Status' is displayed; if greater than or equal to 60, 'Junior Status' is displayed; if greater than or equal to 30, 'Sophomore Status' is displayed; else, 'Freshman Status' is displayed.

```
import java.util.*;
public class cc {
    public static void main(String[] args) {
        System.out.println("Enter your credit");
        Scanner sc = new Scanner(System.in);
        int credit = sc.nextInt();

        if (credit >= 90) {
            System.out.println("Senior Status");
        }

        else if (credit >= 60) {
            System.out.println("Junior Status");
        } else if (credit >= 30) {
            System.out.println("Sophomore Status");
        } else {
            System.out.println("Freshman Status");
        }
    }
}
```

output:

```
Enter your credit
90
Senior Status
```

a) The user enters either 'A', 'B', or 'C'. If 'A' is entered, the program should display the word 'Apple'; if 'B' is entered, it displays 'Banana'; and if 'C' is entered, it displays 'Coconut'.

```
import java.util.Scanner;
public class cc{
    public static void main(String [] args){
        Scanner a=new Scanner(System.in);
        System.out.println("Enter A");
        String letter1=a.nextLine();
        if (letter1.equals("A")){
            System.out.println("Apple");
            Scanner b=new Scanner(System.in);
            System.out.println("Enter B");
            String letter2=b.nextLine();
        if (letter2.equals("B")){
            System.out.println("Banana");
            Scanner c=new Scanner(System.in);
            System.out.println("Enter C");
            String letter3=c.nextLine();
        if (letter3.equals("C"))
            System.out.println("Coconut");
        }else{
    }
}
}
}
```

Output:

```
A
Apple
Enter B
B
Banana
Enter C
C
Coconut
```

Group c

1. Create a Java software that will ask the user for a number and then display whether it is positive or negative.

```
import java.util.*;
public class cc {
    public static void main(String [] args){
        System.out.print("Enter a number: ");
        Scanner sc = new Scanner(System.in);
        int number = sc.nextInt();

        if(number>0){
            System.out.print(number +" is a positive number");
        }else{
            System.out.print(number +" is a negative number");
        }

    }
}
```

Output:

```
1 is a positive numberEnter a number: 2
2 is a positive numberEnter a number: 3
3 is a positive numberEnter a number: -1
-1 is a negative number
```

4. There were bunch of students who were curious about their total marks, percentage and grade using the marks from five subjects as input. Develop a system to help them find their grades.

Output:

```
2
enter your mark in nepali
3
enter your mark in math
2
enter your mark in science
3
enter your mark in computer
2
your percentage is 0.024
```

```java
import java.util.Scanner;

public class mark{
public static void main(String[] args){
Scanner sc = new Scanner(System.in);
System.out.println("enter your mark in english");
int eng = sc.nextInt();
System.out.println("enter your mark in nepali");
int nep = sc.nextInt();
System.out.println("enter your mark in math");
int math = sc.nextInt();
System.out.println("enter your mark in science");
int sci = sc.nextInt();
System.out.println("enter your mark in computer");
int comp = sc.nextInt();
int sum = eng+nep+math+sci+comp;
double   per = (sum/500D);
double  grade = (per/100D);
System.out.println("your percentage is "+per);
if(grade >= 3.6){
System.out.println("your grade is A+");
}
else if (grade >=3.2){
System.out.println("your grade is A");
}
else if (grade >=2.65){
System.out.println("your grade is B");
}
}
}
```

6. Let’s create a java program to input a number and check whether it is a Buzz number or not. A number is said to be a buzz number when it ends with 7 or is divisible by 7.

```
import java.util.Scanner;
public class cc{
public static void main(String args[]){
Scanner d=new Scanner (System.in);
System.out.print("Enter a number");
double n=d.nextDouble();
if (n%7==0 || n/10==10) {
System.out.print("buzz number");
}else{
System.out.print ("not a buzz number");
}
}
}
```

Output:

```
Enter a number7
buzz numberEnter a number2
not a buzz number
 Can only enter input while your program is
```

7. Let’s take an example program where we will take the age of user as input and find whether he is a child, adult, or senior on the basis of age. Using Java if-else-if ladder statements.

```java
import java.util.Scanner;
public class cc {
    public static void main(String[] args) {
        System.out.println("Enter your age");
        Scanner sc = new Scanner(System.in);
        int age = sc.nextInt();

        if (age < 18) {
            System.out.println("You are a child");
        }

        else if (age > 18 && age < 40) {
            System.out.println("You are a adult");
        } else {
            System.out.println("You are a Senior");
        }
    }
}
```

Output:

```
8
You are a child
Enter your age
19
You are a adult

 Can only enter input while y
```

Group D

1. Let's create a printing application program where we will take the number of copies to be printed as input from the user and then prints the price per copy and the total price for the printing copies.

```
import java.util.Scanner;
public class cc{
   public static void main(String [] args){
       Scanner sc=new Scanner (System.in);
       System.out.println("enter amount of copies:");
    int copies =sc.nextInt();

    if(copies<=99){
         double price=copies*0.30;
         System.out.println("price is"+price);
    }
    else if (copies<=499){
         double price=copies*0.28;
         System.out.println("price is"+price);
    }
    else if(copies>=799){
         double price=copies*0.27;
         System.out.println("price is"+price);
   }
   else if(copies>=1000){
         double price=copies*0.26;
         System.out.println("price is"+price);

}
else if(copies>=100){
         double price=copies*0.25;
         System.out.println("price is"+price);
    }
}
}
```

Output:

```
enter amount of copies:
10
price is3.0
```

3. [Scenario] You're waiting at a station and the announcer has just broadcast that your train is going to be 13445 seconds late. You need to work out in understandable terms what that means. You assume this is going to be quite a long time so you whip out your laptop to write a program to convert the seconds into hours, minutes and seconds, aiming to maximize readability by giving priority to the largest units, i.e. the resulting seconds and minute's values must not be greater than 60.
You will need four variables to hold: the total number of seconds;
the number of hours; the number of minutes; and the number of remaining seconds. The example output should look something like
this:

```java
import java.util.Scanner;
public class cc{
public static void main(String[] args)
    {
        Scanner in = new Scanner(System.in);
        System.out.print("Input seconds: ");
            int seconds = in.nextInt();
        int S = seconds % 60;
        int H = seconds / 60;
        int M = H % 60;
        H = H / 60;
        System.out.print( H + ":" + M + ":" + S);
        System.out.print("\n");
    }
 }
```

Output:

```
Input seconds: 4
0:0:4

 Can only enter input while your program is running
```