Subject: SBL-OOPJ **Class: SE-Data Science**

Semester: III **A.Y. 2022-2023**

Experiment No. 1

❖ **Aim :** Write a Java program for implementation of looping and branching constructs.

Theory : Java provides three ways for executing the loops. While all the ways provide similar basic functionality, they differ in their syntax and condition checking time.

while loop: A while loop is a control flow statement that allows code to be executed repeatedly based on a given Boolean condition. The while loop can be thought of as a repeating if statement.

Syntax:

while (boolean condition)

{ loop statements... }

```
class whileLoopDemo {
   public static void main(String args[])
   {
      int i = 1;
      while (i < 6) {
         System.out.println("Hello World");
          i++;
      }   }    }
```

Output

Hello World

Hello World

Hello World

Hello World

Hello World

- **for loop:** for loop provides a concise way of writing the loop structure. Unlike a while loop, a for statement consumes the initialization, condition and increment/decrement in one line thereby providing a shorter, easy to debug structure of looping.

Syntax:

for (initialization condition; testing condition;increment/decrement)

{

statement(s)

```
}
```

Example:

```
class Main {
  public static void main(String[] args) {
    int n = 5;
    for (int i = 1; i <= n; ++i) {
      System.out.println("Java is fun");
    } } }
```

OUTPUT:

Java is fun

Java is fun

Java is fun

Java is fun

Java is fun

- **do while:** do while loop is similar to while loop with only difference that it checks for condition after executing the statements, and therefore is an example of Exit Control Loop.

Syntax:

```
do
{
   statements..
}
while (condition);
```

Example:

```
class Useofdowhile {
    public static void main(String args[])
    {
        int x = 21, sum = 0;
        do {
            sum += x;
```

```
            x--;   }
        while (x > 10);
        System.out.println("Summation: " + sum);
    }   }
```

Output:
Summation: 176

Break and Continue Statement:

Syntax :
In Java, a break statement is majorly used for:

- To exit a loop.
- Used as a "civilized" form of goto.
- Terminate a sequence in a switch statement.

```
class UseofBreak {

   public static void main(String[] args)
   {
      // Initially loop is set to run from 0-9
      for (int i = 0; i < 10; i++) {
         // Terminate the loop when i is 5
         if (i == 5)
            break;
         System.out.println("i: " + i);
      }
      System.out.println("Out of Loop");
   }
}
```

Continue:
Syntax:
continue;

```
  class UseofContinue {
     public static void main(String args[])
     {  for (int i = 0; i < 10; i++) {
           // If the number is 2     // skip and continue
           if (i == 2)
              continue;
           System.out.print(i + " ");
        }   }  }
```

Output : 0 1 3 4 5 6 7 8 9