Practical No. 6: Develop programs to demonstrate use of 'while', 'do-while'

I. Practical Significance:

Loop is used in programming to repeat a specific block of code until certain condition is true. Students will be able to use while and do-while loop to replace the repetition of statements.

II. Relevant Program Outcomes (POs)

- **Basic knowledge:** Apply knowledge of basic mathematics, sciences and basic engineering to solve the computer group related problems.
- **Discipline knowledge:** Apply Computer Programming knowledge to solve the computer group related problems.
- **Experiments and practice:** Plan to perform experiments and practices to use the results to solve the computer group related problems.
- **Engineering tools:** Apply relevant Computer programming technologies and tools with an understanding of the limitations.
- **Individual and Team work:** Function effectively as a leader and team member in diverse/multidisciplinary teams.
- **Communication:** Communicate effectively in oral and written form.

III. Competency and Practical skills

"Develop Applications using Java".

The practical is expected to develop the following skills:

1. Develop a program to using while and do-while loop.

IV. Relevant Course Outcome(s)

Develop programs using Object Oriented methodology in Java.

V. Practical Outcome (PrOs)

Develop programs to demonstrate use of 'while', 'do-while'

VI. Relevant Affective domain related Outcome(s)

1. Follow safety practices.
2. Practice good housekeeping
3. Demonstrate working as a leader/ a team member.
4. Follow ethical practices.

VII. Minimum Theoretical Background

1. While loop:

Syntax:

```
while(condition)
{
  statement(s);
}
```

2. do-while loop:

Syntax:

```
do {
  // Statements
} while (Boolean_expression);
```

VIII. Resources required (Additional)

Nil

IX. Resources used (Additional)

Sr. No.	Name of Resource	Broad Specification	Quantity	Remarks (If any)
1	Computer system	i3 · 4/256 GB SSD	1	
2				

X. Program Code: Teacher must assign a separate program statement to group of 3-4 students.

Develop a program to use logical operators in do-while loop.

```
Class whileDemo{
    public static void main(string[] args){
        int no = 1;
        while(no <=11){
        System.out.println("Number:"+no");
        no++;
        }
    }
}
```

XI. Result (Output of Code):

Number : 1
Number: 2
Number: 3
Number: 4
Number: 5
Number: 6
Number: 7
Number: 8
Number: 9
Number: 10
Number: 11

XII. Practical Related Questions

Note: Below given are few sample questions for reference. Teacher must design more such questions so as to ensure the achievement of identified CO.

1. State difference between while and do-while loop.
2. In do-while loop termination condition is checked at _____ (~~beginning~~/end)
3. How many times do-while loop will be executed if condition is false?

(Space for answer)

1) While loop cheaks the condition before the iteration of loop & the other hand do-while cheaks the condition after ~~iterat~~ execution of loop.

2) In do-while loop termination condition is checked at end

(3) do-while loop will be executed once it Condition is false.

XIII. Exercise:

1. Write Error/output of code in the given space.

Sr. No.	Program Code	Error/Output

1.	class DoWhileBasics
	{
	public static void main(String args[])
	{
	int a=1;
	do
	{
	System.out.println(a);
	a=a+1; // or a++;
	}
	while(a<=10);
	}
	}
		1
		2
		3
		4
		5
		6
		7
		8
		9
		10

2.	class Test {
	public static void main(String[] args)
	{
	while(true) {
	System.out.print(1);
	do {
	System.out.print(2);
	} while (false);
	}
	}
	}
		~~do unreachable~~
		~~state~~
		~~error.~~
		1
		2
		1
		2
		1
		2 . . . . .

2. Write a program to display number 1 to 50 using do-while loop.

XIV. References/ Suggestions for Further Reading

1. https://www.codesdope.com/c-loop-and-loop/
2. https://www.youtube.com/watch?v=llX6cLed73o
3. https://www.journaldev.com/16536/java-do-while-loop
4. https://beginnersbook.com/2015/03/do-while-loop-in-java-with-example/

(Space for answer)

```
2)
class Test {
    public static void main (String[] args){
        int i = 1;
        do {
            System.out.println("Number: "+i);
            i++;
        }
        while (i<=100);
    }
}
```

XV. Assessment Scheme

Performance Indicators		Weightage
Process related (35 Marks)		**70%**
1	Logic formation	30%
2	Debugging ability	30%
3	Follow ethical practices	10%
Product related (15 Marks)		**30%**
4	Expected output	10%
5	Timely Submission	10%
6	Answer to sample questions	10%
Total (50 Marks)		**100%**

List of Students /Team Members

1. .....
2. .....
3. .....
4. .....

Marks Obtained			Dated signature of Teacher
Process Related (35)	**Product Related (15)**	**Total (50)**	