Lecture 26

Agenda:
1. while loop
2. do_while loop
3. Scanner class

---

while loop:

Syntax:

initialization

while (condition)
{
   do this;
   do this;
   increment/decrement;
}

Boarding a flight

eg: 1,2,3,4,5

```
int i = 1;

while (i <= 5)
{
  Sopln (i);
  i++;
}
```

i = 1̷ 2̷ 3̷ 4̷ 5̷ 6

o/p: 1
    2
    3
    4
    5

---

do while loop:

Syntax:

initialization

do
{
   do this;
   do this;
   increment/decrement;
} while (condition);

Boarding a bus

```
int i = 1;

do
{
  Sopln (i);
  i++;
} while (i <= 5);
```

i = 1̷ 2̷ 3̷ 4 5̷ 6

o/p: 1
    2
    3
    4
    5

```
for( int i=1; i<=5; i++)
    {
        Sopln (i);
    }
```

eg: int i = 10;
    do
    {

        Sopln(i);
        i++;
    } while (i<=5);

i = 10̶ 11
o/p 10

Guess the output:

1. ```
   int i = 72;
   while (i< 80)
   {

       Sopln(i);
       i = i+2;
   }
   ```

i = 7̶2̶ 7̶4̶ 7̶6̶ 7̶8̶ 80
o/p 72
     74
     76
     78

2

```
int i=5;                 i=$ $ 3
while (i > 3)            o/p: 5
{                            4
  Sopln(i);
  i--;
}
```

3.
```
int i=5;                 i= $ $ 3
do                       o/p:  5
{                              4
  Sopln(i);
  i--;
} while (i==4);
```

4.
```
for(int i=5; i>=4; i--)
{ Sopln(i);
}
```
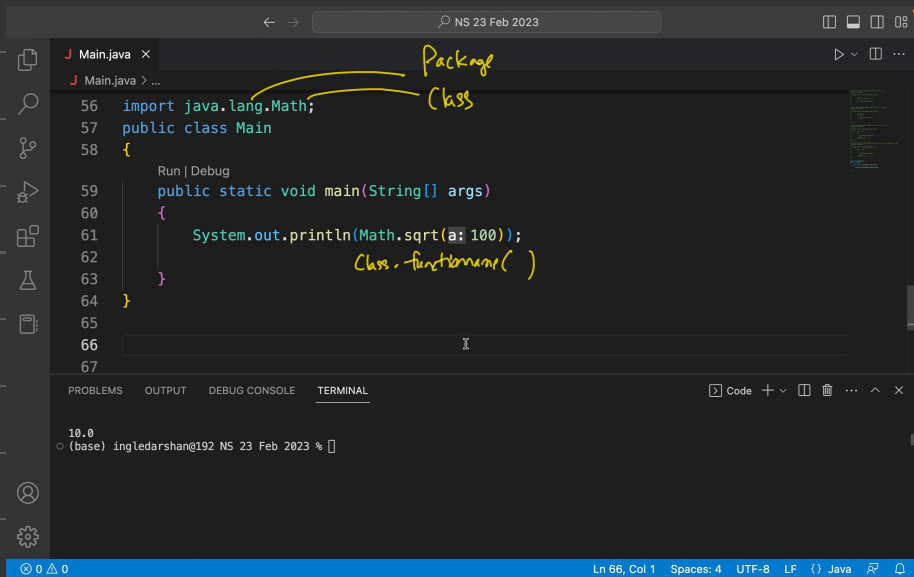
Main :

```
56  import java.lang.Math;
57  public class Main
58  {
        Run | Debug
59      public static void main(String[] args)
60      {
61          System.out.println(Math.sqrt(a: 100));
                                  Class.functionname(  )
62
63      }
64  }
65
66
67
```

Package
Class

Class . functionname( )

PROBLEMS   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
10.0
(base) ingledarshan@192 NS 23 Feb 2023 %
```

Scanner Class : It is used to take i/p from the user.

import java util Scanner;

class Main

{

   psvm(String args [ ])

   {

      // Create an object of Scanner class

      <u>Scanner</u>   <u>sc</u> = <u>new</u>   <u>Scanner</u>(System . in);

      object   allocate

      name   memory

             to

             object

             'sc'

to instruct System to take
input from the external
device like KBD

      Sopln(" What is your name ? ");

String s;

s = sc.nextLine(); // accept i/p from KBD

Sopln("Hello ", s);

}

}

```
56  import java.util.Scanner;
57  public class Main
58  {
        Run | Debug
59      public static void main(String[] args)
60      {
61          Scanner sc = new Scanner(System.in);
62          System.out.println(x: "What is your name?");
63          String s;
64          s = sc.nextLine();
65          System.out.println("Hello "+s);
66      }
67  }
```

s

Dr. Darshan Ingle

PROBLEMS 1   OUTPUT   DEBUG CONSOLE   **TERMINAL**

```
What is your name?
Dr. Darshan Ingle
Hello Dr. Darshan Ingle
(base) ingledarshan@192 NS 23 Feb 2023 %
```

```java
// Scanner class
import java.util.Scanner;
public class Main
{
    public static void main(String[] args)
    {
        Scanner sn = new Scanner(System.in);
        System.out.println("What is your first name?");
        String fname, lname;
        fname = sn.nextLine();
        System.out.println("What is your last name?");
        lname = sn.nextLine();
        System.out.println("Hello "+fname+" "+lname);
    }
}
```

Terminal output:
```
What is your first name?
Darshan
What is your last name?
Ingle
Hello Darshan Ingle
(base) ingledarshan@192 NS 23 Feb 2023 %
```

```java
import java.util.Scanner;
public class Main
{
    public static void main(String[] args)
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter first no:");
        int no1, no2;
        no1 = sc.nextInt(); // 100
        System.out.println("Enter second no:");
        no2 = sc.nextInt(); //50
        int res;
        res = no1+no2;
        System.out.println("Addition= "+res);
    }
}
```

Terminal output:
```
Enter first no:
100
Enter second no:
50
Addition= 150
(base) ingledarshan@192 NS 23 Feb 2023 %
```

https://www.w3schools.com/java/java_user_input.asp

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Java Method Overloading
Java Scope
Java Recursion

Java Classes
Java OOP
Java Classes/Objects
Java Class Attributes
Java Class Methods
Java Constructors
Java Modifiers
Java Encapsulation
Java Packages / API
Java Inheritance
Java Polymorphism
Java Inner Classes
Java Abstraction
Java Interface
Java Enums
Java User Input
Java Date
Java ArrayList
Java LinkedList
Java HashMap
Java HashSet
Java Iterator
Java Wrapper Classes

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Learn more

Input Types

In the example above, we used the `nextLine()` method, which is used to read Strings. To read other types, look at the table below:

Method	Description
nextBoolean()	Reads a boolean value from the user
nextByte()	Reads a byte value from the user
nextDouble()	Reads a double value from the user
nextFloat()	Reads a float value from the user
nextInt()	Reads a int value from the user
nextLine()	Reads a String value from the user
nextLong()	Reads a long value from the user
nextShort()	Reads a short value from the user

In the example below, we use different methods to read data of various types:

Example

Get your own Java Server

```
import java.util.Scanner;
```

Take Home :

1. WAP to find area of circle & its perimeter.
Accept radius from user.
Use value of PI from Math class.

2. WAP to accept two nos a & b & print even
nos in the range. Accpt a & b from the user.
eg: if a= 2 & b=11, o/p: 2,4,6,8,10
eg: if a= 2 & b=10, o/p: 2,4,6,8,10
eg: if a= 500, b= 1000, o/p: 500,502,504, ----- 996,998,1000

——————— X ———————