Core Java

Unit 2

Learning Outcomes

ITERATIONS

JUMP STATEMENTS

LABELLED LOOPS

Iterations

while

do … while

for

for each

while

- It loops through a block of code as long as a specified condition is **`true.`**
- If the number of iterations is not fixed, it is recommended to use while loop.
- **General Form:-**

```
while(condition) {
        // body of loop
}
```

EXAMPLE

```
class WhileLoopExample {

    public static void main(String args[]){

         int n, rem ,sum=0;
        Scanner sc=new Scanner(System.in)
         System.out.println("Enter a Number");
          n = sc.nextInt();
        while(n>0){
            rem = n%10;
            sum=sum+rem;
             n=n/10;
        }
          System.out.println(sum);
    }
}
```

do while

This loop always executes its body at least once, because its conditional expression is at the bottom of the loop.

General Form:-

```
do {
    // body of loop
} while (condition);
```

Example

```
class WhileLoopExample {

   public static void main(String args[]){

        int n, rem ,sum=0;
       Scanner sc=new Scanner(System.in)
        System.out.println("Enter a Number");
         n = sc.nextInt();
       do{
          rem = n%10;
          sum=sum+rem;
           n=n/10;
       }
         System.out.println(sum);
    }while(n>0)
}
```

for

- For loop is used When you know exactly how many times you want to loop through a block of code.

- General Form:-

```
for(initialization; condition; iteration) {
        // body of the loop
}
```

EXAMPLE

```
class ForLoopExample {
    public static void main(String args[]){
        for(int i=5; i>1; i--){
            System.out.println("The value of i is: "+i);
        }
    }
}
```

Output:-

The value of i is: 5
The value of i is: 4
The value of i is: 3
The value of i is: 2

for each

- The for each loop allows iterating over arrays and other collections in sequential fashion from start to finish.

General Form:-

```
for(data_type variable : array | collection){
        // body of the loop
}
```

Example

```
class ForEachExample1{
  public static void main(String args[]){
   //declaring an array
   int arr[]={12,13,14,44};
   //traversing the array with for-each loop
   for(int i:arr){
     System.out.println(i);
   }
 }
}
```

Output:-

12
13
14
44

Jump Statements

break

continue

return

Example: Break

```
public class BreakExample {

  public static void main(String args[]){
                int var;
                for (var =100; var>=10; var --)
                {
                   System.out.println("var: "+var);
                   if (var==99)
                   {
                       break;
                   }
                }
                System.out.println("Out of for-loop");
  }
}
```

Output:-

```
var: 100
var: 99
Out of for-loop
```

Example: Continue

```
public class ContinueExample {

  public static void main(String args[]){
            int counter=10;
            while (counter >=0)
            {
      if (counter==7)
      {
                  counter--;
                  continue;
      }
      System.out.print(counter+" ");
      counter--;
            }
  }
}
```

Output:

```
10 9 8 6 5 4 3 2 1 0
```

Example return

```
class ReturnEx{

        public static void main(String args[]) {
                boolean t= true;
                System.out.println("Before the return.");
                if(t)
                    return;
                    System.out.println("End of the program.");
                }
        }
```

Output:-

Before the return

Labelled Loops

- In java , we can give a label to a block of statements.
- A label is any valid java variable name.

Example 1

```
Loop1:   for(……..)
         {
                  ……..
          }
```

Example 2

```
Block1:  {
                  ……..
         Block2:  {
                  ……..
                   }
          }
```

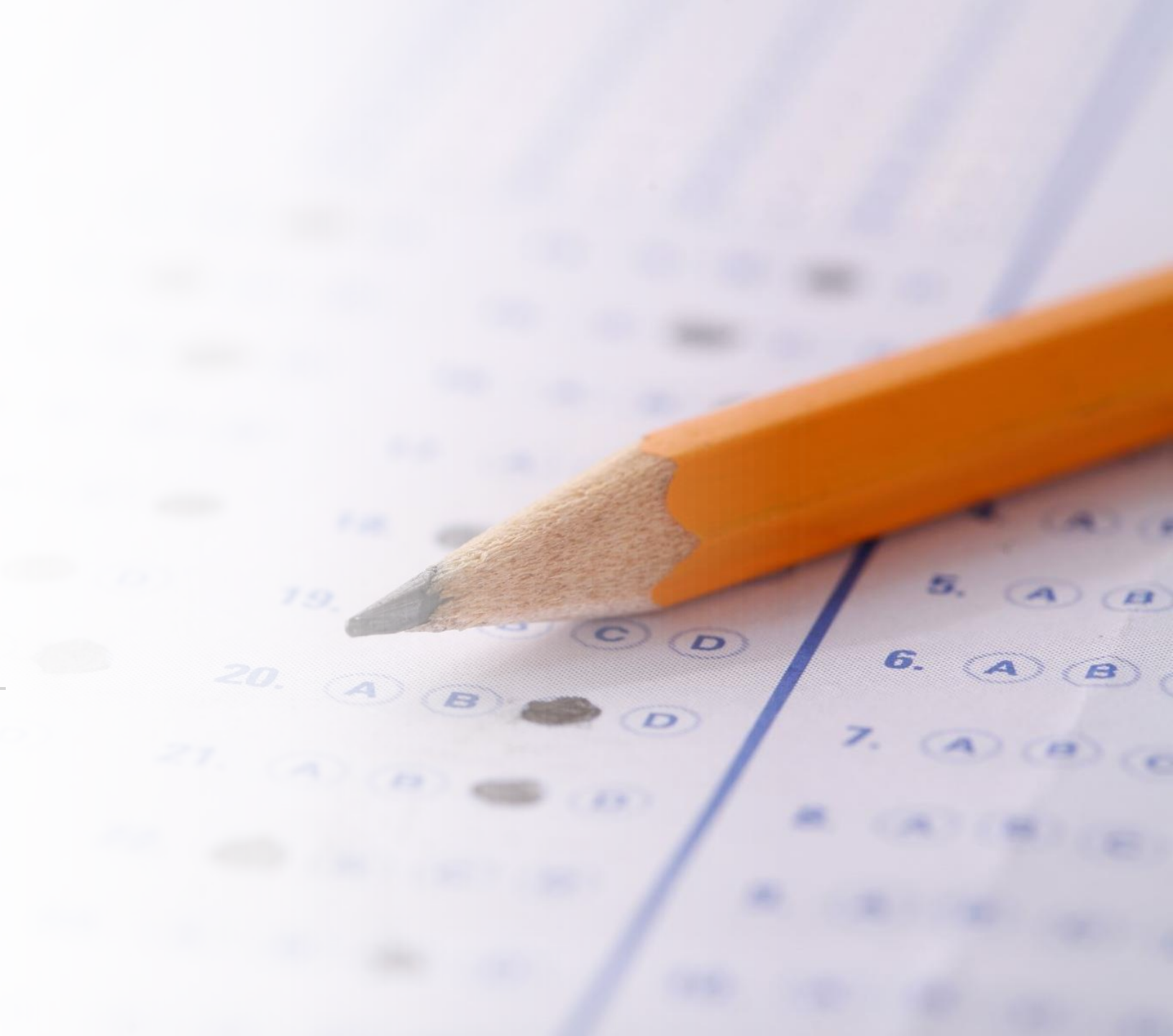
Example

```
class LabelledContinue
{
public static void main(String... ar)
{
loop:
for(int i=0;i<2;i++) {
for(int j=0;j<5;j++)
{
if(j==2)
continue loop;
System.out.println("i ="+i);
System.out.println("j ="+j);
}
}
System.out.println("Out of the loop");
}
}
```

Output:-

```
i =0
j =0
i =0
j =1
i =1
j =0
i =1
j =1
Out of the loop
```

Quiz



Thank you