**While loop**

**Day-01**

**07-03-2025**

**===================**

1) public void m1(){

 ......

 return v;

}

Ans: incorrect because the method's return type is "void"

no return statement is required in the method body.

2) public static void m2(){

 .....

 return;

}

Ans: correct

because method type ==> void

return; returning nothing

**Transfer Statements:**

**==============**

1) break

2) continue

3) return

4) exit

return statement:

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-> when we want to exit from the method immediately, we can use "return"

-> return is the keyword

-> return statement can always write/define within the method only.

-> return can define in two ways:

 1) using value/with value

 2) using no value/without value

Ex: return with value:

return variable;

return True;

return without value:

return;

class Practice{

 public static void main(String[] args)

 {

 System.out.println("Good Morning!");

 return;

 }

}

Q-1: Is method able to return object?

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Yes

Syntax:

 public static ClassName methodName(type data1, type data2,...){

 statement-1;

 statement-2;

 return new ClassName(data1, data2,..);

 }

Scanner scan = new Scanner(System.in);

Ex:

public Employee getEmployeeDetails(int empid){

 ....;

 return new Employee(101);

}

Q: What is Factory Method?

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The method which can return an object of the specified class is called as "Factory method".

double bankBalance(long acno){ // normal method because it returns the primitive value

 return 25000.67;

}

Student result(int sid){ // factory method because it returns the object

 return new Student(77,67,59,88,98);

}

**Loop Statements:**

**===========**

When we need loops?

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when we want to execute the certain block of code repeatedly (again and again) we can use "loops"

-> Loop statements are also called as "Iterative statements".

-> There are two types of loop statements:

 1) Loop Entry Control statements

 2) Loop Exit control statements

-> When the program control can check the condition before going to start the loop, those are called as "Loop Entry control statements".

-> When the program control can check the condition before leaving from the loop, those are called as "Loop Exit control statements".

-> There are three loop statements:

 1) for loop --> loop entry control statement

 2) while loop --> loop entry control statement

 3) do-while loop --> loop exit control statement

Ex:

"Hi"

System.out.println("Hi"); --> Hi

"Hi" for 10 times

System.out.println("Hi");

System.out.println("Hi");

System.out.println("Hi");

System.out.println("Hi");

System.out.println("Hi");

System.out.println("Hi");

System.out.println("Hi");

-> To work with loops, we need three things:

1) Initialization ==> line = 1

2) Condition ==> line <= 10

3) Update ==> line + 1

**While loop:**

**=======**

-> while is a keyword

using this we can define the while loop.

**When we can use while loop and when we can use for loop?**

**======================================**

-> When we can estimate the number of iterations before going to implement we can use "for loop".

-> When we cannot estimate the number of iterations before going to implement we can use "while loop".

Ex: Billing system ==> run with unexpected number of tokens ==> While

Employee Data System ==> for loop

While loop syntax:

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initialization;

while(condition)

{

 statement-1;

 statement-2;

 update;

}

Next Statement;



**/\* WRITE A PROGRAM IN JAVA TO PRINT "HI" FOR 10 TIMES USING WHILE LOOP \*/**

class printingOfHi{

 public static void main(String[] args){

 int line = 1; // initialization

 while(line <= 10){

 System.out.println("Hi");

 line = line + 1;

 }

 }

}

**// WRITE A PROGRAM TO PRINT SUM OF FIRST 10 NATURAL NUMBERS USING WHILE LOOP.**

**/\***

**Natural number: 1 TO ANY**

**\*/**

class SumOfNaturalNumbers{

 public static void main(String[] args)

 {

 int i = 1;

 int s = 0;

 while(i < 11){

 s = s + i;

 i = i + 1;

 }

 System.out.println("The sum of first 10 natural numbers = "+s);

 }

}

Assignment:

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1. WRITE A JAVA PROGRAM TO PRINT NUMBERS FROM 1 TO 10 USING WHILE LOOP.

**Day-02**

**08-03-2025**

**================**

Differences between while and for loop:

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1) while loop is loop entry control statement

for loop is also loop entry control statement

2) for(initialization; condition; update){

}

while(condition){

}

-> to define the for loop, we need initialization, condition and update

but to define the while loop, we need only the condition.

3) we can use the while, when the number of iterations not to be estimated

whereas the for loop can be used when we can estimate the number of iterations.

**/\* WRITEA A PROGRAM IN JAVA TO ACCEPT AN INTEGER AS AN INPUT.**

**AND FIND THE NUMBER OF DIGITS OF THE GIVEN NUMBER.**

**\*/**

import java.util.Scanner;

class CountDigits{

 public static void main(String[] args)

 {

 Scanner scan = new Scanner(System.in);

 System.out.println("Enter a value:");

 int number = scan.nextInt(); // 19976234

 int count = 0;

 int n = number; // initialization

 while(n > 0){

 int digit = n % 10; // 4 3 2 6 7 9 9 1

 count = count + 1; // 1 2 3 4 5 6 7 8

 n = n / 10; // 1997623 199762 19976 1997 199 19 1 0

 }

 System.out.println("The total number of digits = "+count);

 }

}

**/\* Write a java program to accept an integer as an input.**

**And check whether the given number is an Armstrong number or not.**

**\*/**

/\*

1234

individual digits: 1, 2 , 3 and 4

if number is 3-digit (xyz):

 x^3 + y^3 + z^3 == xyz

if number is 4-digit (abcd):

 a^4 + b^4 + c^4 + d^4 == abcd

The sum of nth power of individual digits of the number is equals to original given number then that number is called as an Armstrong number".

\*/

import java.util.Scanner;

class AmstrongNumberCheck{

 public static void main(String[] args)

 {

 Scanner s = new Scanner(System.in);

 System.out.println("Enter a value:"); // 4-digit only

 int number = s.nextInt();

 int n = number;

 int sum\_powers = 0;

 while(n != 0){

 int digit = n % 10;

 int powers = digit \* digit \* digit;

 sum\_powers = sum\_powers + powers;

 n = n / 10;

 }

 if(sum\_powers == number){

 System.out.println("The given number is an Armstrong number");

 }

 else{

 System.out.println("The given number is not an Armstrong number");

 }

 }

}

**/\* WAP USING JAVA TO DISPLAY ALL 4-DIGIT ARMSTRONG NUMBERS \*/**

/\*

for(initialization; condition; update){

 statements;

}

\*/

class ArmstrongRange{

 public static void main(String[] args)

 {

 for(int i = 1000; i <= 9999; i = i + 1){

 int n = i;

 int s = 0;

 while(n > 0){

 int d = n % 10;

 int p = d \* d \* d \* d;

 s = s + p;

 n = n/10;

 }

 if(s == i){

 System.out.print(i + "\t");

 }

 }

 }

}

**/\* WAP TO CHECK WHETHER THE GIVEN NUMBER IS PALINDROME NUMBER OR NOT \*/**

/\* when the reverse of the number which is exact to original number then that given number is called as "palindrome number".

\*/

import java.util.Scanner;

class PalindromeCheck{

 public static void main(String[] args)

 {

 Scanner s = new Scanner(System.in);

 System.out.println("Enter a value:");

 int number = s.nextInt();

 int n = number;

 int reverse = 0;

 while(n != 0){

 int d = n % 10;

 reverse = reverse \* 10 + d;

 n = n/10;

 }

 if(reverse == number)

 {

 System.out.println("The given number is Palindrome number");

 }

 else{

 System.out.println("The given number is not Palindrome number");

 }

 }

}

Assignment:

========

1) WRITE A PROGRAM IN JAVA TO ACCEPT AN INTEGER AS AN INPUT

AND FIND THE SUM OF INDIVIDUAL DIGITS OF THE GIVEN NUMBER.

2) WRITE A JAVA PROGRAM TO PRINT ALL PALINDROME NUMBERS FROM THE GIVEN RANGE.

3) WRITE A JAVA PROGRAM TO PRINT ALL ARMSTONG NUMBERS 100 UPTO 1000.

4) WRITE A JAVA PROGRAM TO FIND REVERSE OF THE NUMBER.

**Day-03**

**09-03-2025**

**=================**

**/\***

**WRITE A PROGRAM USING JAVA FOR ATM PIN VALIDATION SYSTEM**

**\*/**

/\*

correctPin = 1905

attempts = 3

\*/

import java.util.Scanner;

class ATMValidationSystem{

 public static void main(String[] args)

 {

 Scanner scan = new Scanner(System.in);

 int correctPin = 1905;

 int attempts = 4;

 while(attempts > 0){

 System.out.println("Enter your pin:");

 int atmPin = scan.nextInt();

 if(atmPin == correctPin){

 System.out.println("Proceed with your banking operation...");

 break;

 }

 else{

 attempts = attempts - 1;

 System.out.println("Incorrect Pin Entered. And remaining number of attempts you left with:"+attempts);

 }

 }

 if(attempts == 0){

 System.out.println("Your card was blocked that you were reached with maximum number of attempts. So try after 24 hours or you can visit or bank");

 }

 }

}

**/\***

**WRITE A JAVA PROGRAM TO BUILD USER LOGIN SYSTEM**

**\*/**

/\*

 facebook:

 login:

 user-name:

 password:

\*/

import java.util.Scanner;

class LoginSystem{

 public static void main(String[] args)

 {

 Scanner s = new Scanner(System.in);

 String username, password;

 while(true){

 System.out.println("Enter user name:");

 username = s.next();

 System.out.println("Enter the user password:");

 password = s.next();

 if(username.equals("admin") && password.equals("admin123")){

 System.out.println("Login Success..");

 break;

 }

 else{

 System.out.println("Invalid user login data..");

 }

 }

 }

}