

Industrial Visit Day-2 Report

Core Java Programming

Java:

Java is an Object-Oriented Programming Language.

It is based on classes and real time objects.

Applications of java:

- Mobile applications (specially Android apps)
- Desktop applications
- Web applications
- Web servers and application servers
- Games
- Database connection

Features of java:

- Java works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc.)
- It is one of the most popular programming language in the world
- It has a large demand in the current job market
- It is easy to learn and simple to use
- It is open-source and free
- It is secure, fast and powerful
- It has a huge community support (tens of millions of developers)
- Java is an object oriented language which gives a clear structure to programs and allows code to be reused, lowering development costs

- As Java is close to C++ and C#, it makes it easy for programmers to switch to Java or vice versa

JVM:

JVM (Java Virtual Machine) is an abstract machine. It is a specification that provides runtime environment in which java bytecode can be executed.

JDK:

JDK stands for Java Development Kit

It is a software development environment which is used to develop java applications and applets.

The JDK contains a private Java Virtual Machine (JVM) and a few other resources such as an interpreter/loader (Java), a compiler (javac), an archiver (jar), a documentation generator (Javadoc) etc. to complete the development of a Java Application.

Installation steps of JDK:

Step 1: Download JDK from the Site

Step 2: Install the JDK exe File

Step 3: Check the Directory

Step 4: Update the Environment Variables

Step 5: Verify the Java Installation

We can run a java application through JDK or Development tools (eclipse IDE). We can download eclipse from eclipse.org and install it.

Advantages of using IDEs:

- Easy to code
- Reduces human errors (The related functions/modules to the typed things will be listed while coding, So that we can just choose the functions from the list).
- Easy to debug
- Various shortcuts are available which reduces the coding time.

Steps to create a java application in eclipse:

- Open eclipse IDE
- Click on file from menu bar, and click on New project, give name to your project and click on Finish.
- Right click on src folder in the project created and click on New -> Class, give name to your main class and click on Finish.
- Write the code in the code space and click on the Play button from the tool bar to run the code.

Some of the built-in classes in java:

Class	Package	Functions
Scanner	java.util	Reads an user input
Date	java.util	Provides the system date and time
Calendar	java.util	Provides the calendar of 200 years calendar (1900-2099)
Random	java.util	Allows us to generate the random numbers between specified numbers.

Activities given in between the session:

- 1) Read three numbers and find the largest number among them.

```
import java.util.Scanner;

public class GreatestofThree
{
    public static void main(String[] args)
    {
        Scanner usrinp=new Scanner(System.in);
        System.out.println("enter three numbers:");
        int a=usrinp.nextInt();
        int b=usrinp.nextInt();
        int c=usrinp.nextInt();
        int L1=Math.max(a, b);
        int L=Math.max(L1, c);
        System.out.printf("Largest among %d, %d, and %d is %d",a,b,c,L);
    }
}
```

```
enter three numbers:
12
156
13
Largest among 12, 156, and 13 is 156
```

- 2) Write a program to print a message based on the system time; if the time is less than 12, print “Good morning”; if the time is less than 4, print “Good afternoon”; else print “Good evening”.

```
import java.util.Date;

public class GetWishes {

    public static void main(String[] args) {
        Date d = new Date();
        int hour=d.getHours();
        if (hour<12)
        {
            System.out.println("Good Morning!!");
        }
        else if (hour<16)
        {
            System.out.println("Good afternoon!");
        }
        else
        {
            System.out.println("Good Evening...");
        }
    }
}
```

```
Good Evening...
```

- 3) Write a program to read the year of birth from user and find the age; If the age is greater than or equal to 18, print “You can vote”; else print “You’re not eligible for voting and also for how many years they want to wait to vote.

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

public class EligibilityForVoting {

    public static void main(String[] args) {
        Calendar cal = Calendar.getInstance();
        Scanner input=new Scanner(System.in);
        System.out.println("Enter your year of birth: ");
        int YOB=input.nextInt();
        int currentYear=cal.get(Calendar.YEAR);
        int age=currentYear-YOB;
        if (age>=18)
        {
            System.out.println("You're eligible for voting");
        }
        else
        {
            System.out.printf("Sorry!! You can't vote now... Wait for %d more years.",18-age);
        }
    }
}
```

```
Enter your year of birth:
2007
|Sorry!! You can't vote now... Wait for 2 more years.
```

- 4) Write a program to generate a random string of 5 characters.

```
import java.util.Random;

public class RandomStringGeneration {
    public static void main(String args []) {
        Random rand=new Random();
        String randstr="";
        for (int i=0;i<5;i++)
        {
            int x=rand.nextInt(65,90);
            randstr+=(char)x;
        }
        System.out.println("The random string generated is "+randstr);
    }
}
```

```
The random string generated is AOPTS
```

