Java Installation Procedure

**Date: 5th Feb 2024**

**Step1: Command to check java version:-** java -version

run above command in command prompt(cmd)

if java version 8 to 20 available in your PC/laptop--> No need to install java

**Step2: Check Operating System**:

Right click on This PC/My Computer--> Properties-->Device Specifications--> System type

OS 32 bit--> 8 (1.8)

OS 64 bit--> 20(11 -20)

**Step3: How to download java**

**Java 8**:-> google search "download java 8"-->click on oracle.com(1st website)--> scroll down upto "Windows x86" --> click on 201.64 MB file

**Java 20**:-> google search "download java 20"-->click on oracle.com(1st website)--> scroll down upto "Windows x64 Installer" --> click on 160.12file

**Step4: install downloaded java file**

**Date: 5th Feb 2024**

**Step5: Set java path:**

5A: Copy java path

Open C drive-->program files-->Java-->Jdk/Jre(Jdk Preferred)-->bin folder-->Copy bin folder path (control + C)

**Step5B: Set java path**

Right click on This PC/my computer-->Properties-->Advanced system setting-->Environment Variable--> User Variable--> check for "path" variable

**Case1: Already path variable exist -->**click on path variable-->edit-->new-->ctrl+ V(Paste) --> ok--ok

**Case2: No path variable-->** click on new --> Enter variable name i.e. -"path"--> variable value -ctrl+ V(Paste)--> ok-->ok

**step6: verify java installed or not ?**

--> check for java version

execute command --> java -version

Eclipse Installation Procedure

**Date: 7th Feb 2024**

**Different Versions of eclipse Application(IDE):-**

oxygen, neon, marsh --> Java 8

Photon(latest Version) --> java version above 8

**Step1: Download eclipse Application (IDE)**

**Photon-> Google** Search "download eclipse photon"-->Select 1st website ->"Eclipse IDE for Java EE Developers"-->Windows 86\_64

**Oxygen-> Google** Search "download eclipse photon"-->select 1st website->"Eclipse IDE for Java EE Developers"-->Windows 32-bit

**Step2: Open Eclipse Application (IDE)**

Open downloads folder --> unzip eclipse file --> open eclipse folder --> double click on eclipse application file (blue colour icon) --> it should ask for workspace path-->

keep as it is(default path) --> select checkbox --> launch --> welcome/home page

1st Java Program

**Date: 8th Feb 2024**

**Java 1st program:**

**1. Create java Project**

**2. Create java package**

**3. Create java class**

**4. main method**

**5. printing statement**

**6. Vave Program (Control + s)**

**7. run program (click green btn)**

**8. check output--> Console tab**

**Step1: Create java project-->** file--> new--> java project--> Enter project name--> finish(Create module/don't create module--> don't create module)

**If "Java project" not visible ->** click on "open perspective"(top right corner) ->java(default)/java -> open

**Step2: Create java package**--> Right click on project name/Src folder-->new--> Package--> enter package name--> finish (Create module/don't create module--> don't create module)

**Step3: Create java class-->** right click on package name-->new-->class-->enter class name--> finish

**Note :** **Implicit super constructor Object() is undefined for default constructor**

**-->**right click on project name -> build path -> configure build path ->libraries ->double click on JRE system library ->workspace default jre -> finish --> apply & close

**1 java project--> multiple packages-->**

**1 packages--> multiple classes**

package sample1; //packageName

public class demo1 //className //class declaration

{

//class body

}

1st Java Program

**Date: 9th Feb 2024**

**Java 1st program:**

1. Create java Project

2. Create java package

3. Create java class

4. main method

5. Printing statement

6. Save Program (Control + s)

7. run program (click green btn)

8. check output--> Console tab

**Shortcuts in eclipse:**

**1. main method:** type "main"+control+space bar

**2. Printing statement**: type "syso"+control+space bar

String, System**--> 1st letter -->Caps**

**Step1: Create java project-->** file--> new--> java project--> Enter project name--> finish(Create module/don't create module--> don't create module)

**if "java project" not visible ->** click on "open perspective" ->java(default)/java -> open

**Step2: Create java package-->** right click on project name/Src folder-->new--> package--> enter package name--> finish (Create module/don't create module--> don't create module)

**Step3: Create java class-->** right click on package name-->new-->class-->enter class name--> finish

**Note:- Implicit super constructor Object() is undefined for default constructor**

**-->**right click on project name -> build path -> configure build path ->libraries ->double click on JRE system library ->workspace default jre -> finish --> apply & close

**Step4: create main method**

**Step5: create printing statement**

**1 Java project--> multiple packages-->**

**1 package--> multiple classes**

**1 class--> multiple method--> main method**

**1 main method --> multiple printing statements -->**

**to print messages**

**package** sample1; //packagename --> // -> comments

**public class demo1 //className or class declaration**

{

//class body

**public static void** main(String[]args) //main method declaration

{

System.***out***.println("HI") ; //printing statement

System.***out***.println("Hello ");

}

//String, System --> 1st letter caps

}

**package sample1;**

**public class demo2**

{

public static void main(String [] args)

{

System.***out***.println("hi");

}

}

Variable

Variables are nothing but piece of memory use to store information.

One variable can store 1 information at a time.

Variables also used in information reusability

**To utilise variables in java programming language we need to follow below steps:**

1. Variable declaration (Allocating/Reserving memory)

2. Variable Initialization(Assigning or Inserting value)

3. Variable Usage

//datatype

// String --> multiple characters --> shruti, Pratik, IT, computer, abc@1234, A+

// int --> numeric + non-decimal --> 10, 20, 10000, 5, -1, -11

// float --> numeric + decimal --> 2.5, 20000.5, 55.6, 61.2

// char --> single character --> A, B, a, x

**package Variable;**

**public class demo2**

{

public static void main(String[] args)

{

//Step 1: variable declaration

String studentName; //dataType variableName;

String studentDept;

//Step2: variable initialization

studentName="laxmi"; //variableName="variable Value";

studentDept="Computer Science";

//Step3: variable usage

System.***out***.println(studentName); //variableName

System.***out***.println(studentName); //info reusability

System.out.println(studentDept);

}

}

New Program:

**package Variable;**

**public class demo2**

{

public static void main(String[] args)

{

//step1: variable declaration

String studentname; //dataType variableName

String studentdept;

int studentRollNum;

float studentPer;

char studentGrade;

//step2: variable initialization

studentname = "mayuri"; //variableName="variableInfo";

studentdept = "Computer";

studentRollNum = 20;

studentPer = 60.5f;

studentGrade='A';

//step3: variable usage

System.out.println(studentname);

System.***out***.println(studentname); //info reuse

System.out.println(studentdept);

System.out.println(studentRollNum);

System.***out***.println("Student Percentage: "+studentPer+"%");

System.out.println(studentGrade);

}

}

New program :

**package Variable;**

**public class demo3**

{

public static void main(String[] args)

{

String empCompanyName;

String empName;

String empDesignation;

int empID;

float empSal;

empCompanyName="TCS";

empName = "Rahul";

empDesignation = "Automation Tester";

empID = 100;

empSal = 50000f;

System.***out***.println("Company Name: "+empCompanyName);

System.***out***.println("Employee Name: "+empName);

System.***out***.println("Employee Designation: "+empDesignation);

System.***out***.println("Employee ID: "+empID);

System.***out***.println("Employee Salary: "+empSal);

}

}

Datatype

**Date: 14th Feb 2024**

Datatype are used to represent type of data or information which we are going to use in our java program.

In java programming it is mandatory to declare datatype before declaration of variable.

In java datatypes are classified into two types:

1. Primitive datatype.

2. non-Primitive datatype.

**1.Primitive datatype:**

There are 8 type of primitive datatypes(byte,short,int,long,float,double,char,boolean).

All the primitive datatypes are keywords.

\* Memory size of primitive datatype is fix.

The types of primitive datatype are:

**Note**:- keyword starts with lower case

Primitive datatype starts with lower case

**syntax**: datatype VariableName;

**1.(Numeric + Non-decimal):-** Ex: 80,85,10,5, 10000 ..etc

Data Type Size range

1. byte 1 byte -128 to 127

2. short 2 bytes

3. int(imp) 4 bytes

4. long 8 bytes l

1GB=1024MB

1MB=1024KB

1KB=1024Byte

1Byte= 8bit

**2. (Numeric + decimal):-** Ex: 22.5,22.8,6.4....

5. float(imp) 4 byte f

6. double 8 byte d

**3. Single Character: -** Ex: A,B,X,Z.

7. char 2 byte

**4. Conditional:-** Ex: true,false.

8. boolean 1 bit

**2. non-Primitive datatype:**

There are 3 types of non primitive datatypes .

All the Non primitive datatypes are identifiers.

\*Memory size of non primitive datatype is not defined or not fix.

**Note:** Identifier starts with capital letter.

Non-primitive datatype starts with capital letter.

e.g. String, ClassName, InterfaceName

\* Method

**Date: 15th Feb 2024**

A method is a block of code which only runs when it is called.

Methods are used to perform certain actions, and they are also known as functions.

**Why use methods?** To reuse code: define the code once, and use it many times.

**1. main method (pre-defined)**

In any Java program, the main() method is the starting point from where compiler starts program execution. So, the compiler needs to call the main() method.

without main method we can't run any java program.

**2. Regular method (user defined)**

1. static regular method

**package Methods;**

**public class Sample1**

{

//1: static regular method call from same class

//1: main method (pre-defined method)

**public static void** main(String[] args) //main method declaration

{

System.***out***.println("main method started");

m1(); //methodname();

m2();

m2();

System.***out***.println("main method ended");

}

//static regular method (user defined)

public static void m1() //regular method declaration

{

System.***out***.println("running static regular method: m1");

}

//static regular method (user defined)

public static void m2()

{

System.***out***.println("running statis regular method: m2");

}

}