Name of the Experiment : INSTALL AND SETUP JAVA ENVIRONMENT

Experiment No : 01

Date : 9/1/2024

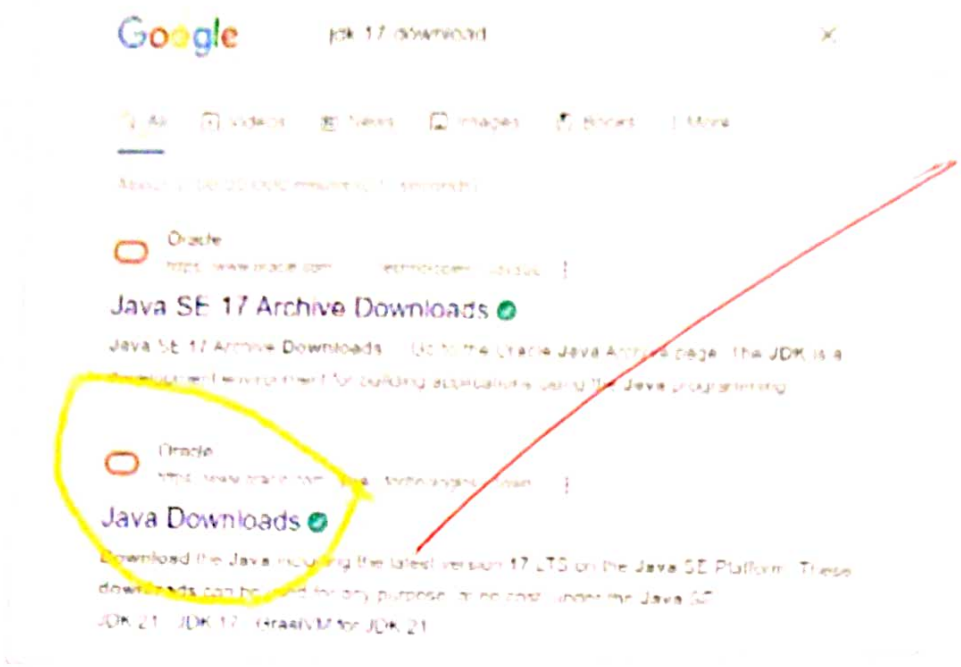
week -01

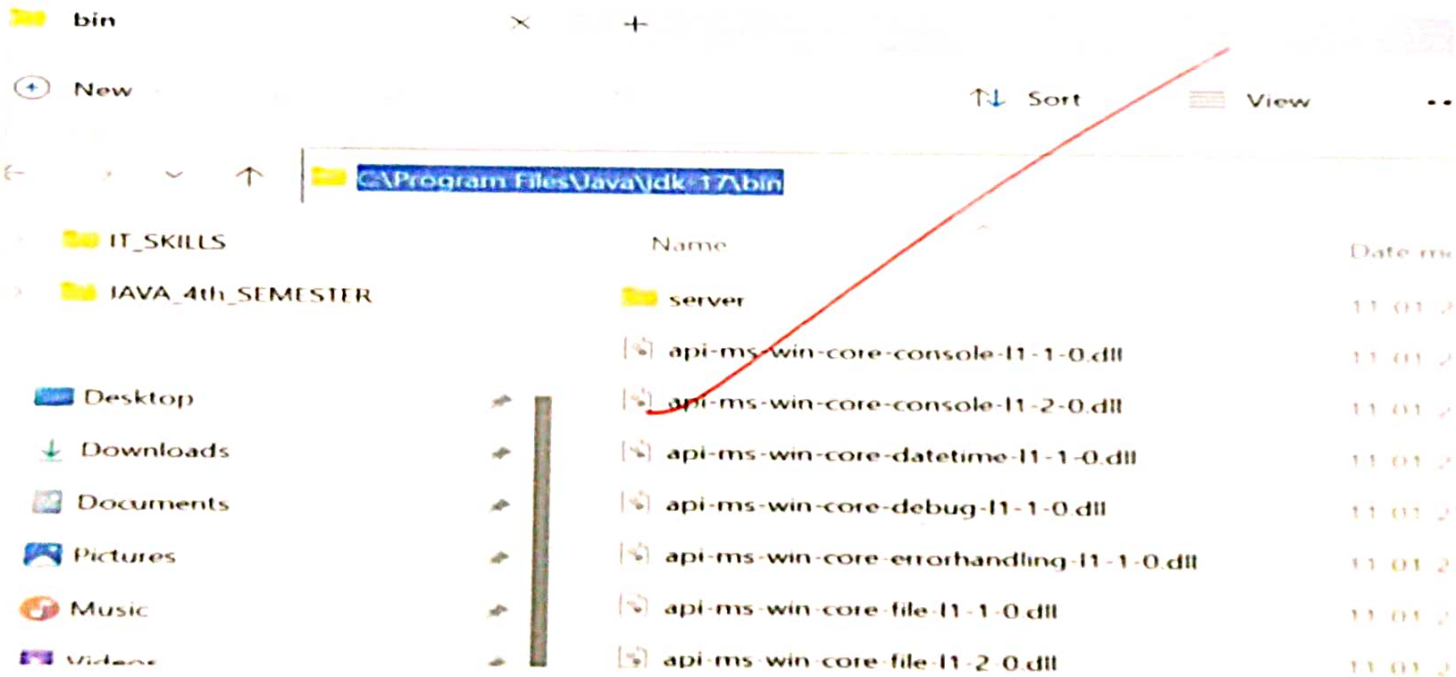
① Install and setepop java environomend :

step 1 :- Download JDK 17

step 2 :- Install JDK 17

step 3 :- Include JDK's "bin" Directory in the PATH environment variable
Copy the jdk installed path as show before


Google
jdk 17 download
Oracle
Java SE 17 Archive Downloads
Oracle
Java Downloads


bin
New
Sort
View
C:\Program Files\Java\jdk-17\bin
IT_SKILLS
JAVA_4th_SEMESTER
Desktop
Downloads
Documents
Pictures
Music
Name
server
api-ms-win-core-console-l1-1-0.dll
api-ms-win-core-console-l1-2-0.dll
api-ms-win-core-datetime-l1-1-0.dll
api-ms-win-core-debug-l1-1-0.dll
api-ms-win-core-errorhandling-l1-1-0.dll
api-ms-win-core-file-l1-1-0.dll
api-ms-win-core-file-l1-2-0.dll

Name of the Experiment : .....

Experiment No : 01 Date : .....

step 4: verify the JDK Installation in Command Prompt

2) Install Java editor (Eclipse for Enterprise Java) and Configure work space

Following is a step-bystep guide to download and install Eclipse IDE

step 1:- Install Eclipse
open your browser and typ https://www.eclipse.org/

step 2:- click a "Download" button

step 3:- click on "Download 64 bit" button

C:\Program Files\Java\jdk-17\bin
%SystemRoot%\system32
%SystemRoot%
%SystemRoot%\System32\Wbem
%SYSTEMROOT%\System32\WindowsPowerShell\v1.0\
%SYSTEMROOT%\System32\OpenSSH\
C:\Program Files\dotnet\

New
Edit
Browse...
Delete
Move Up

ome Insert Draw Design Layout References Mailings Review View Help

Get Ec

ECLIPSE FOUNDATION

Members Working Groups Projects More

The Platform for Open Innovation and Collaboration

The Eclipse Foundation provides our global community of individuals and organizations with a mature, scalab and commercially-friendly environment for open source software collaboration and innovation.

Name of the Experiment : .....

Experiment No : ....01..... Date : .....

step 4) :- click on "Download" button

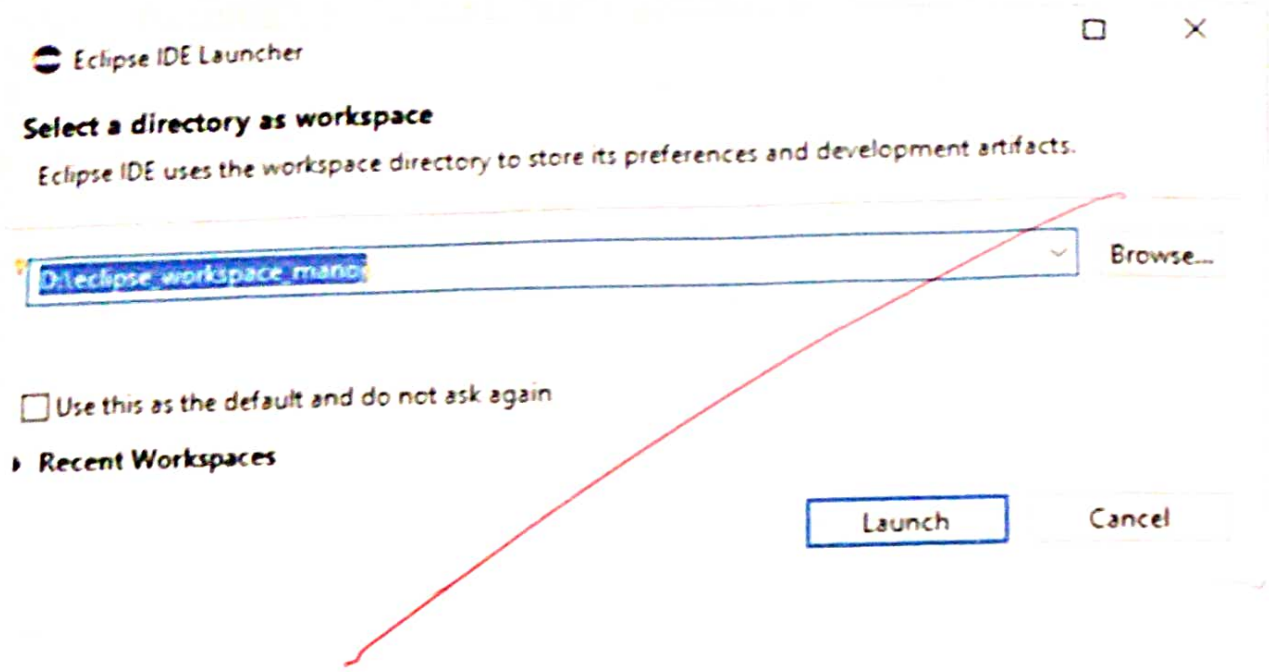
step 5 :- Install Eclipse.

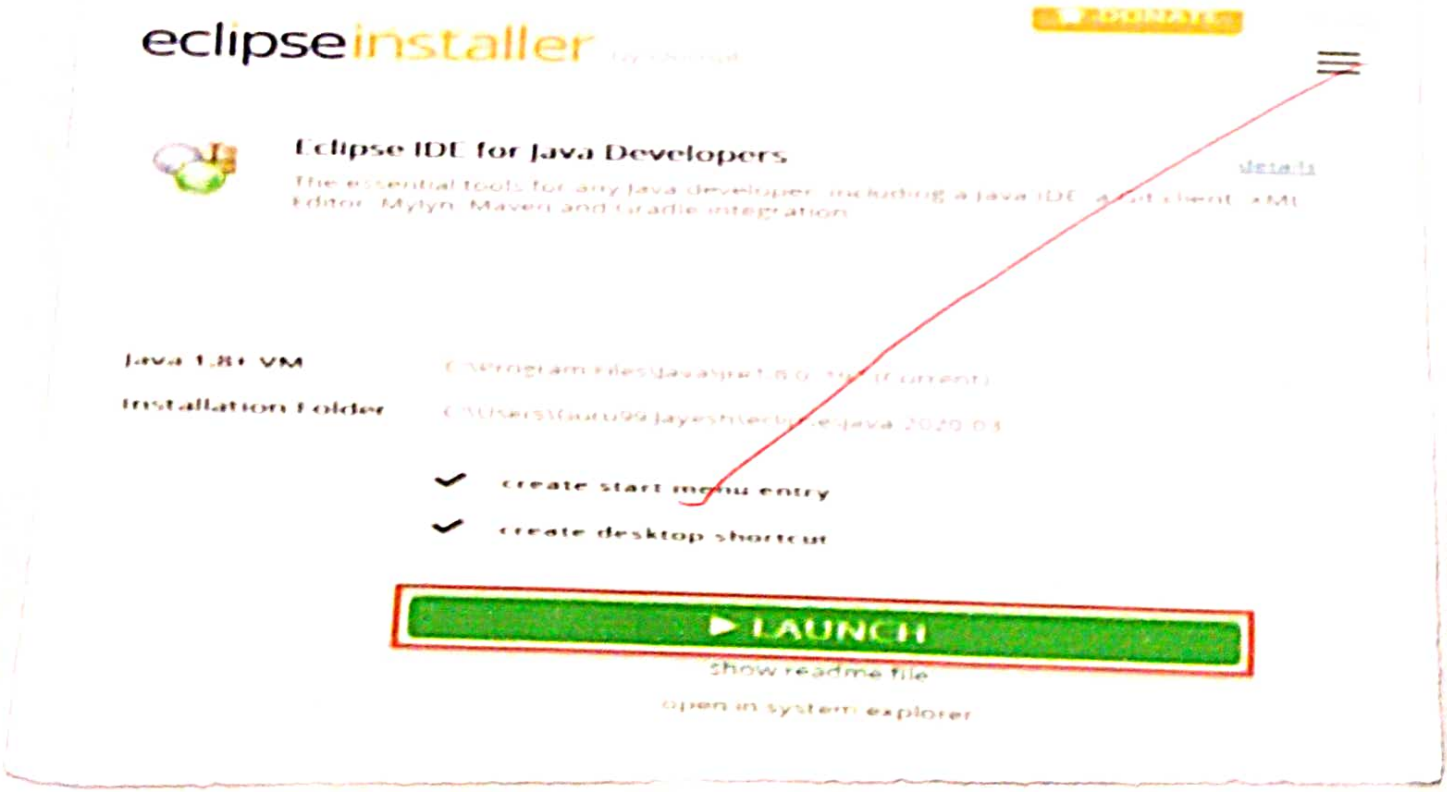
1) click on "downloads" in window file explorer.

2) click on "eclipse - inst - win 65 . exe" file.

step 6 :- Click run button

step 7 :- click "Developers"


Eclipse IDE Launcher
Select a directory as workspace
Eclipse IDE uses the workspace directory to store its preferences and development artifacts.
D:\eclipse-workspace_manoj
Browse...
Use this as the default and do not ask again
Recent Workspaces
Launch
Cancel


eclipseinstaller
Eclipse IDE for Java Developers
Installation Folder
create start menu entry
create desktop shortcut
LAUNCH
show readme file
open in system explorer

step 8 : click on "Install" button

step 9 :- click on "Launch" button.

step 10 :- click on "Launch" button.

3. Execution of first java program.

* First of all, open Eclipse IDE and choose File > new > Java Project to display the new project wizard.

eclipseinstaller

Eclipse IDE for Java Developers

Java 1.8+ VM C:\Program Files\Java\jre1.8.0_192 (Current)

Installation Folder C:\Users\Guru99.Jayesh\eclipse\java-2020-03

create start menu entry

create desktop shortcut

Eclipse IDE Launcher

Select a directory as workspace

Eclipse IDE uses the workspace directory to store its preferences and development artifacts.

Workspace: C:\Users\Guru99.Jayesh\eclipse-workspace Browse...

Use this as the default and do not ask again

Launch Cancel

Java Class

Create a new Java class.

Source folder: Java Project/src Browse...

Package: javaProgram Browse...

Enclosing type: Browse...

Name: Hello

Modifiers: public package private protected

abstract final static

Superclass: java.lang.Object Browse...

Interfaces: Add...

Which method stubs would you like to create?

public static void main(String[] args)

Constructors from superclass

Inherited abstract methods

Name of the Experiment : .....

Experiment No : 01 Date : .....

* Right- Click on Package name " Java program "(Package name of your choice) and choose File > New > Class to display the new Java class wizard.
* Type Hello in the name field > check the option public static void main (String[] args) as shown in below figure

* Click on Finish button to produce templates for the programe source code named. Java

4) Java Code execution process

* To run Hello.java right-click Hello.Java to display a Context menu and select Run File, or simply run or press shift +F6.

30/04/24

07/10

eclipse installer

Eclipse IDE for Java Developers

Eclipse IDE for Enterprise Java Developers

Eclipse IDE for C/C++ Developers

Eclipse IDE for Web and JavaScript Developers

Eclipse IDE for PHP Developers

Create a Java Project

Create a Java project in the workspace or in an external location.

Project name: Java Project

☑ Use default location

C:\Users\Guru99 Jayesh\Java\Java Project

Browse...

JRE

(●) Use an execution environment JRE: JavaSE-1.8

( ) Use a project specific JRE: jre1.8.0_181

( ) Use default JRE (currently 'jre1.8.0_181')

Configure JREs...

Configure default...

Finish

Cancel

Open File - Security Warning

Do you want to run this file?

Name: ...Jayesh\Downloads\Downloads\eclipse-inst-win64.exe

Publisher: Eclipse.org Foundation, Inc.

Type: Application

From: C:\Users\Guru99 Jayesh\Downloads\Downloads\eclips...

Run

Cancel

☑ Always ask before opening this file

While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust.

What's the risk?

Week -2

(1) code - execute and debug programs that uses different types of variables and data types:

```
Package example;
public class Data types {
    public static void main(string[] args){
// boolean byte short char int, float, long
    double

boolean bool = true;
boolean bool1 = false;
byte num0 = 130;
byte num1 = -5;
int a = 20
int h = -5
short sum = 20;
short sum1 = -10;
char c = 'k';
float fval = 2.6f; -6.8f;
float fval1 = 122 33 44 55 6f;
long l - 122 33 44 556 l;
long l1 = -67 84 69 774;
double d = 74564.85458d;
double d1 = 85458.74564d;
string str = "Java program";
```

eclipse_workspace_mancy - Myclass/src/example/DataTypee.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- Myclass
- PracticeProgram
  - JRE System Library [JavaSE-17]
  - src
    - program
      - Arithmetic.java
    - module-info.java

Myclass.java | HelloWorld.java | Swaping.java | DataTypee.java | *Arithmetic.java

```java
package example;

public class DataTypee {

    public static void main(String[] args) {
     //boolean,byte,short,char,int,float,long,double
        boolean bool=true;
        boolean bool1=false;
        byte num0=13;
        byte num1=-5;
        int a=20;
        int b=-15;
        short snum=20;
        short snum1=-10;
        char c='k';
        float fval=2.6f;
        float fval1=-6.8f;
        long l=1223344556l;
        long l1=-678469779;
        double d=74564.85958d;
        double d1=-85958.74564d;
        String str="java program";
        System.out.println("Data Type boolean values:"+bool+" and "+bool1);
        System.out.println("Data Type byte values:"+num0+" and "+num1);
        System.out.println("Data Type int values:"+a+" and "+b);
        System.out.println("Data Type short values:"+snum+" and "+snum1);
        System.out.println("Data Type char values:"+c);
        System.out.println("Data Type float values:"+fval+" and "+fval1);
        System.out.println("Data Type long values:"+l+" and "+l1);
        System.out.println("Data Type double values:"+d+" and "+d1);
        System.out.println("Data Type string values:"+str);
    }

}
```

Problems | Javadoc | Declaration | Console | Coverage

```
<terminated> DataTypee [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (29-Jan-2024, 10:08:49 am – 10:08:49 am) [pid: 7836]
Data Type boolean values:true and false
Data Type byte values:13 and -5
Data Type int values:20 and -15
Data Type short values:20 and -10
Data Type char values:k
Data Type float values:2.6 and -6.8
Data Type long values:1223344556 and -678469779
Data Type double values:74564.85958 and -85958.74564
Data Type string values:java program
```

```
System= out.println("Data Type boolean values : " + bool + "and" + bool1);

System.out.println("Data type byte values: " + numot "and" + num1);

System.out.println("Data type int values:" + a "and " + b);
System.out.print ln("Data type short values:" + sum + "and" + sum 1);
System.out.print ln("Data type char values:" + c);
System.out.print ln("Data type flat values:" + fval + "and" + fval 1);

System.out print ln("Data type long value:" + l + "and" + l1);

System.out.Print ln("Data type dould value:" + d + "and" + d1);

System.out.print ln("Data type string value:" + str);

}

}
```

30/04/24

07/10

Name of the Experiment : .....

Experiment No : 03

Date : 5/2/24

Page No. 08

week - 03

1)
```
Package week - 1 ;
Class stuConstructor {
    string stu-name ;
    string stu-id ;

stu Constructor () {
  this . stu - name = " ~~sri~~ Deepak 3 "
  this stu - id = 488CS22011 ;
}
stuConstructor (string a, string b) {
    this stu - name = a ;
    this . stu - id = b ;
}
stu Constructor (stu Constructor x) {
        this . stu - name = x . stu - name ;
        this . stu - id = x . stu - id ;
}
void display {
    system . out . println ("student details are:" +
    + stu - name + " " stu - id) ;
  }
}
public class Test student {
public static void main (string [] Args) {
  stu Constructor stuobj1 = new Constructor() ;
stu Constructor stuobj2 = new stuConstructor
  ( " ~~mang~~ Deepak , " 488CS22011 " ) ;
```

Package Explorer

- Myclass
- PracticeProgram
  - JRE System Library [JavaSE-17]
  - src
    - program
      - TestArithmetic.java
      - TestStudent.java
    - module-info.java

TestArithmetic.java | TestStudent.java

```java
package program;

class Student {
    String stu_name;
    String stu_id;
    Student(){
        this.stu_name="Guru";
        this.stu_id="488CS11";
    }
    Student(String name, String id){
        this.stu_name=name;
        this.stu_id=id;
    }
    Student(Student s){
        this.stu_name=s.stu_name;
        this.stu_id=s.stu_id;
    }

    void display() {
        System.out.println("Student Name:"+stu_name+" | Student Id:"+stu_id);
    }
}
public class TestStudent{
    public static void main(String[] args) {
        Student obj1=new Student();
        Student obj2=new Student("Manoj","488CS123");
        Student obj3=new Student(obj2);
        System.out.println("The Student Details are as Below:");

        obj1.display();
        obj2.display();
        obj3.display();

    }
}
```

Task List

Find | All | Activate...

Outline

- program
- Student
  - stu_name : String
  - stu_id : String
  - Student()
  - Student(String, String)
  - Student(Student)
  - display() : void
- TestStudent
  - main(String[]) : void

Problems | Javadoc | Declaration | Console | Coverage

```
<terminated> TestStudent [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (02-Feb-2024, 10:52:34 am – 10:52:34 am) [pid: 6184]
The Student Details are as Below:
Student Name:Guru | Student Id:488CS11
Student Name:Manoj | Student Id:488CS123
Student Name:Manoj | Student Id:488CS123
```

vivo V20 SE

Name of the Experiment : .....

Experiment No : 03 Date : .....


```
stuConstructor stuobj3 = new stuConstructor
    (stuobj1);
stuobj1.display();
stuobj2 display();
stuobj3 display();
}
}
```

(2)

```
package week-3;
public class EvaluationExpression {
public static void main (String[] args) {
    int a=20, b=10, c=5, d=5, e=40, f=30;
    // precedence order *, /, + -
system.out.println("a+b/d = "+(a+b/d));
system.out.println("a+b* d-e/f = "+(a+b*d-e/f));
// a=b++ +c is Complied as a a-b = c then
b=b+1

a=b++ +c;
system.out.println("value of a=b++ +c="+a+"b:"+
    b+" : "+c);

}
}
```

eclipse_workspace_manoj - Myclass/src/week3/EvalExpression.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- Myclass
  - JRE System Library [jdk-17]
  - src
    - example
    - week3
      - AutoBoxing.java
      - EvalExpression.java
      - TestStudent.java
      - UnBoxing.java
    - week4
    - module-info.java
    - week5
- PracticeProgram
  - JRE System Library [JavaSE-17]
  - src
    - program
    - week5
      - DowhileloppingStatement
      - ForExample.java
      - IfelseExample.java
      - IfelseLadder.java
      - NestedforExample.java
      - package-info.java
      - SimpleIFExample.java
      - SwitchExample.java
      - WhileloopExample.java
    - module-info.java

Dowhileloppi... | TestStudent... | AutoBoxing.java | UnBoxing.java

```java
package week3;

class EvalExpression {

    public static void main(String[] args) {
        int a=20,b=10,c=0,d=5,e=40,f=30;
        System.out.println("a+b/d= "+(a+b/d));
        System.out.println("a+b*d-e/f= "+(a+b*d-e/f));
        c=b++ +d;
        System.out.println("value of (b+1)+d,"+c+","+b+","+d);
        c+=b;
        System.out.println("assignament operator: "+c);
    }

}
```

Problems | Javadoc | Declaration | Console | Coverage

<terminated> EvalExpression [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (23-Feb-2024

```
a+b/d= 22
a+b*d-e/f= 69
value of (b+1)+d,15,11,5
assignament operator: 26
```

Name of the Experiment : .....

Experiment No : 03

Date : .....

(3)

```
Package week-3;
public class unboxing {
    public static void main (String[] args) {
// unboxing For Integer
        Integer a = 50;
        System.out.println("Integer value Before unboxing : "+a);
        int unwrapInteger = a.intvalue();
// Unboxing for Float
        Float b = 5.5f;
        System.out.println("Float value before unboxing : "+b);
        float unwrapFloat = b.floatvalue();
        System.out.println("After unboxing the int value : "+b+" and "+unwrapFloat);
// unboxing for character.
        character c = 's';
System.out.println("Float value Before unboxing : "+c);
        char unwrapchar = c.charvalue();
        System.out.println("After unboxing char value : "+unwrapchar);

    }
}
```

Sy
20/04/24

06/10

ss/oc/week3/AutoBoxing.java - Eclipse IDE

igate Search Project Run Window Help

WhileloopEx... Dowhileloppi... TestStudent... AutoBoxi

```java
package week3;

class AutoBoxing {

    public static void main(String[] args) {
        int a=50;
        Integer a2= Integer.valueOf(a);//Boxing
        Integer a3=5;//Boxing
        Integer a4=Integer.valueOf(a2);
        System.out.println(a2+", "+a3+", "+a4);

        //AutoBoxing of float
        float f=50.35f;
        Float f2= Float.valueOf(f);//Boxing
        Float f3=5.5f;//Boxing
        Float f4=Float.valueOf(f2);
        System.out.println(f2+", "+f3+", "+f4);

        //AutoBoxing of character
        char c='M';
        Character c2= Character.valueOf(c);//Boxing
        Character c3='b';//Boxing
        Character c4=Character.valueOf(c2);
        System.out.println(c2+", "+c3+", "+c4);
    }

}
```

Problems Javadoc Declaration Console Coverage

<terminated> AutoBoxing [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.e

```
50, 5, 50
50.35, 5.5, 50.35
M, b, M
```

Name of the Experiment : .....

Experiment No : 04

Date : 12/2/24

week - 04

1] install memory monitoring tool and observe how jvm allocates memory (visual vm tool)

* Java visual vm can be used by Java application Developers to troubleshoot application and to monitor & improve the application performance

* Java visual vm can allow developers to generate & Analyze heap dumps

* visual vm is Powerful tool that provides a visual interface to see deep and detailed information running Java Jvm.

* we can download the tool from the link in google visualvm, github or download html

Step 1:- once we download the folder of visual vm 2.1.7 go to bin folder inside vm - 2.1.7 folder.

Step 2:- Click on visual vm application file

Step 3:- open the Eclipse software & type. Java

Google visualvm 2.1.6

Showing results for visualvm 2.1.6

VisualVM Download

VisualVM Home

VisualVM Releases

Please read the following license agreement carefully.

Project VisualVM

The GNU General Public License (GPL)

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Everyone is permitted to copy and distribute verbatim copies of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

Browse...

You must accept the

I Accept Exit

Extract Cancel

Name of the Experiment : .....

Experiment No : 04 Date : .....

Program :-

```
package week 04;
public class vm_monitor {
int a;
int b;
public static void main (string[] args)
{
System.out.println(" using visualvm to monitor and analye JVM memory utilization");
vm.monitor obj1 = new vm.monitor();
vm.monitor obj2 = new vm.monitor();
obj1.a = 10;
obj2.b = 20;
system.out.println(" value of a & b " + obj1.a + " and " + obj2.b);
while (true){
system.out.println("true");
}
}
}
```

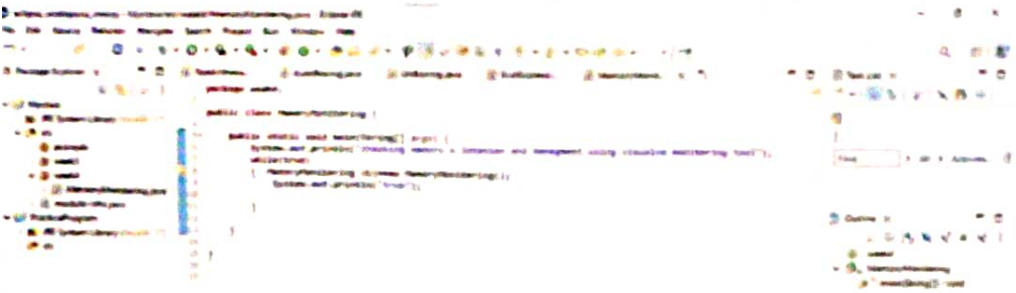
07/10

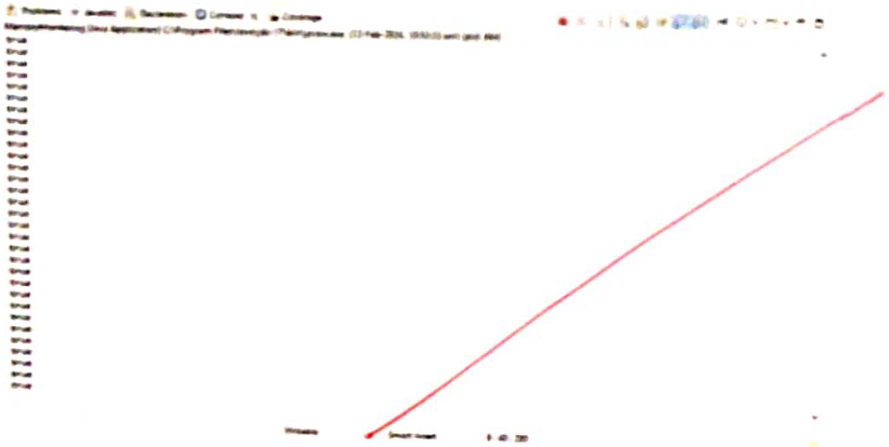
Step 4 :- open the visual vm

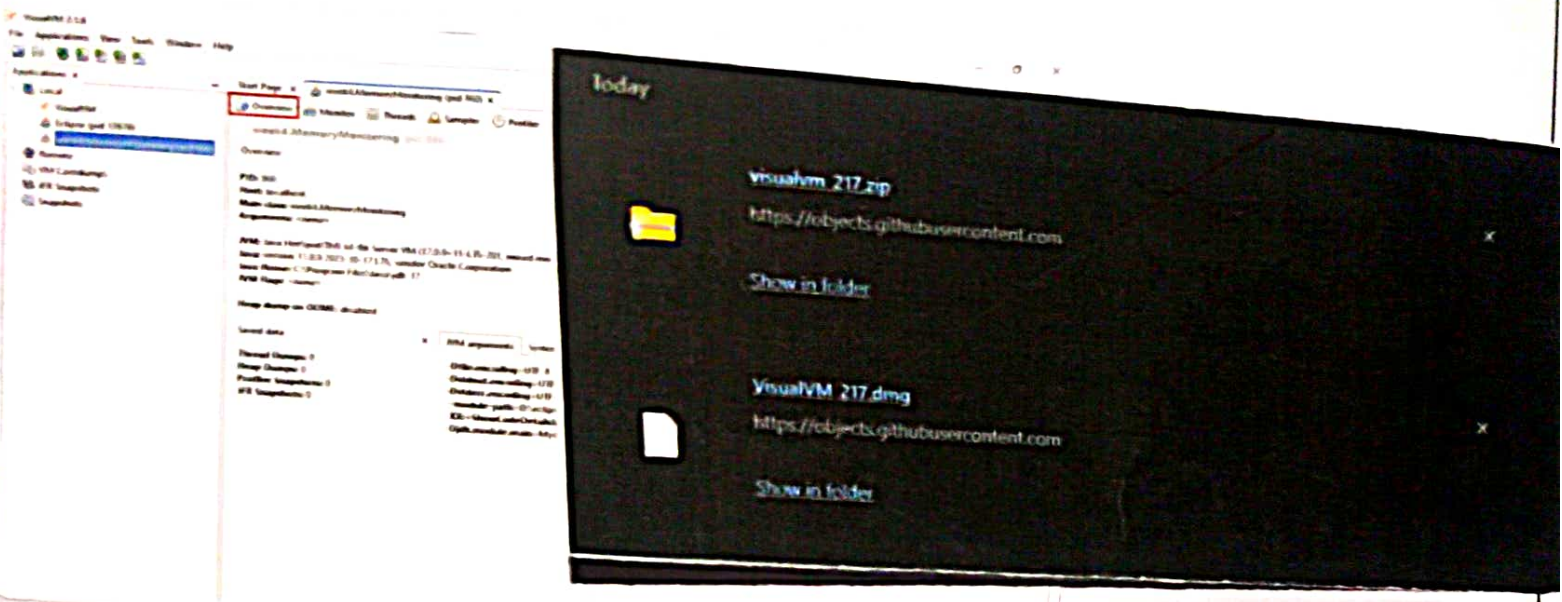
steps :- now Run the program in Eclipse & the behaviour in visual vm tool

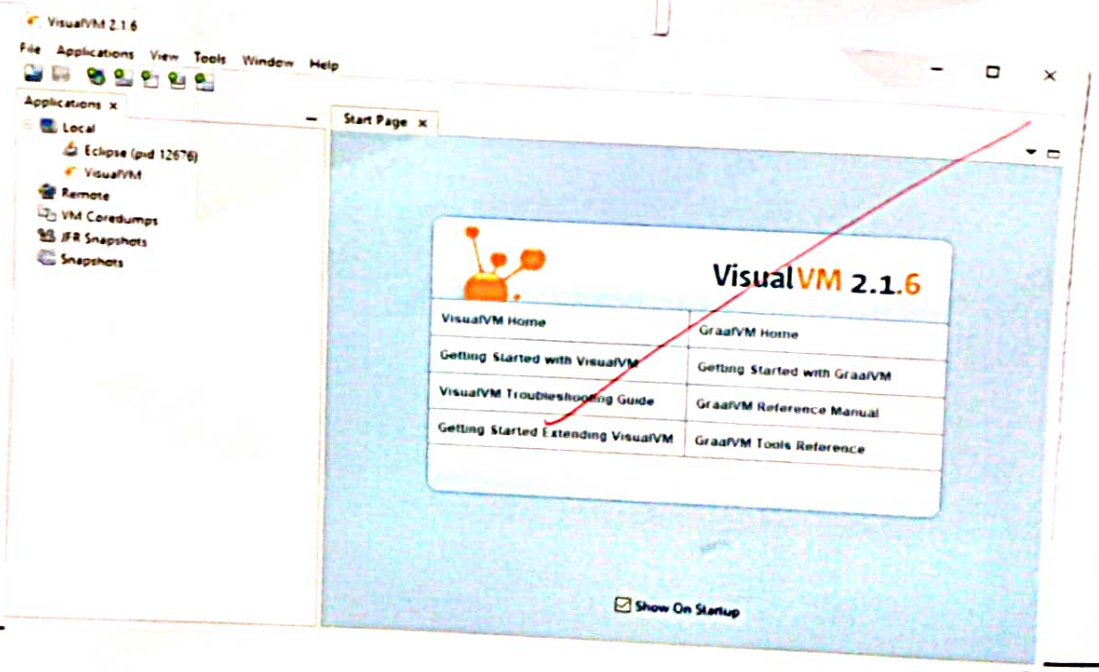
30/04/24

step 6 :- Now we can monitor the CPU, memory class & threads where the java application running time on JVM






Today
visualvm_217.zip
https://objects.githubusercontent.com
Show in folder
VisualVM_217.dmg
https://objects.githubusercontent.com
Show in folder


VisualVM 2.1.6
File Applications View Tools Window Help
Applications
Local
Eclipse (pid 12676)
VisualVM
Remote
VM Coredumps
JFR Snapshots
Snapshots
Start Page
VisualVM 2.1.6
VisualVM Home
GraalVM Home
Getting Started with VisualVM
Getting Started with GraalVM
VisualVM Troubleshooting Guide
GraalVM Reference Manual
Getting Started Extending VisualVM
GraalVM Tools Reference
Show On Startup

Navigate Search Project Run Window Help

TestArithme... AutoBoxing.java UnBoxing.java EvalExpressi... MemoryMonit...

```java
package week4;

public class MemoryMonitering {

    public static void main(String[] args) {
        System.out.println("checking memory a location and managment using visualvm monitoring tool");
        while(true)
        {  MemoryMonitering obj=new MemoryMonitering();
           System.out.println("true");

        }

    }

}
```

Problems Javadoc Declaration Console Coverage

MemoryMonitering [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (12-Feb-2024, 10:52:23 am) [pid: 664]

```
true
true
true
true
true
true
true
true
```

Name of the Experiment : Control statement

Experiment No : 05

Date : 23/1/24

Page No. 12

week - 05

01 Code, Execute and debug Program that uses different control statement

i] simple - if

```
package week-5;

import java.util.Scanner;

public class void main (string[] args) {
    Scanner input = new Scanner (System.in);
    System.out.print ("Enter your number");
    int age = input.nextInt();
    System.out.println ("Entered age is:"
        +age);
    if (age >= 18) {
        System.out.println("your one eligible
        to vote");

    }
}
}
```

Palindrome.java | SingleInheri... | MultiLevel_... | Heirarcic...

```java
package Week05;

import java.util.Scanner;

public class SimpleIfExample {

    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.print("Enter the number :");
        int age = input.nextInt();
        System.out.println("Entered age is " + age);
        if (age >= 18)
            System.out.println("You can vote");

    }

}
```

Problems | Javadoc | Console | Terminal | Coverage | Debug

```
<terminated> SimpleIfExample [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.e
Enter the number :19
Entered age is 19
You can vote
```

Name of the Experiment : .....

Experiment No : 05 Date : .....

ii if - else

```
package week - 05;

import java.util.Scanner;

public class if- else Condition {

    Public class static void main(String [] args) {
    Scanner input = new Scanner(System.in);
    void main(String [] )
    int number = input.nextInt();
    System.out.Println("Entered number is" + number);
        if (number % 2 == 0) {
            System.out.print ln("The given number is even");
        else {
            System.out.print ln("The given number is odd");
        }
    }
}
```

Project Explorer

- JRE System Library [JavaSE-17]
- src
  - program
  - week5
    - ContinueExample.java
    - DowhileloppingStatement.java
    - ForExample.java
    - IfelseExample.java
    - IfelseLadder.java
    - NestedforExample.java
    - package-info.java
    - Person.java
    - PrimeNumber.java
    - SimpleIfExample.java
    - SwitchExample.java
    - SwitchPractice.java
    - WhileloopExample.java
  - week6
  - module-info.java

DowhileloppingStatement.java | ForExample.java | IfelseExample.java

```java
package week5;

import java.util.Scanner;

public class IfelseExample {

    public static void main(String[] args) {
        Scanner input =new Scanner(System.in);
        System.out.println("enter the number");
        int num=input.nextInt();
        if (num%2==0)
            System.out.println("the number is even");
        else
            System.out.println("the number is odd");



    }

}
```

Console | Problems | Debug Shell

<terminated> IfelseExample [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (01-Mar-2024, 11:56:47 am

```
enter the number
5
the number is odd
```

iii if - else ladder

```
package week-5;
import java.util.Scanner;
Public class if-else-ladder {
    public static void main(String[] args) {
        Scanner input = new Scanner(System.in);
        System.out.println("Entered age is : " + marks);
        if (marks > 90 && marks <=100);
            System.out.println("grade'A+');
        }
        Else if (marks > 80 && marks =90) {
            system.out.println("grade A");
        }
        Else if (marks > 70 && marks <= 80) {
            System.out.println("grade B");
        }
        Else if (marks > 60 && marks <=70);
        {
            System.out.print ("grade B+')
        }
```

Package Explorer

- HelloWorld
- JavaProgram
- PracticePrograms
  - JRE System Library [JavaSE-17]
  - src
    - programs
    - Week05
      - Continue.java
      - DoWhile.java
      - Example.java
      - IfElseExample.java
      - IfElseLadder.java
      - Nested.java
      - PrimeNumber.java
      - SimpleIfExample.java
      - StringArray.java
      - SwitchExample.java
      - SwitchExample2.java
      - WhileExample.java
    - Week3
    - Week4
    - Week6
    - Week7
    - Week8
- Practiceprogram1
- swap.java

vivo V20 SE

```java
package Week05;

import java.util.Scanner;

public class IfElseLadder {

    public static void main(String[] args) {
        Scanner input=new Scanner(System.in);
        System.out.print("Enter the Marks :");
        int Marks=input.nextInt();

        if(Marks>90 && Marks<=100) {
            System.out.println("Grade 'A+' ");
        }
        else if(Marks>80 && Marks<=90) {
            System.out.println("Grade 'A' ");
        }
        else if(Marks>70 && Marks<=80) {
            System.out.println("Grade '+B' ");
        }
        else if(Marks>60 && Marks<=70) {
            System.out.println("Grade 'B' ");
        }
        else if(Marks>50 && Marks<=60) {
            System.out.println("Grade '+C' ");
        }
        else if(Marks>35 && Marks<=50) {
            System.out.println("Grade 'C' ");
        }
        else if(Marks>00 && Marks<=35) {
            System.out.println("Grade 'fail' ");
        }
    }

}
```

```
Else if (marks > 50 && marks <= 60) {
        system.out.println("Grade 'B'");
}

Else if (marks > 40 && marks <= 50) {
        system.out.println("Grade 'C'");
}
Else {
        System.out.println("you have Entered
        invalied marks please Enter valied
        marks");
}
}
}
```

iv Switch Condition

```
package week-5 {
  import java.util.Scanner;
Public Class Switch Integer {
    Public static void main(String[] Args)
    {
    Scanner input = new Scanner(system.in);
    System.out.println("Enter the Semester");
    int sem = input.next Int();
    switch (sem) {
    Class 1:
        System.out.println("1st year 1st sem")
        break;
```

/src/week5/SwitchExample.java - Eclipse IDE

rch Project Run Window Help

IfElseLadde... NestedForEx... Person.java PrimeNumber... SimpleIfExa

```java
// To check entered semester belongs to which year
package week5;
import java.util.Scanner;
public class SwitchExample {

    public static void main(String[] args) {
        Scanner input =new Scanner(System.in);
        System.out.println("enter the semester");
        int sem = input.nextInt();
        switch(sem)
        {
        case 1:
            System.out.println("1st sem 1st year");
            break;
        case 2:
            System.out.println("2nd sem 1st year");
            break;
        case 3:
            System.out.println("3rd sem 2nd year");
            break;
        case 4:
            System.out.println("4th sem 2nd year");
            break;
        case 5:
            System.out.println("5th sem 3rd year");
            break;
        case 6:
            System.out.println("6th sem 3rd year");
            break;
        default:
            System.out.println(" you enter invailed sem");
        }
    }

}
```

Console Problems Debug Shell

<terminated> SwitchExample [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (01-Mar-2024, 12:0

```
enter the semester
4
4th sem 2nd year
```

Name of the Experiment : .....

Experiment No : 05 Date : .....


```
Case 2 :
    System.out.println("1st year 2nd sem");
break;

case 3 :
    System.out.println("2nd year, 3rd sem");
break;

case 4;
    System.out.println("3rd year, 4th sem");

case 5;
    System.out.println("3rd year, 5th sem");
break;

case 6;
    System.out.println("3rd year, 6th sem");
    break;
}
}
}
```

v while loop

```
package week-5 ;
public class while - Example {

    Public static void main(String[] args)
    {
    int i = 1 ;
    while (i<=10) {
    System.out.print (i) ;
      i++ ;
    }
}
}
```

vi Do while loope

```
Pakage week 05 ;
public class Do while Example {
    public static void main(String[] args)
    int i = 1;
    do {
      System.out.print ln (i) ;
      i++ ;
      } while (i<10) ;
}
}
```

nigate Search Project Run Window Help

WhileloopEx... Dowhileloppi... UnBoxing.java

```java
//java program to find first 10 natural numbers us
package week5;

public class WhileloopExample {

    public static void main(String[] args) {
        int i=1;
         while(i<=10) {

        System.out.println(i);
            i++;
    }

}

}
```

Problems Javadoc Declaration Console Coverage

<terminated> WhileloopExample [Java Application] C:\Program Files\Java\jdk-

```
1
2
3
4
5
6
7
8
9
10
```

igate Search Project Run Window Help

DowhileloppingStatement.java

```java
//java program to find first 10 natural numbers
package week5;

public class DowhileloppingStatement {

    public static void main(String[] args) {
        int i=1;
         do
         {
             System.out.println(i);
             i=i+2;

         } while(i<=10);

    }

}
```

Console Problems Debug Shell

<terminated> DowhileloppingStatement [Java Application] C:\Program Files\Java\jdk-17\bin\j

```
1
3
5
7
9
```

Name of the Experiment : .....

Experiment No : 05 Date : .....

VII for loop

```
Package week 05 ;
  public class for example {
   public static void main (strings args)
    {
     int sum = 0 ;
       for (int i=1; i<20 ; i++ ){
        sum = sum +i ;
       }
        System.out.print ln("sum of 20
          natural number is :" , +sum);
    }
}
```

VIII nested for loop

```
Package week - 5 ;
   public class nested for {
        public static void main(strings[]arg);
 {
 for (int i=0 ; i<=5 ; i++ ){
   for ( int j=0 ; j<=1 ; j++ ) {
        system . out .print ("* ") ;
   }
```

vivo V20 SE

ceProgram/src/week5/ForExample.java - Eclipse IDE

igate Search Project Run Window Help

package-info.java | SwitchPractice.java | ForExample.java

```java
//To find first 20 natural numbers
package week5;

public class ForExample {

    public static void main(String[] args) {
    int sum=0;
    for(int i=1; i<=20; i++)
    {sum=sum+i;
    }
    System.out.println("sum of first 20 natural numbers= "+sum);
    }

}
```

Problems | Javadoc | Declaration | Console | Coverage

```
<terminated> ForExample [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (23-Feb-2
sum of first 20 natural numbers= 210
```

eProgram/src/week5/NestedforExample.java - Eclipse IDE

gate Search Project Run Window Help

DowhileloppingStatement.java ForExample.java IfelseExample.java IfelseL

```java
package week5;
// pyramid program using the nested for loop
public class NestedforExample {

    public static void main(String[] args) {
        for(int i=5; i>=1; i--) {
            for(int j=1; j<=i; j++){
                System.out.print("*");
}
            System.out.print("\n");
        }
    }
}
```

Console Problems Debug Shell

<terminated> NestedforExample [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (01-Mar

```
*****
****
***
**
*
```

```
System.out.println()
}
}
}
```

IX Continue statement

```
package week_05;
public class Continue statement {
    public static void main(String[]
  args) {
      int i=0
      while (i<10) {
        i++
        if (i==5) {
            continue;
        }
      System.out.Println(i);

    }
  }
}
```

SingleInheritance.java MultiLevel_Inheritance.java Heirarechi

```java
package Week5;

public class Continue {

    public static void main(String[] args) {
        int i = 0;
        while (i < 10) {
            i++;
            if (i == 5) {
                continue;
            }
            System.out.println(i);
        }
    }

}
```

Problems Javadoc Declaration Console

<terminated> Continue [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.e

```
1
2
3
4
6
7
8
9
10
```

Name of the Experiment : .....

Experiment No : 05

Date : .....

** Break Statement

```
Package week 05 ;
import java.util.Scanner;

public class Break_statement {
    int flag = 0;
    Scanner input = new Scanner(System.in);
    System.out.println("Enter the number:");
    int num = input.nextInt();
    int n = num/2;
    if (num == 0 || num == 1) {
        System.out.println("Entered number
        "+num+" is not prime number:")
    else {
        for (int i=2; i<=n; i++) {
            if (num % i == 0) {
                System.out.println("Entered
                Number "+num+" is not a Proces
                number:");
                flag = 1;
                break;
            }
        }
        if (flag==0) {
            System.out.println("Entere
            number "+num+" is a prime number:
        }
    }
}
```

07/10

30/04/24

Navigate Search Project Run Window Help

Palindrome.java | SingleInheri... | Multilevel_... | Heirarecic... | *PrimeNu

```java
public class PrimeNumber {

    public static void main(String[] args) {
        int num=5;
        int m=num/2;
        int flag=0;
        if(num==0 ||num==1) {
            System.out.println("Given number is prime number");
        }
        else
        {
        for(int i=2; i<=m; i++) {
            if(num% i==0)
            {
                System.out.println("The number "+num +" is not a prime");
                break;
            }
        }
        if (flag==0) {
            System.out.println("The number "+num+" is the prime");
        }
        }
    }

}
```

Problems | Javadoc | Console | Terminal | Coverage | Debug

<terminated> PrimeNumber [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (14-Mar-2024, 2:5

The number 5 is the prime

Name of the Experiment : Encapsulation

Experiment No : 06

Date : 24/2/24

Page No. 22

week - 06

① code, execute & debug programs that use encapsulation concept.

```
package week;

public class incapemps {
        private String imp name;
        private int empid;
        Private string empcity;

        // getter method
        public String get EmpName() {
                return emp name;
        }
        Public String get Emp Id() {
                return empId;
        }
        public String get Empcity() {
                return empcity;
        }
        // setor method
        public void set Emp name (string emp name) {
                this.emp name = emp = name;
        }
        public void set empId (string emp-id) {
                this.empid = emp = id;
}
```

/src/week6/Employee.java - Eclipse IDE

e Search Project Run Window Help

TestCalculator.java | RunEncap.java | RunEmp.java | Person.java | Employee.java

```java
package week6;

public class Employee {
    private String empName;// Private=restricted access
    private int empId;// Private=restricted access
    private String empCity;// Private=restricted access
    //getter
    public String getempName() {
        return empName;
    }
    public int getempId() {
        return empId;
        }
    public String getempCity() {
        return empCity;
        //setter
        }
    public void setName(String newName) {
        this.empName=newName;}
    public void setId(int newempId) {
        this.empId=newempId;}
    public void setCity(String newempCity) {
        this.empCity=newempCity;}


    }
```

Name of the Experiment : .....

Experiment No : 06 Date : .....


```
        public void set empcity (string emp_city){
            this.empcity = emp_city;
        }
}

// Testing the encapsulation Concept

Package week 6;

    Public class emp_employee_test {
        public static void main (String[] arg3) {
        encap emp obj = new encap emp();
        System.out.println (obj1.get empname());
        encap emp obj 2 = new encapemp();
        obj 2.set empId ("488(S 220)1")
        System.out.println (obj2.getempId());
        encapemp obj 3 = new encapemp();
        obj3.set empcity ("mysore")
        System.out.println (obj3.get.empcity
                                    ());
        }
}
```

eclipse_workspace_manoj - Pratation/src/week6/RunEmp.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Project Explorer

- Myclass
  - JRE System Library [jdk-17]
  - src
    - example
    - week3
    - week4
    - module-info.java
    - week5
- PracticeProgram
  - JRE System Library [JavaSE-17]
  - src
- Pratation
  - JRE System Library [JavaSE-17]
  - src
    - mypackage
    - week6
      - CalcPrint.java
      - Employee.java
      - Encaptest.java
      - Package.java
      - package-info.java
      - Person.java
      - RunEmp.java
      - RunEncap.java
      - TestCalculator.java
    - module-info.java

TestCalculator.java | RunEncap.java | RunEmp.java | Person.java | Employee.java | Encaptest.java

```java
package week6;

public class RunEmp {
    public static void main(String[] args) {
        Employee myObj=new Employee();
        myObj.setName("john");
        System.out.println(myObj.getempName());
        myObj.setId(222);
        System.out.println(myObj.getempId());
        myObj.setCity("Mysore");
        System.out.println(myObj.getempCity());
    }
}
```

Console | Problems | Debug Shell | Coverage

<terminated> RunEmp [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (11-Mar-2024, 10:21:32 am – 10:21:33 am) [pid: 12952]

```
john
222
Mysore
```

Name of the Experiment : .....

Experiment No : 06 Date : .....

1) Package program using import keyword

// To access package on another Package using import keyword.

```
Package my-package;
    public class my-Class {
        public void getname (string s) {
            system.out.println (R);
        }
}
```

```
Pakage week-6;
    import my-package.my-class {
    public class print-name
        Public Static void main (string[] args) {
        String name = "Java Project"
        my-class obj = new my-class()
        obj.getname (name);
    }
}
```

File Edit Source Refactor Source Navigate Search Project Run Window Help

Package Explorer

- Arithmetic
- Myclass
  - JRE System Library [JavaSE-17]
  - src
    - example
    - week3
    - module-info.java
- Partition
  - JRE System Library [JavaSE-17]
  - src
    - mypackage
      - MyClass.java
      - PrintName.java
    - week6

Myclass.java | HelloWorld.java | Addition.java

```java
package mypackage;

public class MyClass {

    public void getNames(String s) {
        System.out.println(s);


    }

}
```

vivo V20 SE

Name of the Experiment : .....

Experiment No : 06 Date : .....

1) Define class & implement like simple calculator or text processing & check compliance which is SRP

// performing a simple calculator using SRP

```
Package week 6;

Class calculator {
    Addition a = new Addition();
    Subtraction b = new Subtraction();
    multiplication c = new multiplication();
    Division d = new Division();
    void perform Addition (int x, int y){
        a.add (x, y);
    }
    void perform subtraction(int x, int y)
    {
        b.add (x-y));
    }
    void perform multiplication (int x, int y)
    {
        c.add (x, y);
    }
    void perform Division (float x, float y)
    {
        d.add (x, y);
    }
}
```

Encap_Exampl... | Encap_test.java | Encap_Emloy... | Encap_Employ...

```java
//Performing a simple calculator using SRP
package Week_6;

class Calculator{
    Addition a=new Addition();
    Subtraction b=new Subtraction();
    Multiplication c=new Multiplication();
    Division d=new Division();
    void perform_Addition(int x,int y)
    {
        a.add(x,y);
    }
    void perform_Subraction(int x,int y)
    {
        b.add(x,y);
    }
    void perform_Multiplication(int x,int y)
    {
        c.add(x,y);
    }
    void perform_Division(float x,float y)
    {
        d.add(x,y);
    }
}
class Addition{
    int result;

    void add(int x, int y)
    {
        result=x+y;
        System.out.println("Addition of"+x+" and "+y+"="+result);
    }
}
class Subtraction{
    int result;
    void add(int x, int y)
    {
        result=x-y;
```

Name of the Experiment : .....

Experiment No : ....06..... Date : .....


```
Class Addition {
    int result;

    void add (int x, int y)
    {
     result = x+y;
     System.out.println("Addition of "+x+" and
      "+y+" ,+ result);

    }
}

Class Subtraction {
    int result;

    void add (int x ; int y)
    {
     result = x - y;
     System.out.println("Subtraction of "+x
                 " and +y+ " = "+result)

    }
}
Class multiplication {
    int result;

    void add (int x; int y)
    {
     result = x* y;
     System.out.println("multiplication of
                 +x+ " and "+y+" = "+result);
}
}
```

Experiment No : 06

Date :

```
class Division {
    float result;
    void add (float x, float y)
    {
        result = x/y;
        System.out.println("Divison of "+x+
        and +y+ "=" + result);
    }
}

public class Test - Calculator {
    public static void main (String[] a) {
        Calculator obj = new Calculator();
        obj.performaddition(10,6);
        obj.performSubtraction(20,5);
        obj.performmultiplication(5,5);
        obj.performDivision(8,4);
    }
}
```

```java
        System.out.println("Subraction of"+x+" and "+y+"="+result);
    }

}
class Multiplication{
    int result;
    void add(int x, int y)
    {
        result=x*y;
        System.out.println("Multiplication of"+x+" and "+y+"="+result);
    }

}
class Division{
    float result;
    void add(float x, float y)
    {
        result=x/y;
        System.out.println("Division of"+x+" and "+y+"="+result);
    }

}

public class Test_Calculator {


    public static void main(String[] args) {
    Calculator obj=new Calculator();
    obj.perform_Addition(19, 6);
    obj.perform_Subraction(20, 5);
    obj.perform_Multiplication(5, 5);
    obj.perform_Division(8, 5);


    }

}
```

Problems Javadoc Declaration Console Coverage

```
<terminated> Test_Calculator [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (09-Mar-2024, 12:
Addition of19 and 6=25
Subraction of20 and 5=15
Multiplication of5 and 5=25
Division of8.0 and 5.0=1.6
```

```
    }

}
class Multiplication{
    int result;
    void add(int x, int y)
    {
        result=x*y;
        System.out.println("Multiplication of"+x+" and "+y+"="+result);
    }

}
class Division{
    float result;
    void add(float x, float y)
    {
        result=x/y;
        System.out.println("Division of"+x+" and "+y+"="+result);
    }

}

public class Test_Calculator {


    public static void main(String[] args) {
    Calculator obj=new Calculator();
    obj.perform_Addition(19, 6);
    obj.perform_Subraction(20, 5);
    obj.perform_Multiplication(5, 5);
    obj.perform_Division(8, 5);


    }

}
```

Name of the Experiment : .....

Experiment No : 07

Date : 4/3/24

Page No. 28

week - 07

1) Code, execute and debug program that uses array concept

// Java Program to perform addition of two matrix using 2 dimentional array.

```
Package week 7;
public class matrix_Addition {
        public static void main(String[]Args){
int a [][] = {{1,2,3},{1,5,4},{2,3,1}
};
int b[][] = {{2,3,1},{3,4,2},{7,2,1}};
int c[][] = new int [3][3];
System.out.println("Addition of matrix:");
for (int i=0; i<3; i++){
    for (int j=0; j<3; j++){
        c[i][i] = a[i][j] + b[i][j];
        System.out.println(c[i][j]+" ");
    }
    System.out.println();
}
}
```

```java
//Performing a addition of 2 matrix using 2
package week_7;

public class Matrix_Addition {

    public static void main(String[] args) {
        int a[][] = { { 1, 2, 1 }, { 2, 3, 2 }, { 3, 4, 3 } };
        int b[][] = { { 4, 5, 4 }, { 5, 6, 5 }, { 6, 7, 6 } };

        int rows = a.length;
        int columns = a[0].length;

        int[][] resultMatrix = new int[rows][columns];

        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < columns; j++) {
                resultMatrix[i][j] = a[i][j] + b[i][j];

            }
        }
        System.out.println("The matrix after addition");
        for (int i = 0; i < rows; i++) {
            for (int j = 0; j < columns; j++) {
                System.out.print(resultMatrix[i][j] + " ");

            }
            System.out.println();
        }

    }

}
```

Name of the Experiment : .....

Experiment No : 07

Date : .....

2) Program on Reverse a string

// performing a Reversing string

```
Package week 7;
public class Reverse string {
        public static void main (string args)
{
  String s = "Java Program";
  string s1 = " ";
  for (int i = s.length() -1; i>=0; i--){
        s1=s1 + s. charAt (i);
}
  system.out.println ("original string:"+s);
  system.out.println("Reversed string:"+s1);

}
}
```

eclipse_workspace_koushik - HelloWorld/src/week12/ISPDemo.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

ToyPlane.java | FlyableInterface.java | MovableInterface.java | ToyInterface.java | ToyCar.java | ISPDemo.java | ToyHouse.java

```java
package week12;

public class ISPDemo {

    public static void main(String[] args) {
        ToyHouse houseObj = new ToyHouse();
        houseObj.setPrice(356.9);
        houseObj.setColor("Greeen");
        System.out.println(houseObj.print());

        ToyCar carObj = new ToyCar();
        carObj.setPrice(399.9);
        carObj.setColor("Blue");
        carObj.move();
        System.out.println(carObj.print());

        ToyPlane planeObj = new ToyPlane();
        planeObj.setPrice(399.9);
        planeObj.setColor("Yellow");
        planeObj.move();
        planeObj.fly();
        System.out.println(planeObj.print());


    }

}
```

Problems | Javadoc | Declaration | Console | Coverage

```
<terminated> Reverse_String [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Mar-2024, 10:01:24 am – 10:01:25 am) [pid: 7112]
orginal string: Hello World
Reversed String: dlroW olleH
```

pse_workspace_koushik - HelloWorld/src/week12/ISPDemo.java - Eclipse IDE

Edit Source Refactor Navigate Search Project Run Window Help

ToyPlane.java | FlyableInterface.java | MovableInterface.java | ToyInterface.java | ToyCar.java | ISPDemo.java ×

```
1 package week12;
2
3 public class ISPDemo {
4
5-     public static void main(String[] args) {
6         ToyHouse houseObj = new ToyHouse();
7         houseObj.setPrice(356.9);
8         houseObj.setColor("Greeen");
9         System.out.println(houseObj.print());
10
11        ToyCar carObj = new ToyCar();
12        carObj.setPrice(399.9);
13        carObj.setColor("Blue");
14        carObj.move();
15        System.out.println(carObj.print());
16
17        ToyPlane planeObj = new ToyPlane();
18        planeObj.setPrice(399.9);
19        planeObj.setColor("Yellow");
20        planeObj.move();
21        planeObj.fly();
22        System.out.println(planeObj.print());
23
24
25    }
26
27 }
```

Name of the Experiment : .....

Experiment No : 07 Date : .....

3) Code, Execute and debug program string manipulation.

```
// performing a string manipulation
Package week7;
public class string - manipulation {
    public static void main (string[] args){
        string str3 = "vidyavardhaka";
        string str1 = " Computer science";
        string str2 = " science";
        string str4 = "polytechnic";
        System.out.println(" lower case is:" +str3.
        to lower case());
        System.out.println(" upper case is:" +
        str4.to upper case());
        syste.out.println(" Concationation is:
        " +str3.concat (str4));
        System.out.println(" The length of string
        is :" +str4.length());

System.out.println(" Clear at is : " +str3.charAt(4));
System.out.println(" is empty: " +str3.isEmpty());
System.out.println(" split:" +str[1]);
System.out.println(str3.valueof(str4));
}
}
```

Sy 30/04/24

06/10

eclipse_workspace_RanjanKoundinya - Practice_Programes1/src/Week_7/String_Manupulation.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- Expression.java
- TestArthmetic.java
- Unboxing.java
- Week_4
  - MenMonder.java
- Week_5
  - Break_Example.java
  - Continue_statment.java
  - Do_while_example.java
  - For_example.java
  - If_else_condition.java
  - If_else_ladder.java
  - Nested_for.java
  - Simple_if.java
  - Switch_Example.java
  - Switch_Example2.java
  - While_example.java
- Practice_Programes1
  - JRE System Library [JavaSE-16]
  - src

Switch_Exam... | Matrix_Addi... | Reverse_Stri... | String_Manu... | TestArtmi

```java
//Performing a string Manupulation
package Week_7;

public class String_Manupulation {

    public static void main(String[] args) {
        String str3="Vidyavardhaka";
        String str1="Computer;science:";
        String str2="Science";
        String str4="Polytechnic";
        String[] str=str1.split(":", 0);
        System.out.println("lower case is: "+str3.toLowerCase());
        System.out.println("Upper case is: "+str4.toUpperCase());
        System.out.println("concatination is: "+str3.concat(str4));
        System.out.println("the length of string is: "+str4.length());
        System.out.println("char at is:"+str3.charAt(4));
        System.out.println("isempty: "+str3.isEmpty());
        System.out.println("split:" +str[1]);
        System.out.println(str3.indexOf(str4));

    }
```

Name of the Experiment : .....

Experiment No : 08 Date : 11/3/24

week - 08

(1)

```
Package week 8;
    class Animal {
        void eat () {
System.out.println("eating");
        }
    }

    class Dog extends Animal {
        void bark () {
System.out.println("barking");
        }
    }

    class singleInheritance {
        public static void main(String args[]) {
            Dog d = new Dog ();
            d.bark ();
            d.eat ();
        }
    }
```

eclipse-workspace_Ranjanikundnya - Practice_Programes1/src/Week_8/Test_inheritance.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Package Explorer

- HelloWorld
- Practice_Programes
- Practice_Programes1
  - JRE System Library [JavaSE-19]
  - src
    - my_package
    - Week_6
    - Week_7
      - Matrix_Addition.java
      - Palindrom.java
      - Reverse_String.java
      - String_Manupulation.java
    - Week_8
      - Test_inheritance.java
      - Test_inheritance2.java
      - Test_inheritance3.java

Constructor... | Encap_Employ... | String_Manu... | Test_inher...

```java
package week_8;

class Animal {
    void eat() {
        System.out.println("Eating...");
    }
}
class Dog extends Animal{
    void bark() {
        System.out.println("Barking...");
    }
}
public class Test_inheritance{
    public static void main(String[] args) {
        Dog d=new Dog();
        d.bark();
        d.eat();


    }


}
```

Javadoc | Declaration | Console | Coverage

```
<terminated> Test_inheritance [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (23-Mar-2024, 12:21:2
Barking...
Eating...
```

eritance.java - Eclipse IDE

Constructor... | Encap_Employ... | String_Manu...

```
package Week_B;

class Animal {
    void eat() {
        System.out.println("Eating...");
    }
}
class Dog extends Animal{
    void bark() {
        System.out.println("Barking...");
    }
}
public class Test_inheritance{
    public static void main(String[] args) {
        Dog d=new Dog();
        d.bark();
        d.eat();


    }


}
```

```
package week 8;
class vehicle {
        void library () {
            system.out.println(" library of the collage");
        }
}

class polytechine extends collage {
        void technical - course() {
            System.out.println("technical course");
        }
}

class vidyavardhaka extend polytechnic {
        void Computer Science() {
            system.out.println(" Computer science")
        }
}

public class
multilevel Inheritance {
public static void main (string args[]) {
        vidyavardhaka v = new vidyavardhaka
            v.Computer science();
            v.technical - course();
            v.library();
}
}
```

```java
package week_8;

class College{
    void library() {
        System.out.println("library");
    }
}
class Engineering_Course extends College{
    void techinal_course() {
        System.out.println("Techinal Indrustary");
    }
}
class IIT extends Engineering_Course {
    void IIT_course() {
        System.out.println("Aeronautical Engineering");
    }
}
public class Test_inheritance2{
    public static void main(String[] args) {
    IIT c=new IIT();
    c.library();
    c.techinal_course();
    c.IIT_course();

    }
}
```

Javadoc Declaration Console Coverage

```
<terminated> Test_inheritance2 [Java Application] C:\Program Files\Java\jdk-17
Library
Techinal Indrustary
Aeronautical Engineering
```

eclipse_workspace_RanjanKoundinya - Practice_Programes/src/Week_8/Test_inheritance2.j

File Edit Source Refactor Navigate Search Project Run Window Help

Constructor... | Autoboxing.java | Unboxing.java | Expression

```
package Week_8;

class College{
    void library() {
        System.out.println("Library");
    }
}
class Engineering_Course extends College{
    void techinal_course() {
        System.out.println("Techinal Indrustary");
    }
}
class IIT extends Engineering_Course {
    void IIT_course() {
        System.out.println("Aeronautical Engineering");
    }
}
public class Test_inheritance2{
    public static void main(String[] args) {
    IIT c=new IIT();
    c.library();
    c.techinal_course();
    c.IIT_course();
```

(3)

```
Package week 8;

class vehicle{
        string str= "km/hr";
        int speed (int speed)
        {
         return ist speed
        }
}
class car extends vechicle {
        void drive () {
        system.out.println("the car is the derived
                class... manual drive method...")
        }
}

class Bike extends vehicle {
        void fuel() {
        system.out.println("the bike is the
        derived class... fuel type = petrol...");
        }
}
class Truck extends vehicle {
        void goods() {
        system.out.println("the truck is the
    derived class... heavy goods type...") {
    }
}
```

eclipse_workspace_RanjanKoundinya - Practice_Programes1/src/Week_8/Test_inheritance3.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Constructor... | Autoboxing.java | Unboxing.java | Expression.java | Encap_E

```java
package Week_8;

class Vehicle {
    String brand;
    int year;

    public Vehicle(String brand, int year) {
        this.brand = brand;
        this.year = year;
    }

    void displayInfo() {
        System.out.println("Brand: " + brand + ", Year: " + year);
    }
}


class Car extends Vehicle {
    int numOfDoors;

    public Car(String brand, int year, int numOfDoors) {
        super(brand, year);
        this.numOfDoors = numOfDoors;
    }

    void displayCarInfo() {
        displayInfo();
        System.out.println("Number of doors: " + numOfDoors);
    }
}


class Motorcycle extends Vehicle {
    String type;

    public Motorcycle(String brand, int year, String type) {
        super(brand, year);
        this.type = type;
    }
```

Name of the Experiment : .....

Experiment No : 08

Date : .....


```
public class HiIn heritance {
    public static void main (string [] args) {
        Car c = new car ();

int vehicle speed = c. speed (20);
system.out.println ("super class speed" + vehicle
                speed + c, str);
Bike b = new Bike ();
 b. fuel ();
 system. out. println ("super class vehicle speed"
                + vehicle speed + c .str);
Truck t = new Truck ();
 t .goods ();
vehicle speed = c. speed (25);
system.out.println ("supper class vehicle
    speed " + vehicle speed + c .str);
}
}
```

```java
    void displayMotorcycleInfo() {
        displayInfo();
        System.out.println("Type: " + type);
    }
}

public class Test_inheritance3 {
    public static void main(String[] args) {
        Car car = new Car("Toyota", 2020, 4);
        car.displayCarInfo();

        System.out.println();

        Motorcycle motorcycle = new Motorcycle("Honda", 2019, "Sport");
        motorcycle.displayMotorcycleInfo();
    }
}
```

Javadoc Declaration Console X

<terminated> Test_inheritance3 [Java Applicatio

```
Brand: Toyota, Year: 2020
Number of doors: 4

Brand: Honda, Year: 2019
Type: Sport
```

Name of the Experiment : .....

Experiment No : 09 Date : 18/3/24

week - 09

1) Code, Execute and Debug Program that uses

1) static Binding

// To show how method overloading happens in static Binding package week-09;

Class shapes {
// This method is to calculate area not solving parametres float area
() {
return 0;
}
// This method is to calculate area of Circle
float area (int r) {
return (float) 3.14 * r * r;
}
// This method is to calculate area of Triangle float area (float base, float height) { return (float) 0.5 * base * height
}

eclipse_workspace_shetty - PracticeProgram1/src/Week_9/Static_Binding.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

Static_Binding.java × Dynamic_Binding.java

```java
package Week_9;

class Shapes {
    float area() {
        return 0;
    }

    float area(int r) {
        return (float) 3.14 * r * r;
    }

    float area(float base, float height) {
        return (float) 0.5 * base * height;
    }

    float area(int b, int l) {
        return b * l;

    }
}

public class Static_Binding {

    public static void main(String[] args) {
        Shapes shobj = new Shapes();
        System.out.println("Area of Circle = " + shobj.area(2));
        System.out.println("Area of Triangle = " + shobj.area(3.2f,
        System.out.println("Area of Rectangle = " + shobj.area(2, 10

    }

}
```

Console ×

<terminated> Static_Binding [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (30-Mar-2024, 11:25:44 am – 11:

```
Area of Circle = 12.56
Area of Triangle = 3.5200002
Area of Rectangle = 20.0
```

File Edit Source Refactor Navigate Search Project Run Window Help

Static_Binding.java × Dynamic_Binding.java

```java
package Week_9;

class Shapes {
    float area() {
        return 0;
    }

    float area(int r) {
        return (float) 3.14 * r * r;
    }

    float area(float base, float height) {
        return (float) 0.5 * base * height;
    }

    float area(int b, int l) {
        return b * l;

    }
}

public class Static_Binding {

    public static void main(String[] args) {
        Shapes shobj = new Shapes();
        System.out.println("Area of Circle = " + shobj.area(2));
        System.out.println("Area of Triangle = " + shobj.area(3.2f, 2.2f));
        System.out.println("Area of Rectangle = " + shobj.area(2, 10));

    }

}
```

Console ×

<terminated> Static_Binding [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (20-Mar-2024, 11:25:44 am – 11:25:45 am) [pi

```
Area of Circle = 12.56
Area of Triangle = 3.5200002
Area of Rectangle = 20.0
```

```
// This method is to calculate area
of Rectangle
        float area (int b, int l) {
            return b*l;
        }
    }

public class static - Binding {
        public static void main(string[]
args) {
    shapes shobj = new shapes();
// Calling area method with no Parameters
        System.out.println("Area of circle +shobj.area());
// Calling area method to calculate area
of Circle by processing radius as parameter
        System.out.println("Area of circle=+s
. area 20).
// Calling area method to calculate area
of Triangle by passing Base and height
        system.out.println("Area of Tri
" +sho obj. area (3.21 ,2.2))
// Calling area method to calculate area
of Rectangle Passing breadth and length
        System.out.println("Area of rectangle
a + shobj area (2.10));
    }
}
```

2) // To Acheive Run Time polymorphism

Dynamic Building

```
Package week-09;

class Bank {
        float get rate of interest () {
            return 0.0f ;
        }
class SBI extends Bank {
        float get rate of interest() {
            return 9.2.3f ;
        }
    }
}
class Axis extends Bank {
        float get rate of interest () {
            return 87.9f ;
}
}
class ICICI extends Bank {
        float get rate of interest () {
            return 7.8f ;
}
}
}
```

```java
public class Dynamic_Binding {

    public static void main(String[] args) {
        Bank obj;
        obj = new SBI();
        System.out.println("SBI Rate of Interest = " + obj.getrateofinterest());

        obj = new AXIS();
        System.out.println("AXIS Rate of Interest = " + obj.getrateofinterest());

        obj = new ICICI();
        System.out.println("ICICI Rate of Interest = " + obj.getrateofinterest());

        obj = new HDFC();
        System.out.println("HDFC Rate of Interest = " + obj.getrateofinterest());

    }

}
```

Name of the Experiment : .....

Experiment No : .....09.....

Date : .....


```
class HDFC extends Bank {
        float get rate of interest () {
            return 6.9f;
        }
    }
public class Dynamic - Binding {
    public static void main (String[] args) {
        Bank obj ;
        obj = new SBI ();
    System.out.println ("SBI Rate of Interest=" +
        obj.get rate of interest ());
        obj = new Axis ();
    System.out.println ("Axis Rate of interest=" +
        obj.get rate of interest ());
    obj = new ICICI ();
    system.out.println ("ICICI Rate of interest=" +
        obj.get rate of interest ());
    obj = new HDFC ();
    System.out.println ("HDFC Rate of interest=" +
        obj.get rate of interest ());
    }
}
```

30/04/24

09/10

week - 10

1) Code Execute & debug Program that uses abstract class to acheive abstraction

```
Package week -10 :-
// variables declaration
    string color;
// Abstract method declaration
    abstract double area ();
    public abstract string to string();
// constructor method
    public Shape (string color) {
        System.out.println ("Shape Constructor
Called ....");
        this.color = color;
}
// now - Abstract method definition
    public string get color () {
        return color;
}
}

// Redang to derived class from Abstract class
shape
class Rectangle extends Shape {
    double length;
    double width;
```

eclipse_workspace_RanjanKoundinya - Practice_Programes1/src/week_10/Interface_demo.java

File Edit Source Refactor Navigate Search Project Run Window Help

If_else_con... | If_else_tad... | For_example... | While_exampl...

```java
package week_10;

interface Add_Sub {
    public void add(double x, double y);

    public void subtract(double x, double y);
}

interface Mul_Div {
    public void multiply(double x, double y);

    public void divide(double x, double y);
}

interface Calculator extends Add_Sub, Mul_Div {
    public void printresult(double result);
}

class Interface_demo implements Calculator {
    public void add(double x, double y) {
        double result = x + y;
        System.out.print("Addition of two number:");
        printresult(result);
    }

    @Override
    public void subtract(double x, double y) {
        double result = x - y;
        System.out.print("Subraction of two number:");
        printresult(result);

    }

    public void multiply(double x, double y) {
        double result = x * y;
        System.out.print("Multiplication of two number:");
        printresult(result);
    }
```

```
public Rectangle (string colour, double
 length double width){
super (color);
system.out.println(" Rectangle constructor called");

this.length = length;
this.width = width;
}
@ overrids
   double area (){
        retures length * width;
}
@ overrids
public string to string () {
   return " Rectangle color is :" + super.getcolo
() + " and Area is : " + area ();
}
}

// Main method Dular
public class Abstract - Class - Demo {
    public static void main (string [] args){
    ~~sys~~ shape s1 = new Rectangle("yellow", 2.4);
    System.out.println (s1.toString ());
}
}
```

Name of the Experiment : .....

Experiment No : 10 Date : .....

* Interfaces

```
Package week_10;

interface Add-Sub {
        public void Add(double x, double y);
        public void sub(double x, double y);

}
interface mul_Div {
        public void mul (double x, double y);
        public void div (double x, double y);
}

interface Calculations extends Add-Sub,
mul_div {
        public void print Result (double result);
}

Class Run implement Calculator {
    public void Add (double x, double y){
    double Result = x+y;
    System.out.println ("Addition of two
      numbers");
    Print Result (Result);

}
```

eclipse_workspace_RanjanKoundinya - Practice_Programes1/src/week_10/Interface_demo.java

File Edit Source Refactor Navigate Search Project Run Window Help

If_else_con... If_else_lad... For_example... While_exampl...

```
package week_10;

interface Add_Sub {
    public void add(double x, double y);

    public void subtract(double x, double y);

}

interface Mul_Div {
    public void multiply(double x, double y);

    public void divide(double x, double y);
}

interface Calculator extends Add_Sub, Mul_Div {
    public void printresult(double result);
}

class Interface_demo implements Calculator {
    public void add(double x, double y) {
        double result = x + y;
        printresult(result);
    }

    @Override
    public void subtract(double x, double y) {
        double result = x - y;
        printresult(result);

    }

    public void multiply(double x, double y) {
        double result = x * y;
        printresult(result);
    }

    public void divide(double x, double y) {
        double result = x / y;
        printresult(result);
```

Name of the Experiment : .....

Experiment No : 10

Date : .....


```
@ override
public void sub (double x, double y){
        double Result = x-y;
    System.out.println("subtraction of two numbers");
}
@ override
Public void mul (double x, double y){
        double Result = x*y;
    System.out.Println("multiplication of
two numbers");
        Print Result (Result);

}
@ overide
Public void Div (dauble , double y){
        double Result = x/y;
        System.out.print ln " Division of two nu
        Print Result (Result);
}
public void print Result (double Result){
        System.out.print ln (" The Result is "+ Re
}
}
```

```
    public void divide(double x, double y) {
        double result = x / y;
        System.out.print("Division of two number");
        printresult(result);
    }

    public void printresult(double result) {

        System.out.println("the result is:" + result);
    }

    public static void main(String[] args) {
        Interface_demo i = new Interface_demo();
        i.add(5, 10);
        i.subtract(35, 15);
        i.multiply(6, 90);
        i.divide(45, 6);
    }



    }
```

Name of the Experiment : .....

Experiment No : 10

Date : .....


```
Public class Interface - Demo {

public static void main (String [] args) {
        Run C = new Run();
        C.Add(5,10);
        C.Sub(3,10);
        C.mul(6,3);
        C.Div(10,2);

    }
}
```

09

Name of the Experiment : .....

Experiment No : 11 Date : 5/4/24

week -11

① code executes & debug programs in java
a) handles checked & unchecked exceptio

```
Pakage week 11 ;

Public class unchecked Exception {
    public static void main (String [] args)
        int num1 , num2.
        try {
            num1 = 0
            num2 = 62 / num ;
        System.out.println ("Hey I'm not the
            End of try block") ;
        } Catch (Arithetic Exception e) {
            System.out.println ("You should not
            divide a number by zero") ;
        } Catch (Exception ex) {
            system.out.println ("I'm out of
            try Catch block") ;

    }
}
}
```

eclipse-workspace_RanjanKoundinya - Practice_Programes1/src/week_11/Unchecked_Exceptions.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

```
package week_11;
class Unchecked_Exceptions {
    public static void main(String[] args) {
        int num1,num2;
        try {
            num1=0;
            num2=67/num1;
            System.out.println("hey I'm at the end of try block");
            }

        catch(ArithmeticException e) {
            System.out.println("You should not divide a number by zero");
        }
        catch(Exception ex) {
            System.out.println("I'm out of try-catch block in Java");

        }
    }

}
```

Console × Problems Debug Shell

```
<terminated> Unchecked_Exceptions [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Apr-2024, 12:21:2
You should not divide a number by zero
```

Name of the Experiment : .....

Experiment No : ....11.....

Date : .....

b) Read the Content of the file & write the content in another file

```
Package week 11 ;

import java.io.File;
import java.io.FileReader;
import java.io.FileWriter;
import java.io.IOException;

Public class FileIOException {
    public static void main (String[] args) {
        int num1, num2;
        try {
            num1 = 0;
            num2 = 62/num;
            System.out.println("Hey I'm not the end of try block");
        } catch (IOException) {
            System.out.println (e);

        } finally {
            try {
                System.out.println (e);
                System.exit (-1); // successfull termination of a program
        }
```

eclipse_workspace_RanjanKoundinya - Practice_Programes1/src/week_11/Unchecked_Exceptions.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

N_else_con... | If_else_lad... | For_example... | While_exampl... | Continue_st... | Interface_d...

```
package week_11;
class Unchecked_Exceptions {
    public static void main(String[] args) {
        int num1,num2;
        try {
            num1=0;
            num2=62/num1;
            System.out.println("hey I'm at the end of try block");
            }

        catch(ArithmeticException e) {
            System.out.println("You should not divide a number by zero");
        }
        catch(Exception ex) {
            System.out.println("I'm out of try-catch block in Java");

        }
    }

}
```

Console × | Problems | Debug Shell

<terminated> Unchecked_Exceptions [Java Application] C:\Program Files\Java\jdk-17\bin\javaw.exe (13-Apr-2024, 12:21:24 pm – 12:21:27 pm)

You should not divide a number by zero

testin - Notepad

File Edit Format View Help

ranjan koundinya

File Edit Source Refactor Navigate Search Project Run Window Help

H_else_con... H_else_lad... For_example... While_exampl... Continue_st...

```
1  package week_11;
2  class Unchecked_Exceptions {
3      public static void main(String[] args) {
4          int num1,num2;
5          try {
6              num1=0;
7              num2=62/num1;
8              System.out.println("hey I'm at the end of try block");
9              }
10
11         catch(ArithmeticException e) {
12             System.out.println("You should not divide a number by zero");
13         }
14         catch(Exception ex) {
15             System.out.println("I'm out of try-catch block in Java");
16
17         }
18     }
19
20 }
21
```

* User defined exception

```
package week 11;
class User Defined - Exception {
    public static void main (string[]
args) {
try {
    throw new new Exception (5);
    }
    catch (new Exception ex) {
        System.out.println (Ex.print());
    }
    }
}
class new Exception extends Exception {
    int x :
    // constructor
    new Exception (int y) {
        x = y
    }
    Public string Print () {
        return ("Exception value = "+x);
    }
}
```

eclipse-workspace-RanjanKoundinya - Practice_Programes1/src/week_11/UserDefined_Exception

File Edit Source Refactor Navigate Search Project Run Window Help

If_else_con... | If_else_lad... | For_example... | While_exampl...

```
1  package week_11;
2
3  class UserDefined_Exception {
4
5      public static void main(String[] args) {
6          try {
7              throw new NewException(5);
8          }
9          catch(NewException ex) {
10             System.out.println(ex.print());
11         }
12
13
14     }
15
16 }
17 class NewException extends Exception{
18     int x;
19     //constructor
20     NewException(int y){
21         x=y;
22     }
23     public String print() {
24         return("Exception value="+x);
25     }
26 }
27
```

Name of the Experiment : .....

Experiment No : ....11....

Date : .....


```
finally {
        try {
            System.out.println("File is written
successfully");
            ins.close();
            outs.close();
        }
        catch (IOException){
            System.out.println("Exception")
        }
    }
}
```

10

Name of the Experiment : Create 2 Different interface

Experiment No : 12

Date : 12/4/24

Page No. 47

week - 12

① Design an interface to implement it like one that holds different types of toys to check Compliance with TSP.

- Toy interface.

```
Package week 12;
    public interface ToyInterface {
    public void setPrice(double price);
    public void setColor(String color);
}
```

- movable Interface

```
Package week 12;
    public Interface movableInterface
        public void move();
}
```

- Flyable Interface

```
Package week 12;
    public interface FlyableInterface
        public void Fly();
}
```

eclipse_workspace_koushik - HelloWorld/src/week12/ToyInterface.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

ToyPlane.java | FlyableInterface.java | MovableInterface.java | ToyInterface.java | ToyCar.java | ISPDemo.java | ToyHouse.java

```
1 package week12;
2
3 public interface ToyInterface {
4     public void setPrice(double price);
5     public void setColor(String color);
6 }
7
```

eclipse_workspace_koushik - HelloWorld/src/week12/MovableInterface.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

ToyPlane.java | FlyableInterface.java | MovableInterface.java | ToyInterface.java | ToyCar.java | ISPDemo.java | ToyHouse.java

```java
package week12;

public interface MovableInterface {
    public void move();

}
```

eclipse_workspace_koushik - HelloWorld/src/week12/FlyableInterface.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

ToyPlane.java | FlyableInterface.java | MovableInterface.java | ToyInterface.java | ToyCar.java | ISPDemo.java | ToyHouse.java

```java
package week12;

public interface FlyableInterface {
    public void fly();
}
```

Name of the Experiment : Toy House

Experiment No : 12

Date :

- Toy House

```
package week 12;
public class Toyhouse implements ToyInt
-erface {

    double price;
    string color;
    }
    @ override
    public void setprice (double price){
        this. Price = price;
    }

    @ override
    public void set color (string color){
        this .color = color;
    }
    public string print () {
return " Toy house : Toy price is "+price
    + " and toy color is "+color
    }
}
```

```java
package week12;

public class ToyHouse implements ToyInterface{
    double price;
    String color;

    @Override
    public void setPrice(double price) {
        this.price=price;
    }
    @Override
    public void setColor(String color) {
        this.color=color;
    }
    public String print() {
        return("ToyHouse:Toy Price is"+price+"and toy color is"+color);
    }
}
```

Name of the Experiment : Toy Car

Experiment No : 12

Date :

Page No. 50

- Toy Car

```
public class ToyCar implements Toy Interface
                    movable Interface {
        double price;
        string color;

        @ override
        public void set price (double price) {
                this.price = price;
        }
        @ override
        public void set color (string color) {
                this.color = color;
        }

        @ override
        public void move () {
                system.out.println("Toy car moves
                                on the surface...");
        }
        public string print () {
                return "Toy car: price is" + price + " and
                                color is " + color;
        }
}
```

ToyPlane.java × FlyableInterface.java MovableInterface.java ToyInterface.java ToyCar.java ISPDemo.java ToyHouse.j

```java
package week12;

public class ToyPlane implements ToyInterface,MovableInterface,FlyableInterface{
    double price;
    String color;


    @Override
    public void fly() {
        System.out.println("ToyPlane flies upward in air.....");




    }


    @Override
    public void move() {
        System.out.println("ToyPlane Moves on the surface and flies in air .....");


    }


    @Override
    public void setPrice(double price) {
        this.price = price;

    }


    @Override
    public void setColor(String color) {
        this.color = color;


    }

    public String print() {
        return("ToyPlane:Price of tis toy is"+price+"and toy color");
    }

}
```

Name of the Experiment : Toy plane class

Experiment No : 12

Date :

- Toy plane

```
public class ToyPlane implements ToyInterface
                    movable Interface, FlyableInterface {
        double price;
        String color;

        @ override
        public void fly () {
            System.out.println(" toy plane flies upward
                                in air ....");
        }
        @ override
        public void move () {
            System.out.println(" Toy plane moves on the
                                surface & flies in air".
        }
        @ override
        public void setprice (double price) {
                this.price = price;
        }
        @ override
        public void setcolor (String color) {
                this.colour = color;
        }
        public String print () {
            return " Toy plane = price of this toy is
            " + price + " & toy color is " + color;
        }
```

```java
package week12;

public class ToyCar implements ToyInterface,MovableInterface {
    double price;
    String color;


    @Override
    public void setPrice(double price) {
        this.price=price;

    }
    @Override
    public void setColor(String color) {
        this.color=color;

    }
    @Override
    public void move() {
        System.out.println("ToyCar moves on the surface....");

    }
    public String print() {
        return("ToyCar:price is" +price+ "and color is"+ color);
    }
}
```

Name of the Experiment : main method

Experiment No : 12

Date :

Page No. 12

```
Isp demo { main method }

package week 12;

public class IspDFmod
        ToyHouse houseobj = new ToyHouse();
        house obj.set price (356.9);
        house obj.set color ("green");
        system.out.println (house obj.print());

        ToyCar carobj = new ToyCar();
        carobj.set price (399.9);
        carobj.set color ("Blue");
        carobj.move();
        System.out.println (carobj.print());

        ToyPlane planeobj = new ToyPlane();
        planeobj.set price (399.9);
        plane obj.set color (yellow);
        plane obj.move();
        plane obj.fly();
        System.out.println (plane obj.print());

}
```

Sd 29/10/24

10/10

```java
package week12;

public class ISPDemo {

    public static void main(String[] args) {
        ToyHouse houseObj = new ToyHouse();
        houseObj.setPrice(356.9);
        houseObj.setColor("Greeen");
        System.out.println(houseObj.print());

        ToyCar carObj = new ToyCar();
        carObj.setPrice(399.9);
        carObj.setColor("Blue");
        carObj.move();
        System.out.println(carObj.print());

        ToyPlane planeObj = new ToyPlane();
        planeObj.setPrice(399.9);
        planeObj.setColor("Yellow");
        planeObj.move();
        planeObj.fly();
        System.out.println(planeObj.print());

    }

}
```

```
ToyHouse:Toy Price is356.9and toy color isGreeen
ToyCar moves on the surface....
ToyCar:price is399.9and color isBlue
ToyPlane Moves on the surface and flies in air .....
ToyPlane flies upward in air.....
ToyPlane:Price of tis toy is399.9and toy color
```

Connect database through JDBC

Name of the Experiment : Perform basic DB operations

Experiment No : 13

Date : 12/4/24

Page No. 53

week - 13

Code Execute & Debug program to connect to data base through JDBC & perform basic DB operation

```
package week-13;
import Java.SQL.Connection
import Java.SQL.DriverManager;
import Java.SQL.ResultSet;
import Java.SQL.SQLException
import Java.SQL.SQLException;
import Java.SQL.Statement;

public Class Connection {
    p.s.v.m (String [] args) {
try {
    class forname ("com.mysql.jdbc.Driver");
Connection con = DriverManager.getConnection
    ("jdbc:mysql://localhost:3306/testdb
    "root", "password@123");
Statement stmt = con.createStatement();
ResultSet rs = stmt.ExecuteQuery("select *
    student");
while (rs.next()) {
    S.O.P.(rs.getString(first name)
```

eclipse_workspace_Ranjankoundinya - Practice_Programes1/src/week13/MySQLConnection.java - Eclipse IDE

File Edit Source Refactor Navigate Search Project Run Window Help

```java
package week13;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;

public class MySQLConnection {
    public static void main(String args[]) {
        try {
            Class.forName("com.mysql.cj.jdbc.Driver");
            Connection con = DriverManager.getConnection("jdbc:mysql://localhost:3306/testdb", "root", "password@123");
            Statement stmt = con.createStatement();
            ResultSet rs = stmt.executeQuery("select * from student");
            while (rs.next()) {
                System.out.println(rs.getString("firstName") + " " + rs.getString(2) + " " + rs.getString(3) + " "
                        + rs.getString(4) + " " + rs.getInt(5));

            }
            stmt.close();
            con.close();
        } catch (SQLException | ClassNotFoundException e) {
            System.out.println(e);
        }
        System.out.println("connection closed...");
    }
}
```

Name of the Experiment : .....

Experiment No : 13

Date : .....

Page No. 54

```
t " " tns.get string(3) t " " ns.get string(i)
t " " tss.get string(4) t " " tns.get int(5)
}
stmt.close();
con.close();
} catch (SQLException / ClassNotFoundException) {
        S.O.P(e);
}
    S.O.P("Connection closed ...");
}
}.
```

Console ✕ Problems Debug Shell

<terminated> MySQLConnection [Java Application] C:\Program Files\J

```
Ranjan m 488CS22042 Mysore 17
Ranjhhhan m 488CS22042 Mysore 17
connection closed...
```