# Programming in C

## Topic : Basic Programs

1. Write a program to print Hello World on output screen.
2. WAP to calculate Simple interest.
3. WAP to find out perimeter and area of the Square and Rectangle.
4. WAP to convert Fahrenheit temp in degree Celsius.
5. WAP to demonstrate arithmetic operation on two integer numbers.
6. Write a program which will accept three integer numbers from user and find out greatest among them using conditional operator.
7. Accept two numbers and perform swapping with third variable, and without third variable ***[Infosys]***
8. WAP to accept five subject marks and find out total and average of the marks.
9. WAP which calculate speed for time and distance.

   Speed=(distance/time)
10. Command line program to find area of triangle ***[Amdocs]***



## Topic : Selection statement

1. WAP to check whether a number is even or odd

2 . WAP to check whether a person is eligible for voting or not.

3. WAP to accept Cost Price from user and ask whether the user is a student or not. If the user is student and cost price is greater than 500, give discount of 10% ELSE discount will be 5%. If user is not student and cost price is greater 500 then give discount of 8% ELSE discount will be 2%. (Take all inputs from USER)

4. WAP to check whether Number is positive or negative or ZERO.

5. WAP a program to accept Percentage from user and check the GRADE

   A. Above 70% - Grade A

   B. Between 60% to 70% - Grade B+.

   C. Between 45% to 60% - Grade B.

   D. Between 35% to 45% - Grade C.

   E. Less than 35% - Fail

6.Accept three numbers from user and find out largest number among three and also find out whether that three numbers are equal or not.(else if ladder)

## Topic : Branching statement

1. WAP using following menus-

   Choice-1: Accept number and find out square and cube.

   Choice-2: Check whether the given year is LEAP or not. ***[TCS]***

   If user enters wrong choice appropriate message should get displayed.

2. WAP using switch case for arithmetic operation on two numbers, if user enters an operator as choice, the appropriate operation should perform.

   If user enters wrong choice appropriate message should get displayed.

   i.e. + is for addition

   - is for subtraction

## Topic : Looping statements

1. WAP to check whether a number is prime or not. ***[TCS]***

2. WAP to accept a number from user and find out sum of even digits from that given number.

3. WAP to print the following pattern : ***[MindTree]***

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

4. WAP to print the following on output screen using jumping statements

```
1    5
2    4
4    2
5    1
```

5. WAP to print ***[AMCAT,Wipro]***

```
1 1 1 2
3 2 2 2
3 3 3 4
```

6. GCD of three numbers ***[Wipro,TCS]***

7. Find all pythagorean triplet below the given limit. ***[Cognizant]***

8. WAP to print ***[AMCAT exam]***

```
1
1 1
1 0 1
1 0 0 1
1 1 1 1 1
```

9. WAP to convert decimal to binary /binary to octal ***[CoCubes/Amcat]***

# Topic : Functions

1. WAP to demonstrate all four categories of functions for volume of the cylinder

   (volume of cylinder: 3.14*r*r*h)

   a) Function without parameters without return value.

   b) Function with parameter without return value.

   c) Function without parameter with return value.

   d) Function with parameters with return value.



2. WAP to calculate factorial of a number using a function. (using recursion) ***[TCS,Persistent,Infosys]***
3. WAP to print Fibonacci series.(also using recursion) ***[TCS]***
4. WAP to check whether a number is Armstrong number. ***[TCS]***
5. WAP to check whether a number is palindrome. ***[TCS]***
6. WAP to find HCF and LCM of given number using recursion. ***[IBM]***

# Topic : Pointers

1. Write a program that declares a double, an int, and char variables. Next declare and initialize a pointer to each of the three variables. Your program should then print the address of, and value stored in.
2. Demonstrate addition of two floating type numbers by using call by address.

3. Demonstrate pointer arithmetic by assigning pointer “ptr” to variable “a” which is having value as 100 in it.Perform increment operation on pointer ptr like ptr=ptr+2 and display which address that pointer ptr hold.

# Topic : Array

1. WAP to calculate average marks of a 10 students.
2. WAP to sort array in ascending order.
3. WAP to find greatest and smallest number in an array.
4. WAP to find transpose of matrix ***[Infosys]***
5. WAP to multiply a 3*3 matrix. ***[TCS, Infosys]***
6. Write a C program to compute sum of diagonal elements of an array ***[Infosys]***
7. Write a program to search particular value in an array and return the index number where it is located.
8. Perform following operations on two matrices with order m*n and p*q.
9. Addition of two matrix
10. Multiplication of two matrix
11. WAP to check whether two matrtices are identical or not. ***[Cognizant]***
12. Given a 2D array, print it in spiral form. ***[Cognizant]***

***I/p 1 2 3 4 5***

***6 7 8 9 10***

***11 12 13 14 15***

***O/p 1 2 3 4 5 10 15 14 13 12 11 6 7 8 9***

13. Write a program to print all the LEADERS in the array. (An element is LEADER if it is greater than all the elements to its right side.) ***[CoCubes]***

14. Sort array using bubble sort ***[Persistent]***

# Topic : String

1. WAP to compare two strings using strcmp ().
2. WAP to concatenate two strings without using library function.
3. WAP to convert upper-case string into lower-case and vice versa .Write your own functions for the same. ***[TCS]***

4. Find a character(or sub-string) in a string without using library function. And print its ascii value ***[IBM]***
5. Eliminate vowels from string ***[MindTree]***
6. WAP to check a string is palindrome.(Example Wow,bob,radar,sagas..etc). ***[TCS]***
7. WAP to count no of blank spaces in your paragraph without using string function and write it in your own function.
8. WAP to reverse the sentence or string without using library function.***[MindTree,TCS]***

   ***for example***

   ***"hi all"***

   ***reverse 1: "all hi"***

   ***reverse 2: "lla ih"***
9. WAP to show all possible library function for reading and writing String .
10. WAP to convert alternate characters of the string to uppercase.The first letter of the string has to be capital. ***[IBM]***

    ***I/p: We are the world***

    ***O/p: We ArE tHe WorlD***

***11.*** WAP to transform string of lowercase character by replacing each letter with subsequent character. ***[IBM]***

12. write a program to count different types of characters in given string. ***[Infosys]***
13. Dynamically read a string and sort it using bubble sort ***[Persistent]***



## Topic : Dynamic Memory Allocation

1. Write a program to create memory for int, char and float variable at run time.

2. Write a program to input and print text using Dynamic Memory Allocation.

3. Write a program to read a one dimensional array, print sum of all elements along with inputted array elements using Dynamic Memory Allocation.

4. Write a program to read and print the student details using structure and Dynamic Memory Allocation.

5. Write a program to read and print the N student details using structure and Dynamic Memory Allocation.

# Topic : File Handling

1. Write a program to read name and marks of n number of students from user and store them in a file.

2. Write a program to read name and marks of n number of students from user and store them in a file. If the file previously exits, add the information of n students.

3. Write a program to write all the members of an array of structures to a file using fprintf(). Read the array from the file and display on the screen.

4. Write to a text file using fprintf()
5. Write a Program to Append the Content of File at the end of Another.

6. Write a Program to Capitalize First Letter of every Word in a File ***[IBM]***

7. Write a Program to Count No of Lines, Blank Lines, Comments in a para in a file .

8. Write a c program which produces its own source code as its output. ***[Persistent]***

9. Write a program to remove spaces from a File and store the contents without space in a new file. ***[Persistent]***



## Topic : Structure and Union

1. Create a structure Student. Create array of 10 students using MACRO and display data in tabular form.
2. Create a structure Employee. Accept data for 5 employees and display it.
3. Demonstrate use of union and find out size of union variable and the attributes from union.
4. WAP to demonstrate typedef keyword.
5. WAP to copy one structure into another. Use concept of nested structures.
6. Create Employee structure having attributes as id, name and basic salary.
7. Create Date structure having attributes as dd,mm,yy.
8. Nest Date structure into Employee as to display joining date of employee.
9. Create a structure Employee. Pass it to a function by value.
10. Make a structure for banking customer which includes all the essential information like Name,Acc. No, Balance etc ***[Persistent]***

# OOPs With C++

## Topic : CLASS AND OBJECTS

1. Create the following classes and write their appropriate class members and display proper information to user.
a) Time b) Date c) Person d) Student e) Fan f) Point g)Box

Create a class Team as follows with following data members such as,Country_Name,nameofPlayer,age,no_of_matches,batting_avg,balling_avg;
Accept 5 different records in array and display the records as follows:

| Country Name | Player Name | Matches | Age | BattingAvg | BallingAvg |
|---|---|---|---|---|---|
| India | Sachin | 295 | 30 | 45.51 | 53.00 |
| Australia | Ricky | 160 | 28 | 41.00 | 67.00 |
| India | Saurav | 230 | 31 | 40.95 | 30.00 |

2. An electricity board charges the following rates to domestic users to discourage large consumption of energy:
For the first 30 units - 1.50/- per unit
For next 200 units - 3.00/- per unit
Beyond 300 units - 4.25/- per unit
Create a class ElectricityBill for atleast 5 users with following opeartions….
Write a program to read the name of the user and number of units consumed and print out the charges with names.
If the total amount is more than Rs. 500.00 then an additional rcharge of 15% is added.

3. Write a program to implement a sphere class with appropriate members and member function to find the surface area and volume: (Surface =4pie r2 and vol=4/3 pie r3)

4. Write a program to implement a telephone bill class with Name, Address, Tel. No., No. of calls as data members. Compute the amount to be paid if the charges per call is Rs. 2/-.

## Topic : Constructor and Destructor

1. Create the following classes and write member functions and display proper information to user using constructor and destructor.
a) Time b) Date c) Person d) Student e) Fan f) Point

2. Define a class to represent a bank account. Include the following members
Data Members
1. Name of the depositor

2. Account number
3. Type of account
4. Balance amount in the account.

Member functions

1) To assign initial values
2) To deposit an amount
3) To withdraw an amount after checking the balance
4) To display name and balance.

3. Define class student which shows the information about the Student using constructor and destructor - Include the following members

Data Members

1. Name of the Student
2. Roll No
3. Address
4. Percentage

Member functions

1. To assign initial values
2. To accept the values from user
3. To display all data to user including Grade by using following conditions
   a. Per>=70 Distinction
   b. Per <[illegible] and Per >=60 First Class
   c. Per<60 and Per>=40 Second class
   d. Per<40 Student is Fail



# Topic : Reference variable, Copy Contructor

1. Create the following classes and write member functions and display proper information to user using constructor and destructor also use this pointer.
   a) Time b) Date c) Person d) Student e) Fan f) Point

2. Swap two numbers using reference variable. Create class Swap.

3. Write a program to implement flight class with data member as flight no., source, destination and fare. Write a copy constructor and a member function to display the flight information.

4. A book shop maintains the inventory of books that are being sold at the shop. The list includes details such as author, title, price, publisher and no. of copies. Whenever a customer wants a book, the sales person inputs the title and author and the system searches the list and displays whether it is available or not. If it is not, an appropriate message is displayed. If it is, then the system displays the book details and requests for the number of copies required. If the requested copies are available, the total cost of the

requested copies is displayed; otherwise the message “Required copies not in stock” is displayed.

Incorporate the following features:
a.Value of attributes should be assign to some value.
b.Create Accept_book_Info() and Display_Book_Status() methods.

5. Create one class Library which having data members as author, title, price, publisher and no. of copies. Assign some specific values to all its data members and create member functions as Accept_Book_info(),Print_Book_info().
Create function such as Selling_Prise() on the following basis of conditions:
If Actual price of the book is greater than equal to 2500/- then discount=1.00%
If actual price is less than 2500/- then discount=0.5%
Then find out final selling price of the book.

## Topic : Inline, friend function and static data members



1. Implement inline function for the following programs-
    a. Square of the number
    b. Cube of the number
    c. Area of rectangle
2. Find out largest number between two numbers by implementing two different classes as-
    a. Number1-include n1 as variable and get_a(),disp_a() as functions.
    b. Number2-include n2 as variable and get_b(),disp_b() as functions.
    c. Create one common function as friend of both Number1 and Number2 class.
3. Demonstrate static member function with static data member in one class.

## Topic : Function overloading

1. Demonstrate function overloading for addition of two integer and two floating point numbers.

2. Swap two integer numbers and two characters using function overloading.

3. Area of Rectangle, Circle and Square.

## Topic : Operator overloading

1. Demonstrate unary ++ operator using operator function
2. Make addition of Two Complex numbers using binary + operator(using friend function)
    a. C1- 20+i30

b. C2- 14+i10
c. Resultant complex number is- 34+i40

3. Add two values times and display resultant time in the hr.: min: sec form using friend function(overload binary + operator)
   a. T1- 2:40:35
   b. T2- 3:35:30

Resultant time is- 06:16:05

## Topic : Generic Functions And Exception Handling

1. WAP using generic function to find sum of 2 numbers.

2. WAP using exception handling if in the division the denominator is negative.



## Database

**Table Name : Employee**

| Employee_id | First_name | Last_name | Salary | Joining_date | Department |
|---|---|---|---|---|---|
| 1 | John | Abraham | 1000000 | 01-JAN-13 12.00.00 AM | Banking |
| 2 | Michael | Clarke | 800000 | 01-JAN-13 12.00.00 AM | Insurance |
| 3 | Roy | Thomas | 700000 | 01-FEB-13 12.00.00 AM | Banking |
| 4 | Tom | Jose | 600000 | 01-FEB-13 12.00.00 AM | Insurance |
| 5 | Jerry | Pinto | 650000 | 01-FEB-13 12.00.00 AM | Insurance |
| 6 | Philip | Mathew | 750000 | 01-JAN-13 12.00.00 AM | Services |
| 7 | TestName1 | 123 | 650000 | 01-JAN-13 12.00.00 AM | Services |
| 8 | TestName2 | Lname% | 600000 | 01-FEB-13 12.00.00 AM | Insurance |

**Table Name : Incentives**

| Employee_ref_id | Incentive_date | Incentive_amount |
|---|---|---|
| 1 | 01-FEB-13 | 5000 |
| 2 | 01-FEB-13 | 3000 |
| 3 | 01-FEB-13 | 4000 |
| 1 | 01-JAN-13 | 4500 |
| 2 | 01-JAN-13 | 3500 |

1. Create Table Employee & Incentives using above table
2. Add Primary key Constrains to both table;
3. Write Sql Syntax to create EMPLOYEE_REF_ID in INCENTIVES table as foreign key with respect to EMPLOYEE_ID in employee table
4. Write SQL to drop foreign key on employee table



## Topic : Select

1. Get all employee details from the employee table
2. Get First_Name,Last_Name from employee table
3. Get First_Name from employee table in upper case

## Topic : SQL Order By

1. Get unique DEPARTMENT from employee table
2. Get all employee details from the employee table order by First_Name Ascending
3. Get all employee details from the employee table order by First_Name Ascending and Salary descending

## Topic : SQL Group By Query

1. Get department,total salary with respect to a department from employee table.
2. Get department,total salary with respect to a department from employee table order by total salary descending
3. Get department,no of employees in a department,total salary with respect to a department from employee table order by total salary descending

4. Get department wise average salary from employee table order by salary ascending
5. Get department wise maximum salary from employee table order by salary ascending
6. Select no of employees joined with respect to year and month from employee table
7. Select department,total salary with respect to a department from employee table where total salary greater than 800000 order by Total_Salary descending

## Topic : SQL Where Condition

1. Get employee details from employee table whose employee name is “John”
2. Get employee details from employee table whose employee name are “John” and “Roy”
3. Get employee details from employee table whose employee name are not “John” and “Roy”



## Topic : SQL Wild Card Search

1. Get employee details from employee table whose first name starts with 'J'
2. Get employee details from employee table whose first name contains 'o'
3. Get employee details from employee table whose first name ends with 'n'

## Topic : SQL Pattern Matching

1. Get employee details from employee table whose first name ends with 'n' and name contains 4 letters
2. Get employee details from employee table whose first name starts with 'J' and name contains 4 letters
3. Get employee details from employee table whose Salary greater than 600000
4. Get employee details from employee table whose Salary less than 800000
5. Get employee details from employee table whose Salary between 500000 and 800000
6. Get employee details from employee table whose name is 'John' and 'Michael'

# Topic : SQL Join

1. Select first_name, incentive amount from employee and incentives table for those employees who have incentives
2. Select first_name, incentive amount from employee and incentives table for those employees who have incentives and incentive amount greater than 3000
3. Select first_name, incentive amount from employee and incentives table for all employes even if they didn't get incentives
4. Select first_name, incentive amount from employee and incentives table for all employees who got incentives using left join

# Topic : SQL DATE Functions

1. Get employee details from employee table whose joining year is “2013”
2. Get employee details from employee table whose joining month is “January”
3. Get employee details from employee table who joined after January 31st
4. Get database date
5. Get Employee ID's of those employees who didn't receive incentives without using sub query ?(MINUS)
6. Delete employee data from employee table who got incentives in incentive table
7. Update incentive table where employee name is 'John'



# Topic : SQL Union

1. Select First_Name,LAST_NAME from employee table as separate rows

# Topic : Views

1. Create view for Employyee which displays id name of Employee.
2. Update view to add Salary column to View
3. drop View

# Topic : INDEX

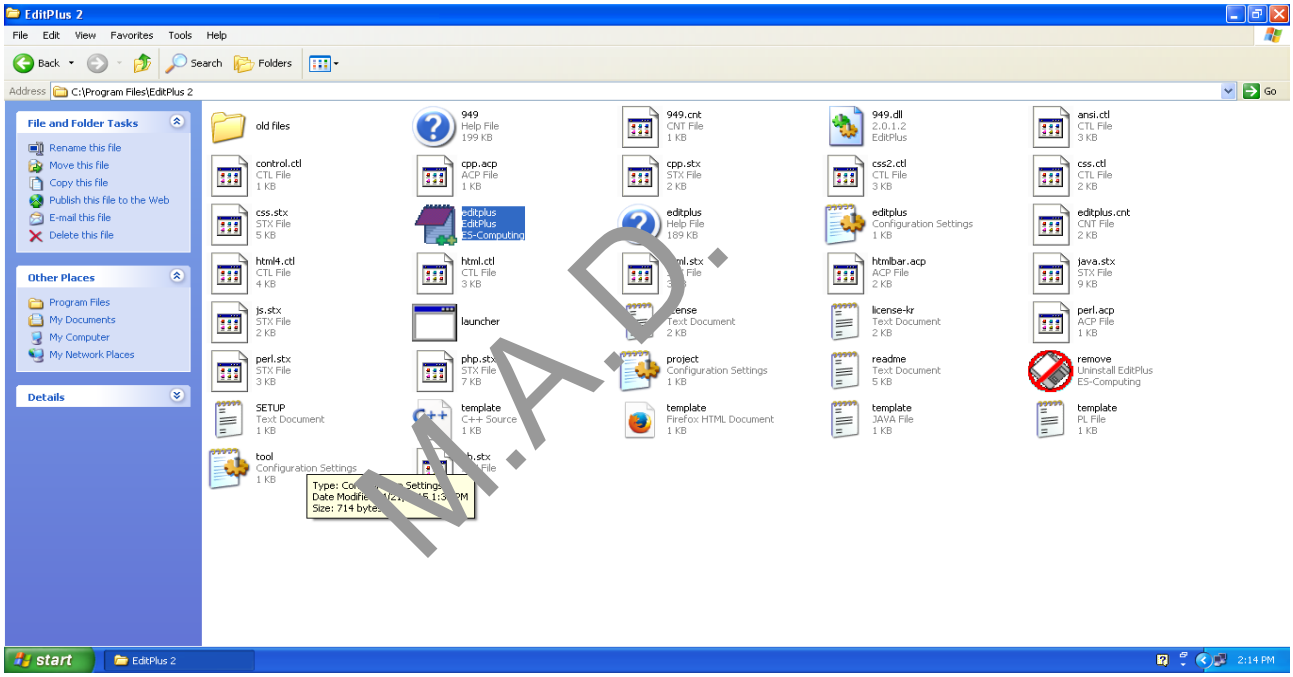
1. Creates an index on a table Employee.
2. Create Forced Index on new Table which is not exit in Database
3. Drop Index

# CORE JAVA

## Lab 1

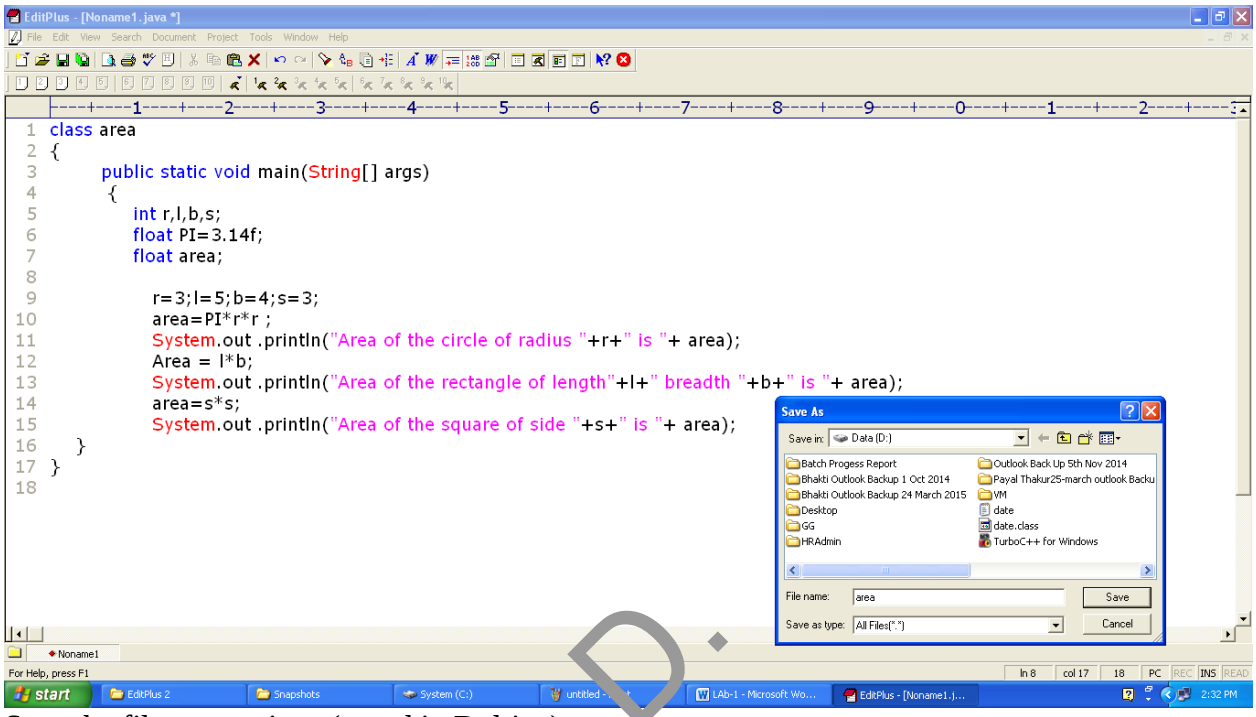
## Writing First Java Program

4. Click on start->My Computer-> System ( C ) -> Program Files -> Edit Plus 2..
5. Double click on editplus icon




Click on I Agree

**File -> New- > Java**
Write your java program in the editor

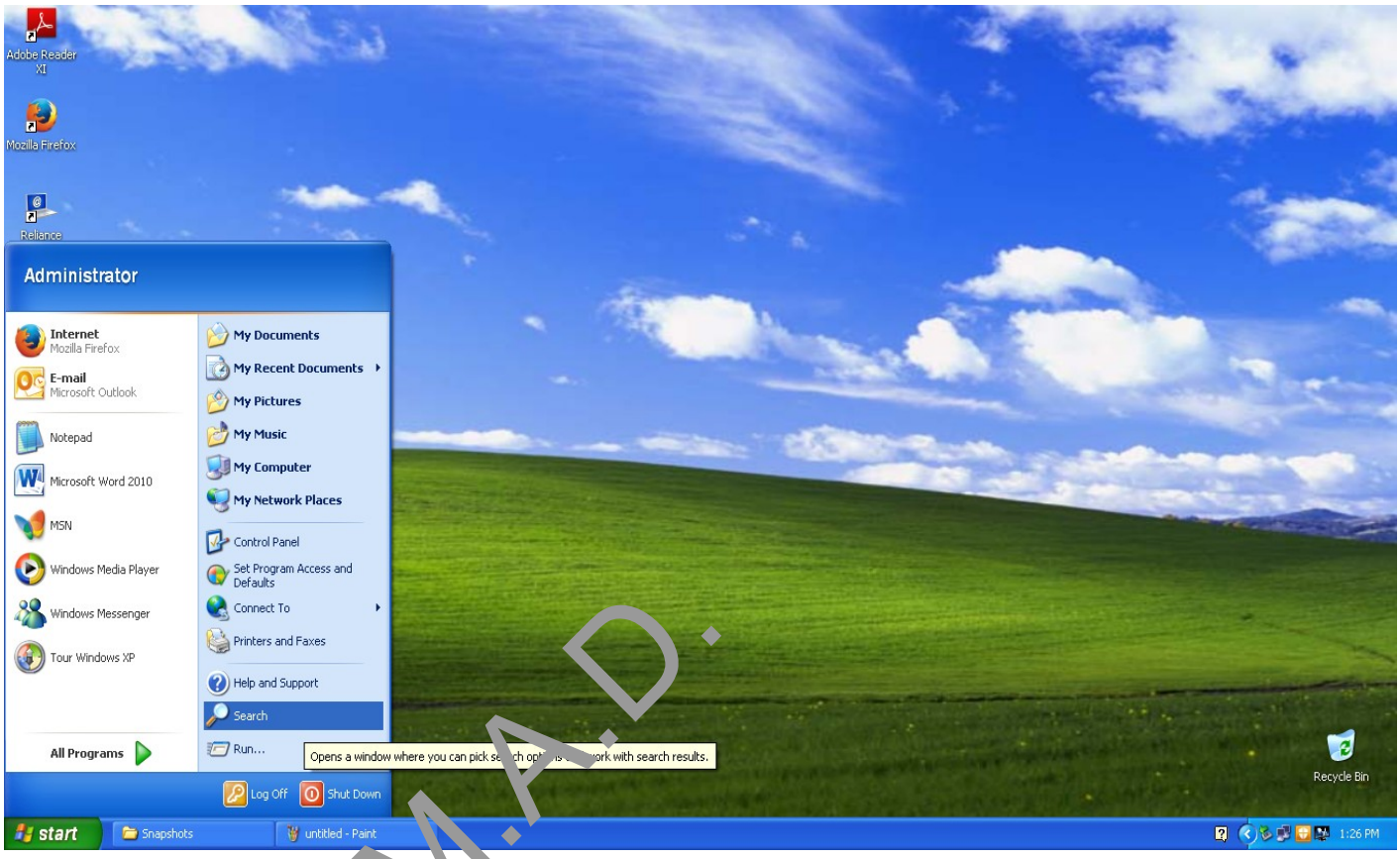



Save the file as area.java (saved in D drive)

**Compile and Run Java Program on Command Prompt**

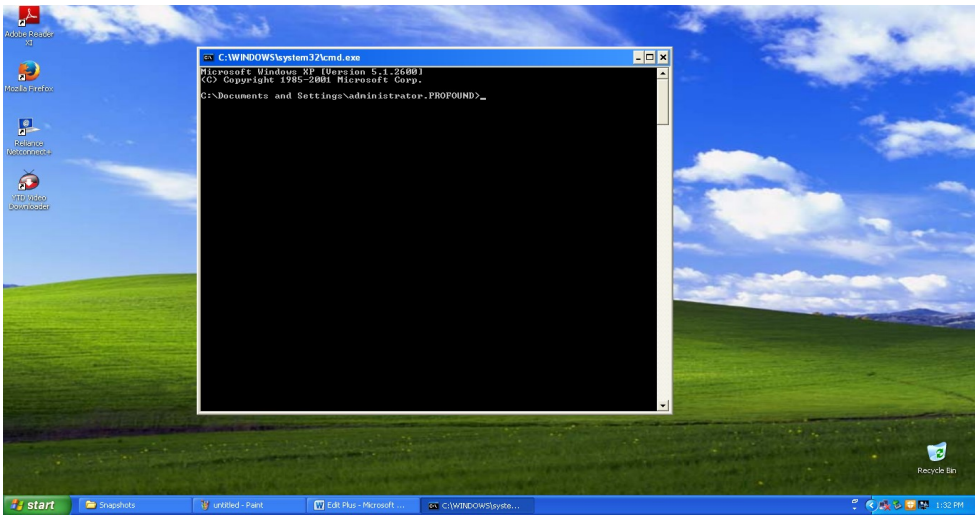
**Steps:**

5. **Click on Start**



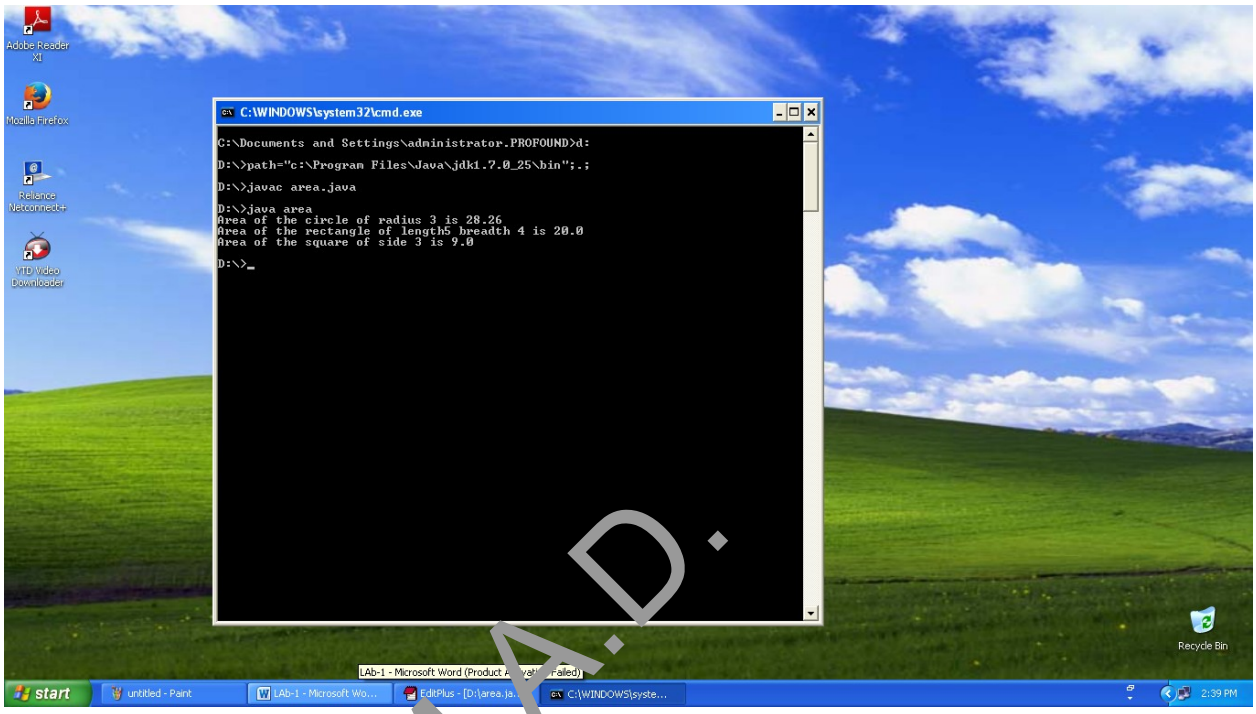



6. **Click on run start->ru (search cmd )**
7. **Type cmd and click on OK Button**




8. **From the command prompt move to the drive and folder where you have saved your program**
   **like**
   **c:\Documents and Settings\administrator.PROFOUND> d:(press Enter Key)**

**d:\>**




**5: set the path**

**D:\> path="c:\Program Files\Java\jdk1.7\bin";.; //(Press enter key)**

**5) Compile the source code**

**D:\>javac area.java**

Once compiled generates area.class file

**6) Run the .class file**

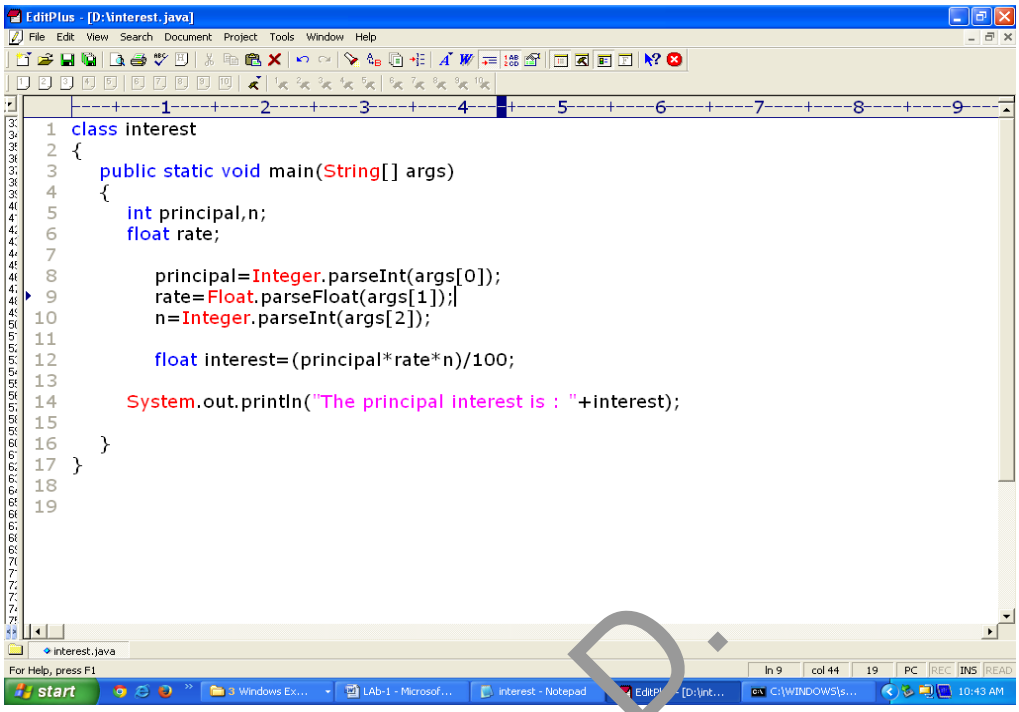
**D:\>java area**

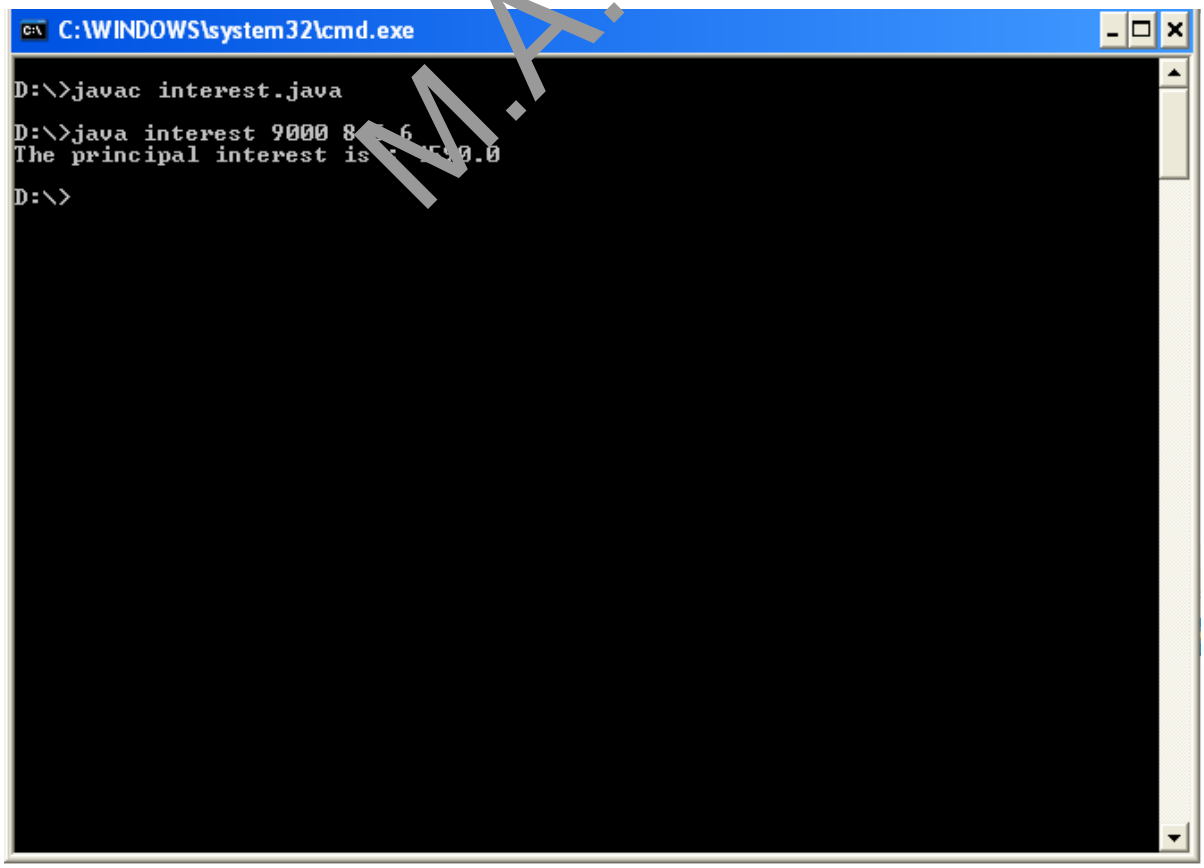
Area of the circle of radius 3 is 28.26

Area of the rectangle of length5 breadth 4 is 20.0

Area of the square of side 3 is 9.0

**Demo for Command Line Arguments**






# Assignments To Solve

1. accept two integer values via CLA* and perform all arithmetic operation2

2. Accept five different values via CLA* by using for loop and display sum of that values

3. Accept values via CLA* for 1-D array of integer type and display it on screen and calculate the sum of number in array

4. Given an array of integers A and a sum B, find all unique combinations in A where the sum is equal to B. ***(Infosys)***
ach number in A may only be used once in the combination.

Note:
All numbers will be positive integers.
Elements in a combination (a1, a2, … , ak) must be in non-descending order. (ie, a1 ≤ a2 ≤ … ≤ ak).
The combinations themselves must be sorted in ascending order.
If there is no combination possible the print "Empty" (without qoutes).
Example,
Given A = 10,1,2,7,6,1,5 and B(sum) 8,

A solution set is:

[1, 7]
[1, 2, 5]
[2, 6]
[1, 1, 6]

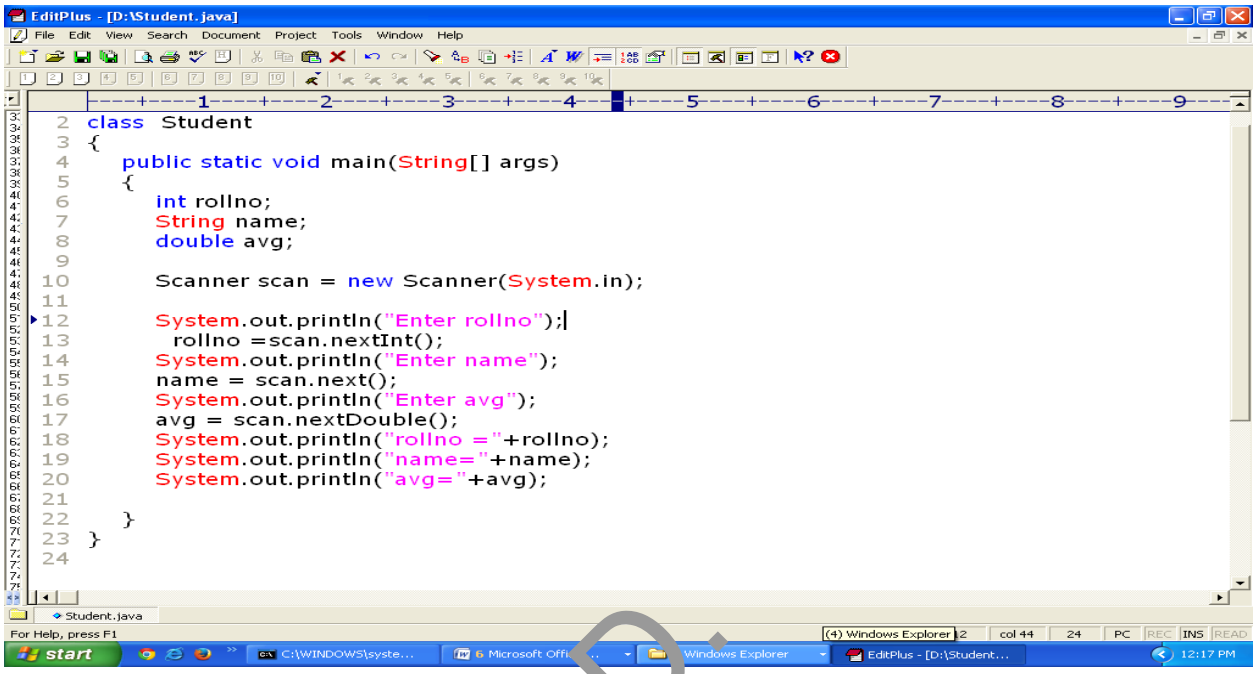


5.Write a java program to check number is perfect or not.***(Accenture)***

# Lab 2

## Classess and Objects
## Using Scanner class

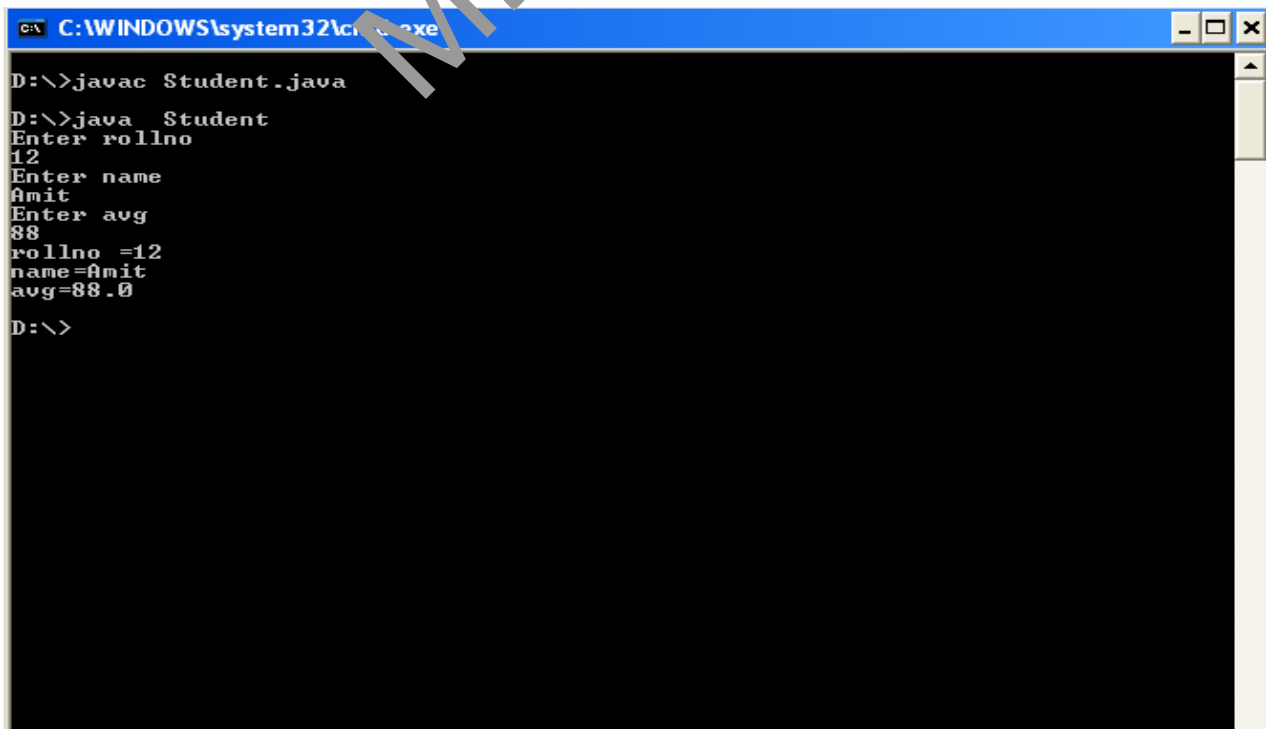
### 1.Introducing Scanner Class To Accept The Values From The User
### Demo for Scanner Class



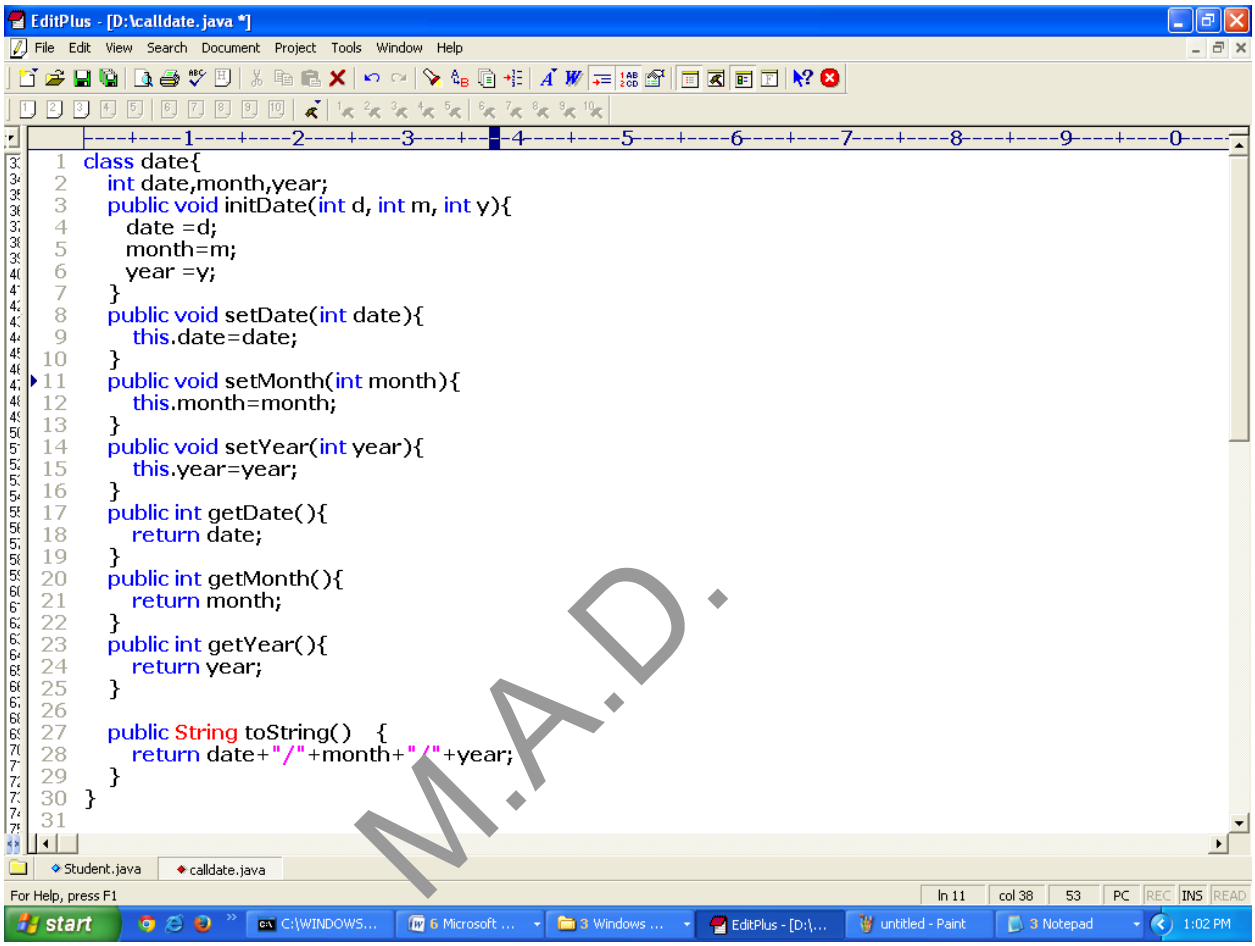

Save as Student.java(in d:\)

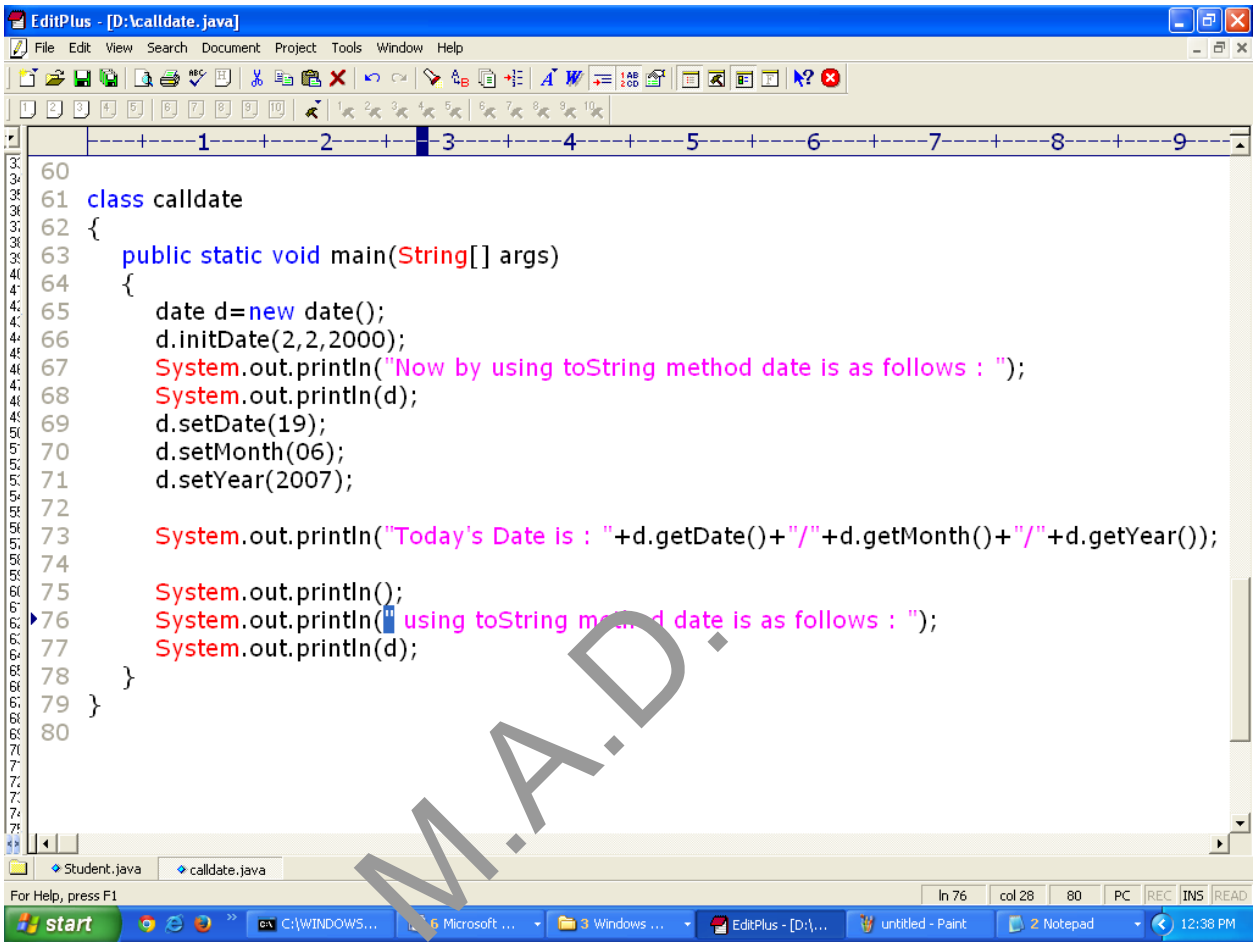
Compile and run from Command Prompt

Note: Always set the path if new command prompt is opened( as mentioned in the previous lab demo)



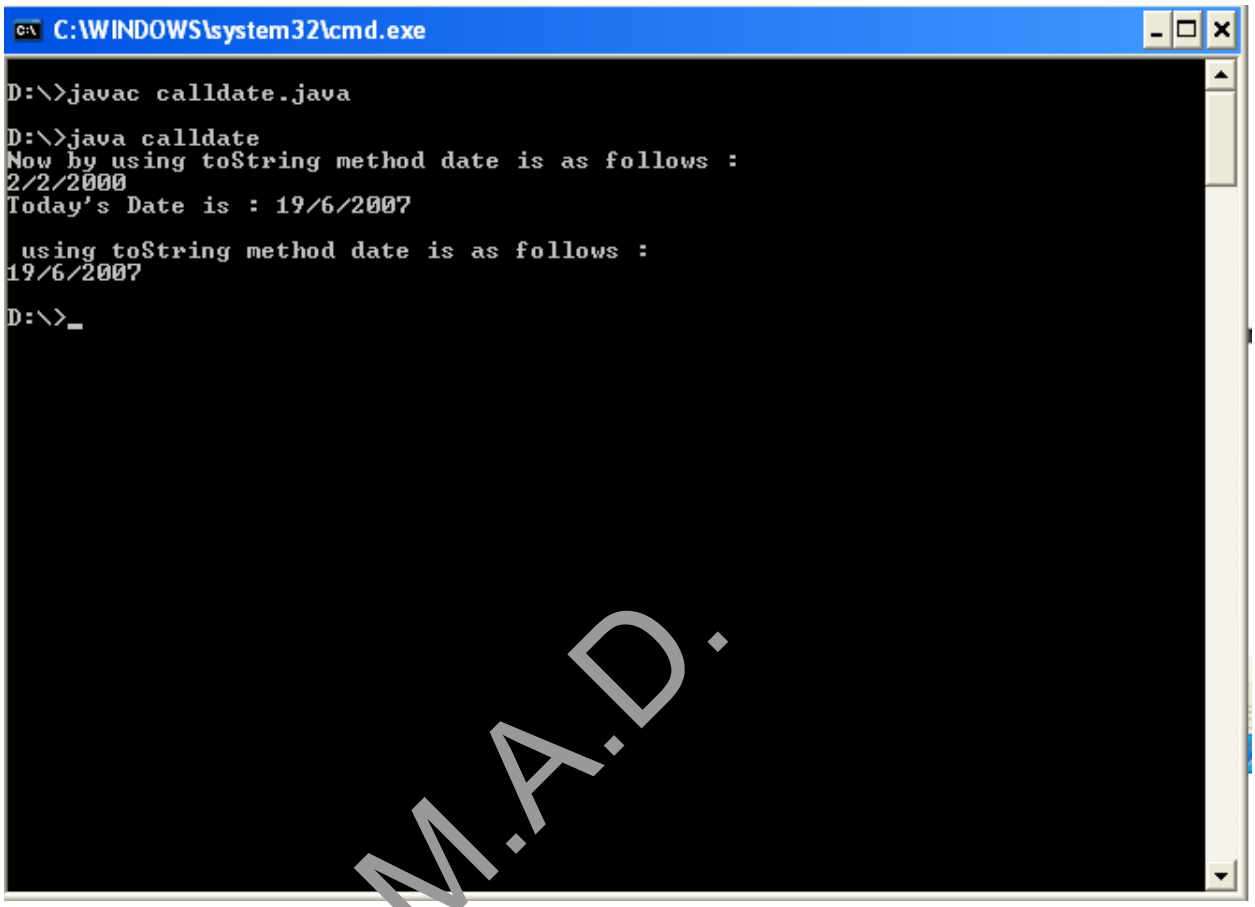
## 2.Demo for Getter Setter Methods








Save as calldate.java
Compile and run calldate.java
Note: When calldate.java is compiled , date class also gets compiled and date.class and calldate.class files get generated



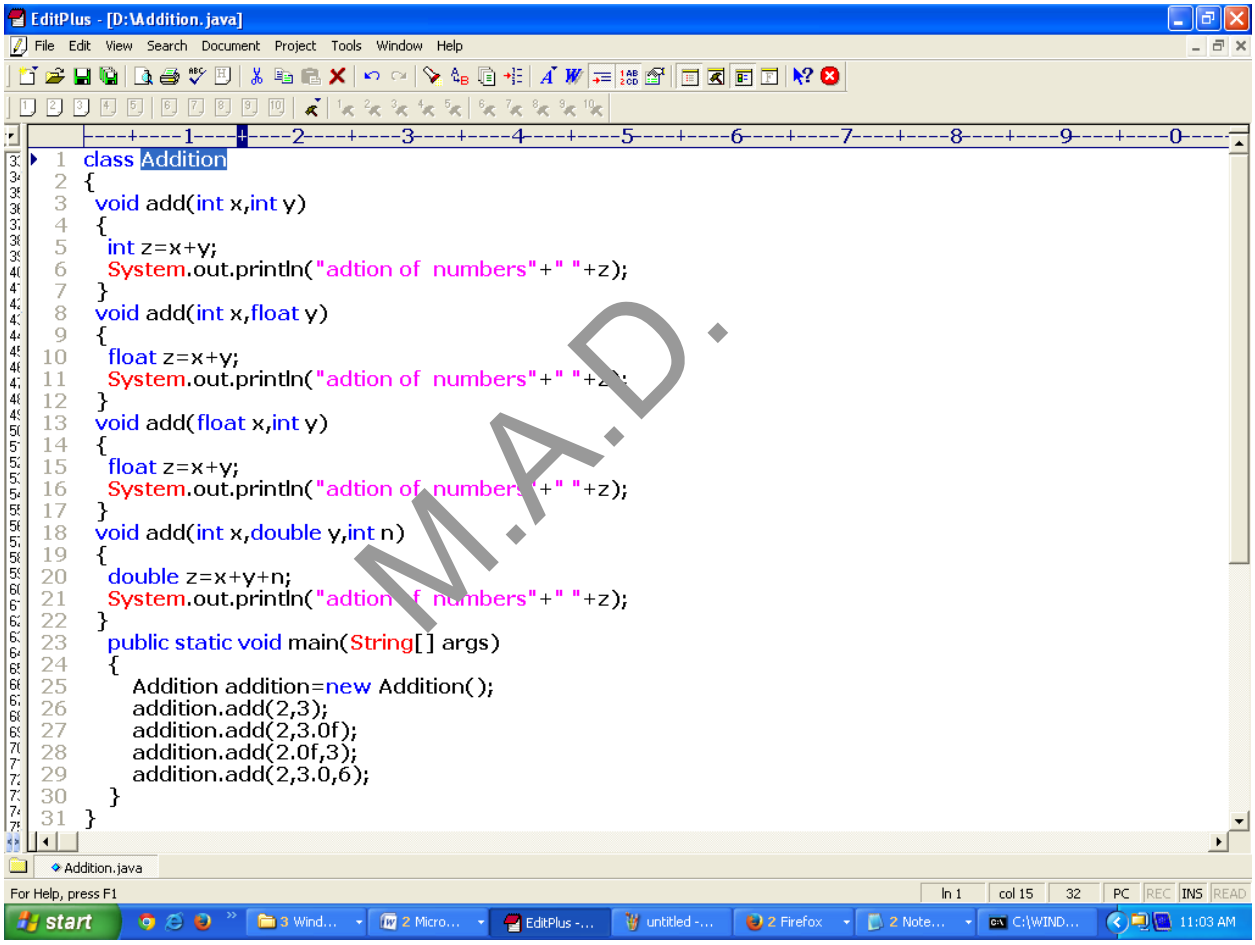


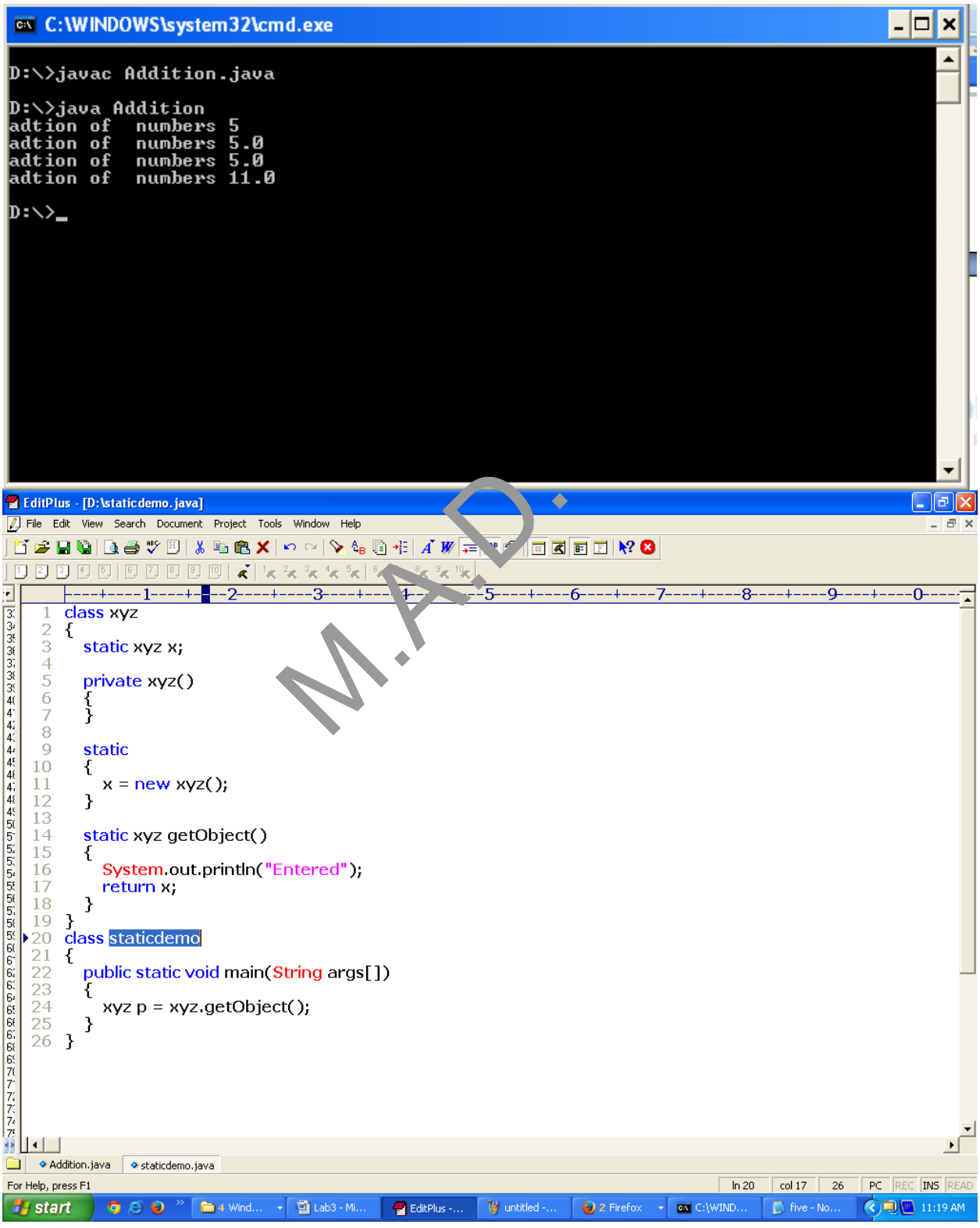

## Assignments To Solve :

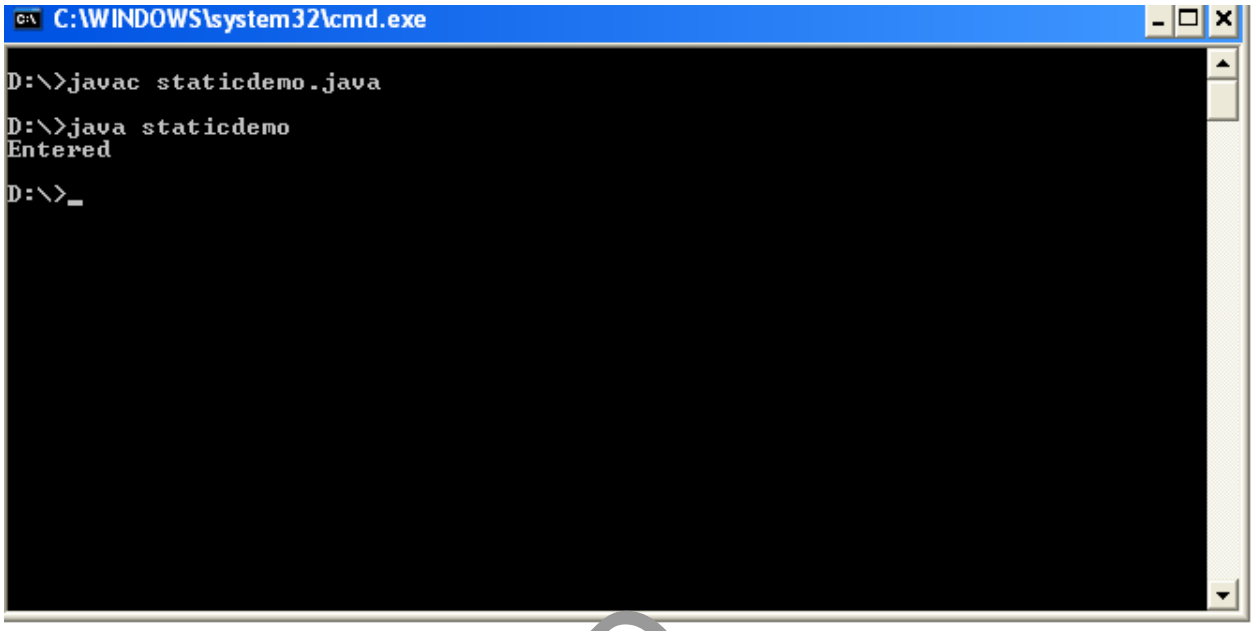
1. WAP to check whether a person is eligible for voting
2. Create a class Book which describes its Book_title and Book_price. Use getter and setter methods to get & set the Books description. Implement createBook and showBookmethods to create and display Book Information. Write a separate class BookInfo to access the Book class
3. Create Model class **Book** with getters and setters, and practice object creation over it
4. How to find leaders element in an array
    1. An element is said to be a leader if all the elements on it's right side are smaller than it. Rightmost element is always a leader. For example, if **{14, 9, 11, 7, 8, 5, 3}** is the given array then **{14, 11, 8, 5, 3}** are the leaders in this array ***(Bitwise)***
5. Calculate the sum of adjecent numbers of an array, and print the minimum sum ***(Vyom labs)***
6. Java Program to find second largest element from an array. ***(Vyom labs)***

# Lab 3

## Introducing Constructor
## OverLoading Constructors
## Overloading Methods/varargs/foreach
## singletone object




C:\WINDOWS\system32\cmd.exe
D:\>javac Addition.java
D:\>java Addition
adtion of numbers 5
adtion of numbers 5.0
adtion of numbers 5.0
adtion of numbers 11.0
D:\>
EditPlus - [D:\staticdemo.java]
File Edit View Search Document Project Tools Window Help
class xyz
{
static xyz x;
private xyz()
{
}
static
{
x = new xyz();
}
static xyz getObject()
{
System.out.println("Entered");
return x;
}
}
class staticdemo
{
public static void main(String args[])
{
xyz p = xyz.getObject();
}
}
Addition.java
staticdemo.java
For Help, press F1
start


C:\WINDOWS\system32\cmd.exe
D:\>javac staticdemo.java
D:\>java staticdemo
Entered
D:\>

# Assignments To Solve :

1. Write an Account class with default constructor, parameterised constructor and
   methods toString(), deposit(int amt), withdraw(int amt). withdraw method should take care of insufficient balance. Accept the values from the user..Display the details of various Accounts
2. Write a class Addition2 with add method (overloading) using varargs and enhanced for loop

3. Write a class stack. Use methods push and pop to store and retrieve elements from stack(hint: create an array of int to store the elements) ***(Amdocs)***

4. Write a singleton class(Singleton class is is a class which has only one object)
   ***(Amdocs)***

5. Consider you are working of Xyz Company and you need to develop a payroll software

   A] Construct a class employee with following member using private access specifier:

   1. employeeId integer
   2. employeName string
   3. basicSalary double
   4. hra double
   5. medical double
   6. pf double
   7. pt double
   8. netSalary double
   9. grossSalary double

   a. Please use following expressions for calculations.
   b. hra=50% of basic salary
   c. pf=12% of basic salary
   d. pt=Rs.200

   1.Write no arguments constructor and parameterized constructor to initialize objects.
   2.Write properties for employeId, employeeName, basic salary, netSalary and grossSalary

3.Write methods to display the details of an employee and calculate the gross and the net salary.

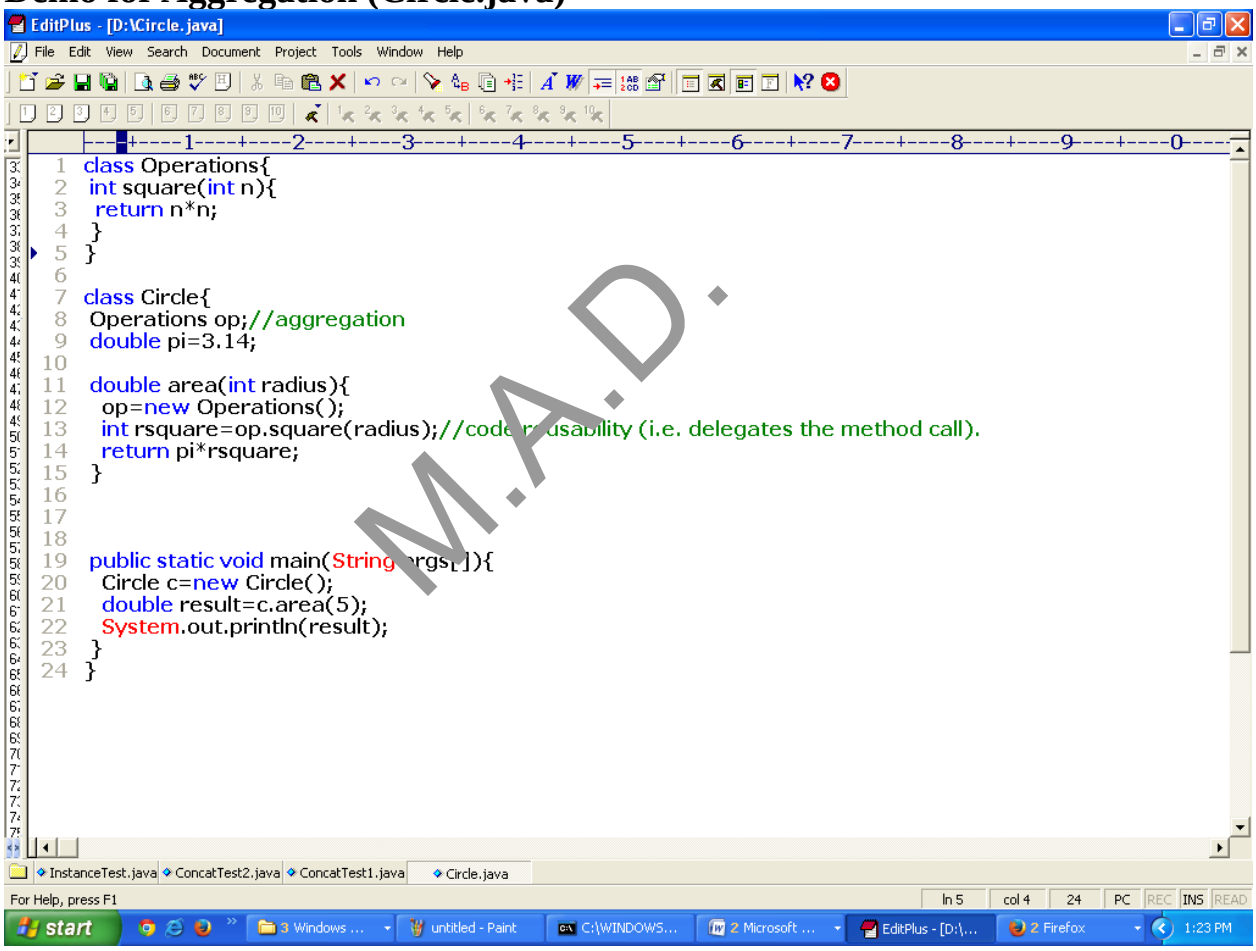
gross salary=basic salary+hra+medical

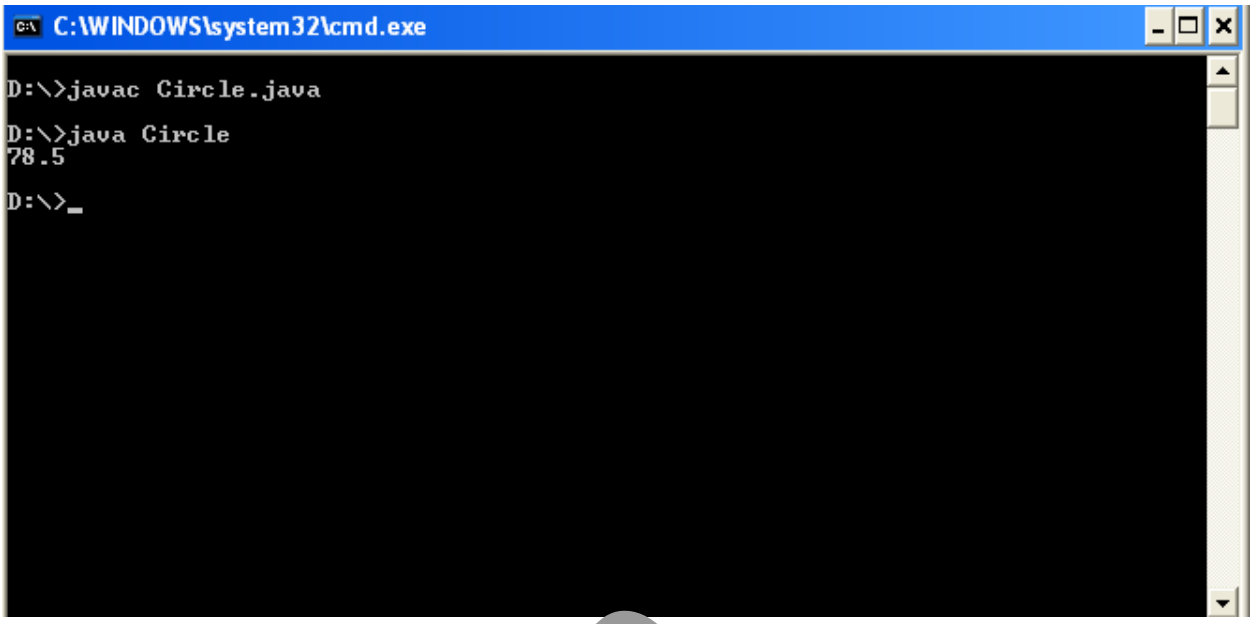
net salary=gross salary-(pt+pf)

# Lab 4

## Aggregation/Containment
## String ,StringBuffer,StringBuilder
## Math and Wrapper classes
## Enum

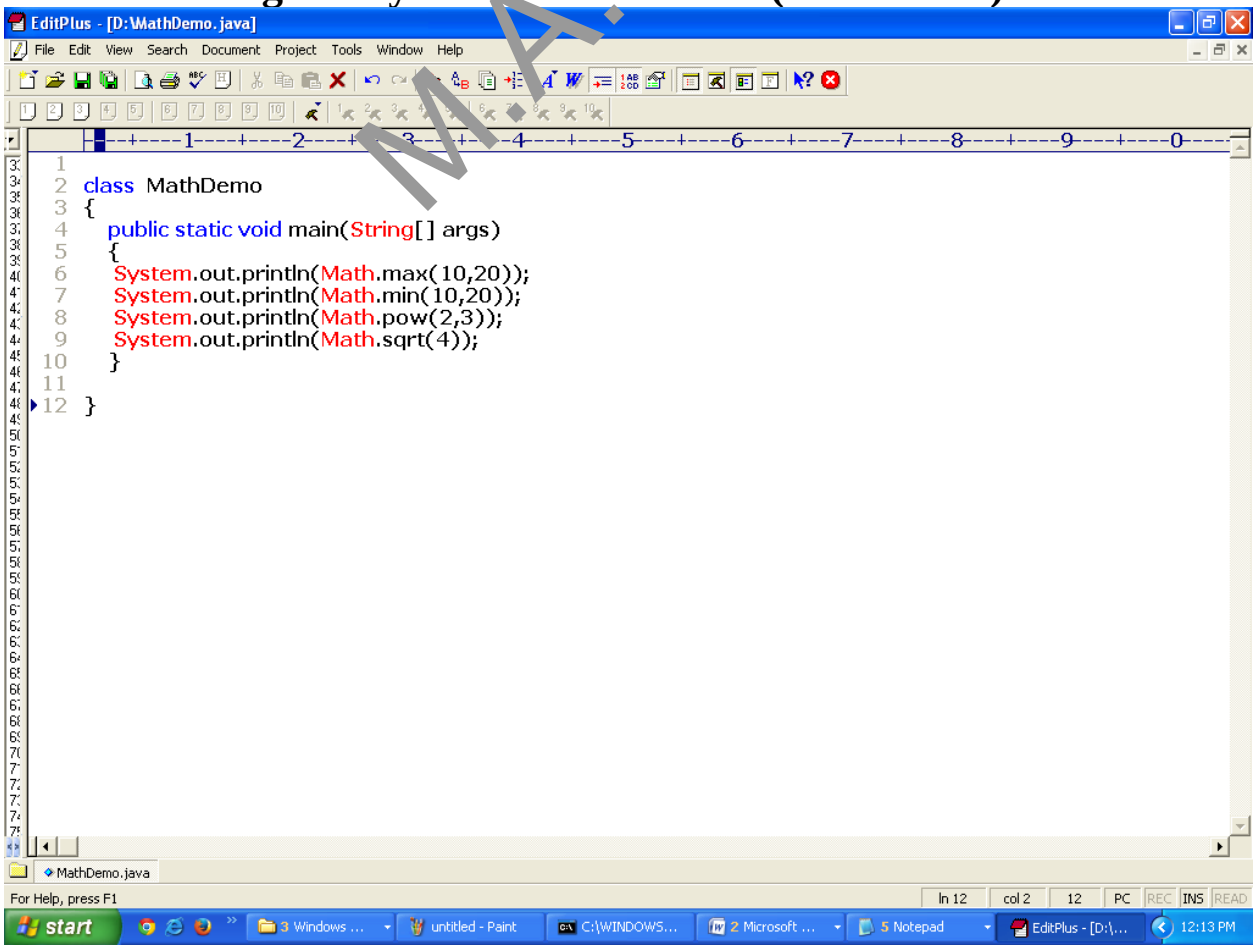
### Demo for Aggregation (Circle.java)



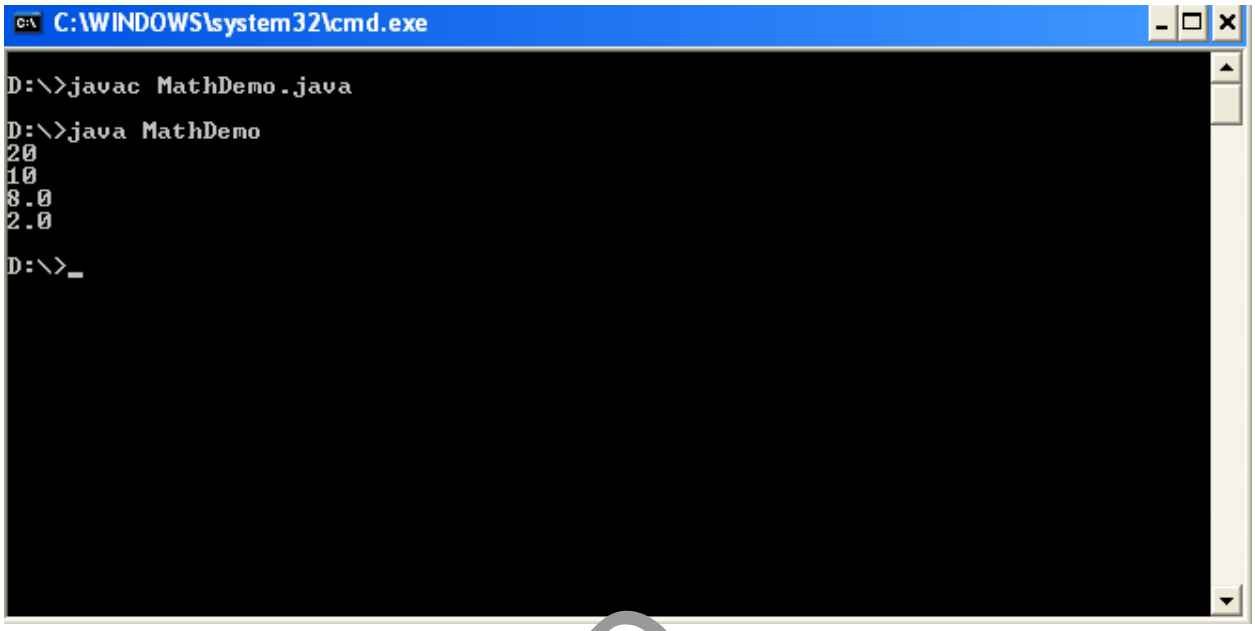





## Demo for using Readymade class methods( Math class)




Note: Use some more methods of Math class to do math operations


C:\WINDOWS\system32\cmd.exe
D:\>javac MathDemo.java
D:\>java MathDemo
20
10
8.0
2.0
D:\>

## Assignments To Solve :

1. Write an Employee class with id, name and dob(Contained Object.. Containment)with Default and parameterised constructor & toString()..
2. Write program to create array of employee object, and print all employee information

3. Use the String Class Methods like length, hashCode,equals, replace, trim, subString, concatinate , compare , charAt, subString etc.. for a given String(s)
4. practice StringBuffer methods such as length(), capacity(),append(),insert(),delete() etc
5. Write a java program to split string by “blank space” and “-” patterns
6. Create string by using below ways and compare using “==” and equals() method:
   a. String s1=”abc”;//literal way
   b. String s2=”abc”;
   c. String s3=new String(“abc”); //using new keyword
   d. String s4=new String(“abc”);

7. consider the given series:1, 2, 1, 3, 2, 5, 3, 7, 5, 11, 8, 13, 13, 17, …

   This series is a mixture of 2 series – all the odd terms in this series form a Fibonacci series and all the even terms are the prime numbers in ascending order. Now write a program to find the Nth term in this series. ***(TCS)***

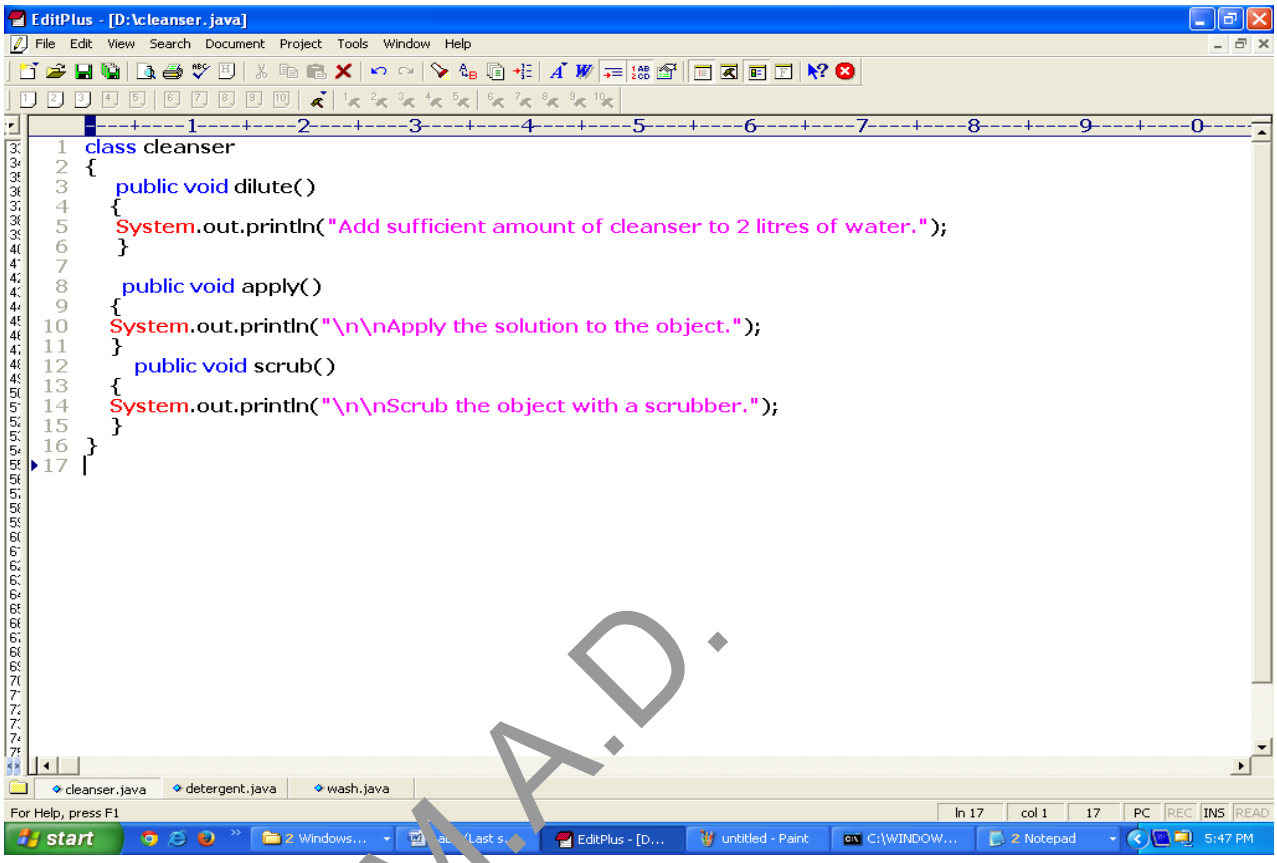
8. Program to sort first half of an array in ascending and second half of an array in descending
   ***(Wipro)***

9. Program to check two given matrices are equivalent **(*Cognizent*)**

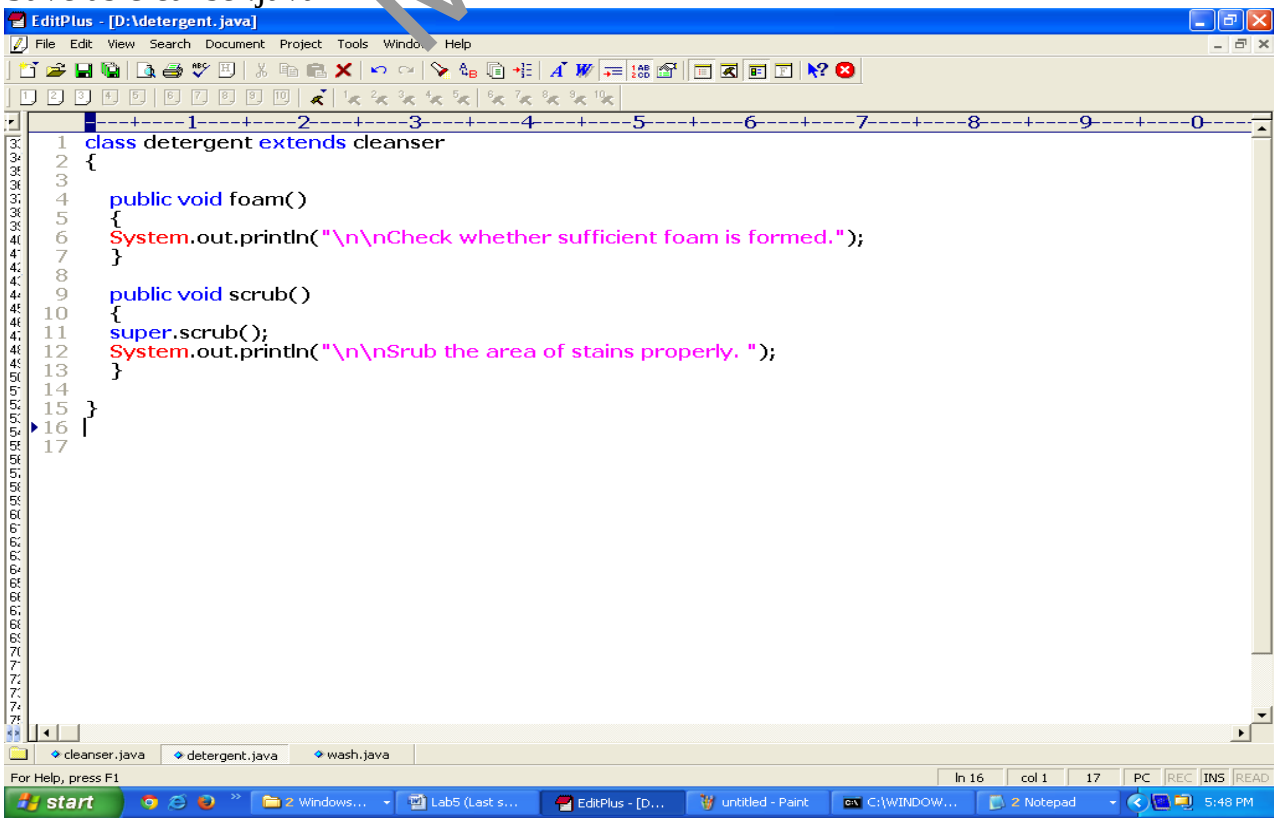
# Lab 5

## Introducing Inheritance (is a a type of relationship)

**Demo for Inheritance**




Save as cleanser.java




Save as detergent.java

EditPlus - [D:\wash.java]

File Edit View Search Document Project Tools Window Help

```
1  class wash
2  {
3     public static void main(String[] args)
4     {
5        detergent c=new detergent();
6
7        c.dilute();
8        c.apply();
9        c.foam();
10       c.scrub();
11    }
12 }
13
14
15
```

cleanser.java | detergent.java | wash.java

For Help, press F1 — ln 1 | col 7 | 15 | PC | REC | INS | READ

start | 2 Windows... | Lab5 (Last s... | EditPlus - [D... | untitled - Paint | C:\WINDOW... | 2 Notepad | 5:49 PM

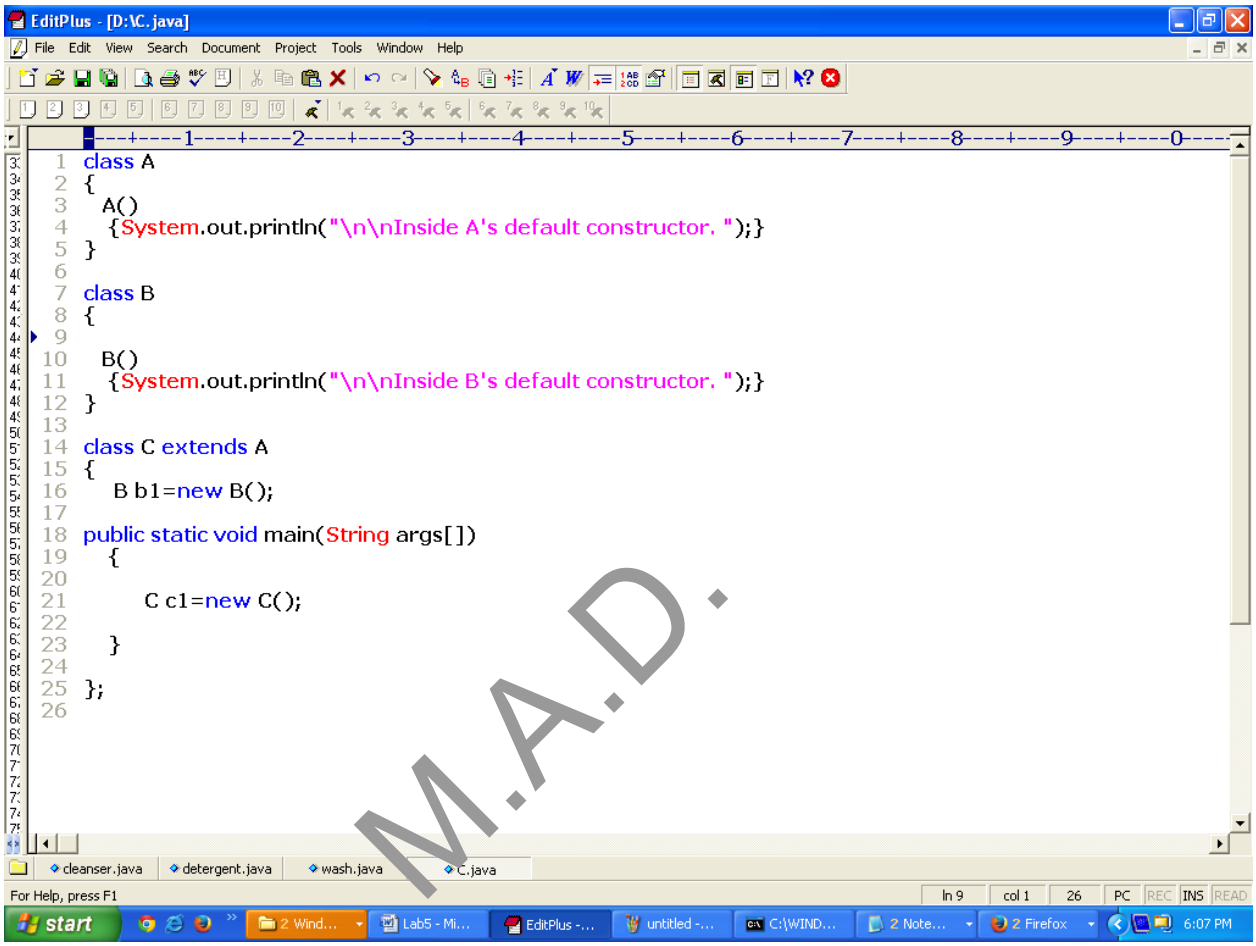


Save as wash.java

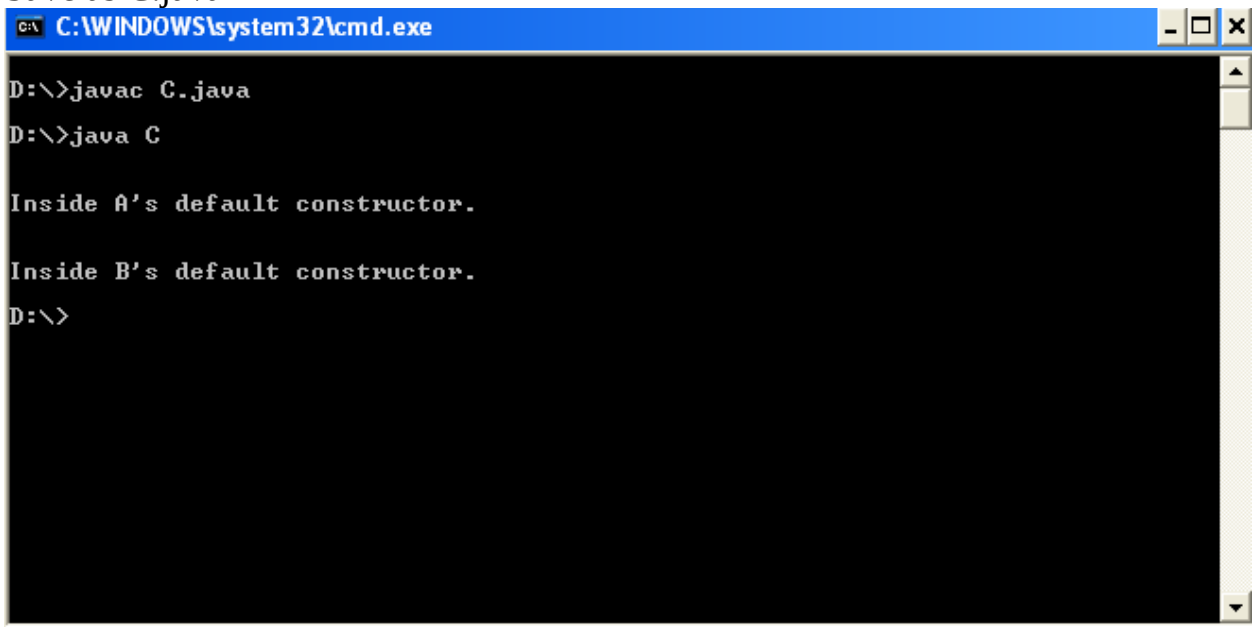
C:\WINDOWS\system32\cmd.exe

```
D:\>javac wash.java

D:\>java wash
Add sufficient amount of cleanser to 2 litres of water.

Apply the solution to the object.

Check whether sufficient foam is formed.

Scrub the object with a scrubber.

Srub the area of stains properly.

D:\>
```

Demo2




Save as C.java



# Assignments To Solve :

1. Write class game{ }

   class boardgame extends game{ }
   class chess extends boardgame{ }
   class gamedemo{
   public static void main(String[] args) {
   chess ch=new chess(); }
   }
   (Note: Write only default constructors in each class with specific information . See the order of constructors invoked when chess object is created)

2. Create class **WageEmployee** extending **Employee** class with attributes as hrs (int)and rate(int) and method computeSalary() to calculate the salary.Print the salary and details of WageEmployee.
   (Note: Use the previous date and Employee classes. Accept the values from the user..Default, Parameterised Constructor and toString() to be written in all the classes)

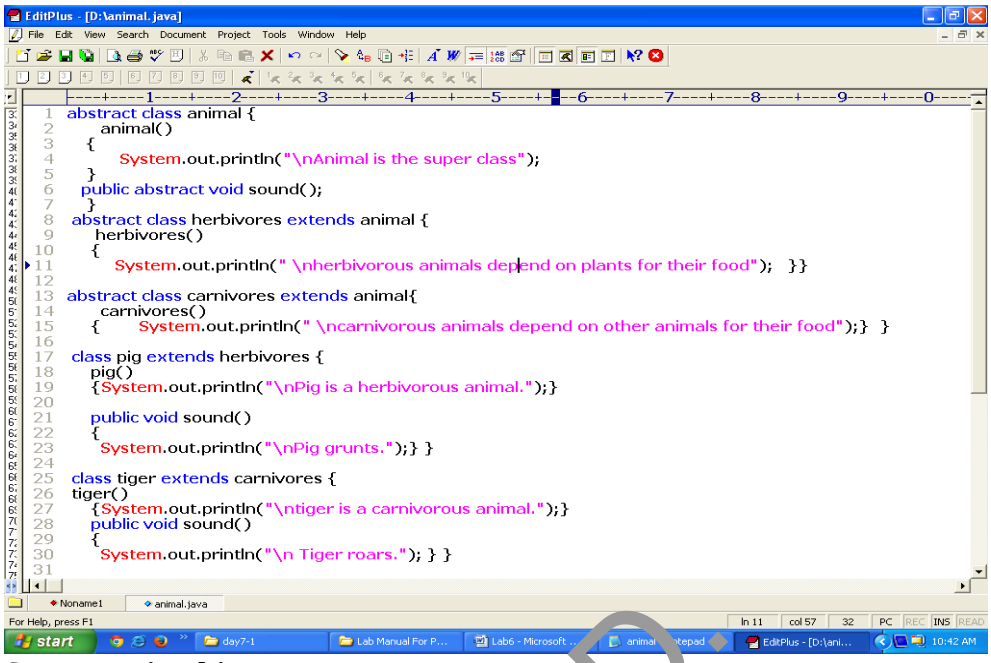
3. Write a java program to remove vowels from a string. ***(Wipro)***
4. Str=”abceedacbbacc”
   write the count of third highest occuring alphabet . ***(ADP)***



# Lab 6

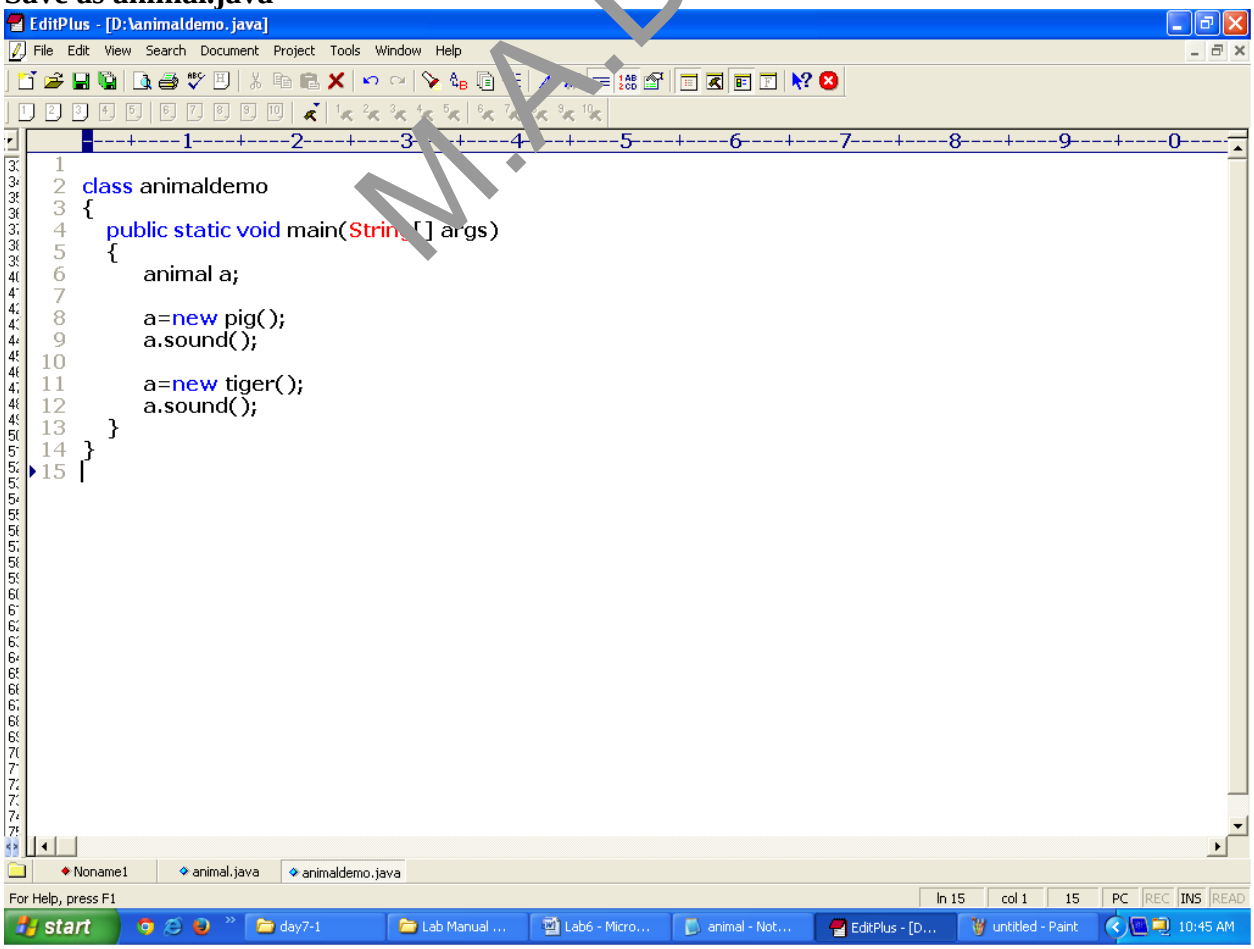
## Introducing Abstract class

**Demo for Abstract class**



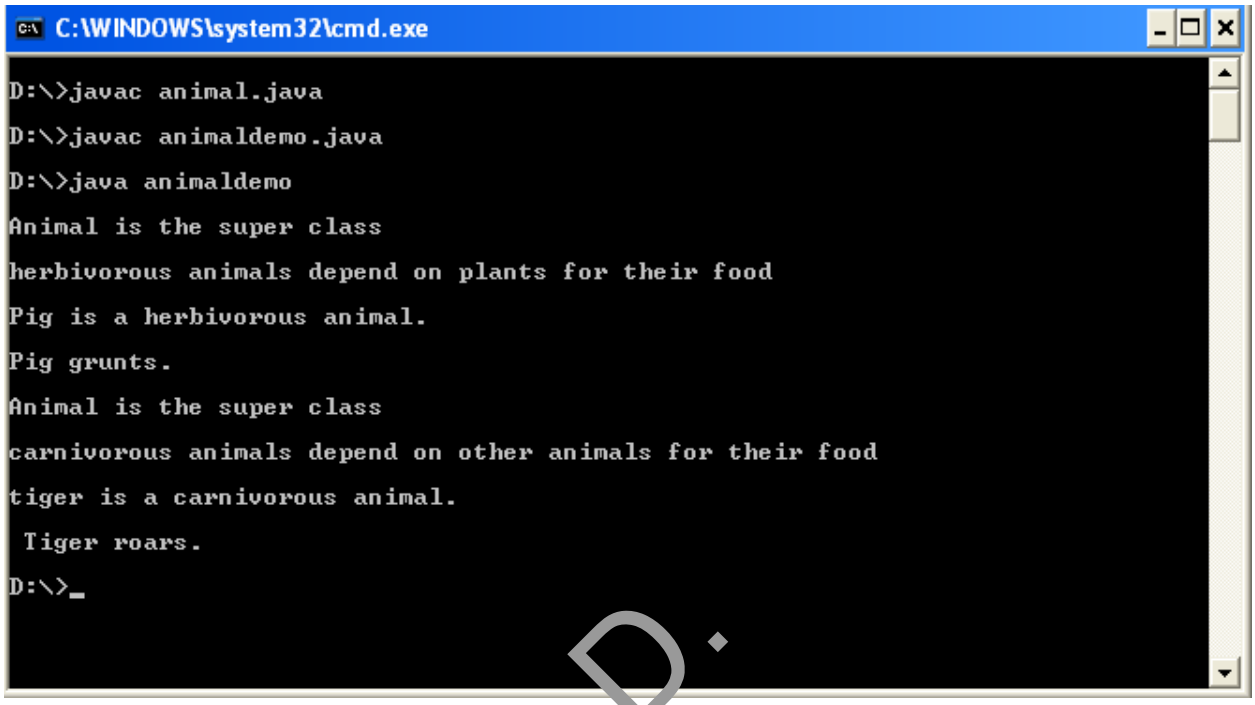
```
abstract class animal {
    animal()
   {
        System.out.println("\nAnimal is the super class");
   }
   public abstract void sound();
   }
abstract class herbivores extends animal {
    herbivores()
    {
        System.out.println(" \nherbivorous animals depend on plants for their food");  }}

abstract class carnivores extends animal{
    carnivores()
    {       System.out.println(" \ncarnivorous animals depend on other animals for their food");} }

class pig extends herbivores {
   pig()
   {System.out.println("\nPig is a herbivorous animal.");}

    public void sound()
    {
     System.out.println("\nPig grunts.");} }

class tiger extends carnivores {
tiger()
   {System.out.println("\ntiger is a carnivorous animal.");}
   public void sound()
   {
     System.out.println("\n Tiger roars."); } }
```

**Save as animal.java**



```
class animaldemo
{
   public static void main(String[] args)
   {
       animal a;

       a=new pig();
       a.sound();

       a=new tiger();
       a.sound();
   }
}
```

**Sava as animaldemo.java**


C:\WINDOWS\system32\cmd.exe
D:\>javac animal.java
D:\>javac animaldemo.java
D:\>java animaldemo
Animal is the super class
herbivorous animals depend on plants for their food
Pig is a herbivorous animal.
Pig grunts.
Animal is the super class
carnivorous animals depend on other animals for their food
tiger is a carnivorous animal.
Tiger roars.
D:\>

# Assignments To Solve

1. Create an abstract class Instrument which is having the abstract function play.
   Create three more sub classes from Instrument which is Piano, Flute, Guitar.
   Override the play method inside all three classes printing a message .
   "Piano is playing tan tan tan tan " for Piano class
   "Flute is playing toot toot toot toot" for Flute class
   "Guitar is playing tin tin tin " for Guitar class
   You must not allow the user to declare an object of Instrument class.
   Create an array of 10 Instruments.
   Assign different type of instrument to Instrument reference.
   Check for the polymorphic behavior of play method.
   Use the instanceof operator to print that which object stored at which index of instrument array.
2. Create a class Medicine to represent a drug manufactured by a pharmaceutical company. Provide a function displayLabel() in this class to print Name and address of the company.

   Derive Tablet, Syrup and Ointment classes from the Medicine class. Override the displayLabel() function in each of these classes to print additional information suitable to the type of medicine. For example, in case of tablets, it could be "store in a cool dry place", in case of ointments it could be "for external use only" etc.
   Create a class TestMedicine . Write main function to do the following:
   Declare an array of Medicine references of size 10
   Create a medicine object of the type as decided by a randomly generated integer in the range 1 to 3.
   Refer Java API Documentation to find out random generation feature.
   Check the polymorphic behavior of the displayLabel() method.

3. Write a java program to display below pattern ***(Amdocs)***

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

4. Given a 2D array, print it in spiral form. See the following examples. **(*Cognizent*)**
   Input:
   1 2 3 4

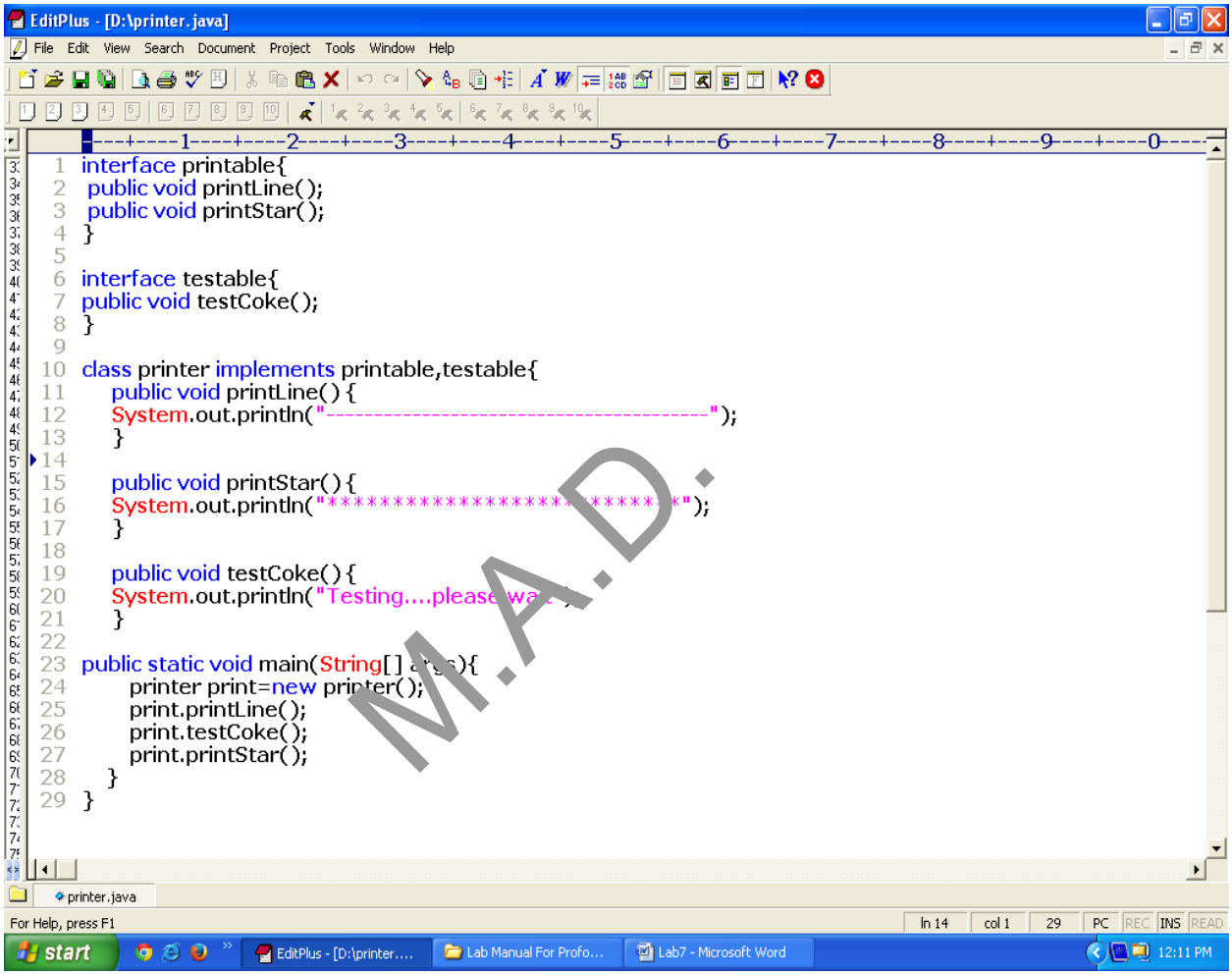
5 6 7 8
9 10 11 12
13 14 15 16

Output:

**1 2 3 4 8 12 16 15 14 13 9 5 6 7 11 10**

# Lab 7

## Introducing Interfaces and Packages





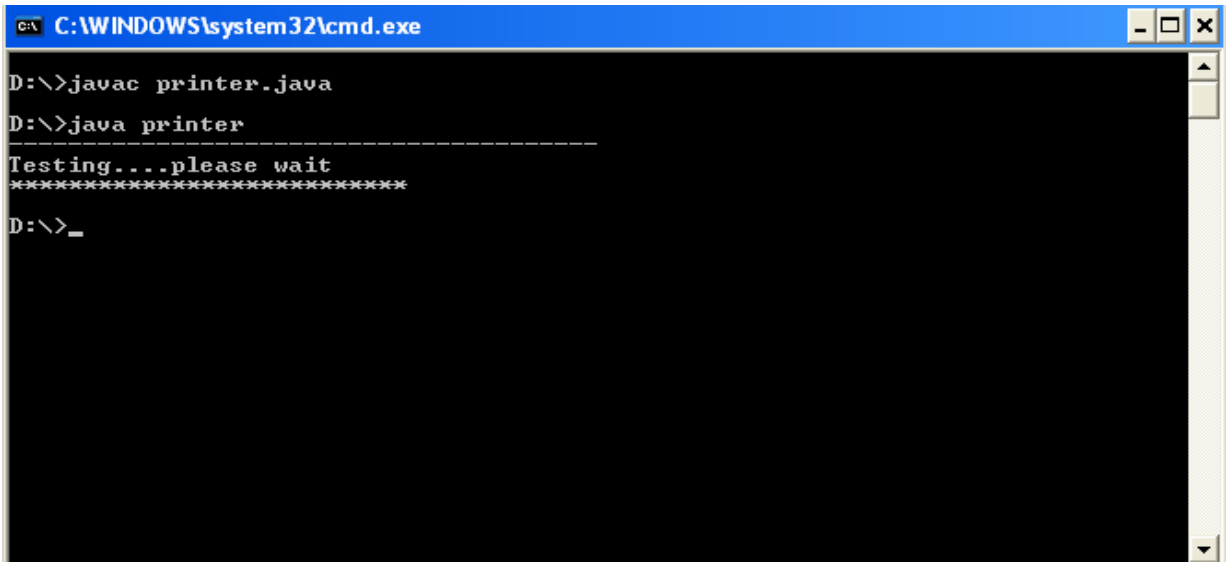

**Save as printer.java**

Note: three .class files get created

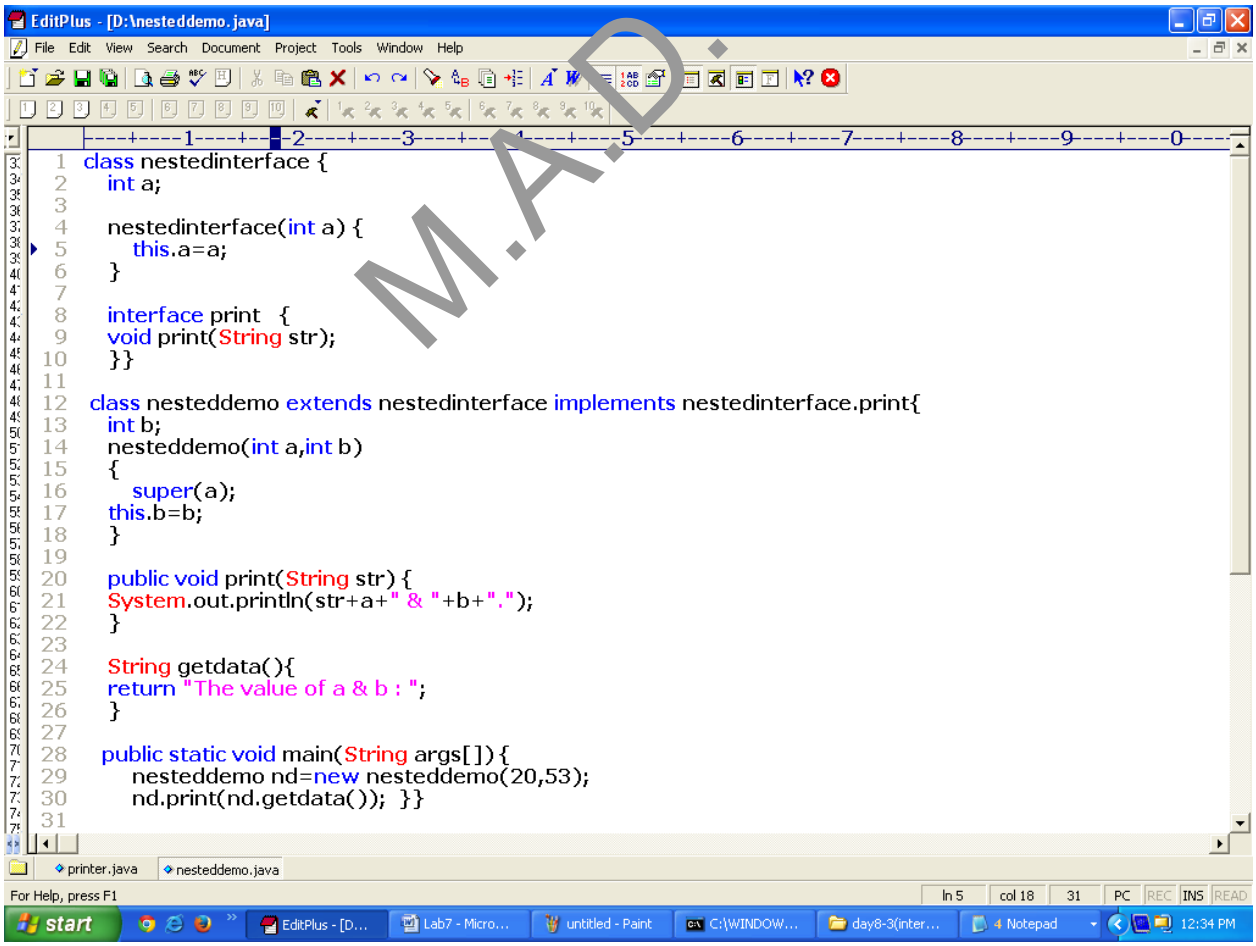
printable.class

testable.class

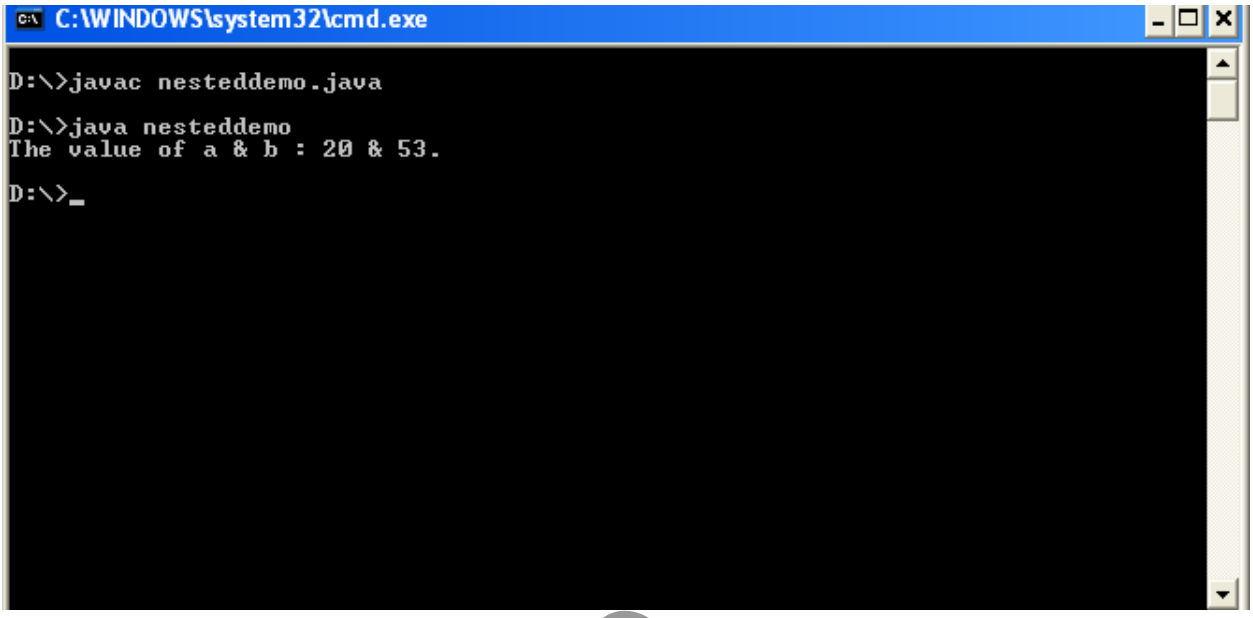
printer.class




**Demo2**




**Save as nesteddemo.java**


C:\WINDOWS\system32\cmd.exe
D:\>javac nesteddemo.java
D:\>java nesteddemo
The value of a & b : 20 & 53.
D:\>

# Assignments To Solve

2. Create an interface relational

```
interface relational
{
void greaterThan();
void lessThan();
void greaterThaneq();
void lessThaneq();
}
```

Write an implementing class implRel which implements realational

```
class  implRel implements relational
{
     int a, b;
          implRel(int a,int b)
          {
          this.a=a;
          this.b=b;
          }
             -   - - -
             -    - - -
}
```



Create a class relationdemo .In main create an object of implRel (implementing class)
and invoke all the methods …

3. Create an interface

```
interface MyMath
{
     double sqr(double a);
          double cube(double a);
          double cosine(double a);
          double sine(double a);
}
```

Write a class implMath which implements MyMath interface.
Write another class MathDemo ..In main create a reference of MyMath pointing to implMath class and invoke the methods..Accept the values from the user..

4. Create a package com.user .
   Now create a Greeter class in this package having the following features:

Attributes:
name string //indicates name of the person to be greeted
Member functions:
Greeter(aName)
//constructor to initialize the name of the //person to be greeted by this greeter.
sayHello() //returns a hello message with the name of the //person initialized earlier.
sayGoodBye() //bids goodbye to the person named earlier.
Create another class in the same package called Advisor that has the following features:
Attributes:
message string[5] //contains five advice messages
Member functions:
Advisor() //default constructor to initialize an array of //strings with atleast five advice messages
getAdvice() //randomly selects an advice from the available //list of messages and returns it to the caller of //this method
Outside the package, from your working directory, create a class GreeterTest that constructs Greeter objects for all command-line arguments and prints out the results of calling sayHello().
The program should then display an advice and finally bid goodbye to each of the persons/entities in reverse order of the names entered at the command line.
For e.g.,
java GreeterTest Mars Venus
then the program should print
Hello, Mars!
Hello, Venus!
Advice: Never say No
Goodbye Venus!
Goodbye Mars!

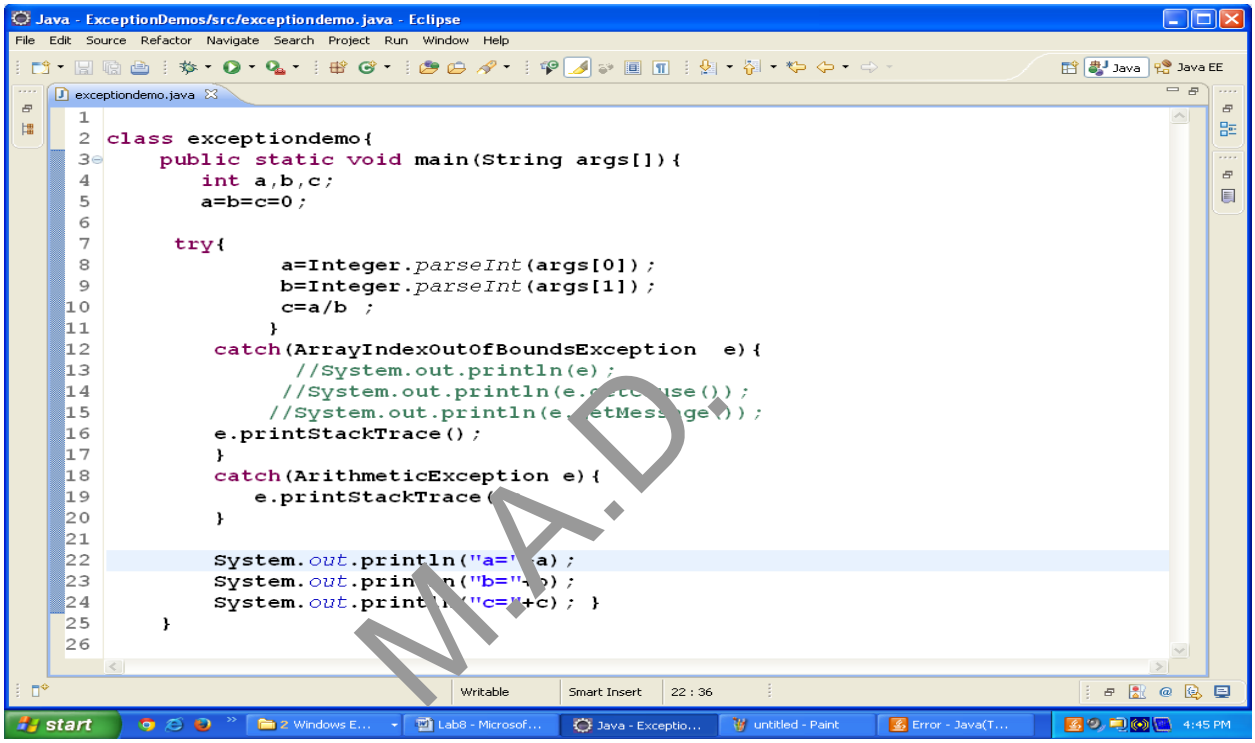
4. Write a java program to check two strings are angram or not. ***(Culture Machine)***
Example :
Str1=”navin”;
Str2=”vanin”
**output :strings are anagram of each other**

# Lab 8

## Exception Handling

### Demo1

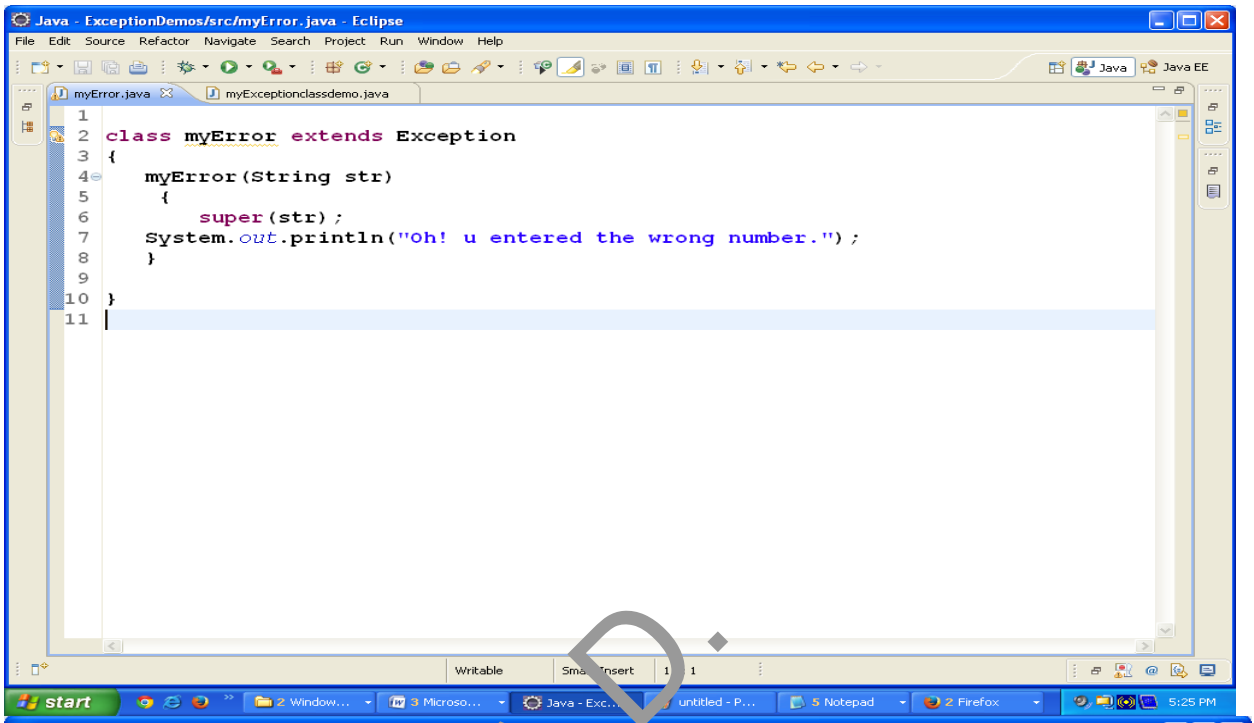
**create exceptiondemo class in Eclipse ID**

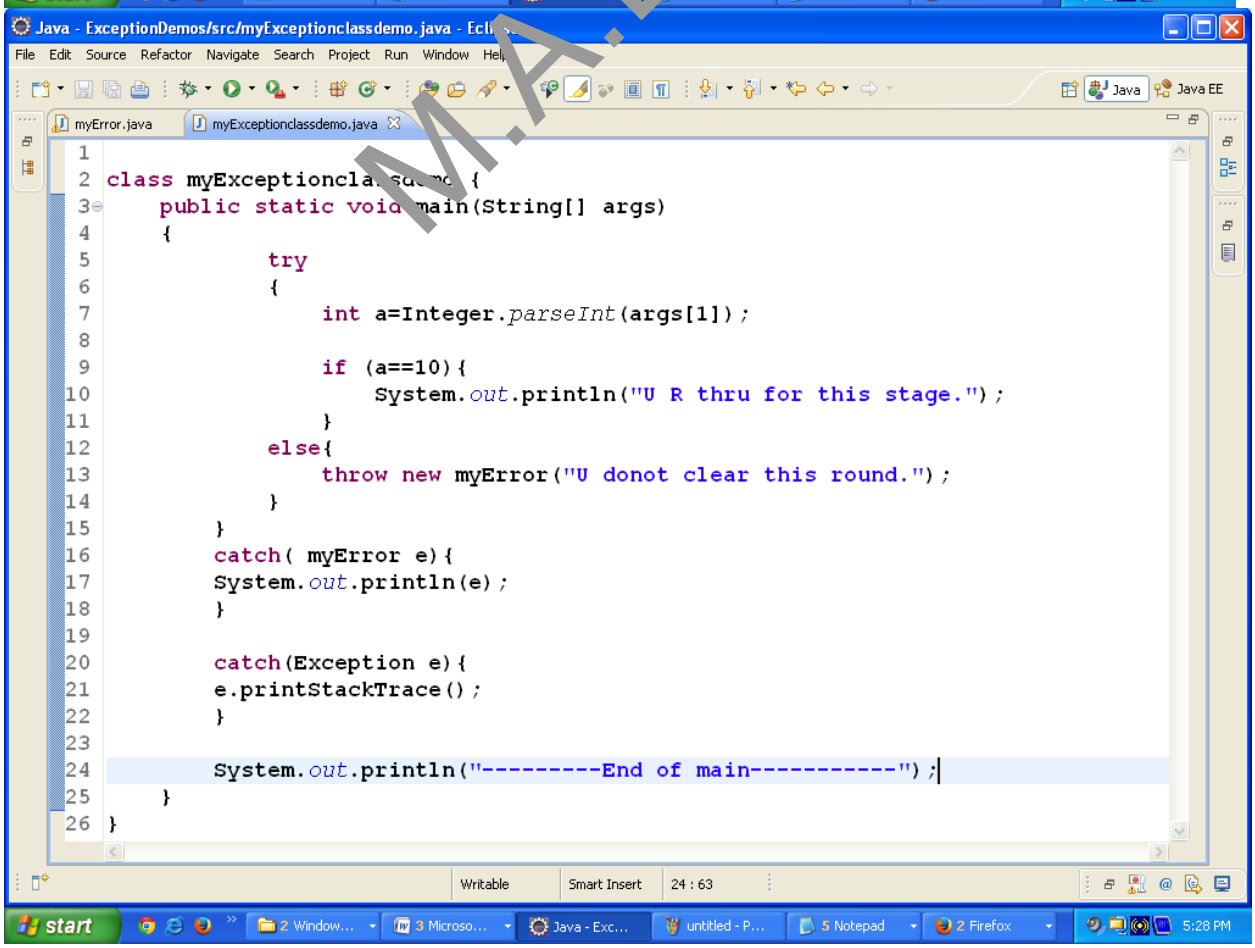



Run as -> Java Application

### Demo2

create userdefined exception class **myError** and **myExceptiondemoclass**

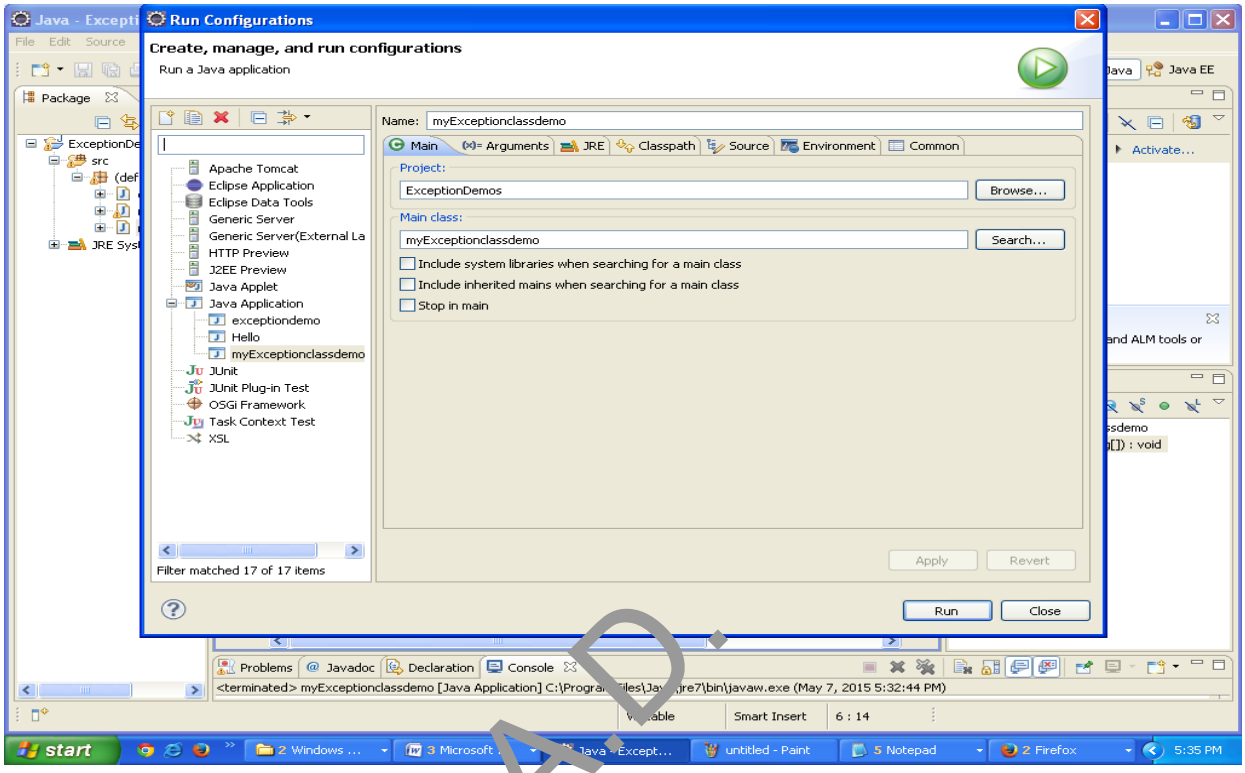


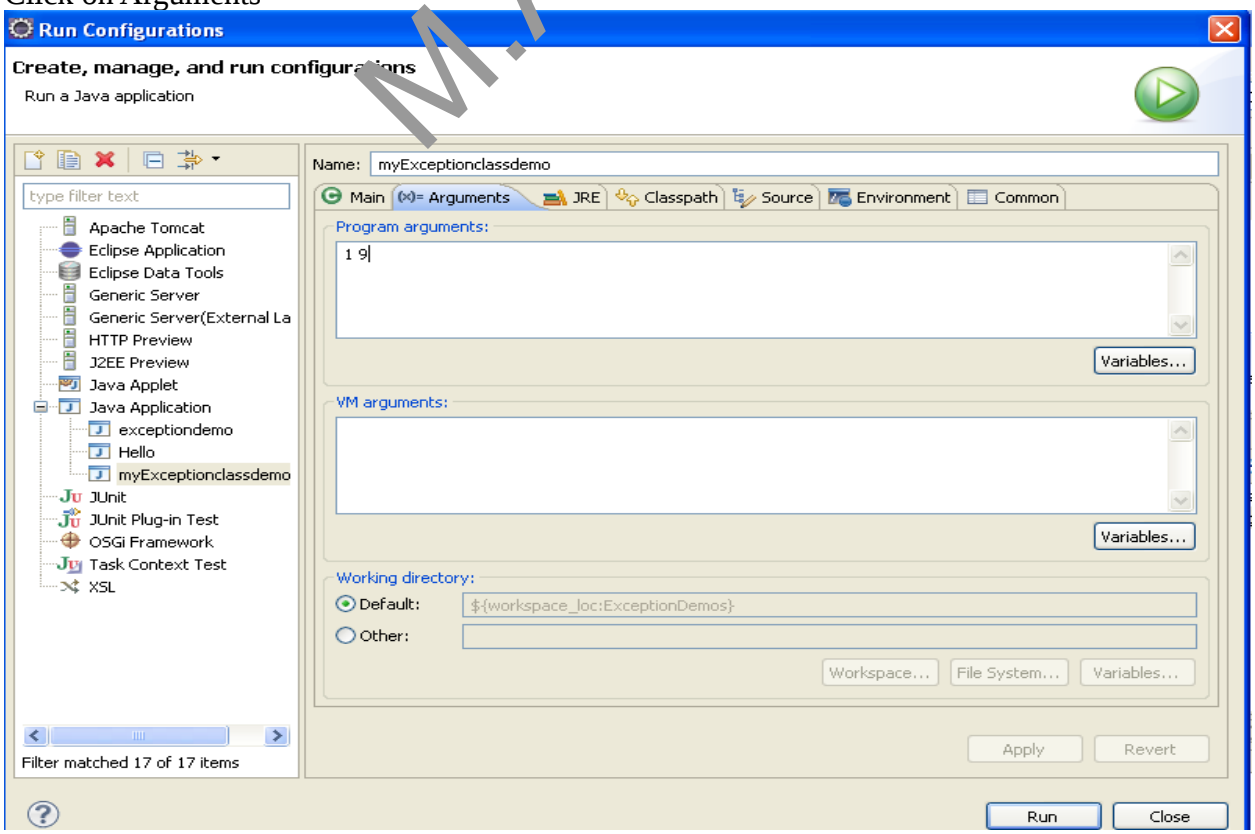



Steps for passing CLA(command Line Arguments in eclipse)
Run as -> Run Configurations…

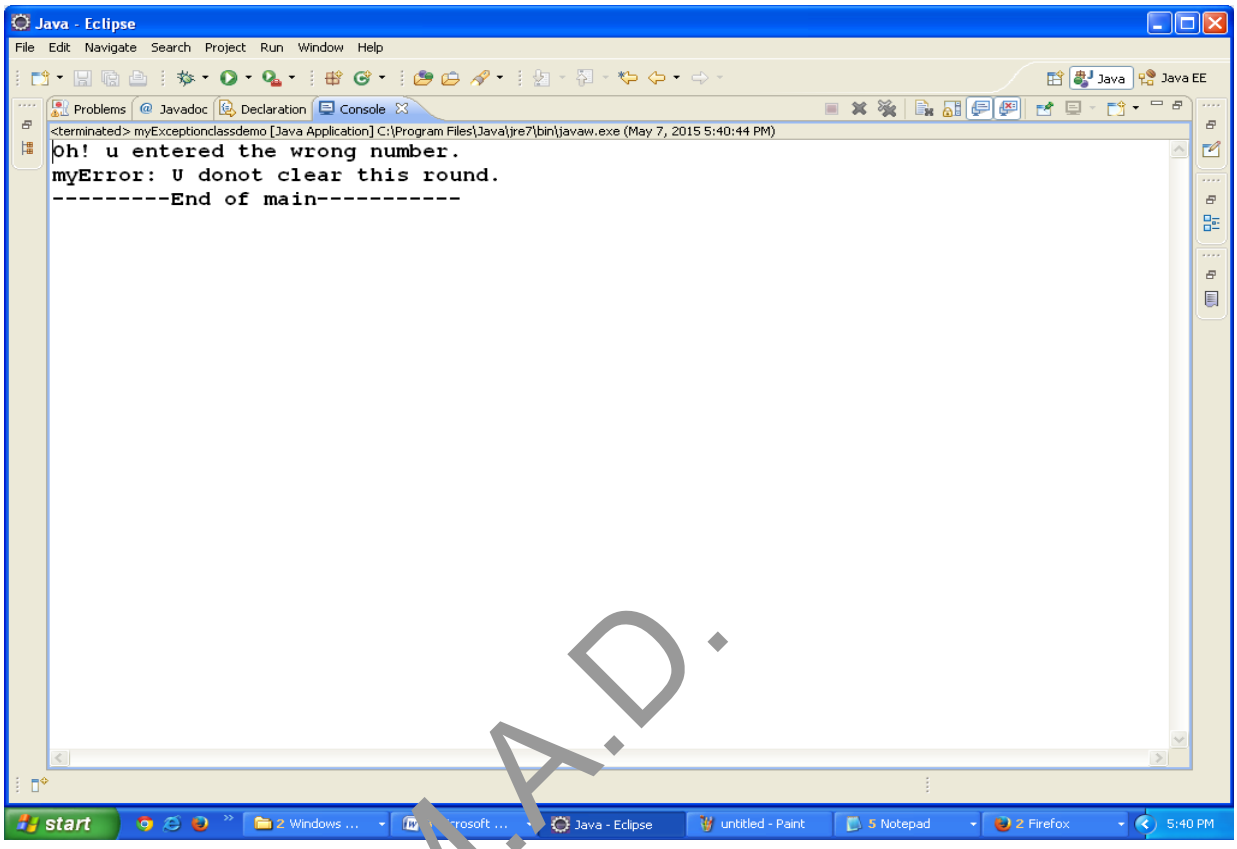
## Lab Manual




Click on Arguments




Enter Arguments and click on Run


Java - Eclipse
File Edit Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> myExceptionclassdemo [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (May 7, 2015 5:40:44 PM)
Oh! u entered the wrong number.
myError: U donot clear this round.
---------End of main-----------
start
Java - Eclipse
untitled - Paint
5:40 PM

# Assignments To Solve:

1. Write a class **TestException** to test different types of exceptions, such as NumberFormateException,ArrayIndexOutOfBoundsException,ArithMeticException,NullPointerException,ClassNotFoundException etc

2. Create a class called **CalcAverage** that has the following method:(use throw keyword)

public double avgFirstN(int N)

This method receives an integer as a parameter and calculates the average of first N natural numbers. If N is not a natural number, throw an exception IllegalArgumentException with an appropriate message.

3. Create a class **Number** having the following features:(use throw keyword)

Attributes

| | | |
|---|---|---|
| int | first number | |
| int | second number | |
| result | double | stores result of math operations |

performed on a & b Member functions(Methods)

| | |
|---|---|
| Number(x, y) | constructor to initialize the values of a and b |
| add() | stores the sum of a and b in result |
| sub() | stores difference of a and b in result |
| mul() | stores product in result |
| div() | stores a divided by b in result |

Test to see if b is 0 and throw an appropriate exception since division by zero is undefined.Display a menu to the user to perform the above four arithmetic operations.

4. Create a user defined Exception class called **InsufficientFundsException**

(Note: Use the existing **Account** Class (created in lab3))

Handle an exception for **Withdraw(int amt)** in Account class

**Withdraw(int amt)** should throw **InsufficientFundsException** if the amount to be withdrawn is greater than the balance.

Accept the values from user for creating Account object and amt to withdraw

5. Create userdefined Exception classes **IncorrectAgeException** & **IncorrectNationalityException**

Write a class **Voter** with constructors and methods **toString(),**

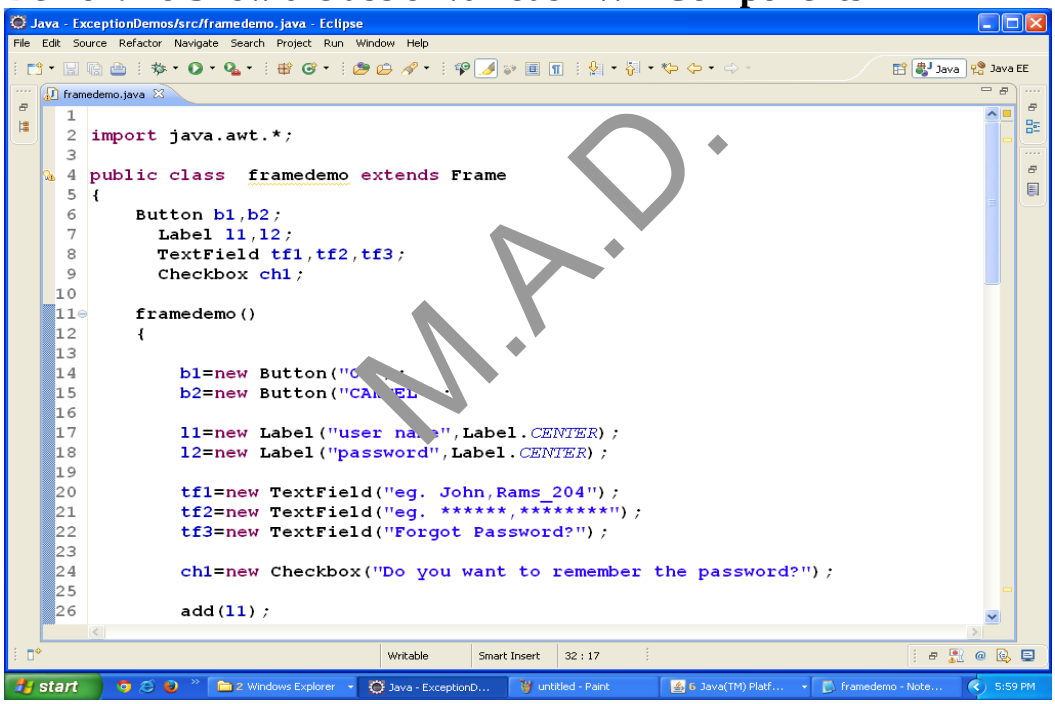
**check**(String name, int age)
The check (…) should check for Nationality and age for voting and throw appropriate Exception
Accept the Name, Nationality & age from user

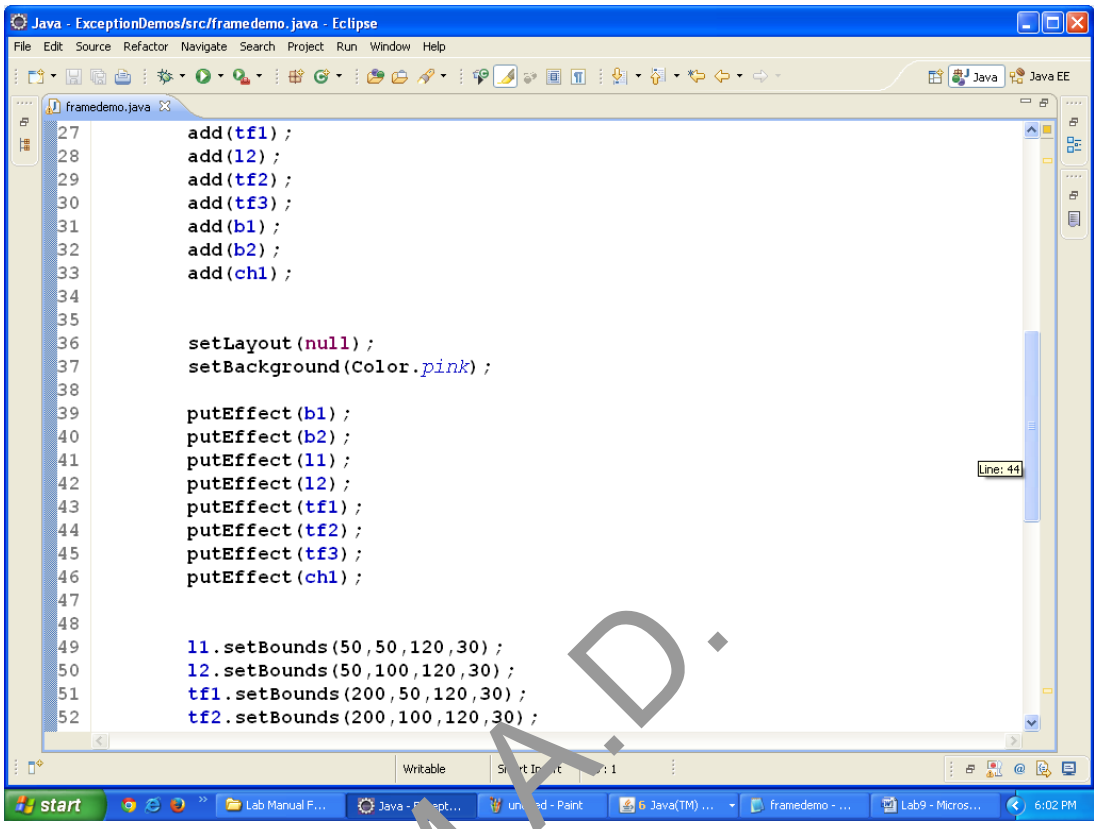
# Lab 9

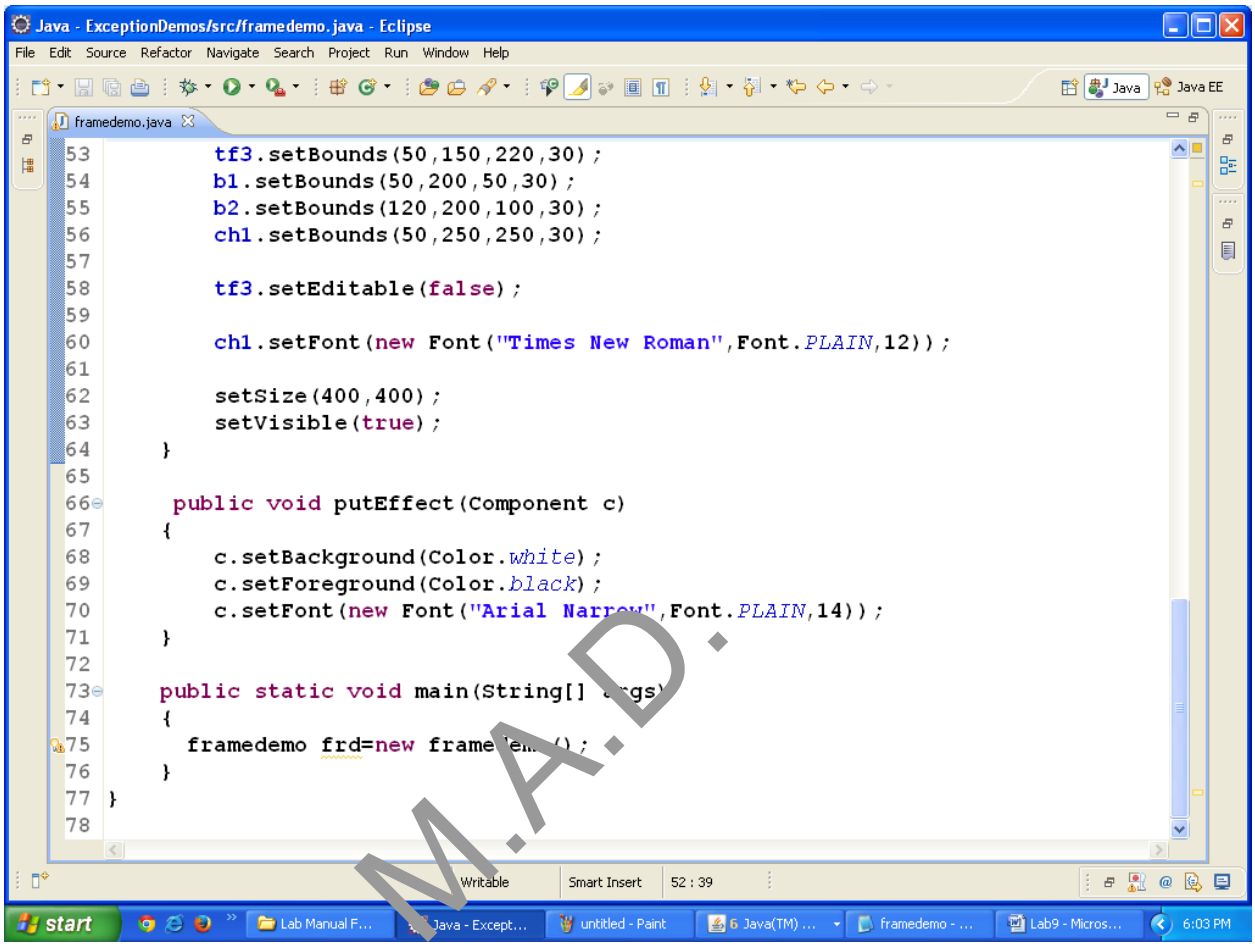
## AWT(Abstract Window ToolKit)

## 1.Design frames using AWT classes

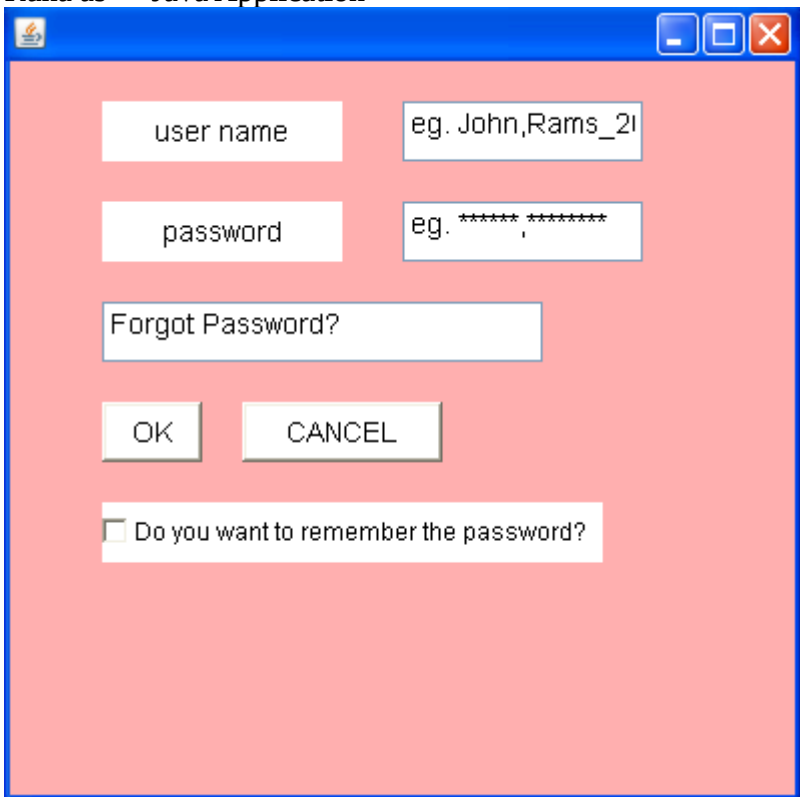
### Demo1: To Show the use of various AWT Components




Java - ExceptionDemos/src/framedemo.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
framedemo.java
add(tf1);
add(l2);
add(tf2);
add(tf3);
add(b1);
add(b2);
add(ch1);
setLayout(null);
setBackground(Color.pink);
putEffect(b1);
putEffect(b2);
putEffect(l1);
putEffect(l2);
putEffect(tf1);
putEffect(tf2);
putEffect(tf3);
putEffect(ch1);
l1.setBounds(50,50,120,30);
l2.setBounds(50,100,120,30);
tf1.setBounds(200,50,120,30);
tf2.setBounds(200,100,120,30);
Line: 44
Writable
start
6:02 PM

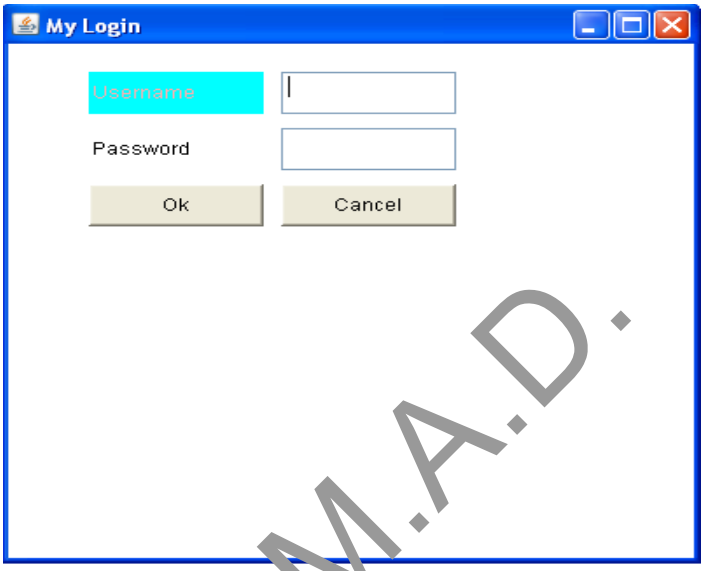



Runa as -> Java Application



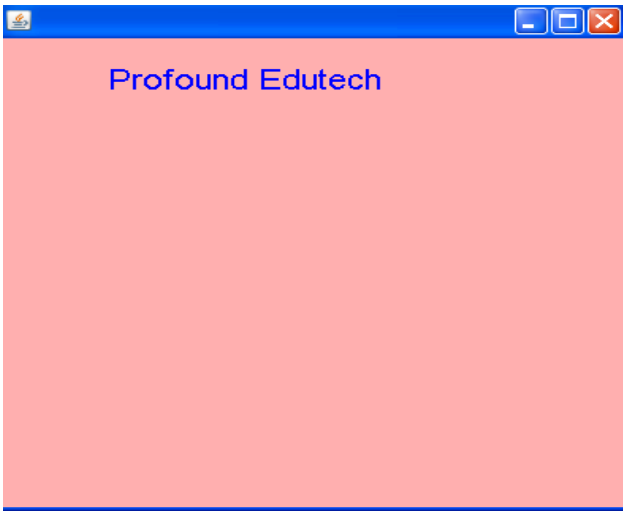
## Assignments To Solve

1. Generate the Login Page as shown below. (Event for which should be handled in the next lab..)



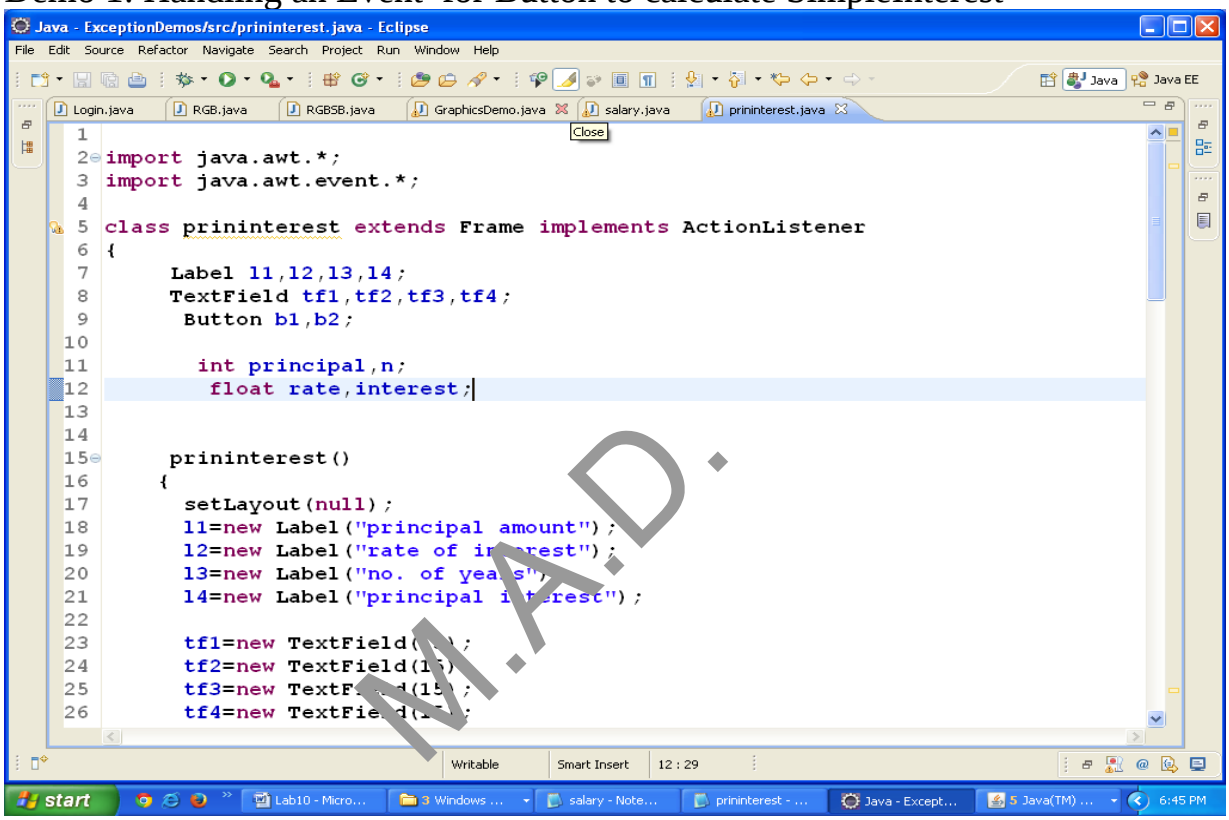

2. Generate the below page.. Draw 3 Scrollbars with backgrounds.(Event for which should be handled in the next lab..)

3. WAP to print your name with the particular Font on the Frame

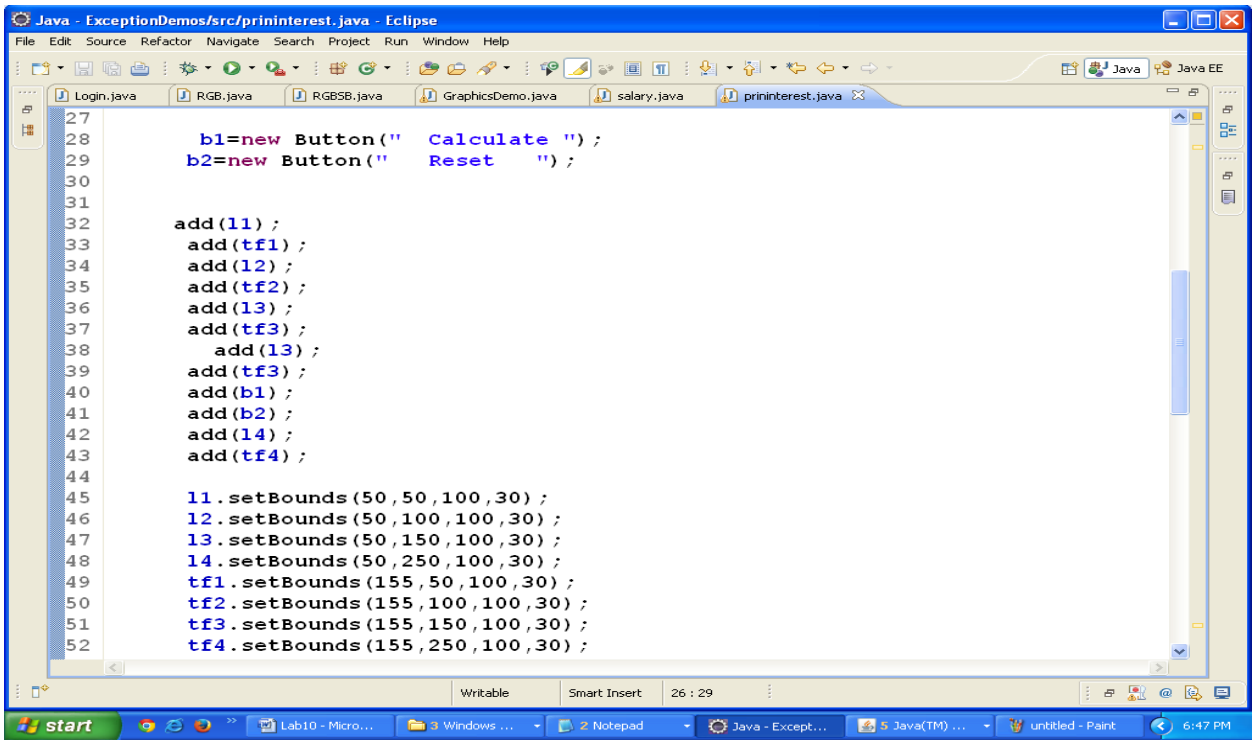


# Event Handling

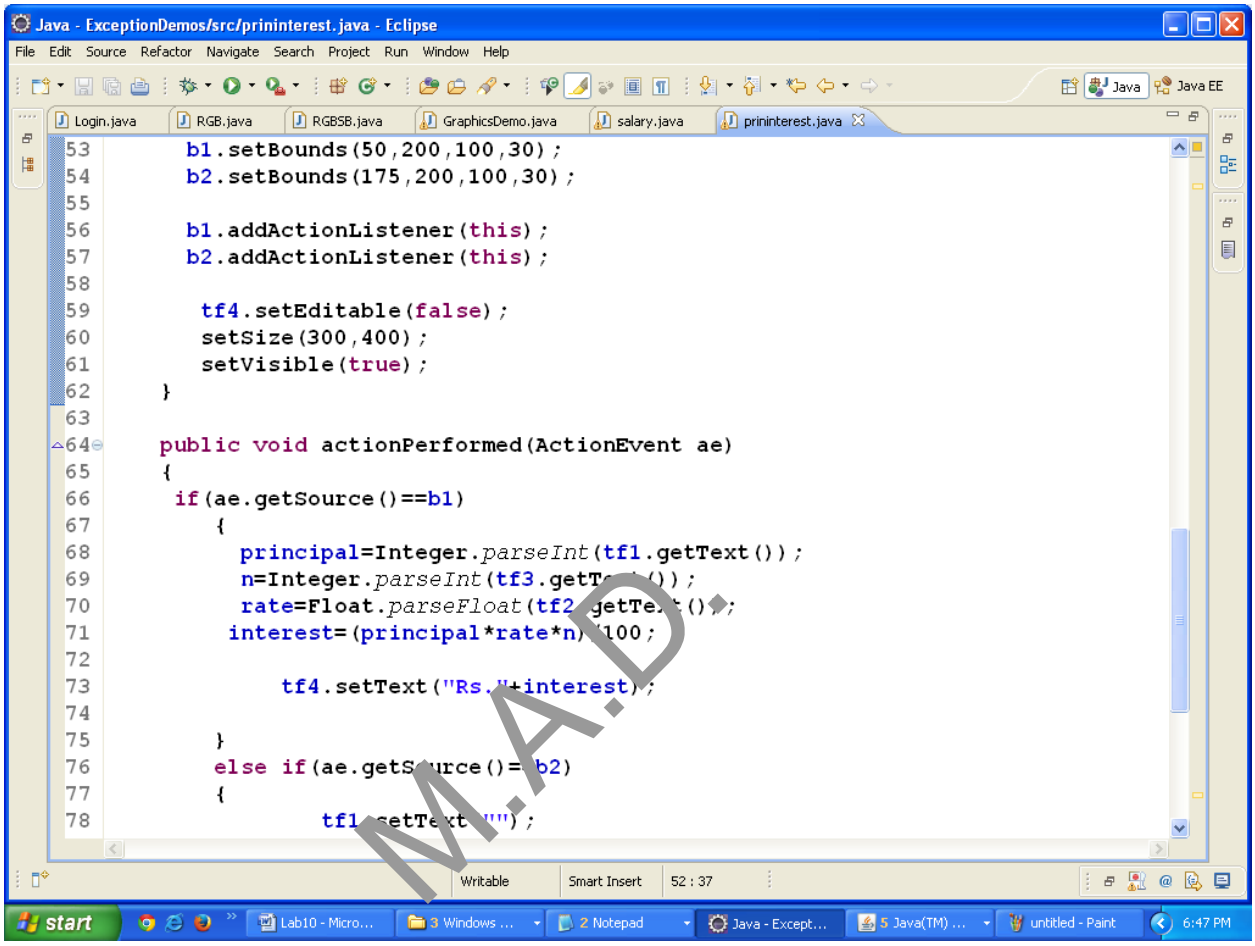
Demo 1: Handling an Event for Button to calculate SimpleInterest



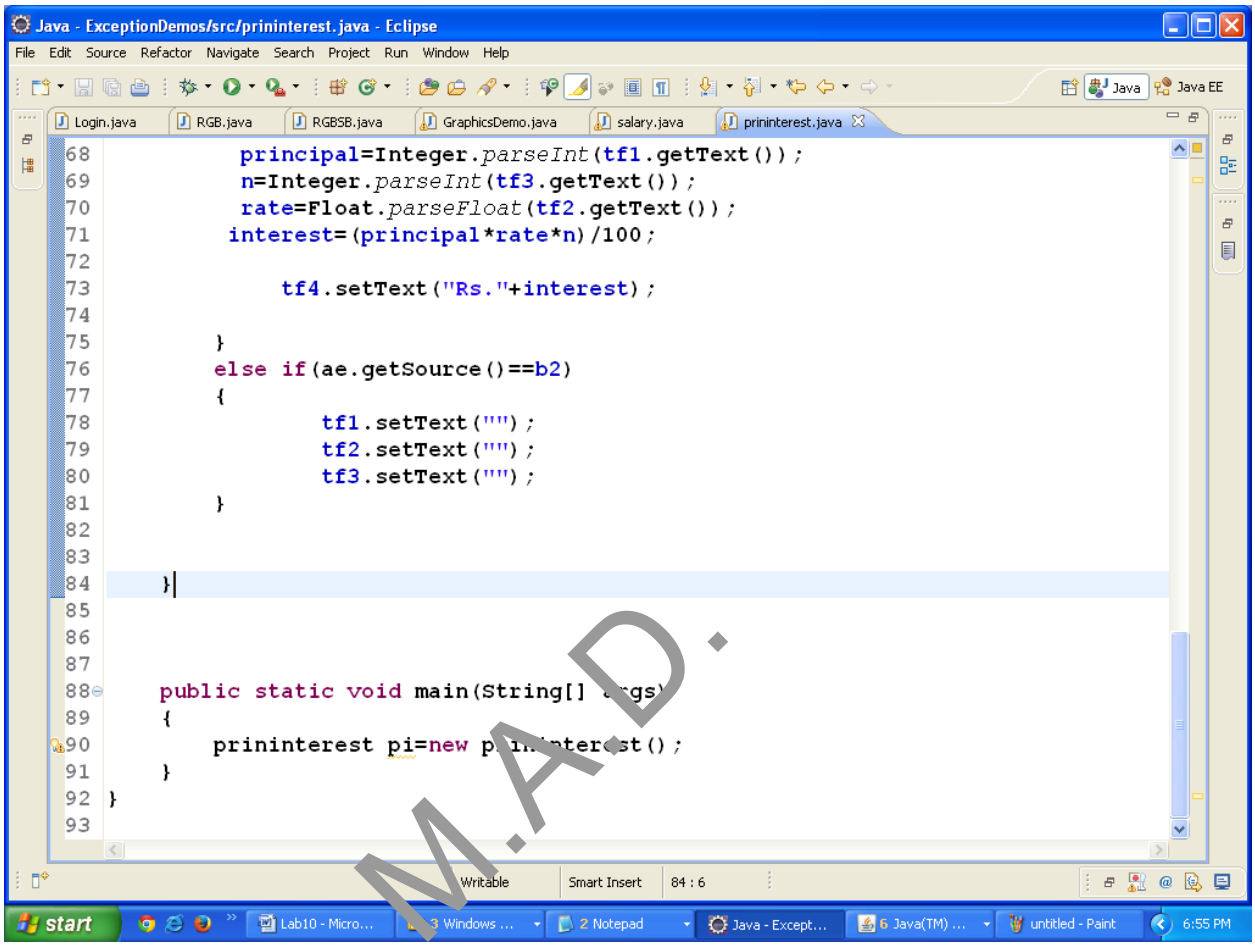

Continued…



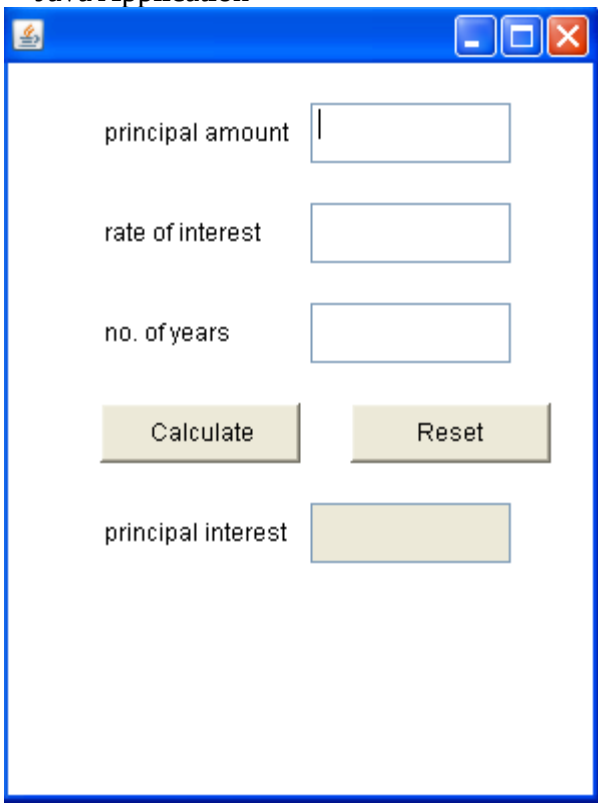
Continued…



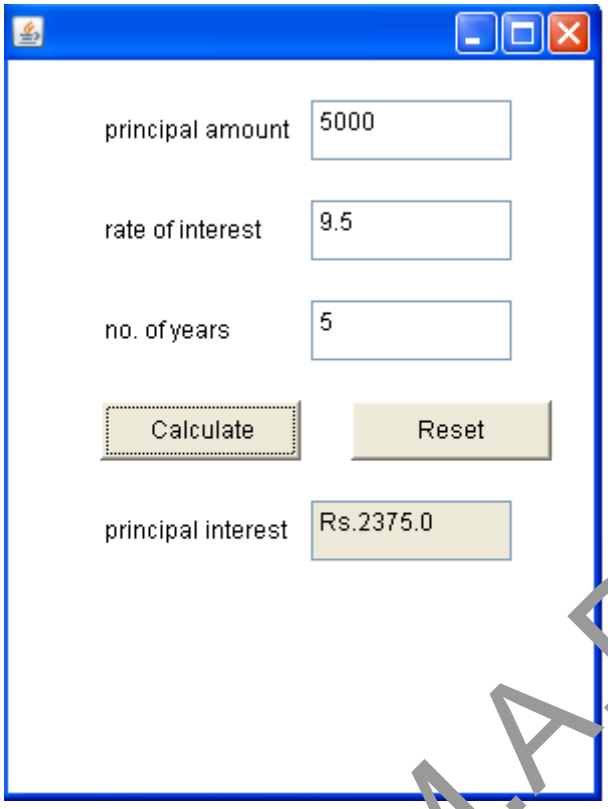

Continued…




Run as-> Java Application



Enter the values and click on Calculate Button(Event Handling)






## Assignments To Solve

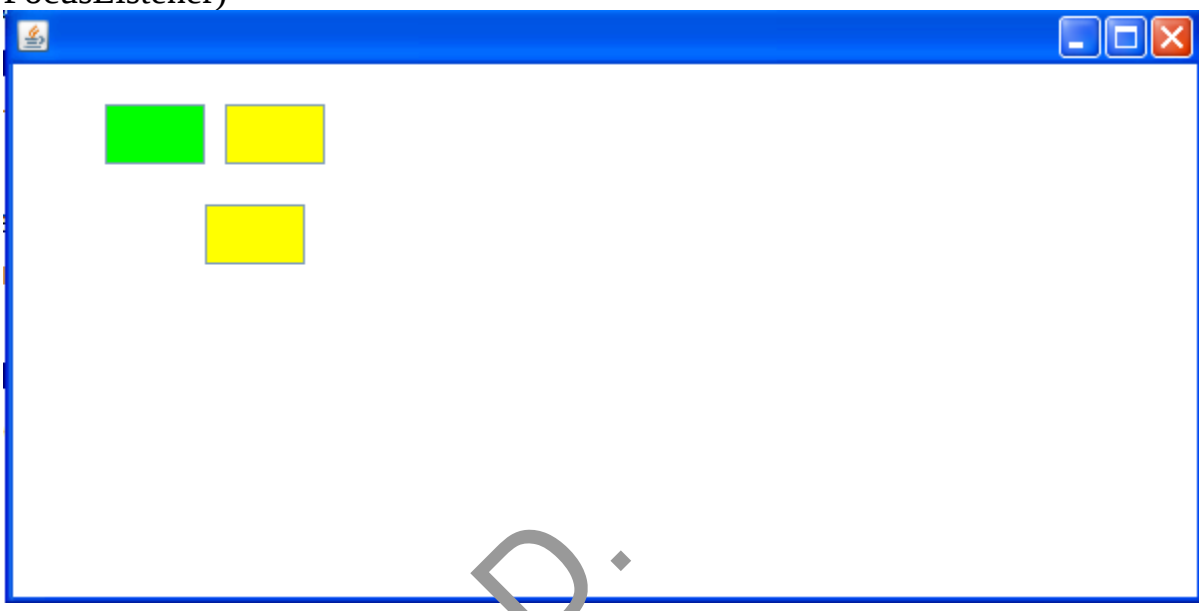
1. Validate Username and Password for LoginPage created in the previous lab
   Print Access Granted on the Frame for valid data
   Print Access Denied on the Frame for Invalid data
   Handle this event for the click of **OK** Button
   Close the Frame at the click of **Cancel** Button

2. Write an event handling code to print your name on the frame at the click of Mouse Button.( hint : Mouse Event)

3. Handle an event for the Scrollbars created in the previous lab.
   Set the background color of the frame with the Scroll values of the 3 Scrollbars.

4. Handle an event for the TextFields shown below . Show the Focus gained

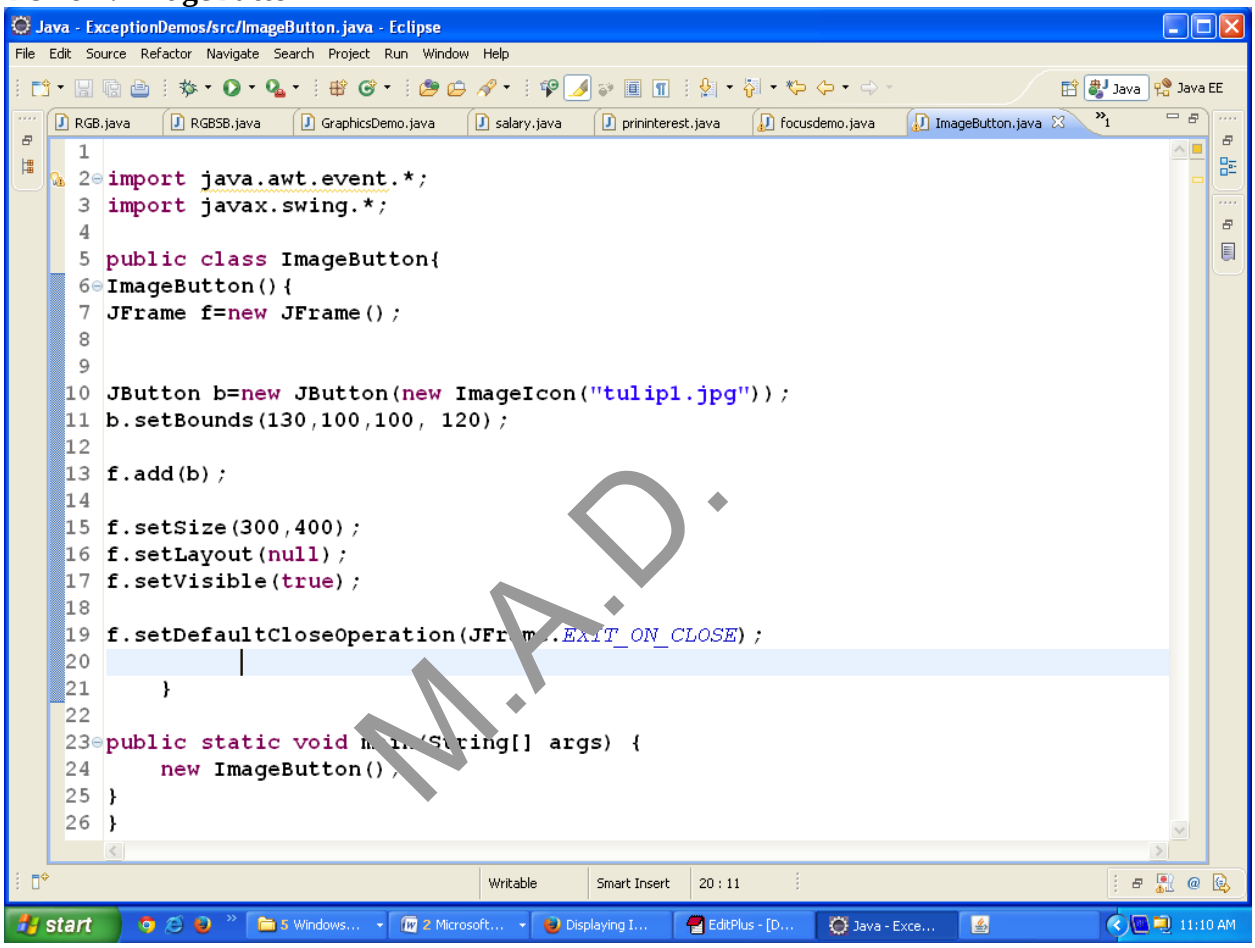
for the TextField when TextField is selected using Tab..(HINT: Use FocusListener)



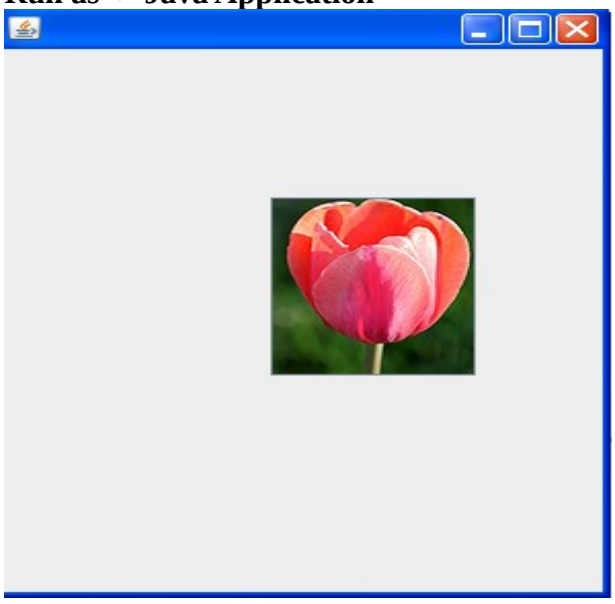
# Swing Components

## MenuBar

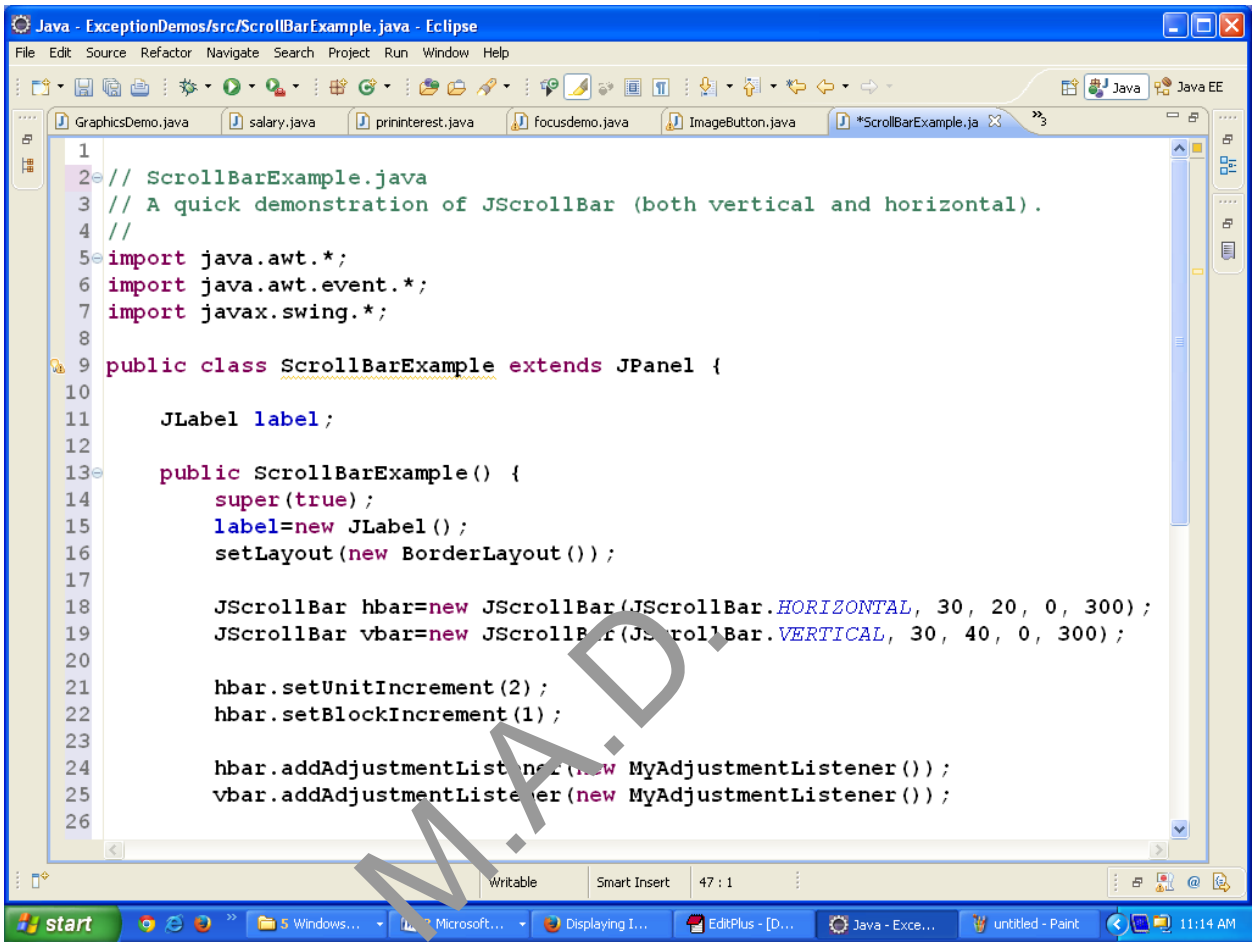
### Demo 1: ImageButton




**Run as -> Java Application**

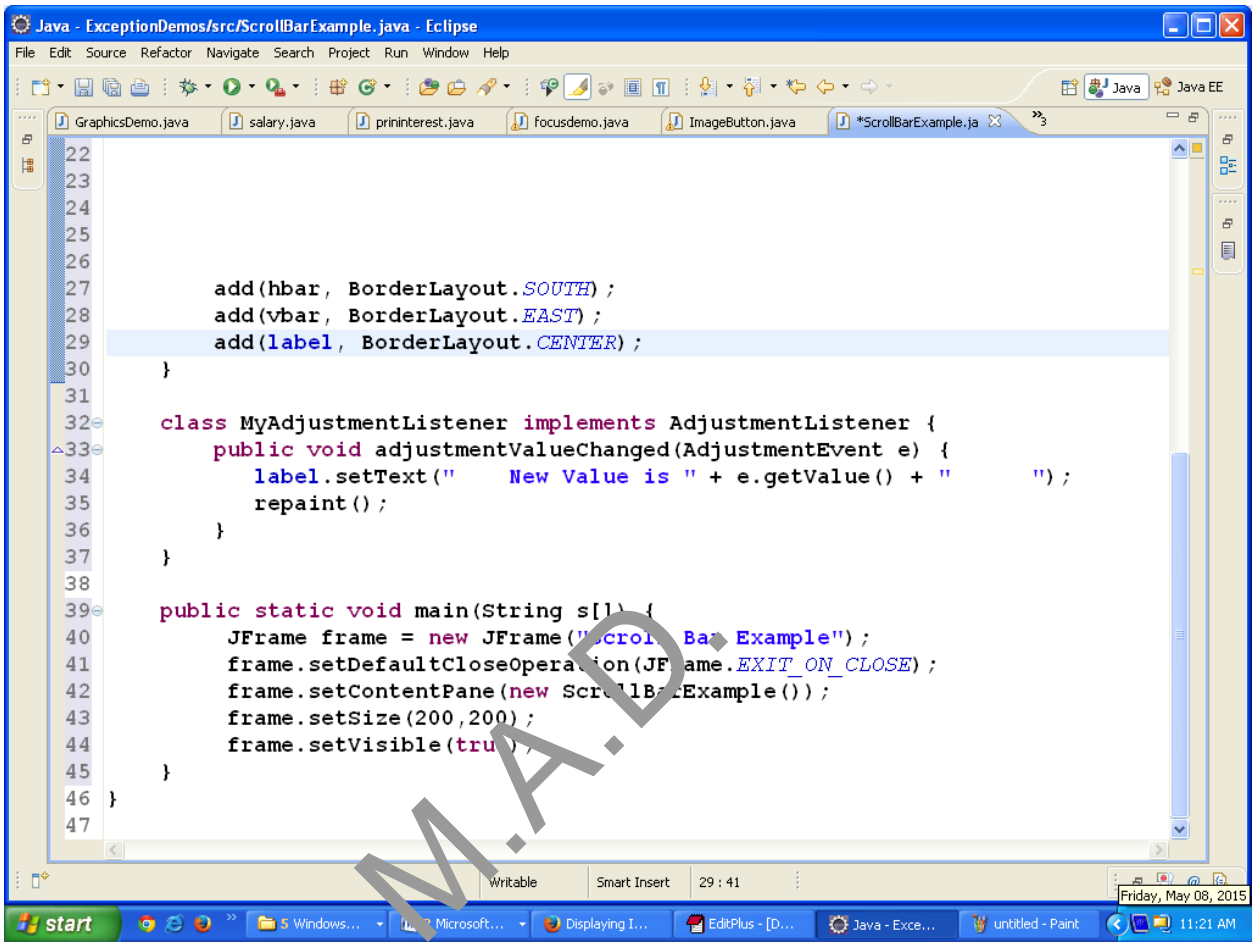


### Demo 2: ScrollBarDemo





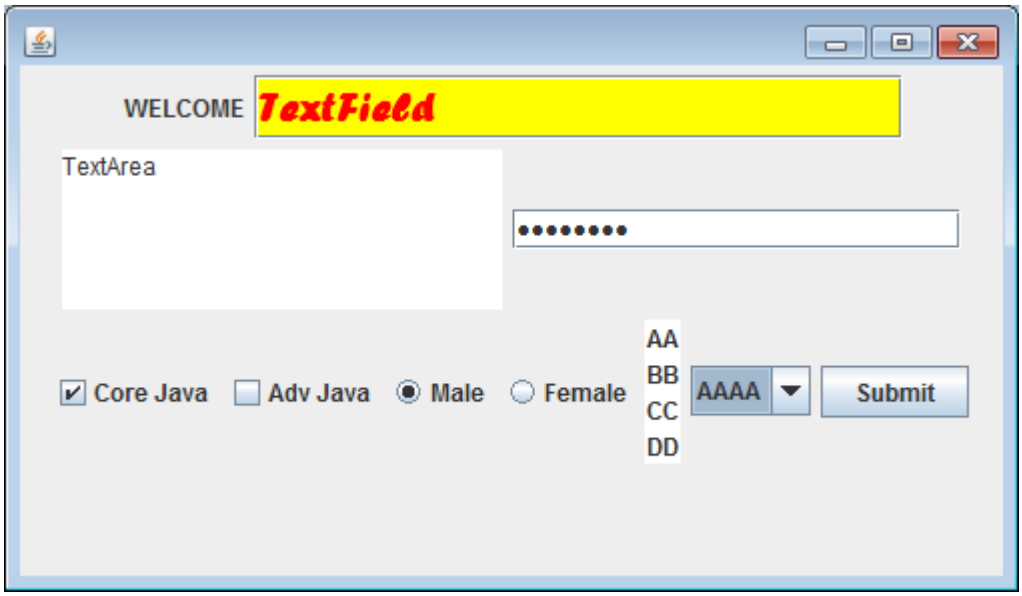

**Continued…**



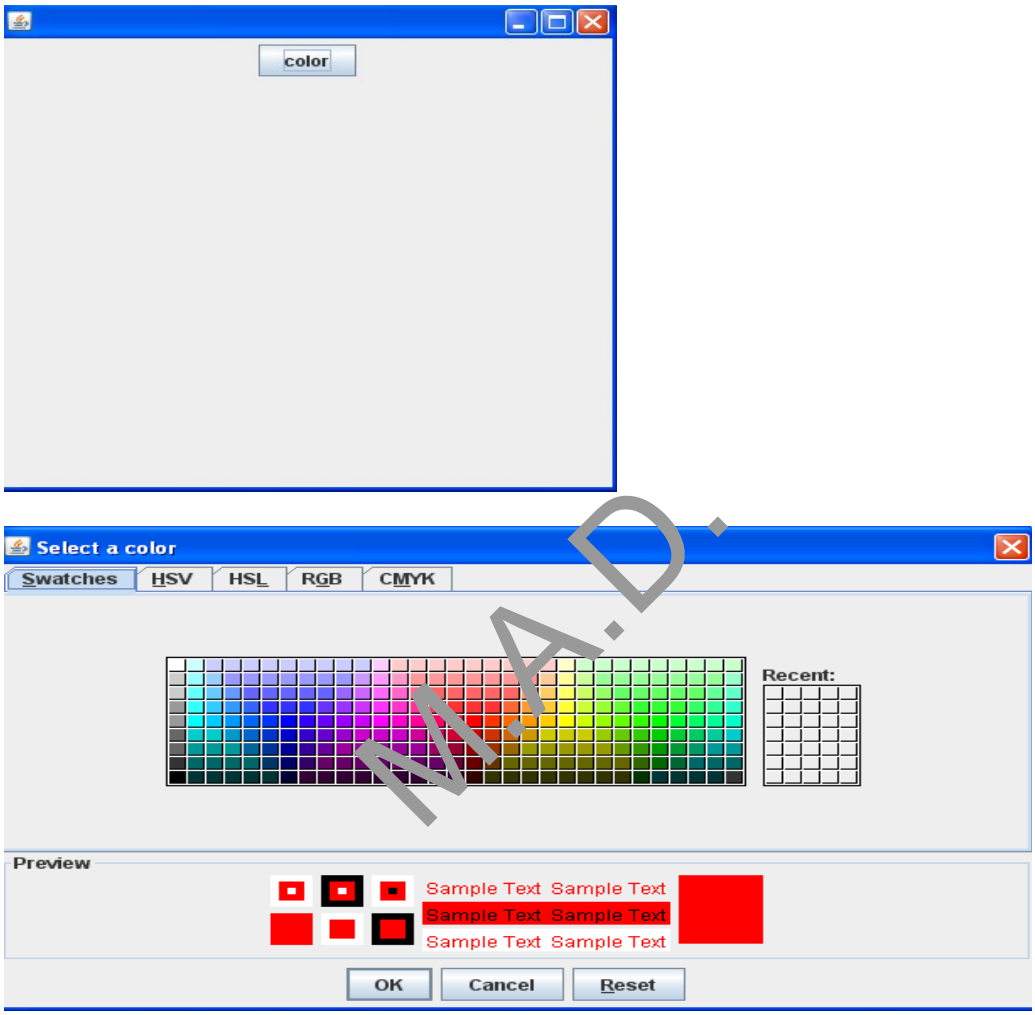

**Run as -> Java Application**


# Assignments To Solve

1. **Design below form displaying basic swing controls.**

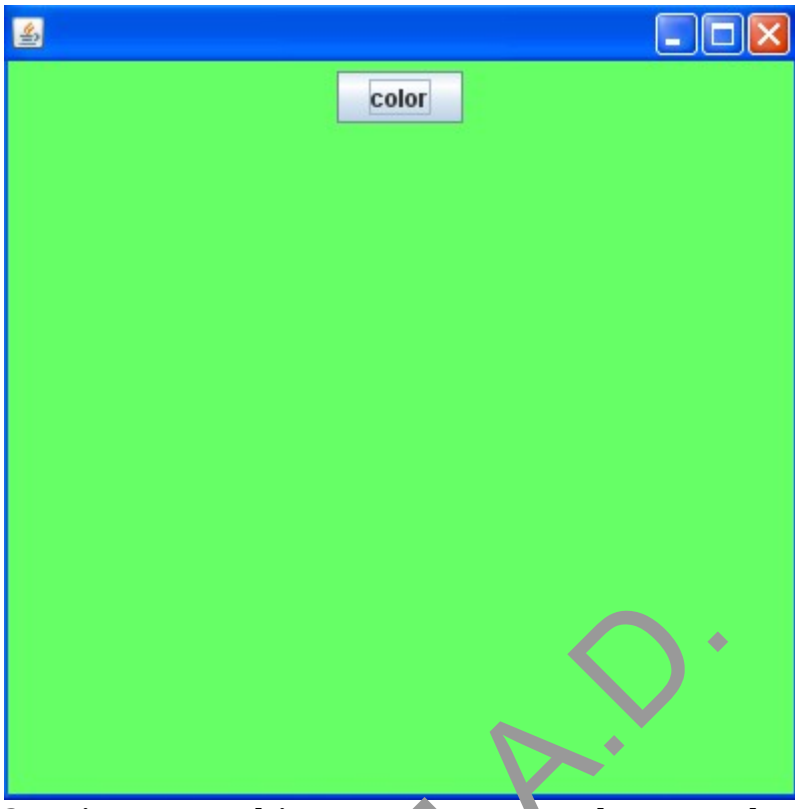

WELCOME
TextField
TextArea
Core Java
Adv Java
Male
Female
AA
BB
CC
DD
AAAA
Submit

**2. WAP to handle an event for a button to set the background color of the frame by selecting color from JColorChooser class.**



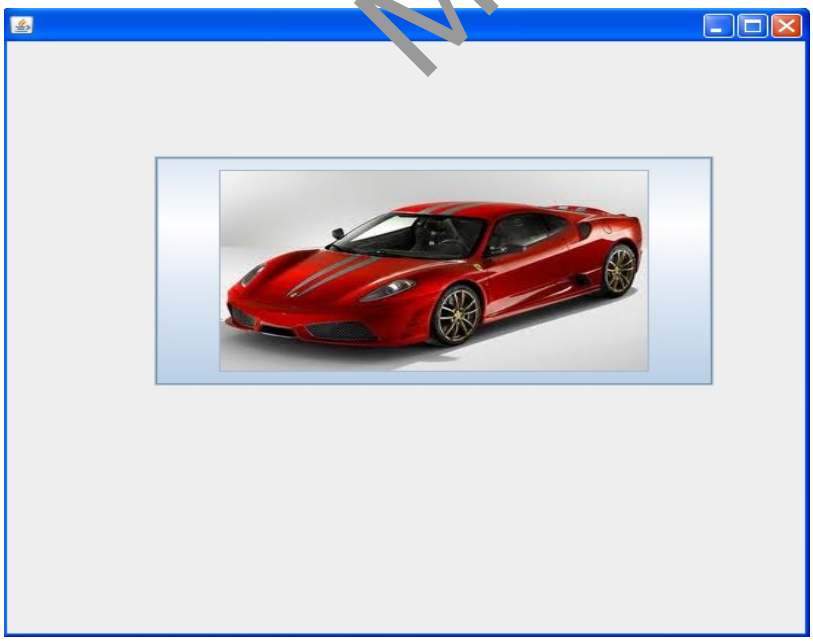



**Select and press ok**

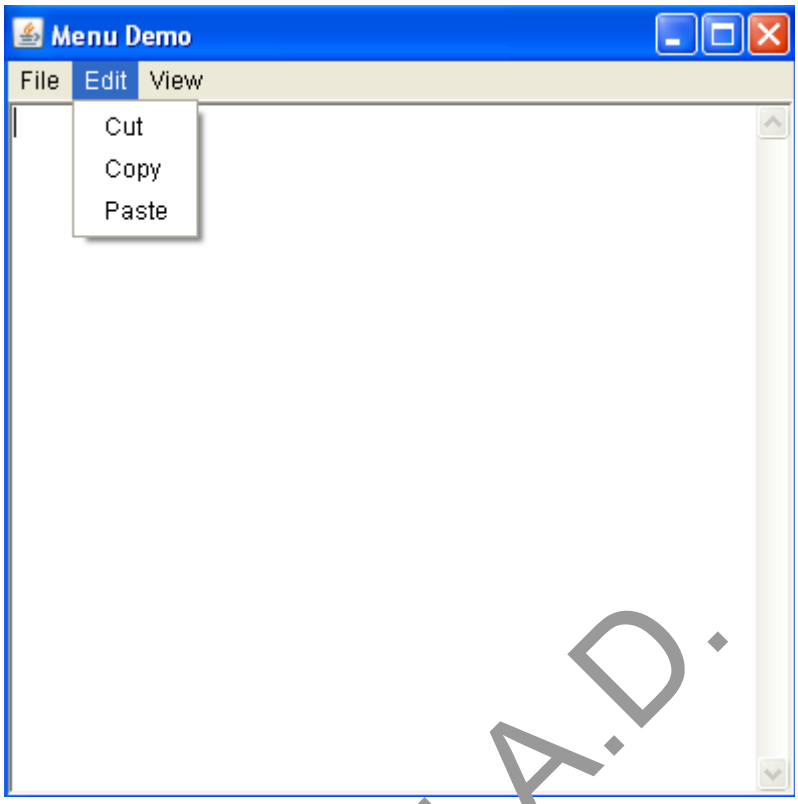





**3. Write an event driven program to move the car up, down,left and right (KeyEvent)**



**4. Write a java program to design notepad.(Use Jmenubar,Jmenu,JmenuItem,JtextArea)**



# Lab 10

## IO programming or File handling

1. Write java program to print file specification such as isFile,isDirectory,last modified date,file size,file patch etc

2. Write a java program to read & write the content to and from “myFile.txt” using FileInputStream and FileOutputStream API

3. Java program to read content from one file and write it into another file. ***(Webdirect)***

4. Write a java program that takes a file name and a search string from the user, if the search string occures in the file, then it counts the no. Of occurences of the string ***(Accenture)***
   Ex: output :Enter a file name : test.txt
   Enter a word : you

5. Write a java program to read console data using BufferedReader API

6. Write a java program to read a file, and print 5 most frequent words having length greater than 10. ***(Culture Machine)***

7. Write a java program to serialize the Student objects and deserialize it(Serializaion)



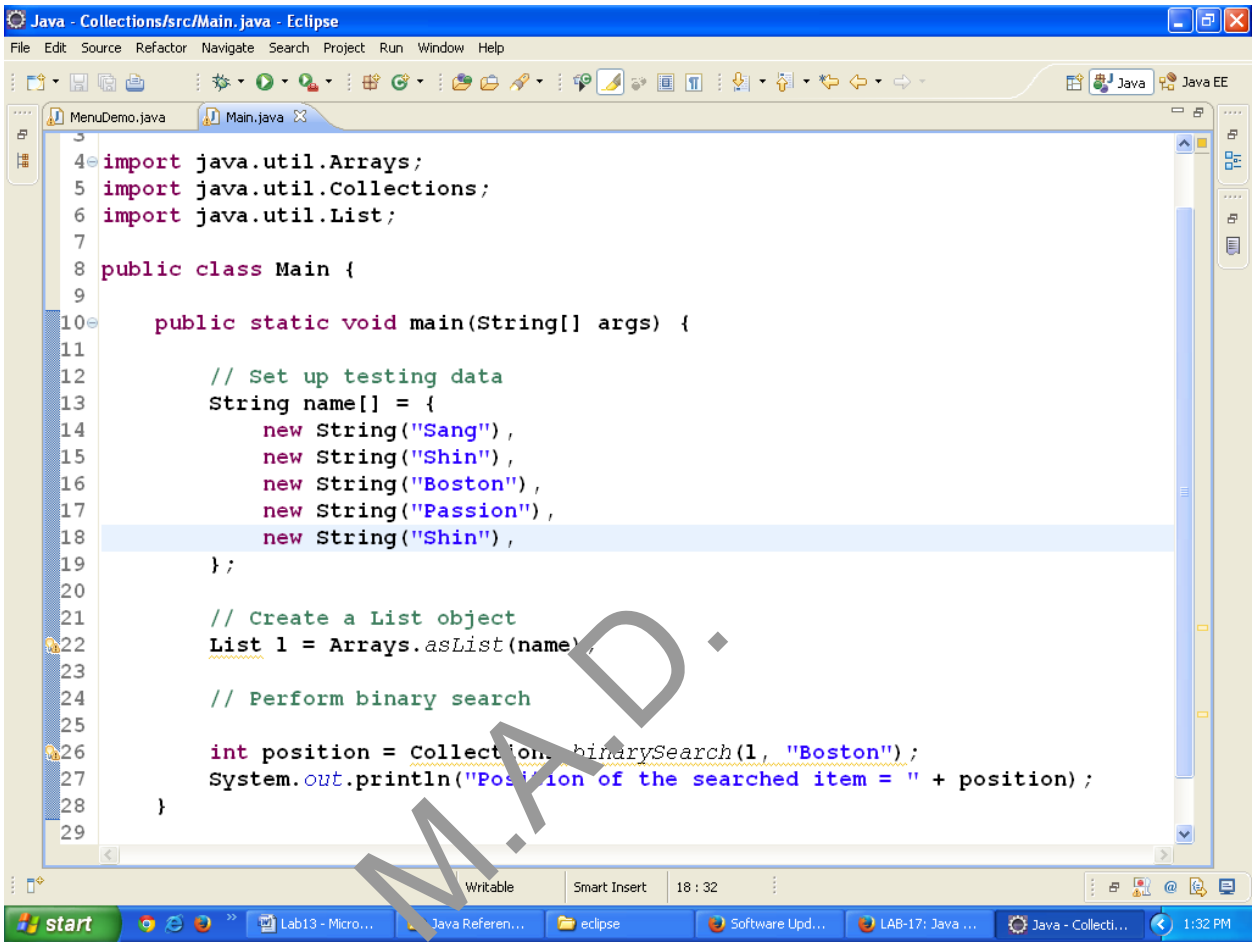
# Lab 11

## Collections & Generics

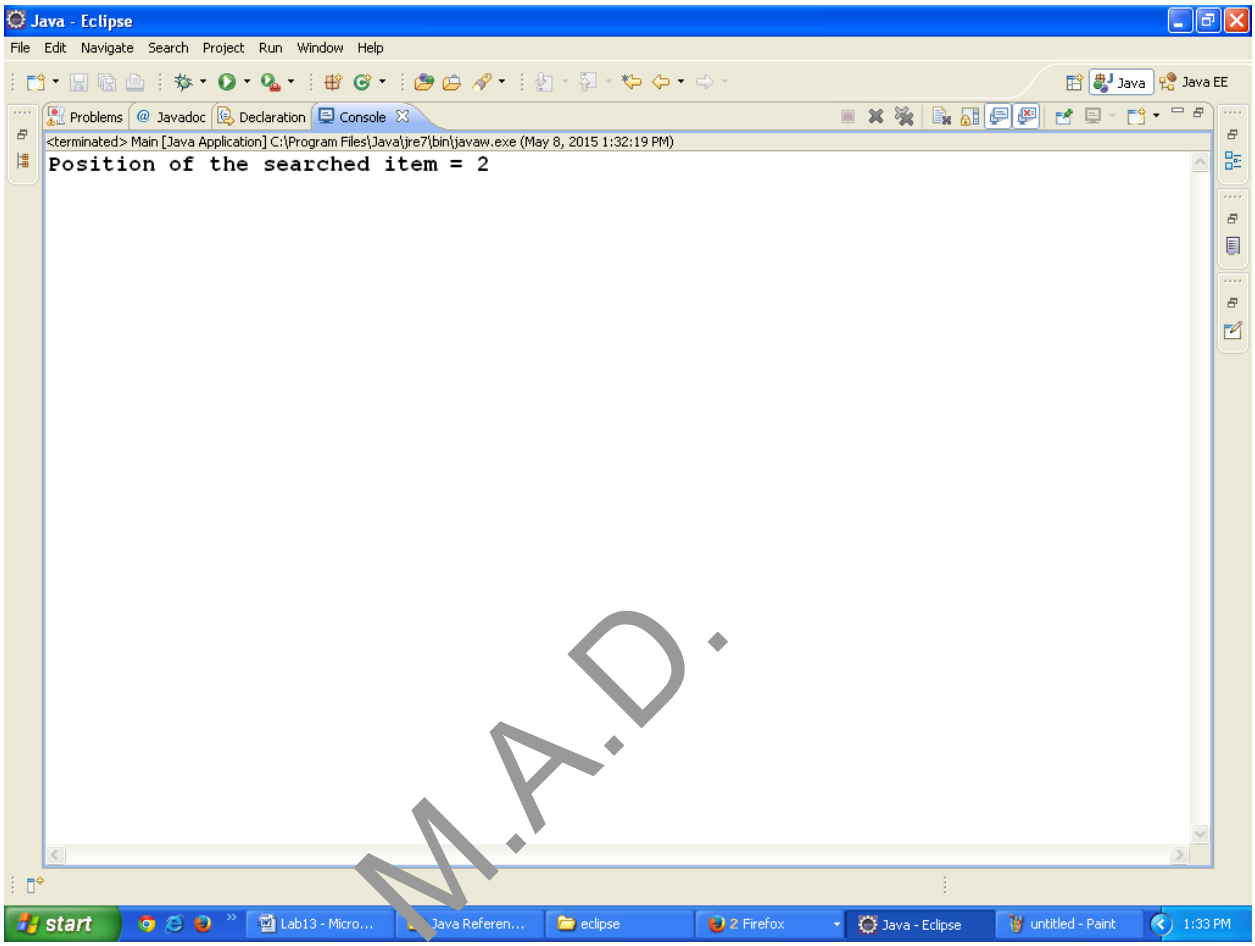
## Collection APIs

**List :ArrayList,LinkedList, Vector**
**Set :HashSet,LinkedHashSet,TreeSet**
**Map : HashMap,LinkedHashMap, TreeMap, HashTable**
**Comparable**
**Comparator**

## Demo 1:List

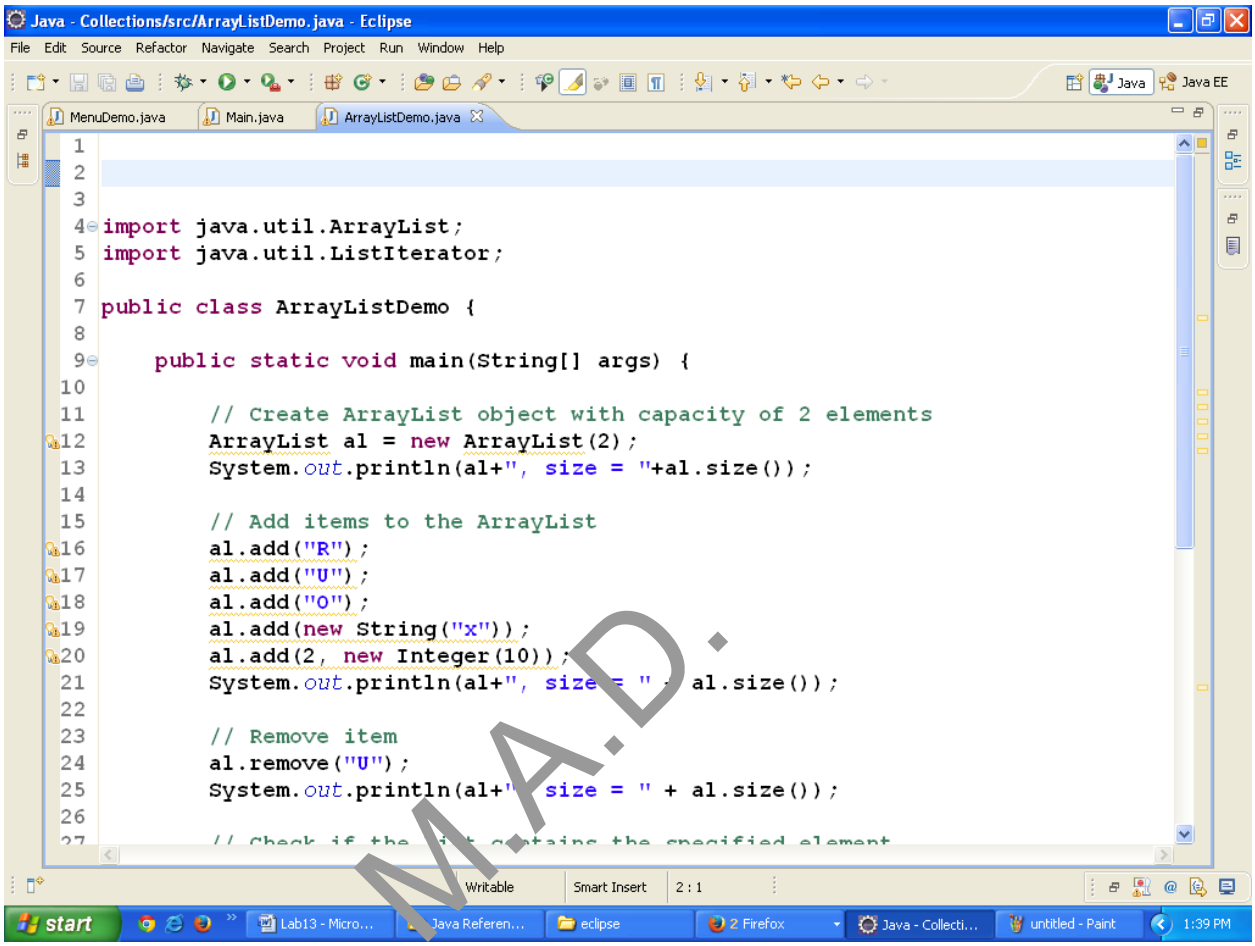



Run as -> Java Application

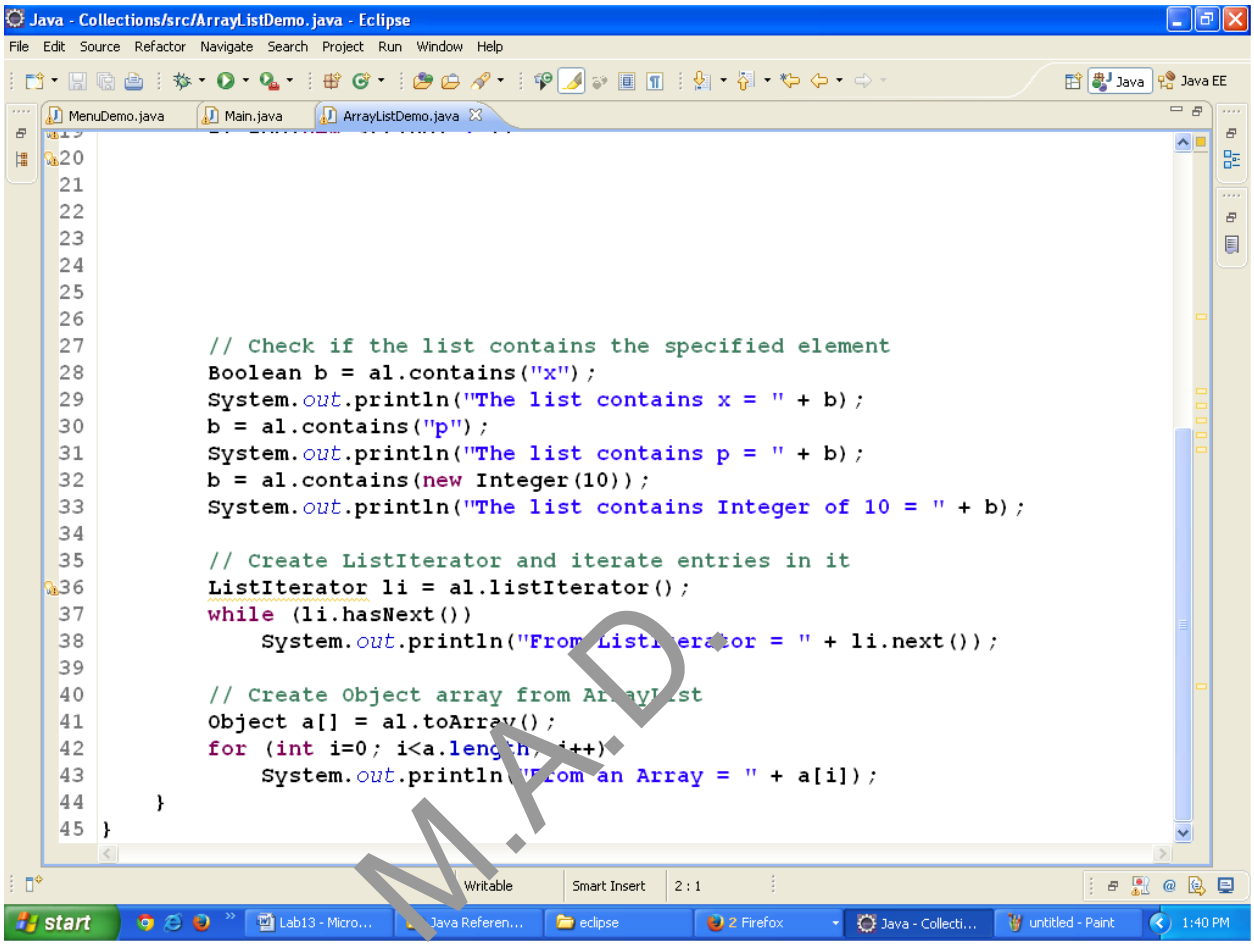




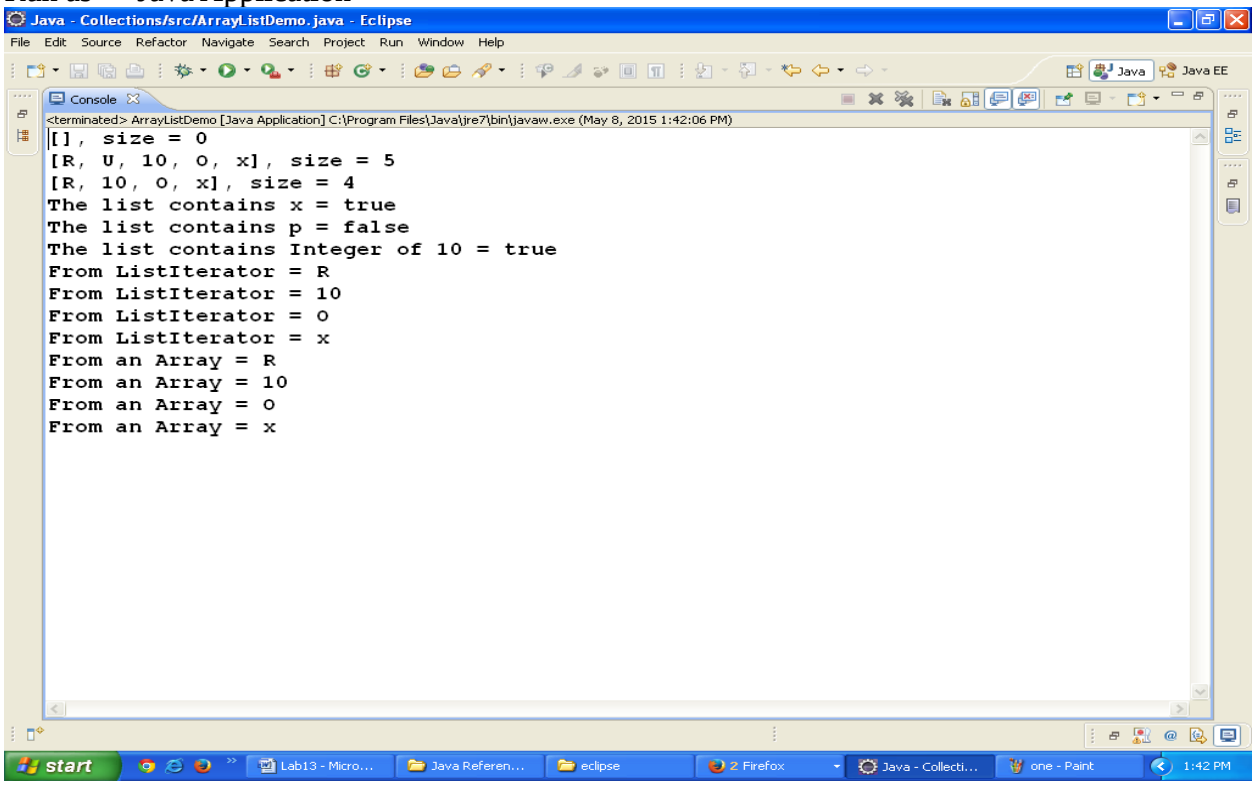

Demo 2: ArrayListDemo


Java - Collections/src/ArrayListDemo.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
MenuDemo.java
Main.java
ArrayListDemo.java
import java.util.ArrayList;
import java.util.ListIterator;
public class ArrayListDemo {
public static void main(String[] args) {
// Create ArrayList object with capacity of 2 elements
ArrayList al = new ArrayList(2);
System.out.println(al+", size = "+al.size());
// Add items to the ArrayList
al.add("R");
al.add("U");
al.add("O");
al.add(new String("x"));
al.add(2, new Integer(10));
System.out.println(al+", size = " + al.size());
// Remove item
al.remove("U");
System.out.println(al+", size = " + al.size());
Writable
Smart Insert
2 : 1
start
Lab13 - Micro...
Java Referen...
eclipse
2 Firefox
Java - Collecti...
untitled - Paint
1:39 PM

Continued…




Run as -> Java Application



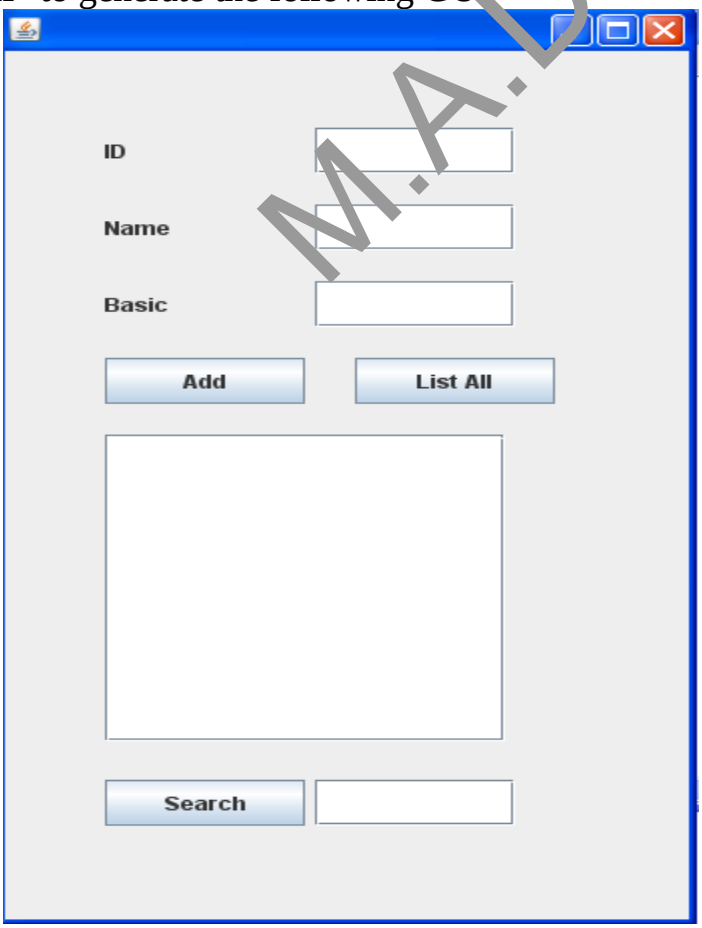
# Assignments To Solve :

1. Write a program to test add(),get(),size(),isEmplty(),iterator(),remove() functions with basic collection APIs(List,Set)

2.Write a Menu Driven program to do following

1. To Add elements into Arraylist
2. To retrieve an element (at a specified index) from a given array list
3. Toinsert an element into the array list at the first position
4. To update specific array element by given element.
5. To remove element from given position
6. To Search element in an arraylist
7. To reverse element of an arraylist
8. To sort element of an arraylist

3. WAP to generate the following GUI






Handle event for Add, List All and Search Buttons

Event for Add:

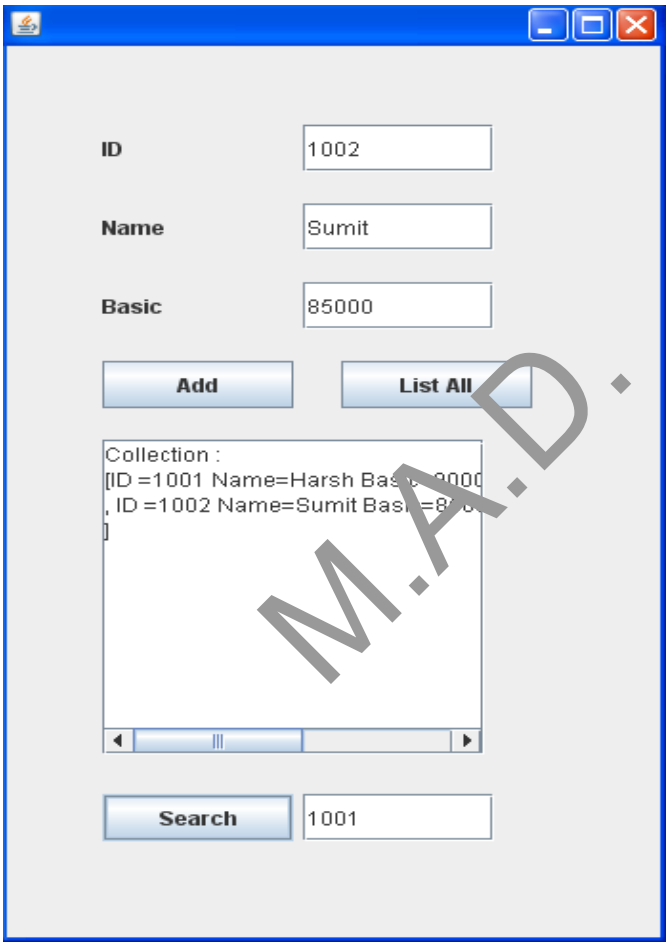
Retrieve the elements from the textfields, create an Object of Employee and add the Objects to Vector or ArrayList.

Event for List All

Display All Objects in TextArea

Event for Search

Iterate through the collection to find employee object for a particular id entered and display the details of that Object in TextArea..Or else print message Object not found for given id..




4. SMS language is the term for the abbreviation and its commonly used with mobile phone text messaging (use collection framework)***(Vyom Labs)*** some of the abbreviation used are

s for yes 2day for today

u for you y for why

Write a program that would convert a given text into proper SMS language

Example :

Input :Where were you yesterday

Output :where were u sterday.

5.A program that prints even and odd characters from a string. ***(Consult Add)***

5. Create a Product class with Product Id & Product Name. Write a program to accept information of 10 products and store that in HashTable. Search a particular product in the Hash Table. Remove a particular product id and product name from the Hash Table.

The product list is as follows:

| Product Id | Product Name |
|---|---|
| P001 | Maruti800 |
| P002 | MarutiZen |
| P003 | MarutiEstem |



6. Write a Java program to Store the <telephone_no,Name_of_Customer> and sort the data by key of descending order

7. Write a Java program which take every entry as name and age of student,and save it as below specified way ***(BMC)***

Example :
Input :
Enter name and age of 1th :
Pravin 25
Enter name and age of 1th :
Prmod 20
Enter name and age of 1th :
Soham 25
Enter name and age of 1th :
Pravin 5

O/P:
Pravin 25,5
Prmod 20
Soham 25

# Lab 12

## MultiThreading

### Thread class and their methods

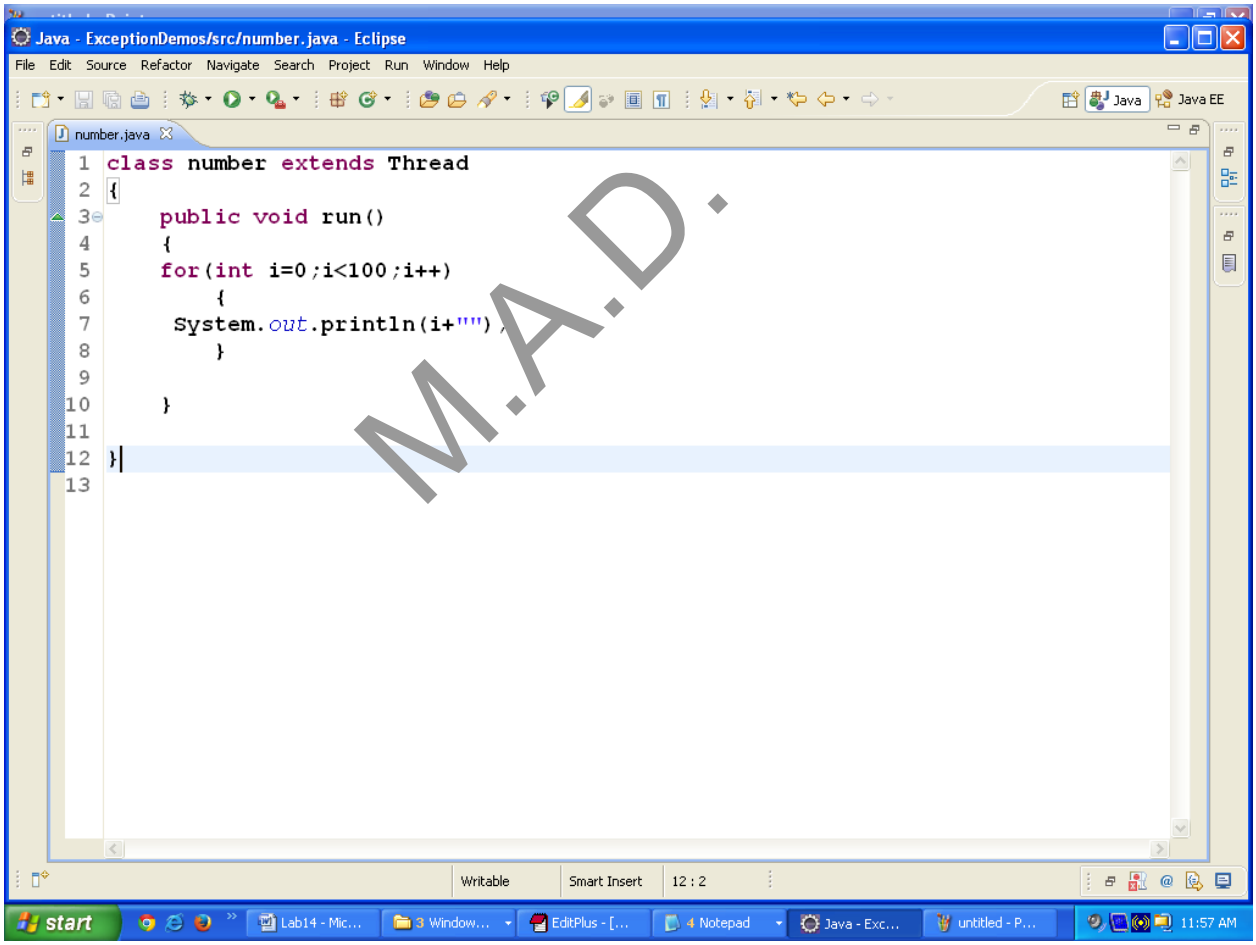
### Runnable Interface

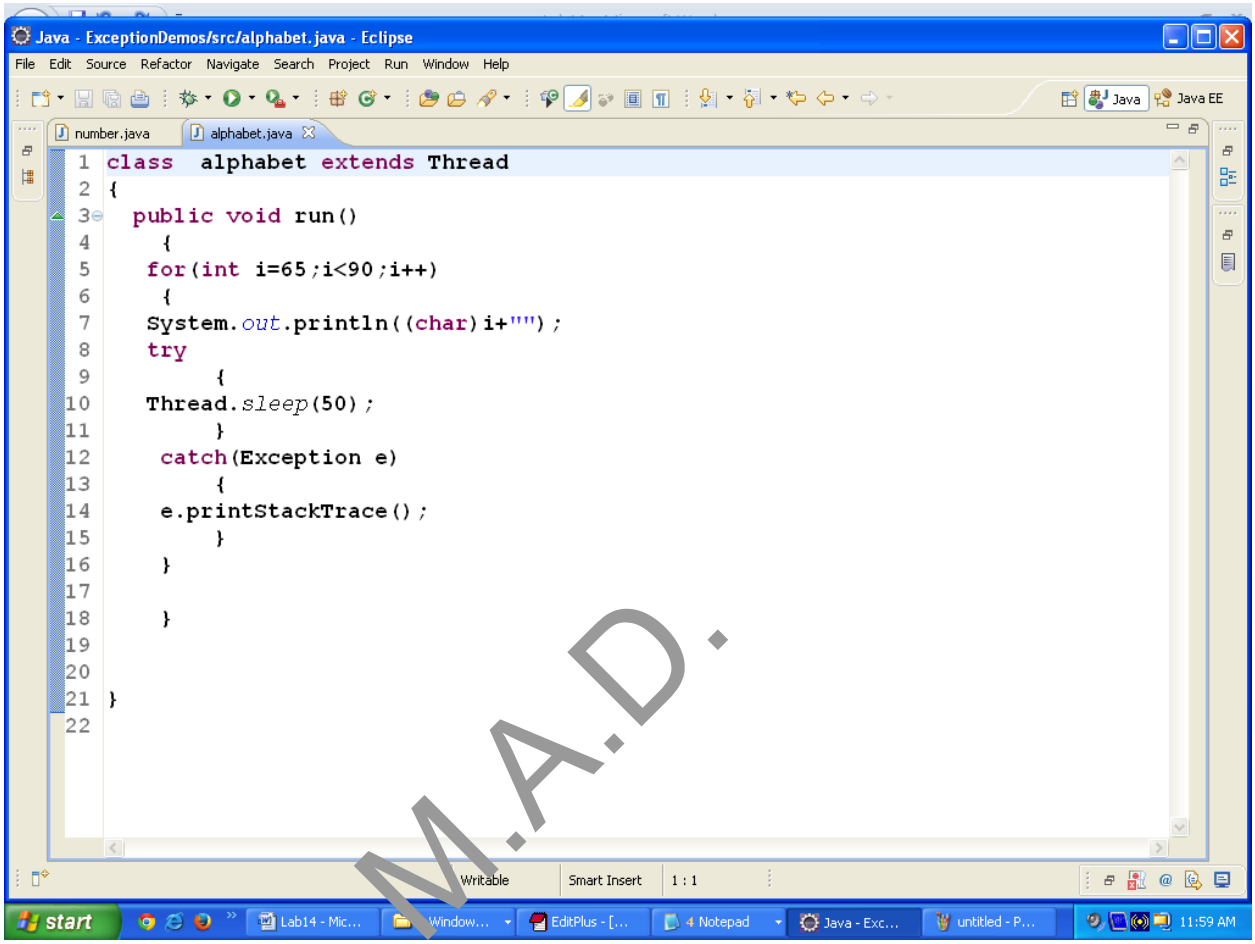
### Synchronization

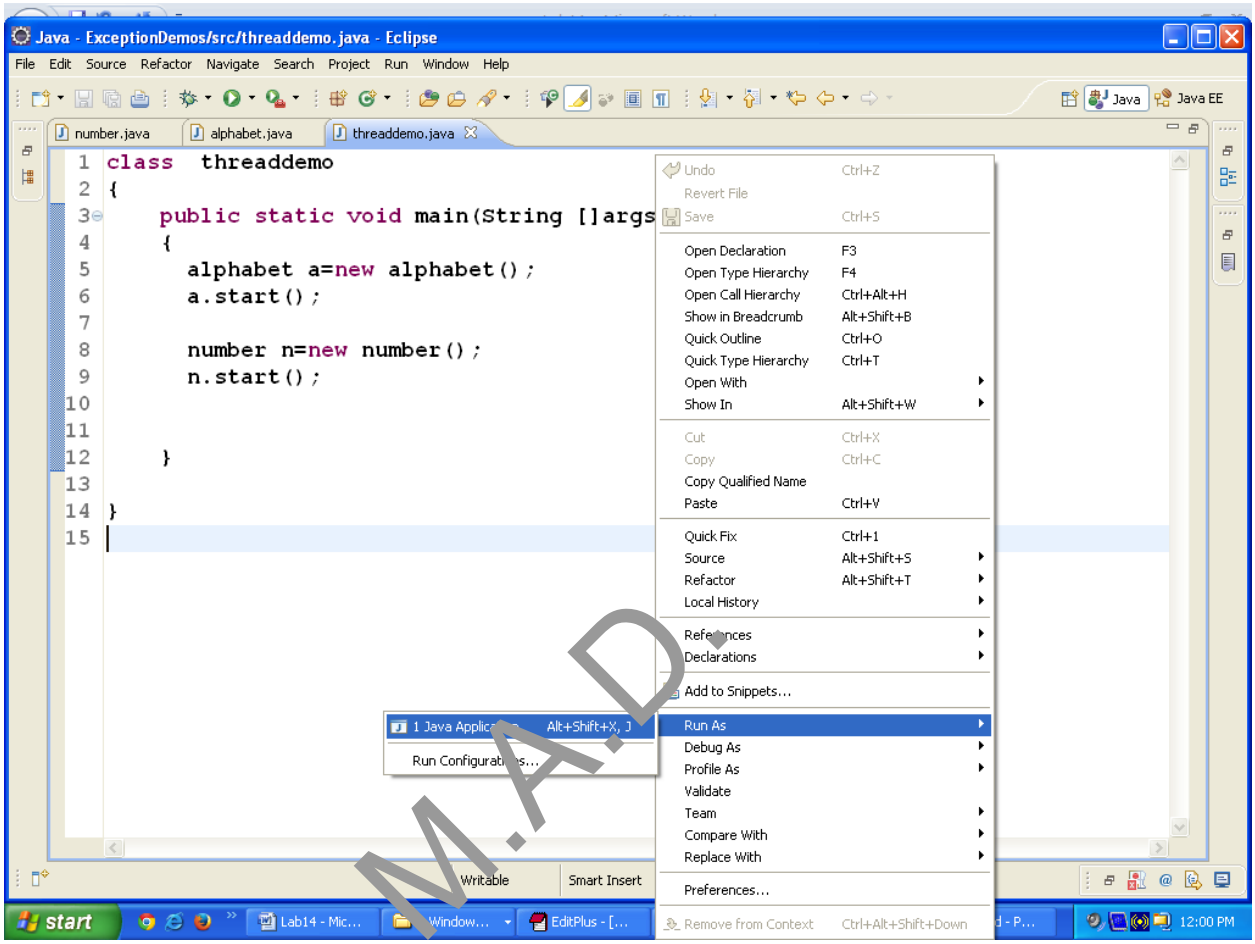
### Interthread communication

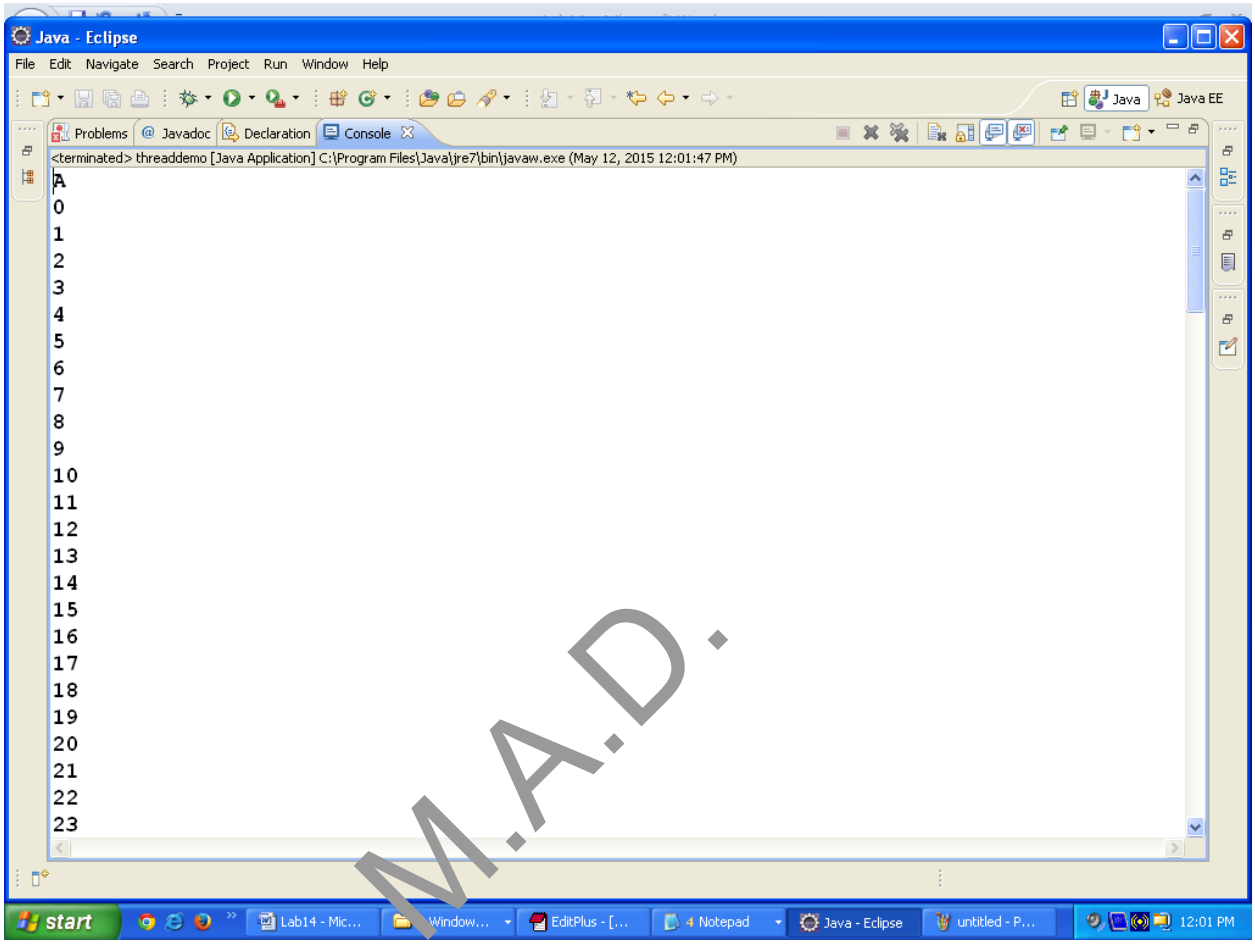
### Lock api

**Demo 1: ThreadDemo**




Java - ExceptionDemos/src/alphabet.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
number.java
alphabet.java
class alphabet extends Thread
{
public void run()
{
for(int i=65;i<90;i++)
{
System.out.println((char)i+"");
try
{
Thread.sleep(50);
}
catch(Exception e)
{
e.printStackTrace();
}
}
}
Writable
Smart Insert
1 : 1
start
11:59 AM


Java - ExceptionDemos/src/threaddemo.java - Eclipse
File Edit Source Refactor Navigate Search Project Run Window Help
number.java
alphabet.java
threaddemo.java
class threaddemo
{
public static void main(String []args
{
alphabet a=new alphabet();
a.start();
number n=new number();
n.start();
}
}
Undo Ctrl+Z
Revert File
Save Ctrl+S
Open Declaration F3
Open Type Hierarchy F4
Open Call Hierarchy Ctrl+Alt+H
Show in Breadcrumb Alt+Shift+B
Quick Outline Ctrl+O
Quick Type Hierarchy Ctrl+T
Open With
Show In Alt+Shift+W
Cut Ctrl+X
Copy Ctrl+C
Copy Qualified Name
Paste Ctrl+V
Quick Fix Ctrl+1
Source Alt+Shift+S
Refactor Alt+Shift+T
Local History
Add to Snippets...
Run As
Debug As
Profile As
Validate
Team
Compare With
Replace With
Preferences...
Remove from Context Ctrl+Alt+Shift+Down
Run Configurations...
Writable
Smart Insert
start
12:00 PM


Java - Eclipse
File Edit Navigate Search Project Run Window Help
Problems Javadoc Declaration Console
<terminated> threaddemo [Java Application] C:\Program Files\Java\jre7\bin\javaw.exe (May 12, 2015 12:01:47 PM)
A
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
start
12:01 PM

# Assignments To Solve

1. Write a Java program to create Thread and practice below mehtods.

getName(): It is used for Obtaining a thread's name

getPriority(): Obtain a thread's priority

isAlive(): Determine if a thread is still running

join(): Wait for a thread to terminate

run(): Entry point for the thread

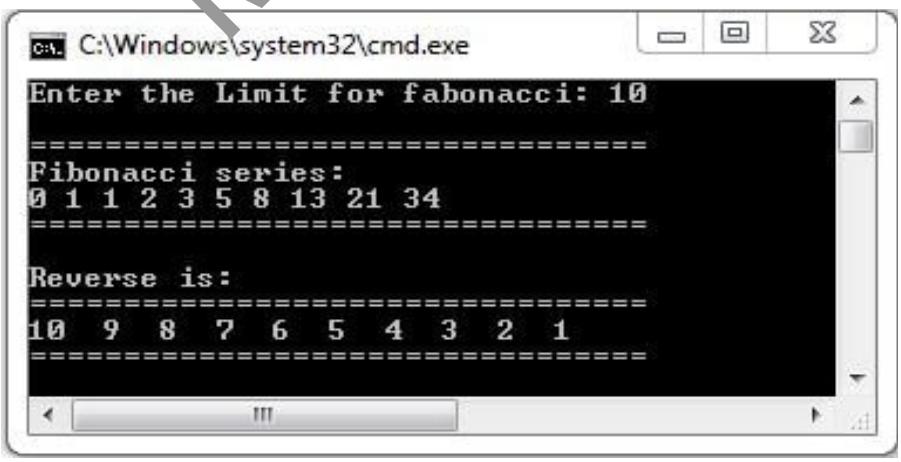
sleep(): suspend a thread for a period of time

start(): start a thread by calling its run() method

2. Write a JAVA program which will generate the threads:

- To display 10 terms of Fibonacci series. (class Fibonacci extends Thread)
- To display 1 to 10 in reverse order. (class Reverse extends Thread)

Output :




3. Create a Banking Application simulating concurrent deposit and withdrawal. Use synchronized method for transaction.

**Account Class**

Attributes: acno & balance

Methods: getter setter methods and toString()

**Method signature**

```
public synchronized int withdraw(Account  acc, int amount)
{….}

public synchronized int deposit(Account acc, int amount)
{…..}
```

4. Create a Banking Application simulating concurrent deposit and withdrawal. Use synchronized block for transaction

**Method signature**

```
public int withdraw (Account acc, int amount)
{
synchronized (this)
{…..}
}

public int deposit(Account account, int amount)
{
 synchronized {….}
}
```



5. WAP to move three balls (Use wait(), notify() and notifyAll() of Object class)

6. Write a java program to demonstrate explicit wait condition check ***(Cognizent)***

## Lab 13

### 1.JDBC Api

- **Connection**
- **Statement**
- **PreparedStatement**
- **ResultSet**

# Assignments To Solve:

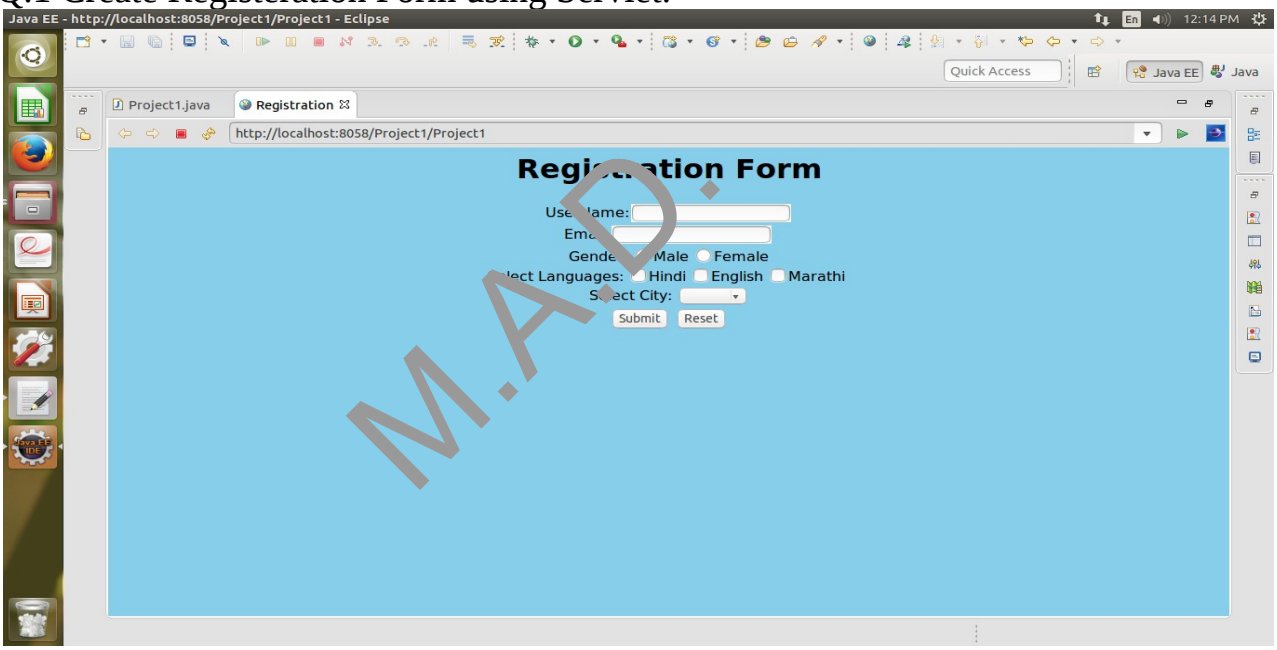
1.WAP perform CRUD operation on Student(rollno,name,marks,address) table using JDBC APIs .(use Statement)

2. WAP perform CRUD operation on Book(id,name,author,price,category) table using JDBC APIs .(use PreparedStatement)

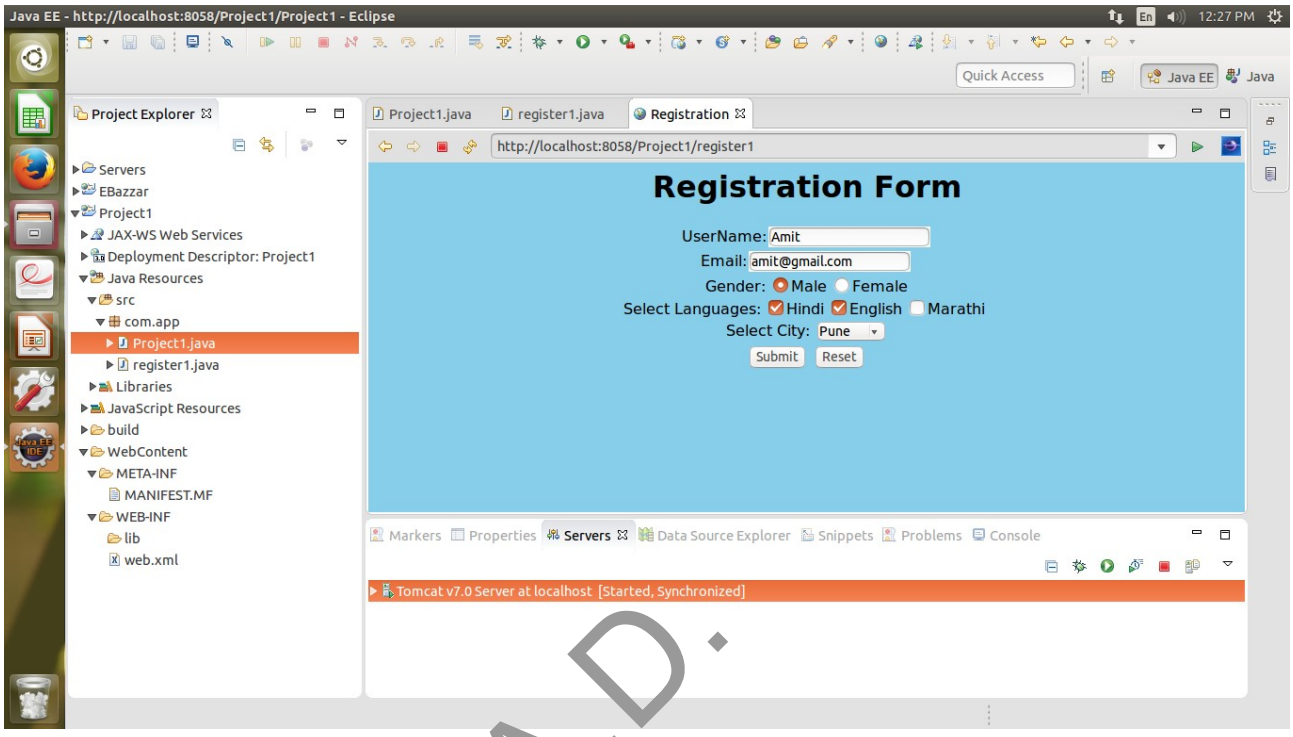
3. WAP to perform CRUD operation On Employee Model (use collection as database) ***(HSBC)***

# Servlet Assignments

Q.1 Create Registeration Form using Servlet.




and Display in Next Servlet.






Q.2 Write a servlet that will take a string and show the reverse in the form. ( create three servlets,
FirstServlet take text input and submit it to SecondServlet,

The SecondServlet print that input in reverse,it has original button when click,it navigate to ThirdServlet and then

ThirdServlet print original text
)


Feed in some text:
Press "submit" and get the form back with the text reversed:


Clicking "submit" again should give you the original text:
Using Servlet basic API.

Q.3 Store email in web.xml as init param name value pair. Write a Servlet to extract the initialization parameters inside the init method of your Servlet and display it within your service method.

Q.4 Store database specification into web.xml as context-param name value pair. Write a Servlet to extract the context parameters ,and display it within your service method.

Q5. Develope LoginApp as directed below flow
Login.html[accept username , password and registration link ]
ValidateServlet (check username and password is valid or not with database,depends on that it will redirect to either HomeServlet or Login.html )
When you click on register link it will redirect you to Register.html and takall registration details, after submit it will save all detail using RegisterServlet

Q.6 Create web application to pay online telephone bill using (Servlet,ServletConfig,ServletContext & RequestDispatcher with Database.)
Hint:

Database BSNL
Table PayBill having Cust_No,Cust_Name & Current_Bill

Servlet
Login.html
User enter contact number and login

DisplayServlet.java

Display CustomerName & CurrentBill which fetch from DB using ServletConfig & ServletContext.
Click on "Pay" button.

Pay.java

Display Bill payment successful with DB update.
Else
Back to Login if contact number is incorrect.

Q.7 Display Customer BankDetails like Name,CustomerId Account_no using ServletFilter chaining concept.
CustomFilter—filter customerID
AuthenticateFilter – filter Account_no.

Q.8Develop BookCart Application using Servlet concept in incremental approach.

**Scenario:**

Cyber Publishing Company is a popular publishing company in India. All the transactions of books happen manually till now. They want to sell books online due to increase No. of customers.



They need to develop an web based application to purchase books online.

| Login Id <Login Id > | | Category <Category > | | |
|---|---|---|---|---|
| Book Id | Book Name | Author Name | Price | Purchase |
| --- | ---- | ---- | ---- | ☐ |
| ---- | --- | ---- | ---- | ☐ |
| | Submit [ Hyperlink ] | Logout [Hyperlink ] [ Hyperlink] | | Show Cart |

5. Login ID must be taken from login page.
6. Book Category must be either Computer or Engg Books.
7. If Computer Books selected then display all the Books with all the details.
8. If Engg. Books selected then display all the Books with all the details.
9. Click on Logout Hyperlink will display the page with Thanks message

and a hyperlink which will move the pointer to the login page again.

6. The customer needs to select the checkbox corresponding to **Purchase** if he is interested in that Book.

- Once the customer has selected all the Books for Purchase he needs to click the **Submit** Button.
- On click of the Hyperlink **Show Cart** the **ShowCartPage** will be called.

.

The screen of **ShowCartPage** is as follows:

| Login Id | | <Login Id > | |
|---|---|---|---|
| Book Id | Book Name | Price | Amount |
| ----- | ------ | ---- | 100 |
| ------ | ------ | ---- | 200 |
| | | Total Amount | 300 |

# JSP Assignments

Q.1 Write JSP Script which accepts user name and nick name from user. At first visit, display message “Hello user name” and for next successive requests, display “Hello nick name”.

Use username if visit count is odd and nick name if visit count is even. (use declaration

scripting elements)

Q.2 Write jsp code to use page directives tag's **isErrorPage** ,**errorPage,import** attribute.

Q.3 Write a jsp code to use all jsp implicit object to read and set content with different scope.

Q.4 Using Scripting Element & Directive tag.



**Problem Statement 1:**

ZBank is new generation bank they are planning to launch their website. They have approached you to create the banking application using jsp. As initial task to test your expertise in jsp programming they have asked you to create a simple welcome screen with a greeting message.

**Requirement Description:**

The welcome page should be named welcome.jsp. It should have the current date displayed “***dd-MM-yyyy***” format. The page should display a greeting based on the time of the day.

***if the time is less than 12.00***

***Print “Good Morning”***

***Else Print “Good Evening”***

The bank wishes to use 24hr time format.

Also as a matter of initial promo the bank wishes to keep track of the number of users visiting the site and this value should be displayed to the user.

Develop a jsp page satisfying the above requirements.

The page should look like the screen shot design provided and the following test cases also needs to be executed.

**Hints**:

4. Use the following code for date calculations and use scriptlets

```
java.util.Calendar calendar = new java.util.GregorianCalendar();
java.util.Date date = calendar.getTime();
DateFormat format=new SimpleDateFormat("dd-MM-yyyy");
String dateval=format.format(date);
int hour = calendar.get(Calendar.HOUR_OF_DAY);
```

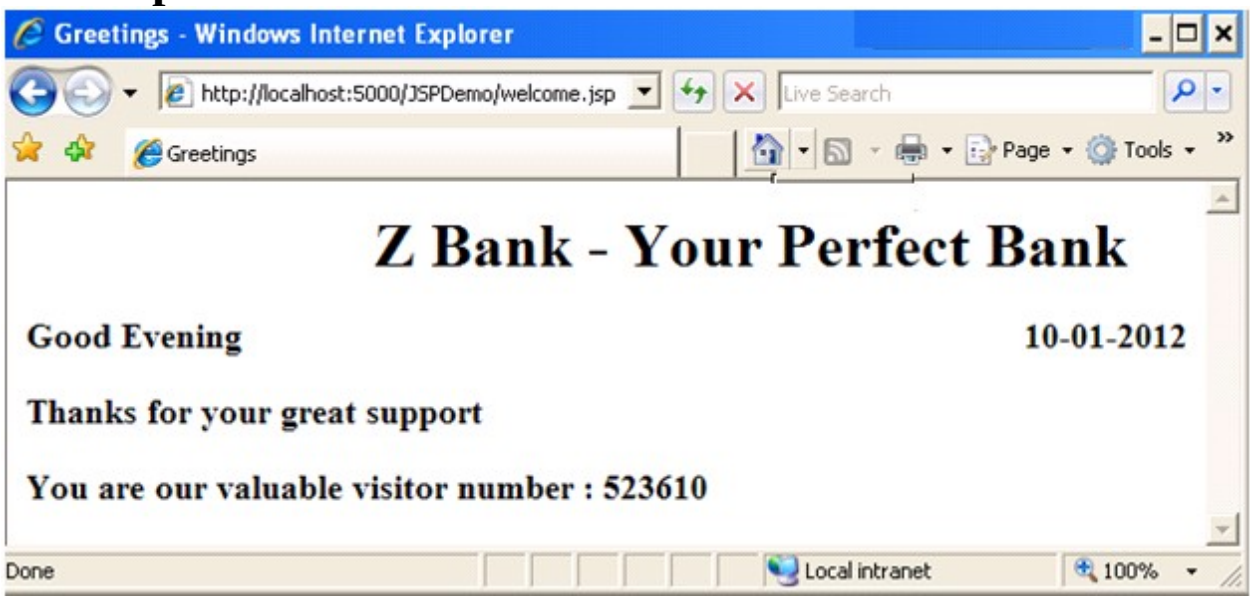
5. Use declaration to declare page count variable.

**Test Cases:** Execute the below test cases after development.

10. **Test case #1:** Access the welcome.jsp it should display the current system date and display the appropriate message.
11. **Test case #2:** As you refresh the JSP page the counter needs to be incremented and should increase for each refresh.



## Screen Expected




Q.5 Write JSP code which adds the student education details in a database through Java bean.
Also display the student details who have secured first class in their graduation.

Q6. Write JSP code to perform CRUD operation on Product table.
Define links into index.html (add new Product,display products etc)

Q.7 Create custom tag which display User Name in its initial.
For eg Hrithik Rakesh Roshan ---> H.R.Roshan using either tag with body or attribute.

Q.8 Create custom tag which display UserName in uppercse with specified font color (use tag with body and attribute)