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| **Experiment No.** | 2A |

| **AIM:** | Write a program to demonstrate constructor. |
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| **Program 1** | |
| **PROBLEM STATEMENT :** | Create a Circle class and include appropriate constructors. Also include the methods area and perimeter. Test the output. |
| **PROGRAM:** | import java.util.Scanner;  class circ{    double rad;  double x,y;    circ(){  x = 2; y=3; rad=5;  }    circ(circ c){  this.x=c.x; this.y=c.y; this.rad=c.rad;  }    // circ(double x, double y){  //this.x = 4; this.y = 10;  // }    circ(double rad, double x, double y){  System.out.println("Values of x, y and radius are : " + x + ", "+ y + ", "+ rad + ". ");  }    void calcarea(double rad){  System.out.println("Area of circle : " + 3.14159 \* rad \* rad);  }    void calccircum(double rad){  System.out.println("Circumference of circle : " + 2 \* 3.14159 \* rad);  }  }  class circle{  public static void main(String [] arr){    Scanner sc = new Scanner(System.in);    System.out.print("Enter radius : ");  double r = sc.nextDouble();  System.out.print("Enter x coordinate of centre of circle : ");  double x = sc.nextDouble();  System.out.print("Enter y coordinate of centre of circle : ");  double y = sc.nextDouble();    circ c1 = new circ();  // circ c2 = new circ(2,3);  circ c3 = new circ(c1);  circ c4 = new circ(r,x,y);    c1.calcarea(r);  c4.calccircum(r);    }  } |
| **RESULT:** | |
| **Program 2** | |
| **PROBLEM STATEMENT :** | The "User" class represents a user on a ‘buy and stream’ movie platform with attributes : name, age, account balance. The “Movie” class represents a movie on the platform with attributes: Movie Title, AgeRestriction, Cost of the movie. The User class should have a method to check whether he can watch a movie based on his age and also account balance. The User class should also have a method to WatchMovie where he has to pay the cost for the Movie to watch it. The Movie class should have methods to get Cost and Age restriction. The main method should create objects of the "User" and "Movie" classes and demonstrate the use of their methods. Input should be taken from the user. |
| **PROGRAM:** | import java.util.Scanner;  class User{  String name;  double age, accbal, costofmovie;  User(String name, double age, double accbal) {  this.name = name;  this.age = age;  this.accbal = accbal;  }    void agebalcheck(double age, double accbal, double costofmovie){  if(age>=18 && accbal>=costofmovie){  System.out.println("You're eligible to watch this movie.");  }  if(accbal<costofmovie){  System.out.println("Insufficient funds!!");  }    }    void watchmovie(double age, double accbal, double costofmovie){  if(age>=18 && accbal>=costofmovie){  System.out.println("Your ticket has been successfully booked.\nRemaining Balance : " + (accbal-costofmovie));  }  }    }  class Movie{  String MovieTitle1 = "Om Shanti Om";  String MovieTitle2 = "Animal";  String MovieTitle3 = "3 Idiots";  double age1 = 10;  double age2 = 18;  double age3 = 12;  double costofmovie1 = 599;  double costofmovie2 = 799;  double costofmovie3 = 699;    void displaydetails(){  System.out.println("\nMovie 1 -");  System.out.println("Title : " + MovieTitle1);  System.out.println("Age Restriction : " + age1);  System.out.println("Cost of Movie : " + costofmovie1);  System.out.println("\nMovie 2 -");  System.out.println("Title : " + MovieTitle2);  System.out.println("Age Restriction : " + age2);  System.out.println("Cost of Movie : " + costofmovie2);    System.out.println("\nMovie 3 -");  System.out.println("Title : " + MovieTitle3);  System.out.println("Age Restriction : " + age3);  System.out.println("Cost of Movie : " + costofmovie3);  }    }  class b{  public static void main(String [] arr){    double age1 = 10;  double age2 = 18;  double age3 = 12;  double costofmovie1 = 599;  double costofmovie2 = 799;  double costofmovie3 = 699;  Scanner sc = new Scanner(System.in);  System.out.print("Enter your name : ");  String name = sc.nextLine();  System.out.print("Enter your age : ");  Double age = sc.nextDouble();  if(age<1){  System.out.println("Invalid age !!");  }  else{  System.out.print("Enter your account balance : ");  Double bal = sc.nextDouble();  if(bal<0){  System.out.println("Invalid amount!!");  }  else{  sc.nextLine();    Movie a = new Movie();  User c = new User(name,age,bal);    a.displaydetails();  System.out.print("\nEnter the title of the movie you want to watch : ");  String moviename = sc.nextLine();    switch(moviename){  case "Om Shanti Om" :  if(age<age1){  System.out.println("Age restriction !!(10+)");  }  else{  c.agebalcheck(age,bal,costofmovie1);  c.watchmovie(age, bal, costofmovie1);  }  break;    case "Animal" :  if(age<age2){  System.out.println("Age restriction !!(18+)");  }  else{  c.agebalcheck(age,bal,costofmovie2);  c.watchmovie(age, bal, costofmovie2);  }  break;    case "3 Idiots" :  if(age<age3){  System.out.println("Age restriction !!(10+)");  }  else{  c.agebalcheck(age,bal,costofmovie3);  c.watchmovie(age, bal, costofmovie3);  }  break;    default :  System.out.println("This movie isn't available on our platform !!");    }  }  }  }  } |
| **RESULT:** | |
| **Program 3** | |
| **PROBLEM STATEMENT:** | The "User" class represents a social media user with attributes: username, password. The class should have a method to get username. The "Post" class represents a social media post with attributes such as postID, LikesCount, and CommentsCount. It should have methods to display no. of likes and comments for a post. The User class also has methods to like/comment on posts. The main method should create objects of the "User" and "Post" classes and demonstrate the use of their methods. |
| **PROGRAM:** | import java.util.Scanner;  class User {  String username;  String password;  Scanner sc = new Scanner(System.in);  User() {  System.out.println("Enter your username");  username = sc.nextLine();  System.out.println("Enter your password");  password = sc.nextLine();  }  User(int Comment, int Like) {  String Commenter;  int choice;  int control = 5;  while (control != 0) {  System.out.println("\nPress 1 to like, 2 to comment and 3 to view the number of likes and comments");  choice = sc.nextInt();  switch (choice) {  case 1:  Like++;  break;  case 2:  System.out.println("\nPlease type your comment below");  sc.nextLine();  Commenter = sc.nextLine();  Comment++;  break;  case 3:  System.out.println("Likes: " + Like);  System.out.println("Comments: " + Comment);  break;  default:  System.out.println("\nPlease select a valid choice");  }  System.out.println("\nEnter 0 to exit the window or press any other number to continue");  control = sc.nextInt();  }  }  }  class Post {    int postID1 = 1987;  int Like1 = 300;  int Comment1 = 18;    int postID2 = 1779;  int Like2 = 350;  int Comment2 = 16;    int postID3 = 1684;  int Like3 = 400;  int Comment3 = 10;  Post() {  System.out.println("Post No1: " + postID1 + " Current likes count:" +  Like1 + " Current comments count:" + Comment1 + "\n");  System.out.println("Post No2: " + postID2 + " Current likes count:" +  Like2 + " Current comments count:" + Comment2 + "\n");  System.out.println("Post No3: " + postID3 + " Current likes count:" +  Like3 + " Current comments count:" + Comment3 + "\n");  }  }  class Insta {  public static void main(String[] args) {  Scanner sc1 = new Scanner(System.in);  User Creator = new User();  Post P = new Post();  int postid;  int control1 = 1;  while (control1 != 4) {  System.out.println("Enter post id of the post with which you wish to interact");  postid = sc1.nextInt();  switch (postid) {  case 1987:  int like1 = P.Like1;  int comment1 = P.Comment1;  User view1 = new User(comment1, like1);  break;  case 1779:  int like2 = P.Like2;  int comment2 = P.Comment2;  User view2 = new User(comment2, like2);  break;  case 1684:  int like3 = P.Like3;  int comment3 = P.Comment3;  User view3 = new User(comment3, like3);  break;  default:  System.out.println("\nPlease enter a valid post id from options shown above");  }  System.out  .println("\nEnter any number if you want to interact with another post or press 4 to exit the app");  control1 = sc1.nextInt();  sc1.nextLine();  }  }  } |
| **RESULT:** | |
| **CONCLUSION:** | Studied the demonstration of constructors. |