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JAVA MID SEM QUESTIONS AND ANSWERS

Q1)

**Code:**

class Book{

    private String title;

    private String author;

    private int price;

    void Book(String title, String author){

        this.title = title;

        this.author = author;

        System.out.println("Title: " + title + "\nAuthor: " + author);

    }

    void Book(String title, String author, int price){

        this.title = title;

        this.author = author;

        this.price = price;

        System.out.println("Title: " + title + "\nAuthor: " + author + "\nPrice: " + price);

    }

}

class Q1{

    public static void main(String[] args){

        Book b1 = new Book();

        b1.Book("Sanat", "Kulkarni");

        Book b2 = new Book();

        b2.Book("SRM", "University", 500);

    }

}

**Execution Command:** javac Q1.java -> java Q1

**Output:**

Title: Sanat

Author: Kulkarni

Title: SRM

Author: University

Price: 500

Q2)

**Code:**

class Q2{

    boolean checkPalindrome(String s1){

        int n = s1.length();

        for(int i=0; i<n; i++){

            if(s1.charAt(i) != s1.charAt(n-i-1)){

                return false;

            }

        }

        return true;

    }

    public static void main(String args[]){

        String s1 = args[0];

        String s2 = args[1];

        System.out.println("Strings are equal: " + s1.equals(s2));

        String ss1=s1.toLowerCase();

        String ss2=s2.toLowerCase();

        System.out.println("String 1 in lowercase: " + ss1);

        System.out.println("String 2 in lowercase: " + ss2);

        boolean s1Palindrome = new Q2().checkPalindrome(s1);

        boolean s2Palindrome = new Q2().checkPalindrome(s2);

        System.out.println("String 1 is palindrome: " + s1Palindrome);

        System.out.println("String 2 is palindrome: " + s2Palindrome);

    }

}

**Execution Command:** javac Q2.java -> java Q2 “Sanat” “racecar”

**Output:**

Strings are equal: false

String 1 in lowercase: sanat

String 2 in lowercase: racecar

String 1 is palindrome: false

String 2 is palindrome: true

Q3)

**Code:**

class Employee{

    void printD(String ename){

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

    }

    void Employee(){

        System.out.println("Employee class Called");

    }

}

class Manager extends Employee{

    void printD(String ename){

        super.printD(ename);

        System.out.println("Salary: 25000");

        System.out.println("Manager class Called");

    }

}

class Programmer extends Manager{

    void Programmer(String ename){

        super.printD(ename);

        System.out.println("Salary: 15000");

        System.out.println("Programmer class Called");

    }

}

class Developer extends Manager{

    void Developer(String ename){

        super.printD(ename);

        System.out.println("Salary: 20000");

        System.out.println("Developer class Called");

    }

}

class Q3{

    public static void main(String[] args){

        Programmer p = new Programmer();

        p.Programmer("John Doe");

        Developer d = new Developer();

        d.Developer("Jane Doe");

    }

}

**Execution Command:** javac Q3.java -> java Q3

**Output:**

Employee Name: John Doe

Salary: 25000

Manager class Called

Salary: 15000

Programmer class Called

Employee Name: Jane Doe

Salary: 25000

Manager class Called

Salary: 20000

Developer class Called

Q4)

**Code:**

interface Animal{

    void sound();

    void eat();

}

abstract class Mammal implements Animal{

    public void eat(){

        System.out.println("Mammal is eating");

    }

    public abstract void sound();

}

class Dog extends Mammal{

    public void sound(){

        System.out.println("Dog is barking");

    }

}

class Q4{

    public static void main(String args[]){

        Dog d = new Dog();

        d.sound();

        d.eat();

    }

}

**Execution Command:** javac Q4.java -> java Q4

**Output:**

Dog is barking

Mammal is eating

Q5)

**Code:**

class NumberClass{

    public int calculate(int a,int b, int c){

        return a+b+c;

    }

    public int calculate(int a,int b,int c, int d){

        return a\*b\*c\*d;

    }

    public int calculate(int a,int b){

        try{

            int c=a/b;

            return c;

        } catch(Exception e){

            System.out.println("Error: "+e.getMessage());

        }

        return 0;

    }

}

class Q5{

    public static void main(String[] args){

        NumberClass obj1=new NumberClass();

        NumberClass obj2=new NumberClass();

        NumberClass obj3=new NumberClass();

        System.out.println(obj1.calculate(1,2,3));

        System.out.println(obj2.calculate(1,2,3,4));

        System.out.println(obj3.calculate(10,0));

    }

}

**Excecution Command:** javac Q5.java -> java Q5

**Output:**

6

24

Error: / by zero

0

Q6)

**Code:**

class BankAccount{

    double calculateInterest(double principal, double rate){

        return 0.0;

    }

}

class SavingsAccount extends BankAccount{

    @Override

    double calculateInterest(double principal, double rate){

        return principal \* rate;

    }

}

class CurrentAccount extends BankAccount{

    @Override

    double calculateInterest(double principal, double rate){

        return principal \* rate \* 0.5;

    }

}

class Q6{

    public static void main(String args[]){

        BankAccount b1 = new BankAccount();

        SavingsAccount s1 = new SavingsAccount();

        CurrentAccount c1 = new CurrentAccount();

        System.out.println("Bank Account Interest: " + b1.calculateInterest(10000,3.5));

        System.out.println("Savings Account Interest: " + s1.calculateInterest(10000,3.5));

        System.out.println("Current Account Interest: " + c1.calculateInterest(10000,3.5));

    }

}

**Execution Command:** javac Q6.java -> java Q6

**Output:**

Bank Account Interest: 0.0

Savings Account Interest: 35000.0

Current Account Interest: 17500.0