**Main Method();**

*Question*[] q\_array = new *Question*[1];

        q\_array[0] = new Question("1", "What is the capital of Pakistan?", "Islamabad");

*Student* s1 = new Student("24", "123");

*Exam* e1 = new Exam(q\_array, s1, 0);

        e1.TakeExam("Islamabad");

*Date* d1 = new Date(2,4,2010);

*Employee*[] array = new *Employee*[3];

        array[0] = new Employee("Hafif", d1, true, "Student", 66000, 8);

        array[1] = new Employee("Hassan", d1, true, "Student", 66000, 8);

        array[2] = new Employee("Hisham", d1, true, "Student", 66000, 8);

*Person* p1 = new Employee("Abdullah", d1, true, "Teacher", 50000, 6);

*Person* p2 = new Manager("Abdullah", d1, false, array, 6, 4000);

        for (*int* i = 0; i < array.length; i++) {

            System.out.println(array[i].earning());

        }

**Question 1:**

*class* Question {

*private* *String* id;

*private* *String* quesStatement;

*private* *String* answer;

*// Argumented Constructor*

*public* Question(*String* *id\_prime*, *String* *quesStatement\_prime*, *String* *answer\_prime*){

*this*.id = id\_prime;

*this*.quesStatement = quesStatement\_prime;

*this*.answer = answer\_prime;

    }

*// Setters*

*public* *void* setID(*String* *id\_prime*){

*this*.id = id\_prime;

    }

*public* *void* setQuesStatement(*String* *quesStatement\_prime*){

*this*.quesStatement = quesStatement\_prime;

    }

*public* *void* setAnswer(*String* *answer\_prime*){

*this*.answer = answer\_prime;

    }

*// Setters*

*public* *String* getID(){

        return id;

    }

*public* *String* getQuesStatement(){

        return quesStatement;

    }

*public* *String* getAnswer(){

        return answer;

    }

*public* *String* toString(){

        return id + " " + quesStatement + " " + answer + " ";

    }

}

*class* Person {

*private* *String* name;

*private* *int* age;

*// Default Constructor*

*public* Person(){

    }

*// Argumented Constructor*

*public* Person(*String* *name\_prime*, *int* *age\_prime*){

*this*.name = name\_prime;

*this*.age = age\_prime;

    }

*// Setters*

*public* *void* setID(*String* *name\_prime*){

*this*.name = name\_prime;

    }

*public* *void* setQuesStatement(*int* *age\_prime*){

*this*.age = age\_prime;

    }

*// Getters*

*public* *String* getID(){

        return name;

    }

*public* *int* getQuesStatement(){

        return age;

    }

*public* *String* toString(){

        return name + " " + age + " ";

    }

}

*class* Student *extends* *Person*{

*private* *String* regID, pswd;

*// Default Constructor*

*public* Student(){

    }

*// Argumented Constructor*

*public* Student(*String* *regID\_prime*, *String* *pswd\_prime*){

*this*.regID = regID\_prime;

*this*.pswd = pswd\_prime;

    }

*// Setters*

*public* *void* setRegID(*String* *regID\_prime*){

*this*.regID = regID\_prime;

    }

*public* *void* setPswd(*String* *pswd\_prime*){

*this*.pswd = pswd\_prime;

    }

*// Getters*

*public* *String* getRegID(){

        return regID;

    }

*public* *String* getPswd(){

        return pswd;

    }

*public* *String* toString(){

        return regID + " " + pswd + " ";

    }

}

*class* Exam {

*private* *Question*[] q = new *Question*[10];

*private* *Student* s;

*private* *double* score;

*// Default Constructor*

*public* Exam(){

    }

*// Argumented Constructor*

*public* Exam(*Question*[] *q\_prime*, *Student* *s\_prime*, *double* *score\_prime*){

        for (*int* i = 0; i < q\_prime.length; i++) {

*this*.q[i] = q\_prime[i];

        }

*this*.s = s\_prime;

*this*.score = score\_prime;

    }

*// Setters*

*public* *void* setQ(*Question*[] *q\_prime*){

        for (*int* i = 0; i < q\_prime.length; i++) {

*this*.q[i] = q\_prime[i];

        }

    }

*public* *void* setS(*Student* *s\_prime*){

*this*.s = s\_prime;

    }

*public* *void* setQuesStatement(*double* *score\_prime*){

*this*.score = score\_prime;

    }

*// Getters*

*public* *Question*[] getQ(){

        return q;

    }

*public* *Student* getS(){

        return s;

    }

*public* *double* getScore(){

        return score;

    }

*public* *String* toString(){

*String* str = "";

        for (*int* i = 0; i < q.length; i++) {

            str += q[i];

        }

        return str + " " + s.getRegID() + " " + s.getPswd() + " " + score + " ";

    }

*// Take Exam*

*public* *void* TakeExam(*String* *answer\_prime*){

*// Presenting Questions*

        for (*int* i = 0; i < q.length; i++) {

            System.out.println(q[i].getQuesStatement());

            if(q[i].getAnswer() == answer\_prime){

                System.out.println("You answered right!");

                score++;

            }

        }

    }

*public* *void* displayStatus(){

        if(score < 50){

            System.out.println("Fail!");

        }

        else{

            System.out.println("Pass!");

        }

    }

}

**Question 2:**

*abstract* *class* Person {

*private* *String* FirstName;

*private* *Date* HireDate;

*private* *Boolean* hasCompanyCar;

*// Argumented Constructor*

*public* Person(*String* *FirstName\_prime*, *Date* *HireDate\_prime*, *boolean* *hasCompanyCar\_prime* ){

*this*.FirstName = FirstName\_prime;

*this*.HireDate = HireDate\_prime;

*this*.hasCompanyCar =hasCompanyCar\_prime;

    }

*public* *abstract* *int* earning();

}

*class* Employee *extends* *Person*{

*private* *String* Designation;

*private* *int* wage, workingHours;

*// Argumented Constructor*

*public* Employee(*String* *FirstName\_prime*, *Date* *HireDate\_prime*, *boolean* *hasCompanyCar\_prime*, *String* *Designation\_prime*, *int* *wage\_prime*, *int* *workingHours\_prime* ){

*super*(FirstName\_prime, HireDate\_prime, hasCompanyCar\_prime);

*this*.Designation = Designation\_prime;

*this*.wage = wage\_prime;

*this*.workingHours = workingHours\_prime;

    }

*public* *int* earning(){

        return wage \* workingHours;

    }

}

*class* Manager *extends* *Person*{

*private* *Employee*[] eArray;

*private* *int* noOfProjects, projectPay;

*// Argumented Constructor*

*public* Manager(*String* *FirstName\_prime*, *Date* *HireDate\_prime*, *boolean* *hasCompanyCar\_prime*, *Employee*[] *eArray\_prime*, *int* *noOfProjects\_prime*, *int* *projectPay\_prime* ){

*super*(FirstName\_prime, HireDate\_prime, hasCompanyCar\_prime);

        for (*int* i = 0; i < eArray\_prime.length; i++) {

*this*.eArray[i] = eArray\_prime[i];

        }

*this*.noOfProjects = noOfProjects\_prime;

*this*.projectPay = projectPay\_prime;

    }

*public* *int* earning(){

        return noOfProjects \* projectPay;

    }

}