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| File:COMSATS new logo.jpg - Wikimedia Commons  **class assignment 2** | **Subject:**  **Object oriented programming**  **submitted by:**  **Daoud Hussain**  (Sp21-bcs-102)  **Class:**  **bcs-3b**  **submitted to:**  **mam saneeha amir**  **date of submission:**  **april 24 , 2022** |

**1. Person cLass**

public class Person{

//Data Members

private String name;

private int age;

public Person(){

//Default Constructor

}

//Argument-Constructor

public Person(String n, int a){

if(n!="" && a > 0){

name = n;

age = a;

}

}

//Setter

public void setName(String n){

if(n!=""){

name = n;

}

}

public void setAge(int a){

if(a > 0){

age = a;

}

}

//Getters

public String getName(){

return name;

}

public int getAge(){

return age;

}

public String toString(){

String text = name + " " + age;

return text;

}

}

**1. Student cLass**

public class Student extends Person{

private String regNo;

private String pswd;

public Student(){

//Default Constructor

}

//Argument-Constructor

public Student(String nam, int ag, String n, String a){

super(nam, ag);

if(n!="" && a != ""){

regNo = n;

pswd = a;

}

}

//Setter

public void setregNo(String n){

if(n!=""){

regNo = n;

}

}

public void setpswd(String a){

if(a != ""){

pswd = a;

}

}

//Getters

public String getregNo(){

return regNo;

}

public String getpswd(){

return pswd;

}

public String toString(){

String text = regNo + " " + pswd;

return text;

}

}

**1. Question cLass**

public class Question{

//Data Members

private String id;

private String quesStatement;

private String answer;

//Argument-Constructor

public Question(String n, String a, String ans){

if(n!="" && a != "" && ans != ""){

id = n;

quesStatement = a;

answer = ans;

}

}

//Setter

public void setId(String n){

if(n!=""){

id = n;

}

}

public void setAnswer(String n){

if(n!=""){

answer = n;

}

}

public void setquesStatement(String a){

if(a != ""){

quesStatement = a;

}

}

//Getters

public String getid(){

return id;

}

public String getAnswer(){

return answer;

}

public String getquesStatement(){

return quesStatement;

}

public String toString(){

String text = id + " " + quesStatement + " " + answer;

return text;

}

}

**1. Exam cLass**

import java.util.\*;

public class Exam{

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

private Student s;

private double score;

Scanner input = new Scanner(System.in);

public Exam(Question ques[], Student stu, double scr){

this.q = ques;

this.s = stu;

this.score = scr;

}

//Setters

public void setS(Student stu){

this.s = stu;

}

public void setQ(String ido, String qs, String ans){

q[0].setId(ido);

q[0].setAnswer(ans);

q[0].setquesStatement(qs);

}

//Getters

public Student getS(){

return this.s;

}

public void takeExam(){

String ans;

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

System.out.print(i+1 + ". " + q[i].getquesStatement() + " ");

ans = input.next();

if(ans.equals(q[i].getAnswer())){

score += 10;

}

}

}

public void displayStatus(){

if(score >= 50){

System.out.println("Congratulations " + s.getName() + " You're pass!!");

}

else{

System.out.println("Try Again " + s.getName() + " You're Fail!!");

}

}

}

**1. Runner Exam cLass**

public class Runner{

public static void main(String[] args) {

int score;

Question[] ques = new Question[10];

Student stu = new Student("Daoud", 19, "SP21-BCS-102", "012345");

ques[0] = new Question("01", "20+10=?", "30");

ques[1] = new Question("02", "20-10=?", "10");

ques[2] = new Question("03", "20\*10=?", "200");

ques[3] = new Question("04", "20/10=?", "2");

ques[4] = new Question("05", "5\*4=?", "20");

ques[5] = new Question("06", "5+4=?", "9");

ques[6] = new Question("07", "5\*5=?", "25");

ques[7] = new Question("08", "10+3=?", "13");

ques[8] = new Question("09", "20%2=?", "0");

ques[9] = new Question("10", "10\*10=?", "100");

Exam annualExam = new Exam(ques, stu, 0);

annualExam.takeExam();

annualExam.displayStatus();

}

}

**2. Person cLass**

public abstract class Person2{

//Data Members

private String firstName;

private Date hireDate;

private boolean hasCompanyCar;

Date hd = new Date(21,04,2022);

//Argument-Constructor

public Person2(String fn, Date hd, boolean hcr){

if(fn!=""){

firstName = fn;

hireDate = hd;

hasCompanyCar = hcr;

}

}

public abstract double earnings();

}

**2. Employee cLass**

public class Employee{

//Data Members

private String designation;

private int wage;

private int workingHours;

//Argument-Constructor

public Employee(String des, int wag, int wh){

designation = des;

wage = wag;

workingHours = wh;

}

public double earnings(){

return workingHours \* wage;

}

}

**2. Manager cLass**

public class Manager{

//Data Members

private Employee[] eArray;

private int noOfProjects;

private int projectPay;

//Argument-Constructor

public Manager(Employee[] e\_arr, int np, int pp){

this.eArray = e\_arr;

noOfProjects = np;

projectPay = pp;

}

public double earnings(){

return projectPay \* noOfProjects;

}

}

**2. Runner Manager cLass**

public class Runner{

public static void main(String[] args) {

Employee e1 = new Employee("Admin", 30, 9);

Employee e2 = new Employee("Clerk", 35, 8);

Employee e3 = new Employee("Operator", 30, 8);

Employee[] myEmployee = new Employee[3];

myEmployee[0] = e1;

myEmployee[1] = e2;

myEmployee[2] = e3;

Manager man = new Manager(myEmployee, 9, 15000);

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

System.out.println(man.earnings()+ " ");

System.out.println(man.toString()+ " ");

}

}

}