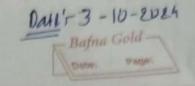
Develop a sava phogram that prints all real solutions to the quadratic equations ax2+bx+c=0. Read in a, b, c and use the quadratic furnishant b2-4ac is negative deplay a message.

```
impuse java. wis. Scanner:
class quadratic ?
 How di
 Scannin SC = new scannin (system. in);
    DUNCTE THE TENED MISSES PROJECTED PROPERTY
 void checker
system, out, println ("enter the value of a, b and c");
   int a = SC, next Int ();
   int b = sc. nexthat();
   int (= 5C, next)nt ();
 it La == 0) {
 System. out println ("invalid equation");
ule 3
   d = b + b - 4 a + C !
system.out. println (" the sulutions are");
  i4 (dz0) 1
   System outprint n.C" the solwion and
   system. ow.println(" roots are uniqui");
    double ri=(-b+ mash, sgr+(a))/(2*a);
    double 82= (-b-math.sqrt(d))/(2* N:
    system. out. println (rH""+ r2);
 it (d = = 0)1
   system. out. printly ( rusts are equal);
    double Y = -b/(e + a);
   system. out. print/n (82+"+1"+ +1++" "+18+"-1"
```

public dax main? public static void main (string () args) ? quadratic q1 = new quadratic(): Chadren of a con output } Enter the value of ce, band e 16. Calletin Gleri I alling the more 20 30 1700-1-676 36 the solution are boots on imaginary -1.0+11. 414213562373 V951 an engineed the Dallard to anne supplies and the party of mandance. 2001 ple 21 0 (-1) + Marison + (1) / (50) COUNTY 8 20 (- 6-4-04) 501 (B) 1 (80) CONTRACTOR BUT ALL STATES (AT LAND ON FE TO SE Experience private Chapman an apartic



Develop a Jora program to covare a class student with members um, name, on armay coedits and an array marks include methods to occept and display.

details, and a method to calculate sures of a student.

impunt j'ava. util. Scannoi.

public clax capa?

public static void main(string[] angs)?

Scannon sc= new scannon (system.in);

system out, print ("Ensu the number of subjects:");
int num subjects = sc, heat lint D:

int [7 coudits = new double [num subjects];
int [7 coudits = new int [num subjects];
int total chedits = v;
double total = v;

Jun Lind i=0; i<num
System but, print C'Enter the grade points for subject"+

(f + 2) +":");

grade points LiJ = 56 nox + Double);

gystem.out.print("Enton the credits for subject" +

(i+1)+":);

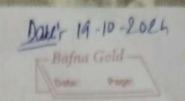
(rudi +1 [i]= 5c. nextln+();

total + = grade Points [i] * credits [i];

total condits = credits [i];

double copa = totall total credits;
system.out.print f ("Your copa in: + copa);

output's Exten USN: 5 6m 23 15 314 Enth Name; shreyes Even the number of subjects: 3 Enth cridita for subjett2:4 ENIN the marky for subject 1: 3 Enth the credits for subject 2:2 Eath the marke for subject 2 " 89 ENTLY WELDITH for subject 3:4 Entsh many for subject 3: 9.8. THE ET CHARLE I BE WITH FURNISHED TO AND Student details: Dista Count & Brief USW: 16m 23 CS 3 19 Name: shreyes Subject and marles". subject 1: Moures=3, coldite = 4 Bubjute: nares=89, credits = 2 Subject 3? Marks = 98, 1921 ditty 4 0 12 56 PA: 5. 8 MUNICIPERCINALITY Euto) + a and Poins Est & Level & [13] LOT WHITE I - I STIP TO TO THE the plane to tot later - a poor the not MARTINE ON THE PORT OF CONTROL OF CORNELS



TRAIL a class Book which contains four member: MAMI. Outhon, Prill, num pages Indude a wastrawan to at the values for the member. Include the methods to set and had the despite of the object, wants a Jans Py to n Book ubj.

improve java. util. Scanner:

Class Book ! ind price: stling authur. Hing name! int payer:

public Book (insprice. String anshur, string name inspace) this price = poice: this, a whyn = anthon: this, name = name; thus payo = payu;

public upid setters) ?

System. uut. pringln (" unto the price author, name and page of the book's;

Sconner St = new Scanner (Sychemin): int price = 5c. next nt ();

string author = 52 next nt ();

string name = si, hextholy;

int page = sc. matheto;

public void better 1) f system. out. println (price); system but printen Cauth in);

system. out. printle (nam); system. unt. print/n (pages). SELECTION OF SOME SON BOLLE public string to string be *Muon" +hi is objilet"; public class pru & public static road main (string 1) angs) ? Scanner 31 = new Scannin (System. in); System. Dut. println ("enter the number of objects"); int n=s1.n(x+InK); the paint a paint BOOK LJ b 1 = NEW BOOK [n]; tun lind i=u', i en; i+18 b1 [i] = new book (200. " visat", " the century", 111); b1[i] - geren():
b1[i]. geren(): sylam. Uvt. println (b1(i)); thought brown i dea

Bafna Gold

		174		1
U	W	\mathbf{p}	U.	A.
-		1		

Enter the number of objects.

2

ever she price, authors, name and page of the bode

999

sheyes

goat

219

999

Shreyas

goat

269

this is object

enter the price, ander, name and page of the book.

899

sanah

told:

49

899

Sanuth

wild

49

this is object

4) Divelop & Java prigram to theore an abstract class ham of shape that contains the integri and an empty inwheel named print Area it sprovide of how clauses numed rectangle triongle and circle such that cack one of the doese wand the class shape lack on it shellares contains only the method printfreals shot prints The area of the briven shape. abstract class shape 1 in clim 1; int dime: abstract roid print Arral); class Rectangle extends shape & public Rectangle Eintlength, intwidth) ? this . dim 1 = ling th ; + his dim2 = width: void print Amal) & sht avazdim1 * dim2; System, out, println C'Area of Rectungly." + areals your Triangle wrinds shape? public Triangli Cim bust, in height } } this dim 1 = base; this dime = height }

Bafna Gold void printenal) 1 double are = 0.5+ dim 1+dim2; system, ow. prinala ("Area of Triangle:" + area); class and owners shapet public circle lint radius) 1 This dim 2 = radi us; this dime = 0: void point Aqual) { double area = Marh, PI + dim 1+ dim 1; System out println ("Ama of circle: " + ana); 4 public class main? public stays void main(string 1) any) ? shape rectangle = tun nectangle (10,5); shape triangle = new Triangle (s, 1); shapt with = hew circle (7): surangle, print Amal); triangle print Aroa (); circle, prine Area ();

output Area of Rectungle: 50 April of ciscle: 153, 9380400 8589985 And same

Bafna Gold

Pership a join Program to sheath a class Bunk their maintain two kinds of account dox its curo muse on called lavings allowed and the other current amount That savings account provides compount interest and nitherand facilities but no degue book Pacilities The lumins account provide theque book facilities but no intenst, workers account holds should also maintain a minimum halance and if the halance falls below this livel, a sovice charge in imposed crease a class Account that souther current name account and type of account from this derive the should unique + and sorr-act to snake them more specific to this requirement Include the necessary method is gaden to a achieve the following. a) & lift + depart + from lustominand update the habital is display the balance is compute and deputite integt a) promit withdrawal and up tate the bolance: Houck minder impose penalt it needs any and update he bal. import java, util , scanner; class Account String cutama Name; int account Number; string account Type's double bollance; public Account latting consumer me intercounter by String occount Type) &

this, ustomin Nam = customes Nami;

these and this account wumber = wevent wumber; that, account Type = account Type's this halance = v.v i public void deposit (double amount) 1 it (amount 20) } balance + = amount ; system wet, print In l"Amount deposited; " + amount); Lyerim. ous. println ("Updated balance: " + balance 19 ely 2. system, our printer l'Invalid deposit amount 19), public void display Balance. 1) & system out printin (" Babars" " + balance); Man SavALL+ Extends Account & phivate double interest Rate; public BarALCH (String customername, into Count Number, duable interest Route) & super Lummus Nome, accommencemble, "Savingen): this, interest Rate = interest Rate;

Bafna Gold

public visid computated Dipoll+ Interest () {

elouble interest = balance + Circuit Ray /100);

halance + = interest;

ky8+um. out. Println ("Interest added: "+ instruct);

ky8+um. out. println ("Updated halance; "+ balance);

ky8+um. out. println ("Updated halance; "+ balance);

g

public void withdrawldouble amount)?

If Comount L-balance)?

bolochel -= amount;

lystam. vu, print In C"Amount wisherown: " + amount);

system. vu, println (" V polared balance" " + balance";

3 Ust ?

system. out. println(" T roubicient bul ance; ");

3

class curacit extends tocount l' duple minimum Balance; double service charge;

2

public conflict lasting entromer Name; int account turns of double surrelchange) of super Countermann, account Number, "corrector); this, notation comments when comments balance; this, so vice change; of

public void withdraw (double amount) {
it (amount 2= belance)?
bdance = amount;

Cyllum an, princh ("but the nikdraun" carnown) I Chalance & mireminipalarios · hypus pundly U: soum. une, primatic updated balance 19+ balances 3 del s system out, printly (47 multicient palances of print void imposepenally ()! bolance - - show change; system west, prime In ("Balance fellow bellow minimering Shrill change imputed: " + sunice changed; public clay Bunk 1 public 1 tate c void main (8 tring (7 args) & scanner scanner = new scanner ly etem, in). sylfam, out printle ("choose account type: In1, sowings Account n2. chang Accounty; int choice = scamer nex Int(); scanner nextline(); sylling out printh (worth Luto my wager ""); String ram = scannon nextine(); systemer printly lulate attract men by; 1) int accorder = scannon, mx+7+++() ", if (chorce == 1) } 34 steen out printly 1 "Enter Intersect but for

Levinger account: D: clouble interestrate: scanner. Next Double (D: savAcct son Account: new SavAcct Cham, accomment than Kate):

system. out, psinthol "Entramain to deposit:"); double deposit = scann, nex Double(); savtuam, deposit (deposit);

SON ALLERENT, compute Anddynus); I nevery ();

System, vut, prints ("Enter amount to withdraw",");

druble withdran Amount = scanny, no x + no wible();

sur Account, with draw (with chan Amount);

MI if (choice == 2) !

Syltem out, printer C "Exter minimum balance for consum fue ");

Nouble min Balance = scanner, we strouble ();

Syltem out, printer ("Come survice change for falling belone

minimum balance; ");

double service change = scanner, nex people ();

curact curaccount = here curaccot learner, according min Bulance,

system out, printer culture on own to deposit; "),
do white deposit = scanner, muct Doubles;
what went deposit (deposit);

suvice changed.

Ly Ather out, princlal "Earth amount to wishdraw" ");

Land withdraw thompson - snaperinesetlouble ():

Lundecomo withdraw (withdraw Amount);

3144

5 y tencous, pinish (" Friance account Type afreted, ");

Languages: vutput; choose adoubtype: In Sovings Account 2. current Account. LATA customer thances: shriyas ENT account number: P105 90. ENTLY inquist roll don savings accounts 101 ENTH Amount to deposit 20000 Amount deputitud: 20000.0 updated balance: 20000,0 Intrut added 22000,0. updaved balance: 22000.0 Enth amount to Nitheraw: 2000 · Amount withdrawn , 2000,0. Vedered balance: 20000.0.



Studend and Internal, The dash presonal has
majores like use, name, slm. The class internals has
an array that story the internal marks stored in
5 course of the current semester, of the student,
course another presage see which has the class External.
which is a derived class of student, this class has an
average that story the see marks scored in time
whether the correst semental at the student, impose
the two packages in a fish that declare the
tinal marks of n students in all the courses

Package 12 :

public class student?

Atting name;

int wh;

int Nm;

public Student (string name, int was, int sem) &
this, mane = name;
this, was = was;
this, sum = sem;

8

package CIE' public was internal cerends student of public int marks [] = NW int [5]; public internals (string nume, in use int sen, int] marks) Esuper (name, usn, 12m): this, marks = marks; parkage SEE", import CLE, Student: public class extunals extends Student ? public int smark [] = new int [+]; public extended (string name int we, out sun, int [] marks) & suph Ename, ush, ens); this smarks = marks "

```
import LIE, internals:
* imposts SEE, extends;
  import java wil scanner;
public class test &
    public static void main/string () angs) ?
      Granner sc=new Scanna (syttemin);
      int (mark 1) = hew in [5];
       The smarts L7 = new Tox [5];
System, but, println(" enth the num of student ");
  int h = 6C, hext Int ();
  furling k=0: Kingk ++) &
System. out. println l" enter the name of the studens");
      String name = 56, huxol) &
     system, vut, println ("enter the un of the student");
       in un = schotzn+O;
       System. out printer bush the sun of the suders ");
        int sam= screet Intly
Syxtem out printen (" note the cic marks of 58hb; (CH4):
   tur (it i=v', i 15, it+)?
       cmarkeli7=3c, me+Int();
system. out, printlal "enter the see mores of 5 subject in):
ton Lint 1=0, 125; 1++) ?
      smarky Li] = 5( next Intl);
internals of = new internal (name ush, sun, marke)
Estarnal 02 = her externals Chame usn, sem, om aski);
```

ton. Cint 1=1; 11=5;141) & System course pointent" she world marker of student system. out-println(01. marks[i-1] + 02. marks (i-1)). Puty wy enth the nam of students .. when the name of the student. sanath ewn the my of the student. 723456 with the som of the student. enter the cie marks of subjects 49 48 49 50 50 onen the see maple at 5 subjects 50 50 . . . (0 50 the total monter of student in sub. 2: 99

	James and
	the total marks of student in sub 2
	98
	the total marks of student in subs
	94
	the total masks ut student in sub 4
	100
	the total marks of student in subs.
	100
	10. 11.02 - 11.02
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	The state of the s
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	throw and brought large or large and
	Co. Magan M. 16 years & Co.
	the thirt had rate testing;
	Tour Sun careal tally 3
	Takas la

a comb souther a continue or touch and it south age and through the south and the south age and through a comb south a contractor that was both to age and and south age and through an exception it south age.

class Wrongtgi Exception extends Exception &
public Wrong Aggi. Exception Latting musaged &
super Emersaged;

8

in further Age;

public Father (int fatherAge) thrown Wrong Agrésication it (fatherAge 20)?

Throw new Wrong Age Exception (" father age cannot be regarive.");

3

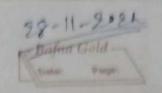
this turninge = furhinge;

3

int sonAge;

public Sonling fatheryl, intronages throws borongage Exception 1 eyn (lasher Ag1): it Loonage > - fatherage) & throw hav. WrongAgl Exception ("bon' 1 age cano + be greater than on equal to father age, "); it Conage 2018 throw new wrongsge Ecuptient "ban's age cannot be nigative. "); this sunAge = sonAge; pudic class ExceptionHandling Demol public static void main (string () angs) ? System. but println. ("Counting a father object..."); Father father = her father(40; Syltamiout, printen Confarm create with age: "+ festion, lashings; System, out printle ("twating a son object..."); Sun sun = new sun (40, 20); Syltem untiprinten ("Son speated with age!" + son bonto 5 carch (wrong Age Exception e) 3 System vuspindly ("In Testing involed stenerius."); tru? Father invalid Father = new bather (-10); 3 catch [wrong Age Exception e) & system , our, print In (xupton cangh; "It l, g et mesiagel);

son invalid son: = newson (30,40); +499 3 Later Woong Age Exception ed & System, out printlns Exception caught = "+ c. germanage (i): 3 output ENTER Jashurs age 50 Eldn son's age 60 Son't age cannot be greatershan us equal to tashes age write other poo cares SonAyı Exception



displaying "ams college of angineering" once every sen seconds and another displaying "CSE" every env seconds.

public static void main (string args []) }
Thoreads thread BMS = new shread (new Display BMS ());
Thread thread LEE = new shread (new Display CSE());
thread BMS, start();
thread CSE. Start();

8

class puplay BMG implements Runnable & public void run () & H

while (+ ru) &

System. Dut, println ("BM3 college of Engineering"), Thread. slep (10000);

3

Catch [Interrupted Exception c) ?

System. Dut, println ("Interrupted" 7 e.gu mexague).
3

3

class Diplay CSE implements Runnable &

try & while (true) &

system. out. printle ("CSE");
thread. sleep (2000);

	9
	1
	couch (Insernapeld Exception 1) { system.ous.prinsln["Insernapeld".+ l.gu-mosayeld).
100	1
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	CSE CSE
	COP .
	Bris college of engineering
THAT	CSE COMPT OF ENGINEERING
N. H.	LSE
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May	The state of the s
	then the out in after me the
	i Charles Alady
	The state of the s
	The second of th
	A GRAND TO THE PROPERTY OF THE PARTY OF THE