CECS 524 Unit 2 Assignment 1

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Write a Pascal program that solves quadratic equations for real and imaginary roots.

program solve;

var a,b,c:real;

var im:real;

var rl:real;

procedure SolveRoots(a, b,c: real);

begin

if(b\*b-4\*a\*c>0) then

begin

writeln('Roots are real');

writeln('Root 1:',(-b+sqrt((b\*b)-4\*a\*c))/(2\*a));

writeln('Root 2:',(-b-sqrt((b\*b)-4\*a\*c))/(2\*a));

end

else if(b\*b-4\*a\*c=0) then

begin

writeln('One real root');

writeln('Root 1:',(-b)/(2\*a));

end

else if(b\*b-4\*a\*c<0) then

begin

writeln('Roots are Imaginary');

rl:=-b/(2\*a);

im:= sqrt(-((b\*b)-4\*a\*c))/2\*a;

if(b=0) then

begin

writeln('Root 1:','+i\*',im);

writeln('Root 2:','-i\*',im);

end

else

begin

writeln('Root 1:',rl,'+i\*',im);

writeln('Root 2:',rl,'-i\*',im);

end

end

end;

begin

repeat

Writeln('Enter a b c values: ');

Readln(a,b,c);

if (a = 0) and (b = 0) and (c = 0) then

begin

Writeln('3 equations were solved');

exit;

end;

SolveRoots(a,b,c);

until a = 0;

end.

Output:

Text

Description automatically generated