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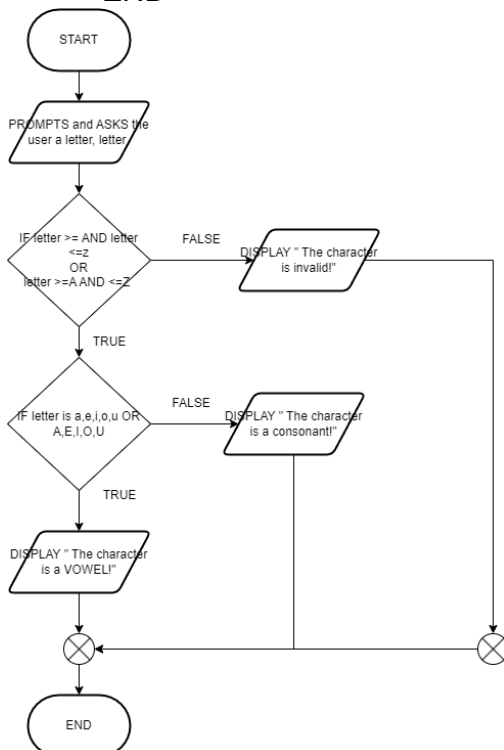
AlgoExercise 4.1

1. Vowel and Consonant

Create a program that determine whether the letter entered by the user is vowel or consonant.

START

1. PROMPTS and ASKS the user a letter, letter
 2. IF the letter is from a to z OR the letter is from A to Z THEN
 - a. IF the letter is a,e,i,o,u OR A,E,I,O,U THEN
 - i. DISPLAY the character inputted is a vowel!, letter
 - b. ELSE
 - i. DISPLAY the character inputted is a consonant!, letter
 - c. END IF
 3. ELSE
 - a. DISPLAY the character inputted is invalid!, letter
 4. ENDIF
- END



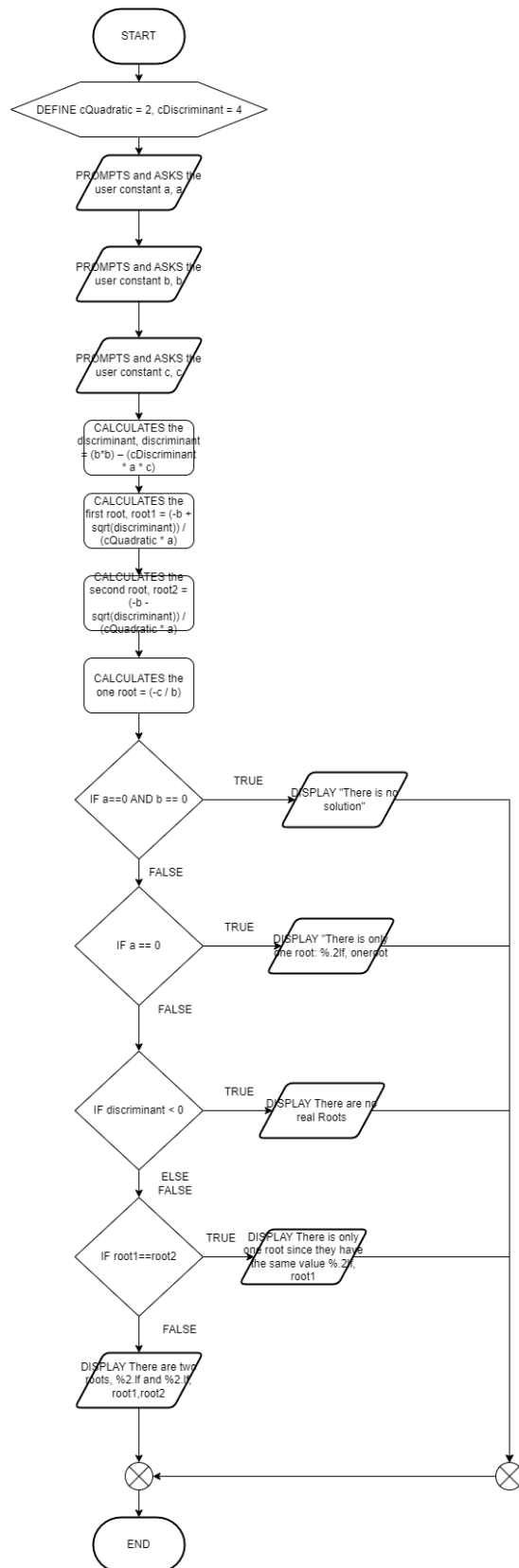


2. Quadratic Equation.

Create a program that computes the real roots of a quadratic equation.

START

1. PREDEFINE cQuadratic =2, cDiscriminant = 4
 2. PROMPTS and ASKS the user constant a, a
 3. PROMPTS and ASKS the user constant b, b
 4. PROMPTS and ASKS the user constant c, d
 5. CALCULATES the discriminant, $\text{discriminant} = (b*b) - (c\text{Discriminant} * a * c)$
 6. CALCULATES the first root, $\text{root1} = (-b + \text{sqrt}(\text{discriminant})) / (c\text{Quadratic} * a)$
 7. CALCULATES the second root, $\text{root2} = (-b - \text{sqrt}(\text{discriminant})) / (c\text{Quadratic} * a)$
 8. CALCULATES the one root, $\text{oneroot} = (-c / b)$
 9. IF $a==0$ AND $b==0$ THEN
 - a. DISPLAY there is no solution
 10. ELSE IF $a==0$ THEN
 - a. DISPLAY there is only one root: %.2lf, oneroot
 11. ELSE IF discriminant is less than zero
 - a. DISPLAY there are no real roots
 12. ELSE
 - a. IF $\text{root1}==\text{root2}$
 - i. DISPLAY There is only one root since they have the same value %.2lf, root1
 - b. ELSE
 - i. DISPLAY There are two roots, %.2lf and %.2lf, root1,root2
 - c. ENDIF
 13. ENDIF
- END





3. Student's Final Grade

Create program that determines a student's final grade and indicate whether it is passing or failing.

START

1. DECLARE float cMinimumpassing as 50, float cMinimumpassing = 50
 2. DECLARE float cMaximumpassing as 100, float cMaximumpassing = 100
 3. DECLARE float cZero as 0, float cZero = 0
 4. DECLARE float numofmarks as 4, float numofmarks = 4
 5. PROMPT and asks the user for mark 1, mark1
 6. PROMPT and asks the user for mark 2, mark2
 7. PROMPT and asks the user for mark 3, mark3
 8. PROMPT and asks the user for mark 4, mark4
 9. CALCULATE finalgrade, finalgrade = (mark1+mark2+mark3+mark4)/numofmarks
 10. IF finalgrade is greater than or equal to cMinimumpassing AND less than or equal to cMaximumpassing THEN
 - a. DISPLAY finalgrade: %.2f, finalgrade
 - b. DISPLAY REMARKS:PASSED
 11. ELSE IF finalgrade less than cMinimumpassing AND greater than or equal to cZero THEN
 - a. DISPLAY finalgrade: %.2f, finalgrade
 - b. DISPLAY REMARKS:FAILED
 12. ELSE
 - a. DISPLAY INVALID INPUT
 13. ENDIF
- END

