Date
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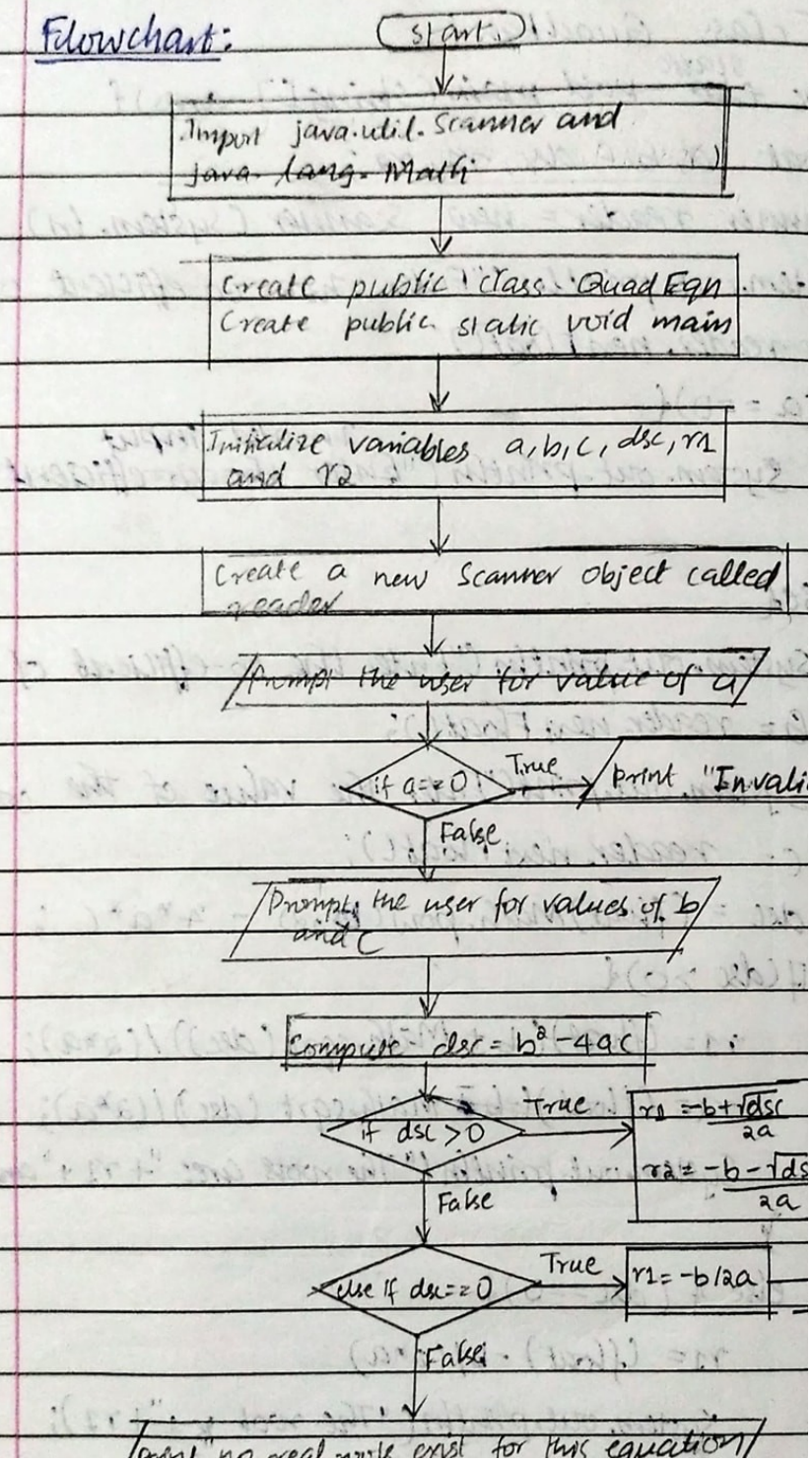
Lab Program 1:

```
import java.util.Scanner;
import java.lang.Math;
public class QuadEqn{
  public static void main(String[] args){
    float a, b, c, dsc, r1, r2;
    Scanner reader = new Scanner(System.
    System.out.println("Enter two co-efficie
    a = reader.nextFloat();
    if(a==0){
      System.out.println("Invalid input
    }
    else{
      System.out.println("Enter the co-efficients
      b = reader.nextFloat();
      System.out.print("Enter the value of th
      c = reader.nextFloat();
      dsc = (float)Math.pow(b,2) - 4*a*c
      if(dsc>0){
        r1 = (float)(-b + Math.sqrt(dsc))/(2*
        r2 = (float)(-b - Math.sqrt(dsc))/(2*a
        System.out.println("The roots are: "+r1
      }
      else if(dsc==0){
        r1 = (float) -b/(2*a)
        System.out.println("The root is: "+r1
      }
```

}

}

Flowchart:


start
Import java.util.Scanner and java.lang.Math;
Create public class QuadEqn
Create public static void main
Initialize variables a, b, c, dsc, r1 and r2
Create a new Scanner object called reader
Prompt the user for value of a
if a==0
True
Print "Invali
False
Prompt the user for values of b and c
Compute dsc = b^2 - 4ac
if dsc > 0
True
r1 = -b+√dsc / 2a
r2 = -b-√ds / 2a
False
else if dsc==0
True
r1 = -b/2a
False
Print "no real roots exist for this equation

3

Enter the co-efficient value of the consta

2

The roots are r1 = -1.0 and r2 = -2.0

③ Enter the co-efficient of x^2:

100

Enter the co-efficient of x:

1

Enter the co value of the constant

1

There are no real roots for this equa

③ Enter the co-efficient of x^2:

1

Enter the co-efficient of x:

-2

Enter the value of the constant:

1

The root is: 1.0

④ Enter the co-efficient of x^2

0

Invalid input

22/12/23

```
C:\Users\bmsce\Desktop\1BM22CS024>java QuadEqn
Enter the co-efficient of x^2:
1
Enter the co-efficient of x:
3
Enter the value of the constant:
2
The roots are r1 = -1.0 and r2 = -2.0
Agneya D A 1BM22CS024
```

```
C:\Users\bmsce\Desktop\1BM22CS024>java QuadEqn
Enter the co-efficient of x^2:
100
Enter the co-efficient of x:
1
Enter the value of the constant:
1
There are no real roots for this equation
Agneya D A 1BM22CS024
```

```
C:\Users\bmsce\Desktop\1BM22CS024>java QuadEqn
Enter the co-efficient of x^2:
1
Enter the co-efficient of x:
-2
Enter the value of the constant:
1
The root is: 1.0
Agneya D A 1BM22CS024
```

```
C:\Users\bmsce\Desktop\1BM22CS024>java QuadEqn
Enter the co-efficient of x^2:
0
Invalid input
```