**Pseudo Code**

CLASS Menu

MAIN

No Algorithm

SUBMODULE: displayChoice

IMPORT: None

EXPORT: None

ALGORITHM:

OUTPUT STATEMENT "Please choose between real number or complex number"

OUTPUT STATEMENT "For real number, please enter '1' "

OUTPUT STATEMENT "For complex number, please enter '2' "

INPUT choice

IF choice==1 THEN

CALL displayRealOption

ELSE

CALL displayComplexOption

END IF

SUBMODULE: displayRealOption

IMPORT: None

EXPORT: None

ALGORITHM:

INPUT numOne

Construct r1 using numOne

INPUT numTwo

Construct r2 using numOne

OUTPUT STATEMENT "Please choose the option"

INPUT option

DO

CASE option

1: CALL Calculation.add🡨r1, r2

2: CALL Calculation.subtract🡨r1, r2

3: CALL Calculation.multiply🡨r1, r2

4: CALL Calculation.divide🡨r1, r2

5: quite=true

ENDCASE

WHILE NOT quit

SUBMODULE displayComplexOption

IMPORT: None

EXPORT; None

ALGORITHM:

INPUT realNumOne

INPUT imagNumOne

Construct c1 using realNumOne and imagNumOne

INPUT realNumTwo

INPUT imagNumTwo

Construct c2 using realNumTwo and imagNumTwo

OUTPUT STATEMENT "Please choose the option"

INPUT option

DO

CASE option

1: CALL Calculation.add🡨c1, c2

2: CALL Calculation.subtract🡨 c1, c2

3: CALL Calculation.multiply🡨 c1, c2

4: CALL Calculation.divide🡨 c1, c2

5: quite=true

ENDCASE

WHILE NOT quit

**Java Code**

import io.\*;

public class Menu

{

public static void main(String args [])

{

}

public static void displayChoice()

{

int choice;

System.out.println("Please choose between real number or complex number");

System.out.println("For real number, please enter '1' ");

System.out.println("For complex number, please enter '2' ");

choice=ConsoleInput.readInt("1 or 2");

if(choice==1)

{

displayRealOption();

}

else

{

displayComplexOption();

}

}

public static void displayRealOption()

{

boolean quit;

int option;

double numOne,numTwo;

RealNumber r1,r2;

numOne=ConsoleInput.readDouble("please enter first real number");

r1=new RealNumber(numOne);

numTwo=ConsoleInput.readDouble("please enter second real number");

r2=new RealNumber(numTwo);

System.out.println("Please choose the option");

option=ConsoleInput.readInt("Please enter '1' for addition, '2' for subtraction, '3' for multiplication, '4' for division, '5' for quit");

do

{

switch(option)

{

case 1: Calculation.add(r1,r2);

break;

case 2: Calculation.subtract(r1,r2);

break;

case 3: Calculation.multiply(r1,r2);

break;

case 4: Calculation.divide(r1,r2);

break;

case 5: quit=true;

break;

}

}

while(quit=false);

}

public static void displayComplexOption()

{

boolean quit;

int option;

double realNumOne,realNumTwo,imagNumOne,imagNumTwo;

ComplexNumber c1,c2;

realNumOne=ConsoleInput.readDouble("please enter first real part");

imagNumOne=ConsoleInput.readDouble("please enter first imaginary part");

c1=new ComplexNumber(realNumOne,imagNumOne);

realNumTwo=ConsoleInput.readDouble("please enter second real part");

imagNumTwo=ConsoleInput.readDouble("please enter second imaginary part");

c2=new ComplexNumber(realNumTwo,imagNumTwo);

System.out.println("Please choose the option");

option=ConsoleInput.readInt("Please enter '1' for addition, '2' for subtraction, '3' for multiplication, '4' for division or '5' for quit");

do

{

switch(option)

{

case 1: Calculation.add(c1,c2);

break;

case 2: Calculation.subtract(c1,c2);

break;

case 3: Calculation.multiply(c1,c2);

break;

case 4: Calculation.divide(c1,c2);

break;

case 5: quit=true;

break;

}

}

(quit=false);

}

}