# Lab 5

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1. No methods required. Please write all code inside the main method of the class StudentIO. You will ask the user number of students to be processed. Then for each student ask the student's age, gpa, id, year and the number of credits he/she enrolled for this semester. Then you will write a small report about each student. Use *Scanner* class for reading input. *Scanner* class can be used by importing *java.util.Scanner*. You may refer to Scanner documentation:
https://docs.oracle.com/en/java/javase/11/docs/api/java.base/java/util/Scanner.html

Input:

```
Question 1. StudentIO Class

import java.util.Scanner;

public class StudentIO {

    public static void main(String[] args) {

        int i;
        int numStudents;
        int age;
        float gpa;
        int id;
        int year;
        float numCredits;
        float totalCredits;

        Scanner scnr = new Scanner(System.in);

        System.out.println("Number of students: ");
        numStudents = scnr.nextInt();
        System.out.println("");

        for ( i = 0; i < numStudents; i = i + 1 ) {
            System.out.println("Enter Student Number " + (i+1) + "
Info:");
            System.out.println("");
            System.out.println("Age: ");
            age = scnr.nextInt();

            System.out.println("GPA: ");
            gpa = scnr.nextFloat();

            System.out.println("ID: ");
            id = scnr.nextInt();
```

```
            System.out.println("Year: ");
            year = scnr.nextInt();

           System.out.println("Credits taken so far: ");
            numCredits = scnr.nextFloat();

            System.out.println("Total credits required: ");
            totalCredits = scnr.nextFloat();
            System.out.println("");

            System.out.println("Age: " + age);
            System.out.println("GPA: " + gpa);
            System.out.println("ID: " + id);
            System.out.println("Year: " + year);
            System.out.println("Credits completed: " + numCredits);
            System.out.println("Total credits required: " +
totalCredits);
            System.out.println("Credits remaining: " + (totalCredits-
numCredits));
            System.out.println((i+1) + " completed");
            System.out.println("");
        }

        scnr.close();

        System.out.println("Report completed.");
    }

}
```

Output :

**Note: Could not format output in text properly, image below**

File - StudentIO

```
 1 /Library/Java/JavaVirtualMachines/jdk-15.0.2.jdk/
   Contents/Home/bin/java -javaagent:/Users/
   solbenishay/Desktop/IntelliJ IDEA CE.app/Contents/
   lib/idea_rt.jar=61683:/Users/solbenishay/Desktop/
   IntelliJ IDEA CE.app/Contents/bin -Dfile.encoding=
   UTF-8 -classpath /Users/solbenishay/Desktop/Lab 5/
   out/production/Lab 5:/usr/local/Cellar/python@3.9/3
   .9.2_4/Frameworks/Python.framework/Versions/3.9/lib
   /python3.9:/usr/local/Cellar/python@3.9/3.9.2_4/
   Frameworks/Python.framework/Versions/3.9/lib/
   python3.9/lib-dynload:/Users/solbenishay/Library/
   Python/3.9/lib/python/site-packages:/usr/local/lib/
   python3.9/site-packages:/Users/solbenishay/Library/
   Caches/JetBrains/IdeaIC2020.3/python_stubs/-
   1199943124:/Users/solbenishay/Library/Application
   Support/JetBrains/IdeaIC2020.3/plugins/python-ce/
   helpers/python-skeletons:/Users/solbenishay/Library
   /Application Support/JetBrains/IdeaIC2020.3/plugins
   /python-ce/helpers/typeshed/stdlib/3.9:/Users/
   solbenishay/Library/Application Support/JetBrains/
   IdeaIC2020.3/plugins/python-ce/helpers/typeshed/
   stdlib/3.7:/Users/solbenishay/Library/Application
   Support/JetBrains/IdeaIC2020.3/plugins/python-ce/
   helpers/typeshed/stdlib/3:/Users/solbenishay/
   Library/Application Support/JetBrains/IdeaIC2020.3/
   plugins/python-ce/helpers/typeshed/stdlib/2and3:/
   Users/solbenishay/Library/Application Support/
   JetBrains/IdeaIC2020.3/plugins/python-ce/helpers/
   typeshed/third_party/3:/Users/solbenishay/Library/
   Application Support/JetBrains/IdeaIC2020.3/plugins/
   python-ce/helpers/typeshed/third_party/2and3
   StudentIO
 2 Number of students:
 3 2
 4
 5 Enter Student Number 1 Info:
 6
 7 Age:
 8 21
 9 GPA:
10 3.2
11 ID:
12 1
13 Year:
```

```
14 2017
15 Credits taken so far:
16 6
17 Total credits required:
18 20
19
20 Age: 21
21 GPA: 3.2
22 ID: 1
23 Year: 2017
24 Credits completed: 6.0
25 Total credits required: 20.0
26 Credits remaining: 14.0
27 1 completed
28
29 Enter Student Number 2 Info:
30
31 Age:
32 28
33 GPA:
34 3.265
35 ID:
36 66
37 Year:
38 2020
39 Credits taken so far:
40 8
41 Total credits required:
42 15
43
44 Age: 28
45 GPA: 3.265
46 ID: 66
47 Year: 2020
48 Credits completed: 8.0
49 Total credits required: 15.0
50 Credits remaining: 7.0
51 2 completed
52
53 Report completed.
54
55 Process finished with exit code 0
56
```

2. Java provides dialog boxes for input/output purposes. Use *JOptionPane* class under *javax.swing*. *JOptionPane* has methods *showInputDialog* and *showMessageDialog*. Repeat the first question without using *System.out.print(ln)* and *Scanner.* You can refer to JOptionPane documentation: https://docs.oracle.com/en/java/javase/11/docs/api/java.desktop/javax/swing/JOptionPane.html

First import *javax.swing.* Use *showInputDialog* method to read input. It returns a String so convert this *String* to *int* or *float* by using *Integer.parseInt or Float.parseFloat*. Use *showMessageDialog* method to show the output. First create the output String and use it as a parameter for this method.

Input:

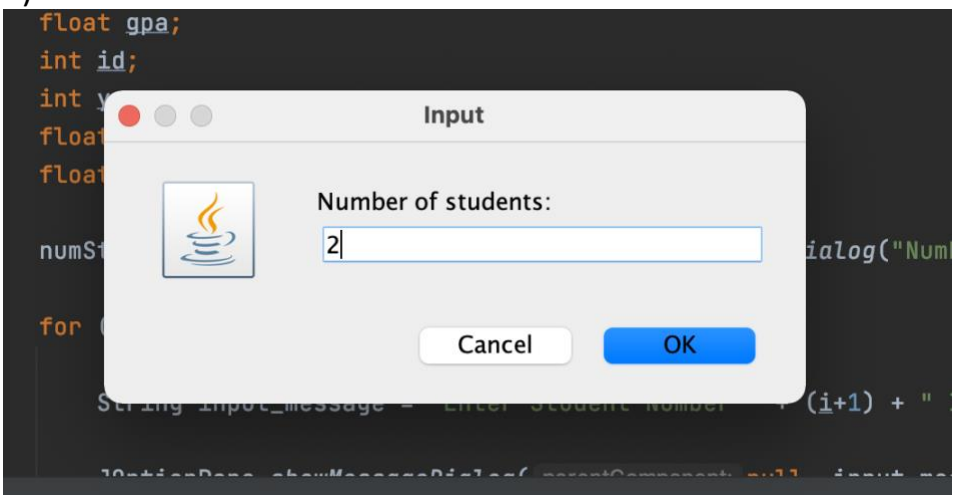
```
Question 2. StudentIO2 Class

import javax.swing.*;

public class StudentIO2 {

    public static void main(String[] args) {

        int i;
        int numStudents;
        int age;
        float gpa;
        int id;
        int year;
        float numCredits;
        float totalCredits;

        numStudents =
Integer.parseInt(JOptionPane.showInputDialog("Number of students: "));

        for ( i = 0; i < numStudents; i = i + 1 ) {

            String input_message = "Enter Student Number " + (i+1) + "
Info:";

            JOptionPane.showMessageDialog(null, input_message);

            age = Integer.parseInt(JOptionPane.showInputDialog("Age:
"));

            gpa = Float.parseFloat(JOptionPane.showInputDialog("GPA:
"));

            id = Integer.parseInt(JOptionPane.showInputDialog("ID:
"));
```

```
            year = Integer.parseInt(JOptionPane.showInputDialog("Year:
"));

            numCredits =
Float.parseFloat(JOptionPane.showInputDialog("Credits taken so far:
"));

            totalCredits =
Float.parseFloat(JOptionPane.showInputDialog("Total credits required:
"));

            String output = "Age : " + age + "\nGPA: " + gpa + "\nID:
" + id + "\nYear: " + year +
                    "\nCredits completed: " + numCredits + "\nTotal
credits required: " + totalCredits +
                    "\nCredits remaining: " + (totalCredits-
numCredits) + "\n" + (i+1) + " completed.";
            JOptionPane.showMessageDialog(null, output);
        }

        JOptionPane.showMessageDialog(null, "Report completed.");



    }

}
```

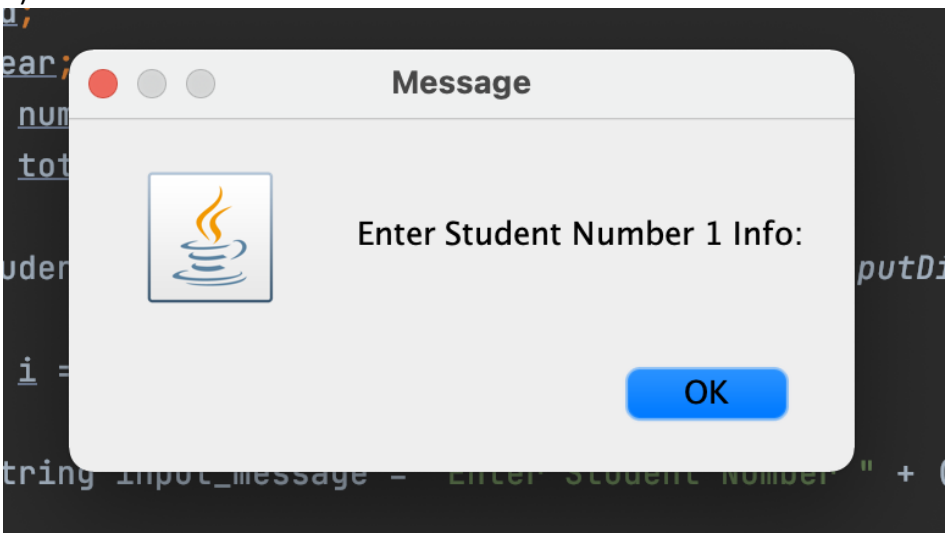
Output (Example with 1 Student):

**Note: Only way to show output is with screenshots**

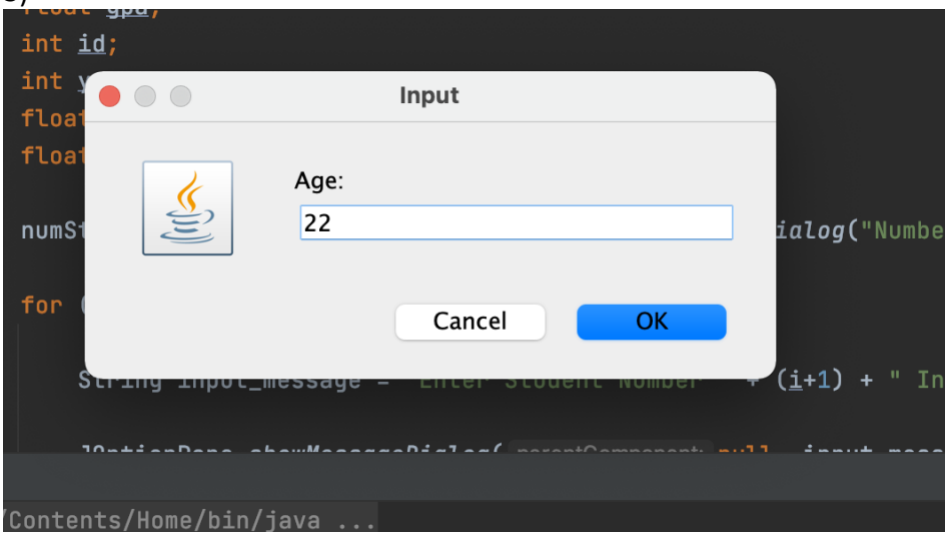
1)



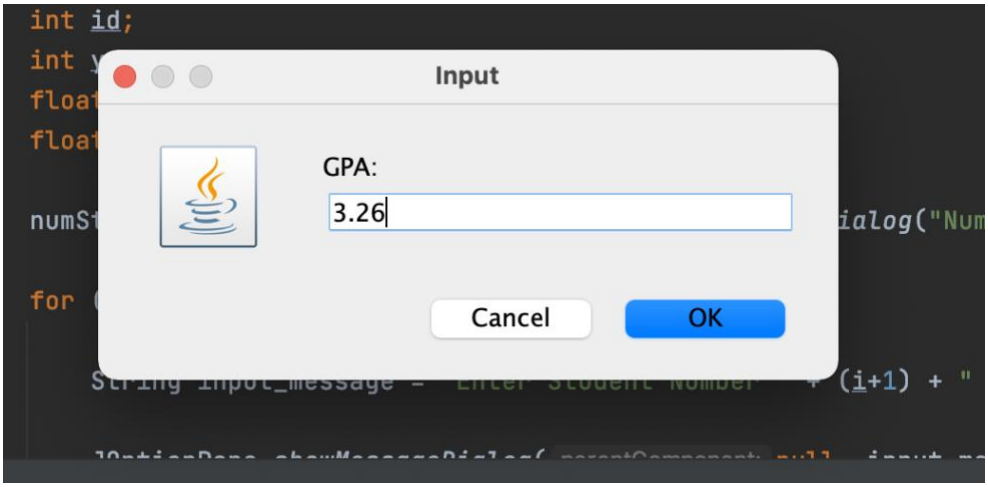
2)


Message
Enter Student Number 1 Info:
OK

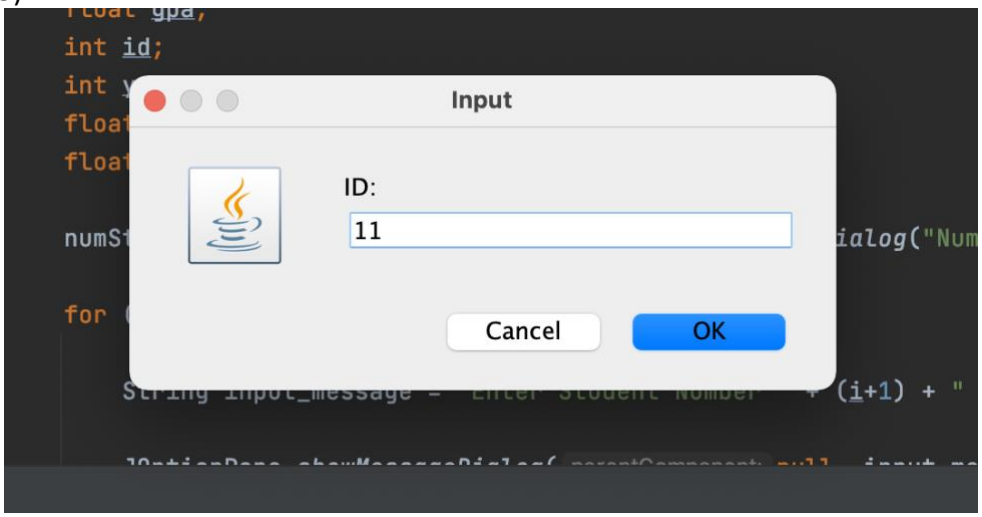
3)


Input
Age:
22
Cancel
OK

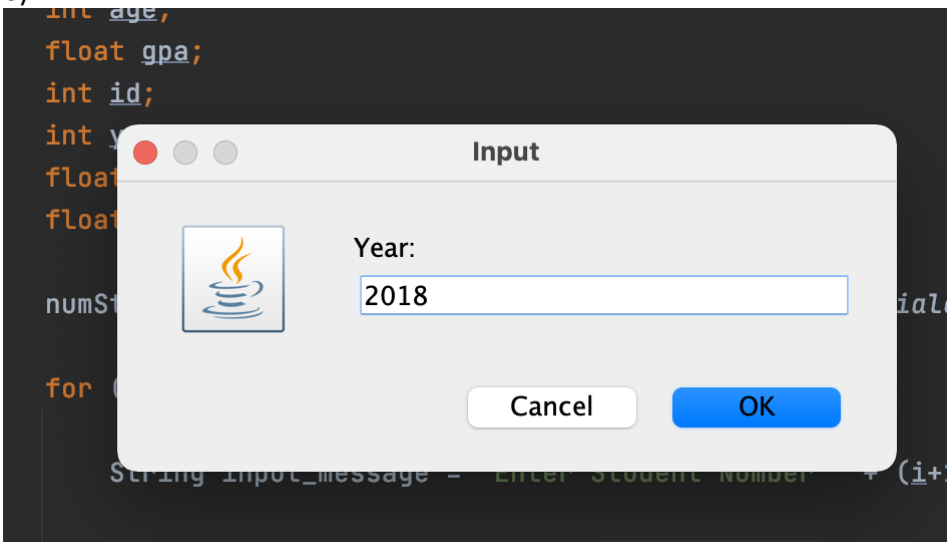
4)


Input
GPA:
3.26
Cancel
OK

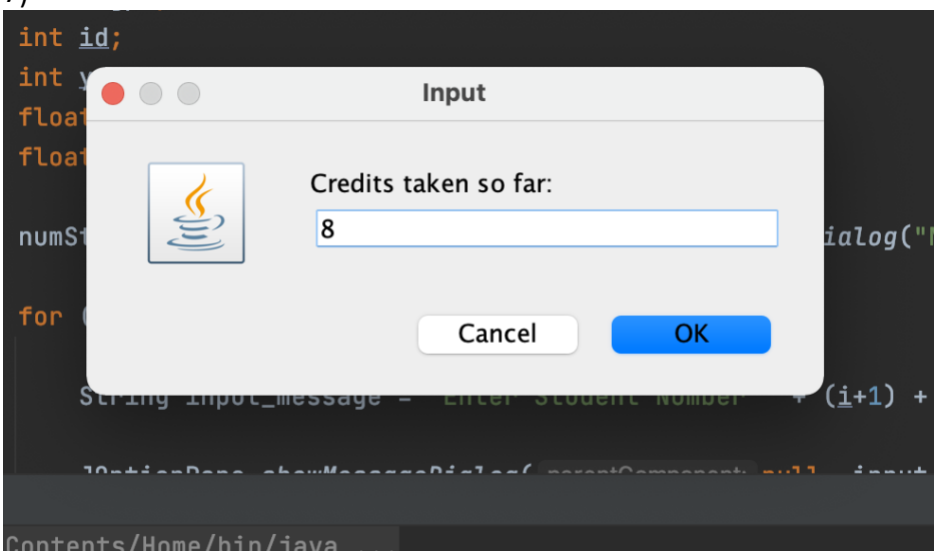
5)


Input
ID:
11
Cancel
OK

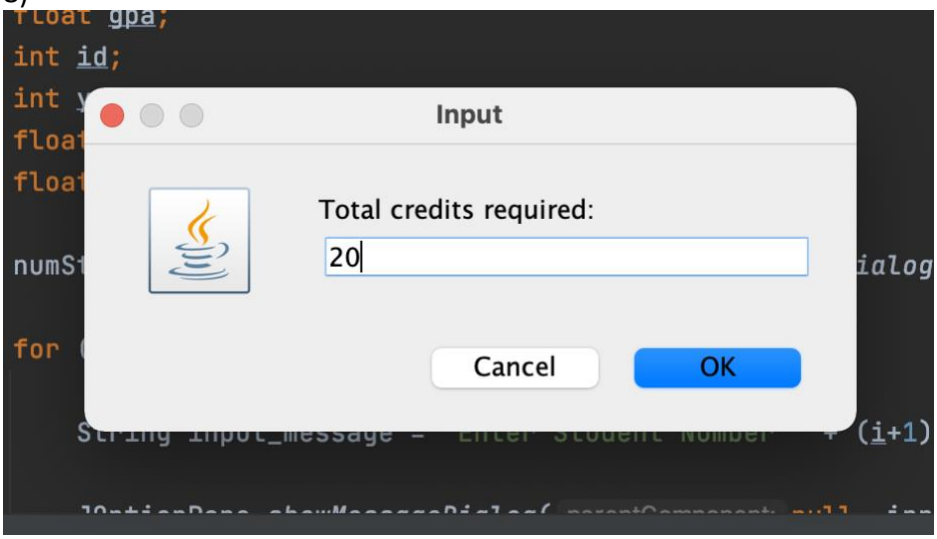
6)


float gpa;
int id;
Input
Year:
2018
Cancel
OK

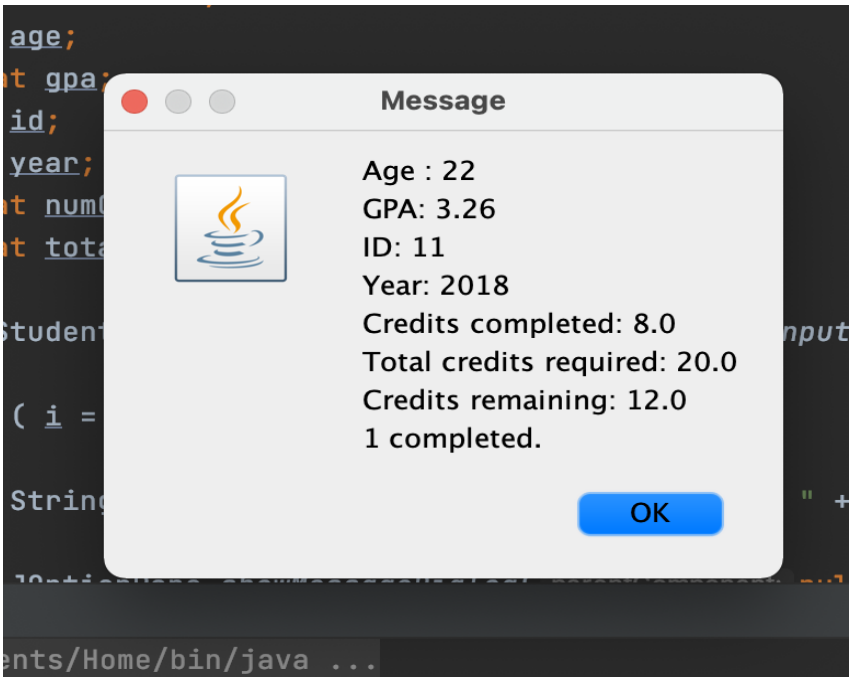
7)

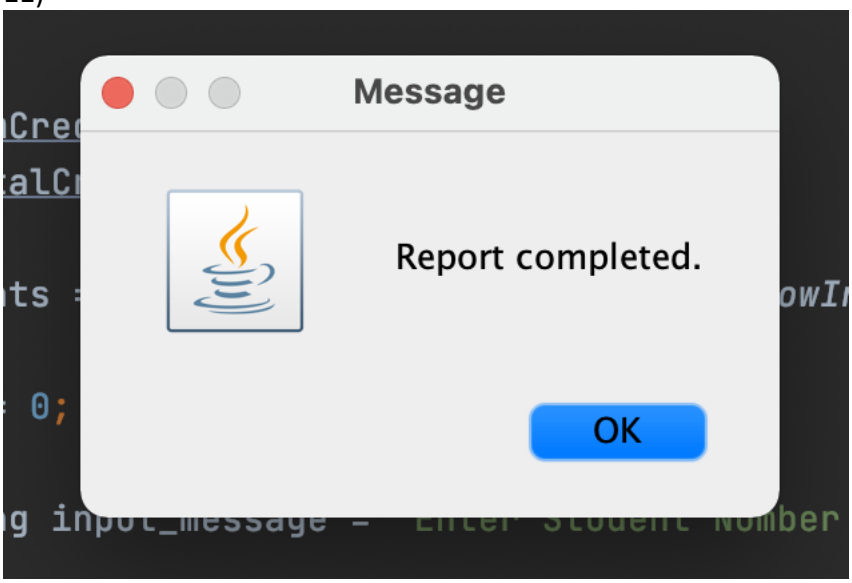

Input
Credits taken so far:
8
Cancel
OK

8)


Input
Total credits required:
20
Cancel
OK

9)




10)
Repeat 2-9 for additional students

11)