Logo

Description automatically generated

**LAB**

JAN 2022

TEB1113

Algorithm & Data Structure

*Lab 1*

|  |  |  |  |
| --- | --- | --- | --- |
| **NO.** | **NAME** | **STUDENT ID** | **PROGRAM (IT / IS / CS / BM)** |
| **1.** | **CHENG PIN JIE** | **21000548** | **CS** |

Activity #3

Input: 38 students’ score

Process: Count the number of students who passed the exam

Output: Number of students who passed the exam

Pseudocode:

1.0 Start

2.0 Declare i, student\_score, num\_pass

3.0 Initialise i = 0, num\_pass = 0

4.0 if i < 38

4.1 Prompt and get student\_score

4.2 if students\_score >= 40

4.2.1 num\_pass = num\_pass + 1

4.3 i = i + 1

5.0 Display num\_pass

6.0 End

Activity #4

Pseudocode:

1.0 Start

2.0 Declare length, width, area, time

3.0 Prompt and get length and width

4.0 area = length \* width

5.0 time = area/2

6.0 Display time

7.0 End

Activity #5

Pseudocode:

1.0 Start

2.0 Declare stud\_mark, num\_pass num\_fail

3.0 Intialize num\_pass, num\_fail = 0

4.0 while True:

4.1 Prompt and get stud\_mark

4.1.1 If stud\_mark >= 40:

4.1.2 num\_pass += 1

4.2 else if stud\_mark < 40:

4.2.1 num\_fail += 1

4.3 else if stud\_mark == “Q” or “q”

4.2.2 break

4.4 else

4.4.1 Display “Please enter valid input: “

5.0 Display num\_pass

6.0 Display num\_fail

7.0 End

Activity #6

Pseudocode:

1.0 Start

2.0 Declare name, amount, tax\_code, sales\_tax, total

3.0 Prompt and get name, amount, tax\_code

4.0 If tax\_code == 0:

4.1 sales\_tax = 0

5.0 else if tax\_code == 1:

5.1 sales\_tax = amount\*(3/100)

6.0 else if tax\_code == 2:

6.1 sales\_tax = amount\*(5/100)

7.0 else if tax\_code == 3:

7.1 sales\_tax = amount\*(7/100)

8.0 total = sales\_tax + amount

9.0 Display name, amount, sales\_tax, total

10.0 End

OOP Lab Activity

1. A program to add 2 integers

import java.util.Scanner;

public class OOP\_Act\_1

{

public static void main(String[] args)

{

//Attributes

String num1;

String num2;

// Methods

// Get input

Scanner in = new Scanner(System.in);

System.out.print("Enter integer 1: ");

num1 = in.nextLine();

Integer.parseInt(num1);

System.out.print("Enter integer 2: ");

num2 = in.nextLine();

Integer.parseInt(num2);

//Addition

System.out.println(num1 + num2);

}

}

Text

Description automatically generated

2. A program to swap 2 numbers

import java.util.Scanner;

public class OOP\_Act\_2

{

public static void main(String[] args)

{

//Attributes

String num1;

String num2;

// Methods

// Get input

Scanner in = new Scanner(System.in);

System.out.print("Enter integer 1: ");

num1 = in.nextLine();

Integer.parseInt(num1);

System.out.print("Enter integer 2: ");

num2 = in.nextLine();

Integer.parseInt(num2);

//Addition

System.out.println(num2 + "," + num1);

}

}

Text

Description automatically generated