Department of Computer Sciences
Laboratory Manual
CS-100: Fundamentals of ICT
Class: BS(CS) Fall 2021

Lab Engineer: Syeda Hafsa

Lab#3

Flow chart/Pseudo code

List of Experiments

01	Computer Hardware
02	Microsoft Word - Part I (& Reading: Ch 10A)
03	Microsoft Word - Part II
04	Microsoft PowerPoint - Part I (& Reading: Ch 10A)
05	Microsoft PowerPoint - Part II
06	Microsoft Excel - Part I (& Reading: Ch 10A)
07	Microsoft Excel - Part II
08	Flow Chart/Pseudo Code
09	Microsoft Access
10	Internet & Search Engines
11	Introduction to Networking
12	HTML
13	Google Docs and Surveys

Table of Contents

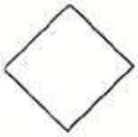
Good, coherent writing computer programs is created through great pre-code arranging and association. This is helped by the utilization of pseudocode and program flowcharts.

Flowcharts are written with program flow from the top of a page to the bottom. Each command is placed in a box of the appropriate shape, and arrows are used to direct program flow. The following shapes are often used in flowcharts:

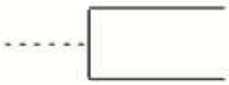
An oval indicates beginning or end of a program.

A parallelogram is a point where there is input to or ouput from the program.

A rectangle indicates the assignment of a value to a variable, constant, or parameter. the assigned value can be the reult of a computation. The computation would also be included in the rectangle.



A diamond indicates a point where a decision is made.



An open-ended rectangle contains comment statements. The comment is connected to the program flow via a dashed line.

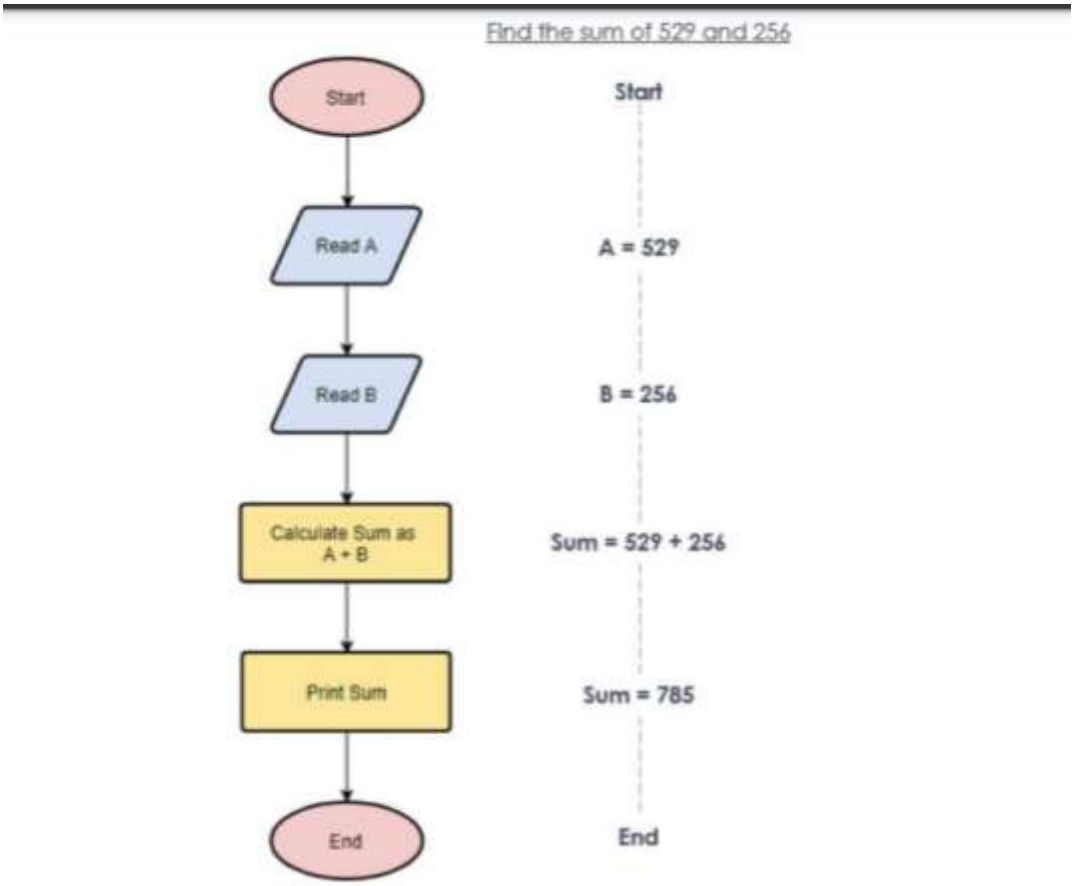
A hexagon indicates the beginning of a repitition.

The double-lined rectangle indicates the use of an algorithm specified outside the program, such as a subroutine.

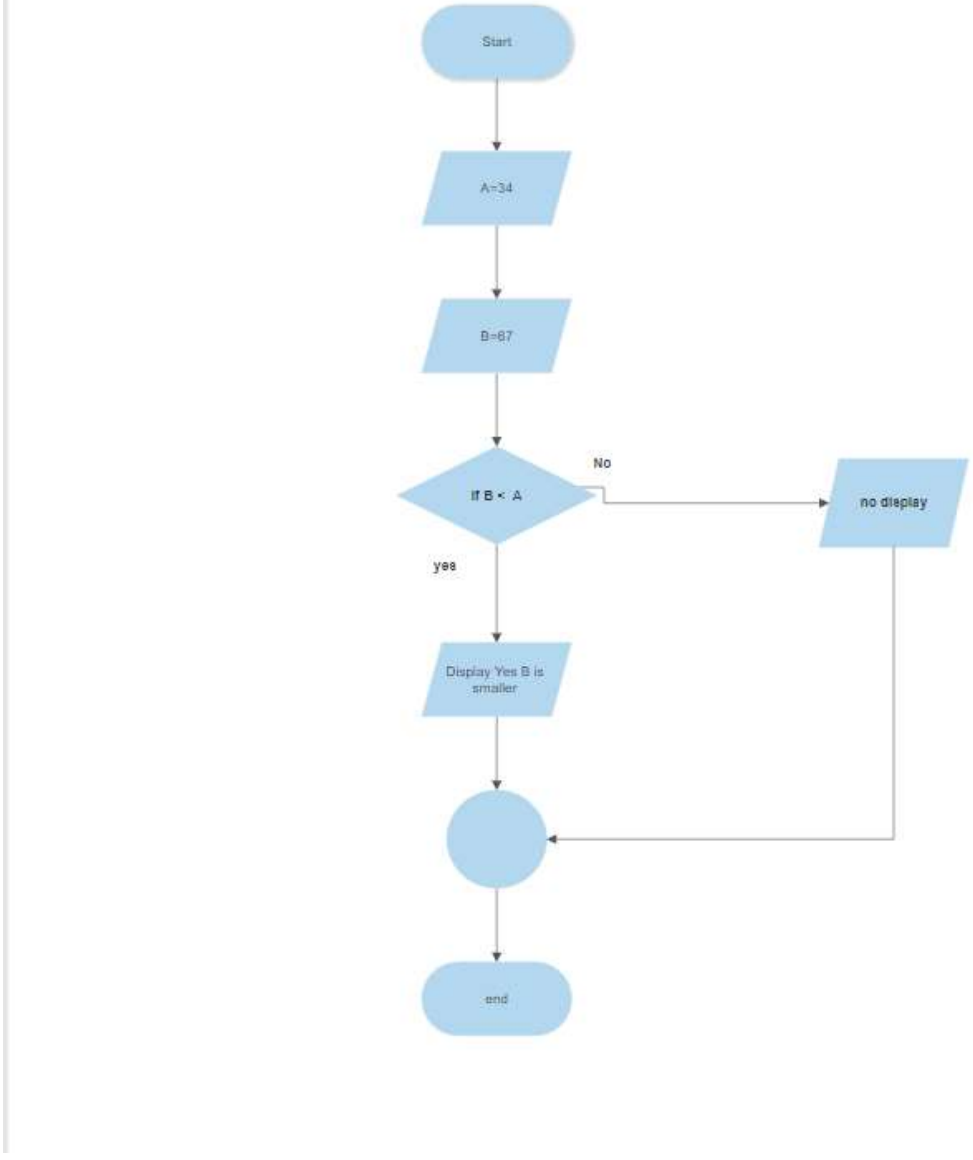
Circles can be used to combine flow lines.

Arrows indicate the direction and order of program execution.

1.1 For example, you write a program that gets sum of 2 variables:



1.2 Draw a flowchart to input two numbers from user and display the largest of two numbers



Class task

I want to watch Spiderman: no way home! Should I watch it in cinema or home?

Start
Process: Watching movie.
Condition: if it rained watch it at home movie time.
Condition 2: if it didn’t rain watch it at cinema.
End

Pseudo code is a simple way of writing programming code in English Pseudo code is simply an implementation of an algorithm in the form of annotations and informative text written in plain English.
Pseudo code is not actual programming language It has no syntax like any of the programming language and thus can't be compiled or interpreted by the computer.
W

"While understanding pseudo code is usually not difficult, writing it can be a challenge"

In general, here are some rules that are frequently followed when writing pseudocode:

Real life example:

Pseudocode

- For example, for making a cup of tea:

```
Organise everything together;
Plug in kettle;
Put teabag in cup;
Put water into kettle;
Wait for kettle to boil;
Add water to cup;
Remove teabag with spoon/fork;
Add milk and/or sugar;
Serve;
```

1. The usual Fortran (a high-level computer programming language used especially for scientific calculations.)

- symbols are used for arithmetic operations (+, -, *, / , **).
- Symbolic names are used to indicate the quantities being processed.
- Certain Fortran keywords can be used, such as PRINT, WRITE, READ, etc.
- Indentation should be used to indicate branches and loops of instruction.

The following gives common keywords used in pseudocodes.

1. **//:** This keyword used to represent a comment.

2. **BEGIN, END:** Begin is the first statement and end are the last statement.

3. **INPUT, GET, READ**: The keyword is used to inputting data.

4. **COMPUTE, CALCULATE**: used for calculation of the result of the given expression. **5. ADD, SUBTRACT, INITIALIZE** used for addition, subtraction, and initialization**.**

.

6. **OUTPUT, PRINT, DISPLAY**: It is used to display the output of the program.

7. **IF, ELSE, ENDIF**: used to make decision.

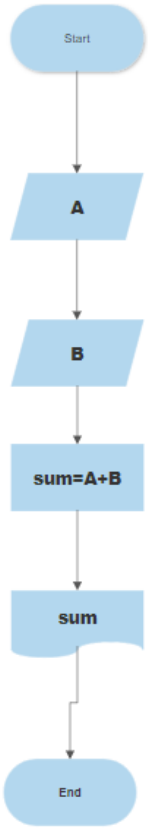
8. **WHILE, ENDWHILE**: used for iterative statements.

9. **FOR, ENDFOR**: Another iterative incremented/decremented tested automatically.

Example2.1

```
BEGIN
NUMBER A, B, sum;
OUTPUT("Input number1:")
INPUT A
OUTPUT("Input number2:")
INPUT B
sum=A+B
OUTPUT sum
END
```

Flow chart of above-mentioned Pseudo code:



Assignment

Draw a flowchart of two numbers from user and display the largest of two numbers
Write pseudo code for this program.


NATIONAL UNIVERSITY OF SCIENCES & TECHNOLOGY
PAKISTAN