Learning Programming Concept with C

Dr. Nachiket Tapas

Instructor Details

Dr. Nachiket Tapas

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Lecture Schedule

Monday, Tuesday : 2:30 to 3:30

Wednesday : 11:30 to 12:30

Friday : 10:30 to 11:30

Saturday : 3:30 to 4:30

Exams

There can be surprise quizzes during the lectures.

There will be an End Semester Exam (ESE).

There will be two class tests before the ESE.

There will be a unit test at the end of each unit.

Labs

The schedule will be communicated to you in due course of time.

In each lab you will be given few problems to solve

- You must work on your own
- Discussion is allowed, but sharing of code in any form is NOT permitted.

Textbooks

B. Kernighan, D. Ritchie, “The C Programming Language”, Prentice Hall of India, Second Edition, ISBN 81-203-0596-5 (Textbook)

Programming in ANSI C by E. Balguruswamy, Tata Mc-Graw Hill

Computer Programming in ‘C’ by V. Rajaraman , Prentice Hall

How to solve it by Computer by R.G. Dromey, Pearson Education

Problem Solving Techniques , Stephen G. Krantz, Universities Press.

Course Objective

The course teaches you how to solve problems using the computer.

No prior exposure to programming is needed

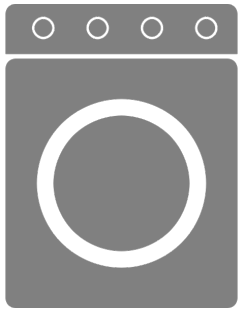
It contains two parts, theory and lab.

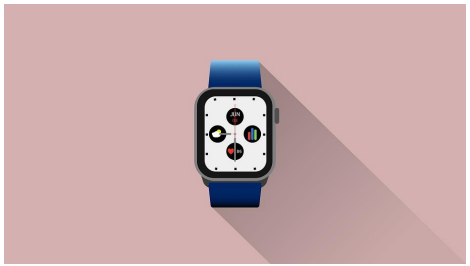
It is a 4 credit course with 3 credits for theory and 1 credit for practical.

Let’s Begin

What is a Computer?

Almost all electronic gadgets you see today are computers. They are everywhere!





What is a Computer?

Devices which can be instructed to carry out set of arithmetic and logical operations automatically - Wiki

Set of operations - Program

The instructions need to be in a format understood by the Computer.

We will learn programming in this course.

Process of Programming : Step 1

Define and model the problem. In real life this is important and complicated.

- Example : consider modelling the Indian Railway reservation system or State Bank of India banking system.
- Example : consider the following data.

0	32
100	37.8
212	100

Process of Programming : Step 2

Obtain a logical solution to your problem.

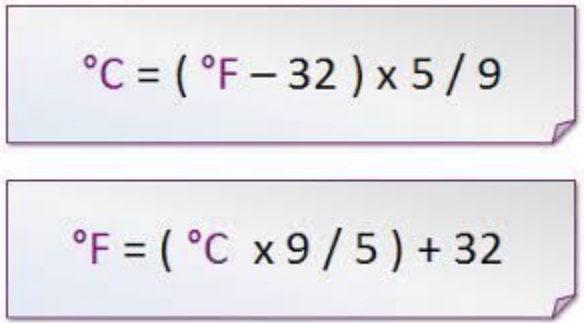
A logical solution is a finite and clear step-by-step procedure to solve your problem.

Also called an Algorithm (or recipe)

- We can visualize this using a Flowchart.
- Very important step in the programming process.

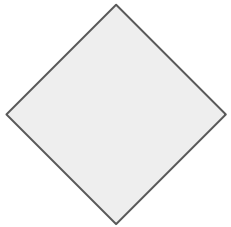
Algorithms in Ordinary Life?

An algorithm is a familiar concept: cooking recipes are almost algorithms! (not quite precise enough for a computer)



Flowchart to represent Algorithm

Initiator

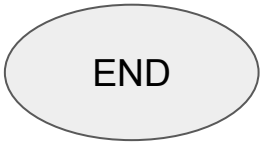


Decision

Connector

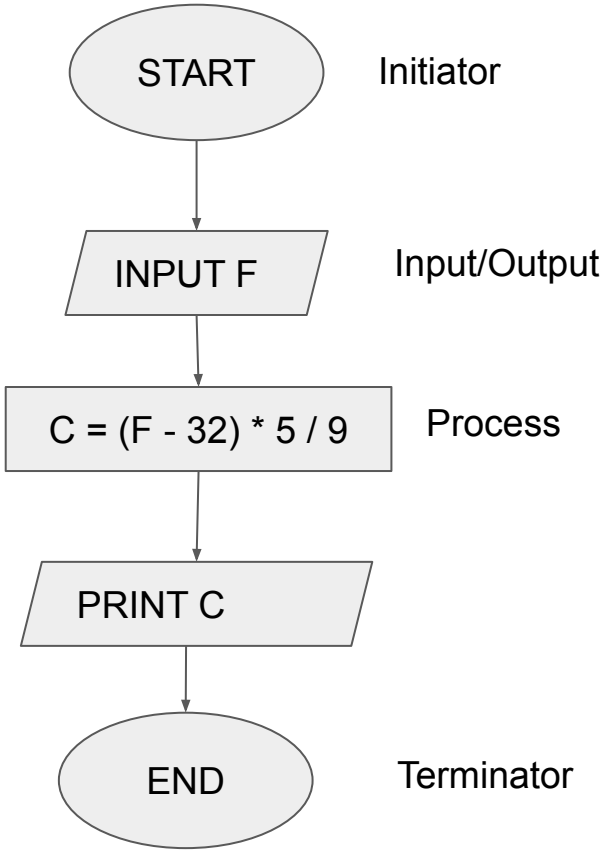
Input/Output

Process

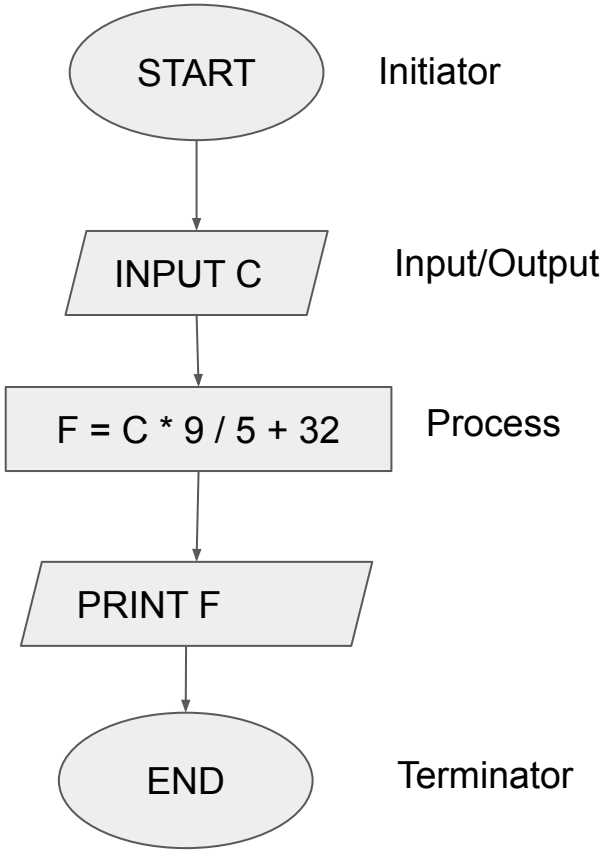


Terminator

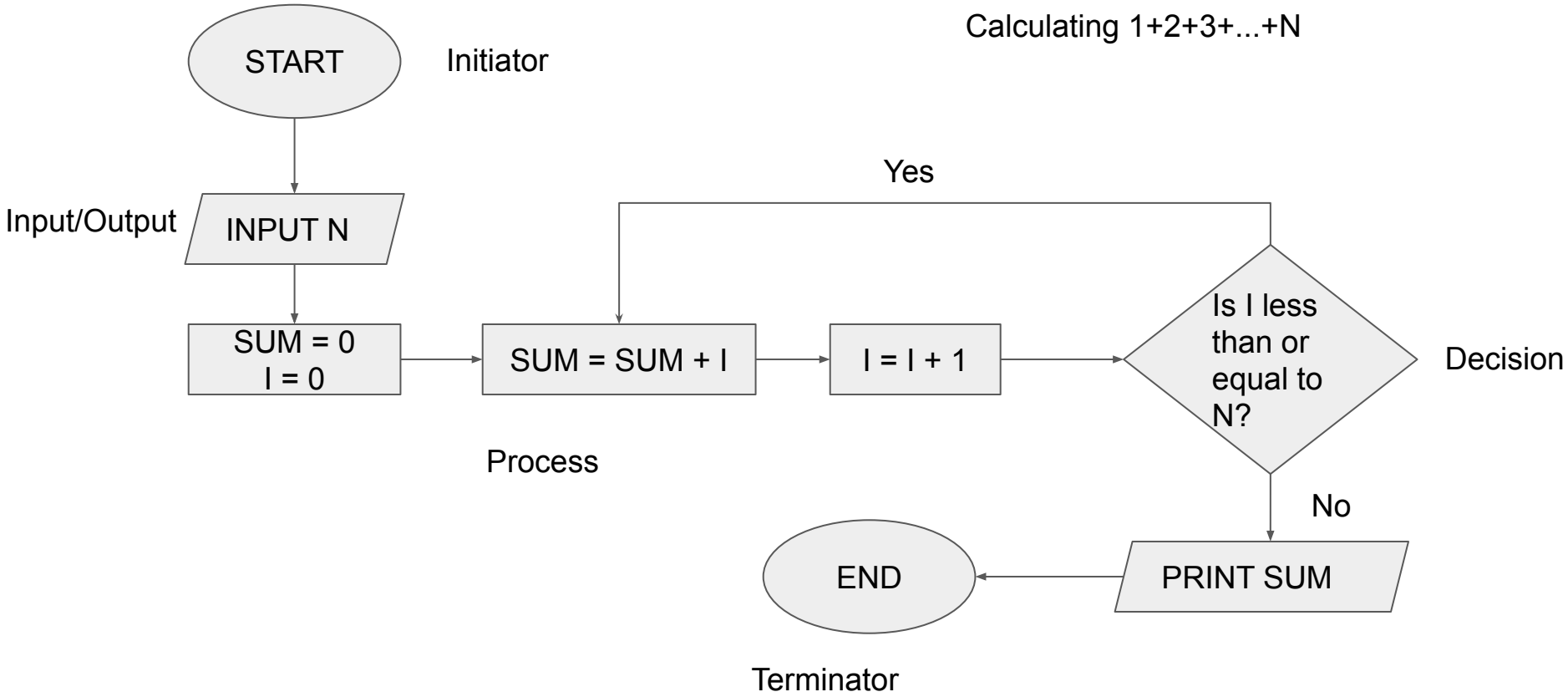
Flowchart to represent Algorithm



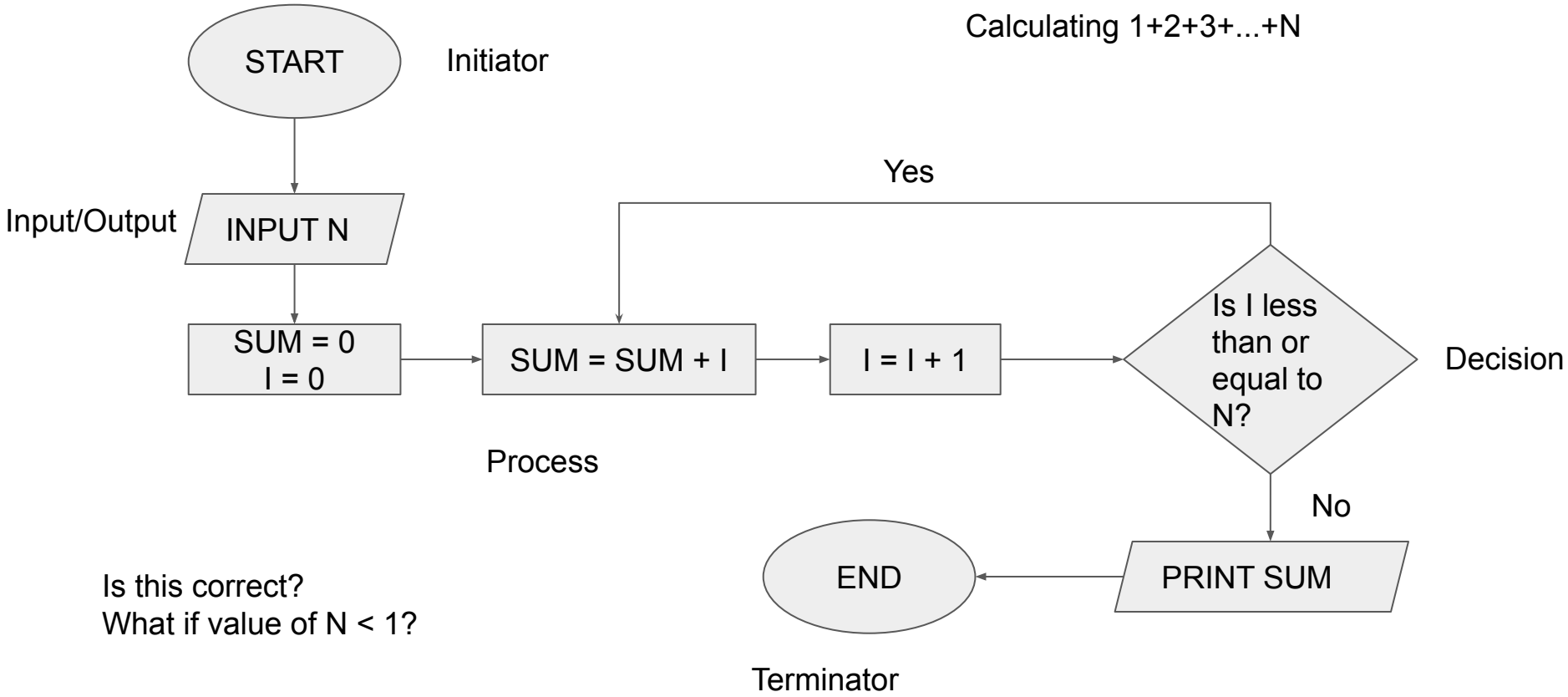
C/5 = (F - 32)/9



Flowchart to represent Algorithm

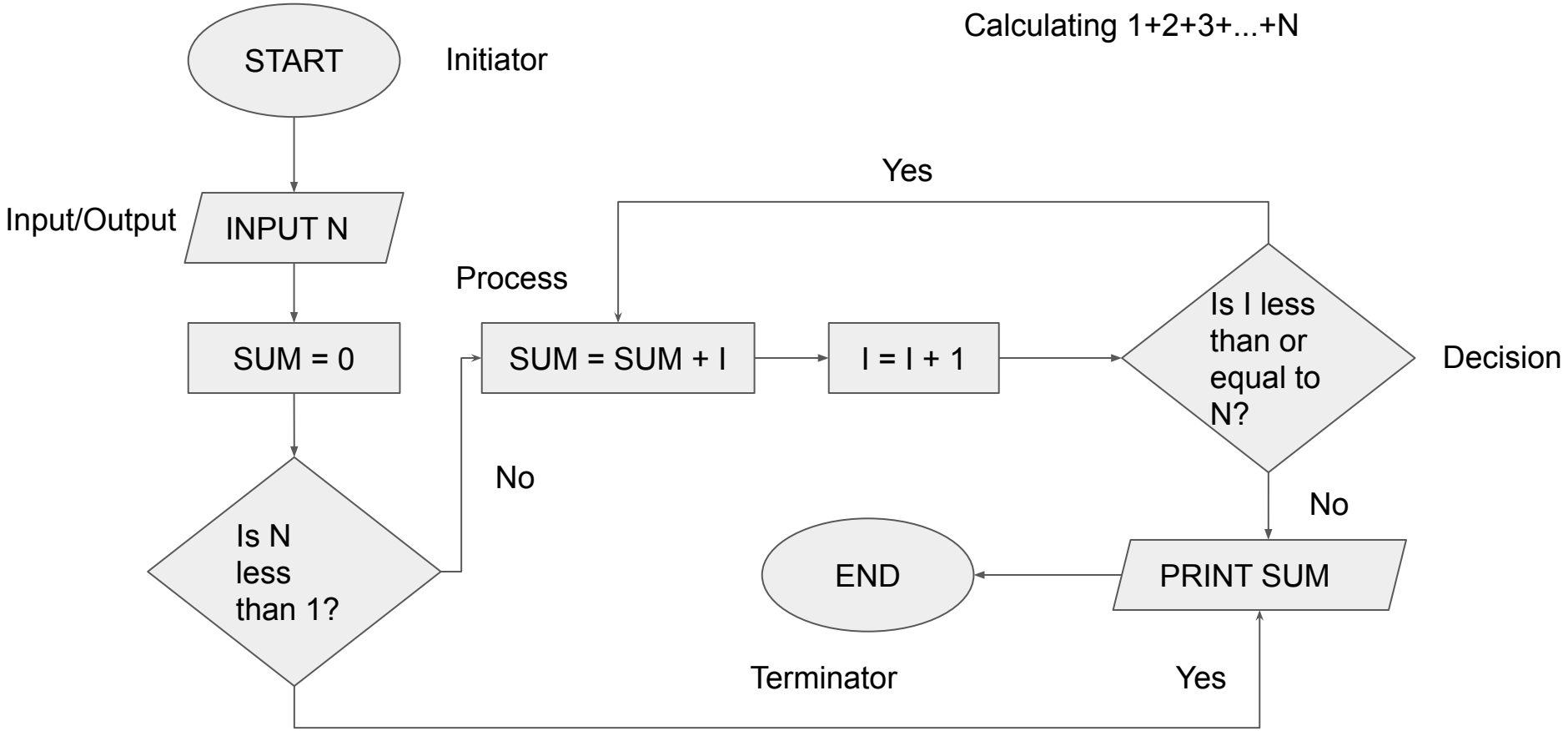


Flowchart to represent Algorithm



Is this correct?
What if value of N < 1?

Flowchart to represent Algorithm



Problems

Q1. Add 10 and 20

Q2. Find the sum of 5 numbers

Q3. Print Hello World 10 times

Q4. Draw a flowchart to log in to facebook account

Thank You!!