Adam Mukharil Bachtiar
English Class
Informatics Engineering 2011

Algorithms and Programming

Introduction of Algorithms

Steps of the Day

Let’s Start

Rules of Lecture

Description of Subject, Rules, References and Value

Description of Subject

- Name of subject : Algorithm and and Programming
- Prerequisite : none
- Lecturer : Adam Mukharil Bachtiar
- SKS : 4 SKS (Divide into 2 Teoritics and 2 Practises)

Rules

Don’t be late to come in my classroom

Rules

Presence must be above 80%

Rules

Do all components of value

Rules

Don’t be CHEATING!!!

Components of Value

- Presence : 10%
- Homework : 20%
- Middle Test : 30 %
- Final Test : 40%

References

- Rinaldi Munir, Algoritma & Pemrograman
- Inggriani Liem, Diktat Algoritma dan Pemrograman

Syllabus

Before and After Middle Test

Syllabus of Subject

- Introduction of Algorithms
- Introduction of Dev Pascal, Data Type, value, and naming
- Sequential Structure
- Branching Structure
- Looping and Structure
- Procedure and Function
- Middle Test

Syllabus of Subject

- One Dimension Array
- Two Dimension Array
- Record
- Array of Record
- Searching
- Sorting
- Final Test

Introduction Of Algorithms

Definition and Example

Why We Must Study Algorithm?

What is the Definition of Problem?

Question or set of works that must be done with human.

Algorithm and Programming can solve the problems

Some Terms in Programming

- **Program** is implementation of **ALGORITHM** that was made from one programming language.
- **Programming language** is notation that was used in **ALGORITHM NOTATION** to communicate with computers.
- **Programmers** are people who made the programs with **ONE OR MANY** programming languages.

Types of Programming Languages

- High Level
- Middle Level
- Low Level

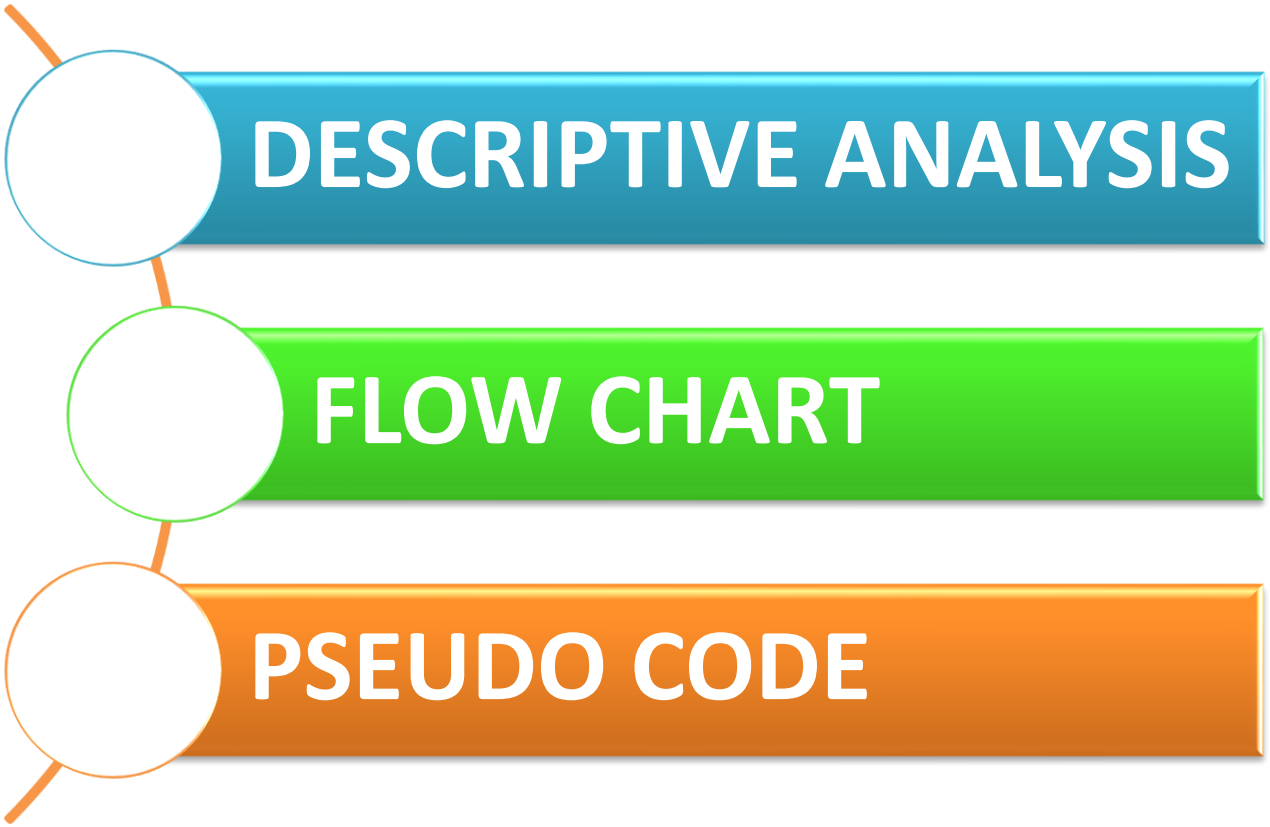
Build the Program

- Problem Definition
- Requirements Analysis
- Build the algorithms
- Coding
- Testing and Debugging
- Maintenance
- Documentation

What is Algorithm?

Sequence of steps to solve the problems.

Presentation of Algorithm

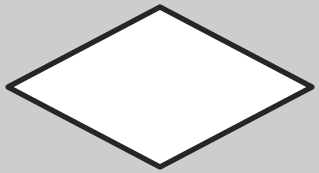


Example of Descriptive Analysis

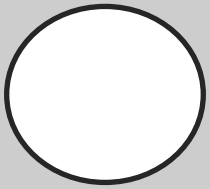
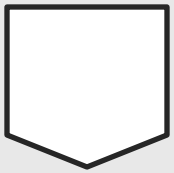
How to Make Scramble Egg:

- Pour oil into skillet.
- Heat oil.
- Break the eggs and pour into the hot oil.
- Fry it
- Serve on a plate

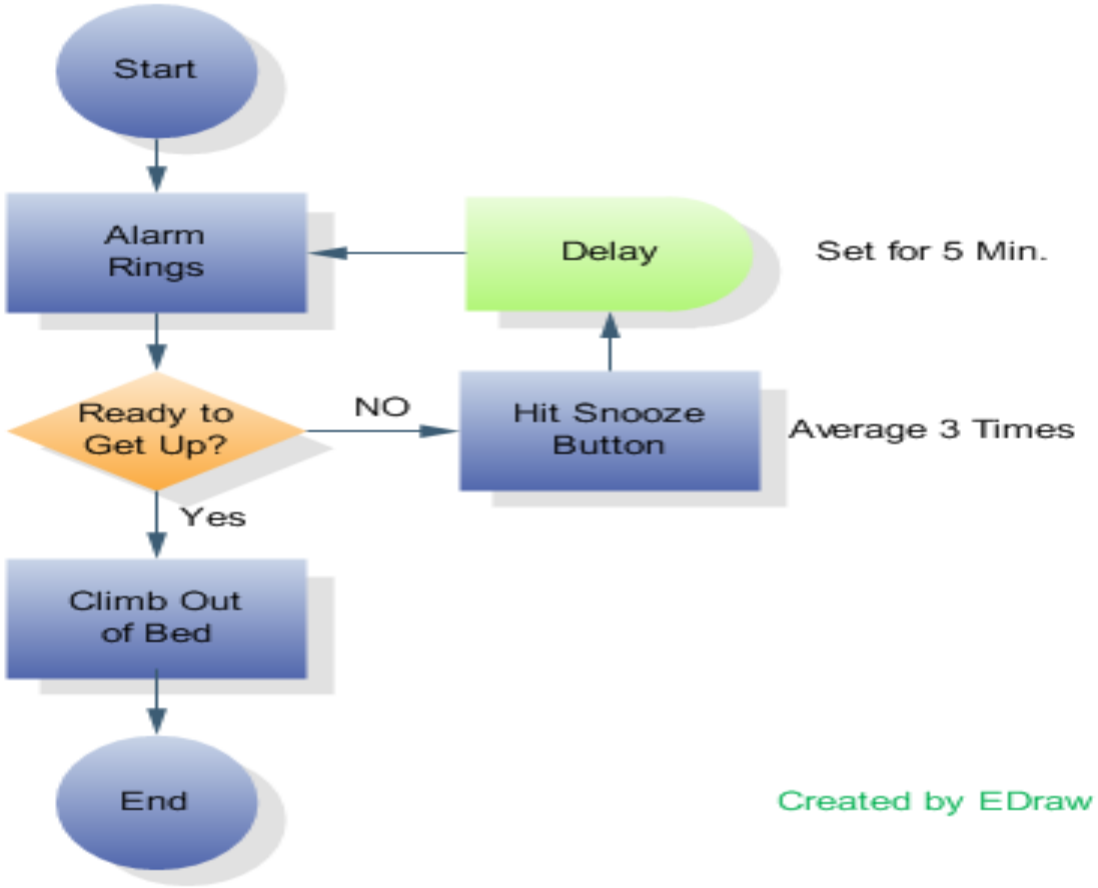
Example of Flow Chart

SYMBOL	ACTIVITY
	INPUT/OUTPUT
	PROCESSING
	DECISION
	PROCEDURE/SUBROUTINE

Example of Flow Chart

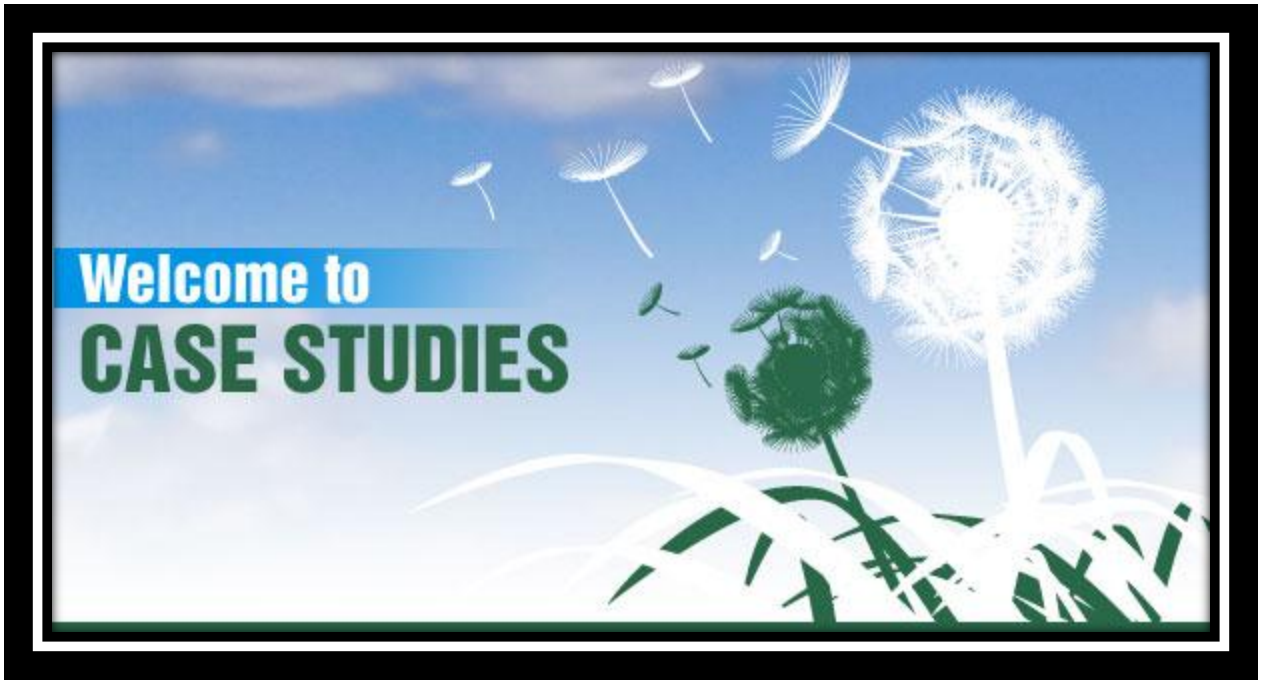
SYMBOL	ACTIVITY
	FLOW LINES
	START/TERMINATOR
	ON PAGE CONNECTOR
	OFF PAGE REFERENCE

Example of Flow Chart



Example of Pseudo Code

```
1   Algoritma Tambah_Nilai
2   {I.S.: Nilai kesatu dan kedua diinisialisasi}
3   {F.S.: Menghitung penambahan nilai kesatu dan kedua}
4
5   Deklarasi: {atau Kamus:}
6       a,b,c:integer
7
8   Algoritma:
9       a←1
10      b←2
11      c←a+b
```


Welcome to
CASE STUDIES

Ilustration of Exchange Value with Variable

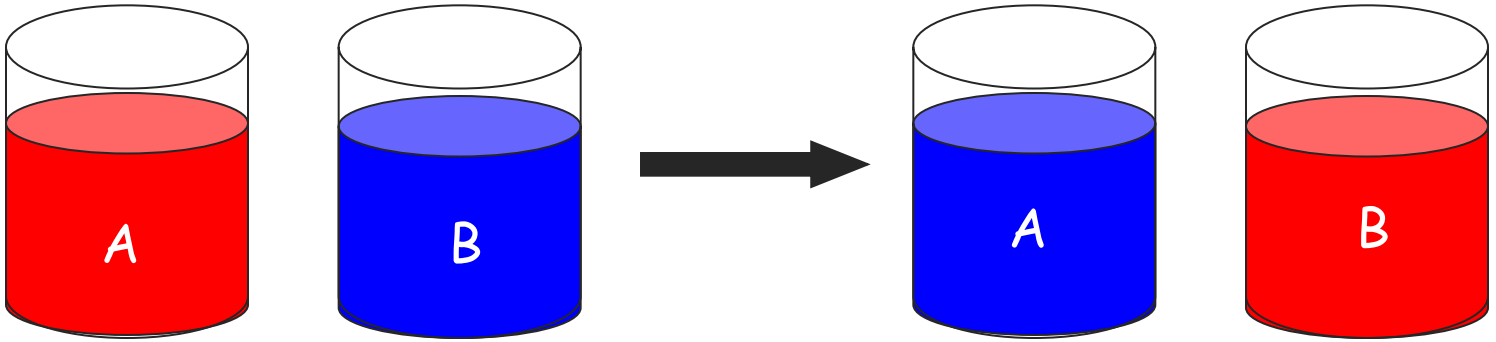
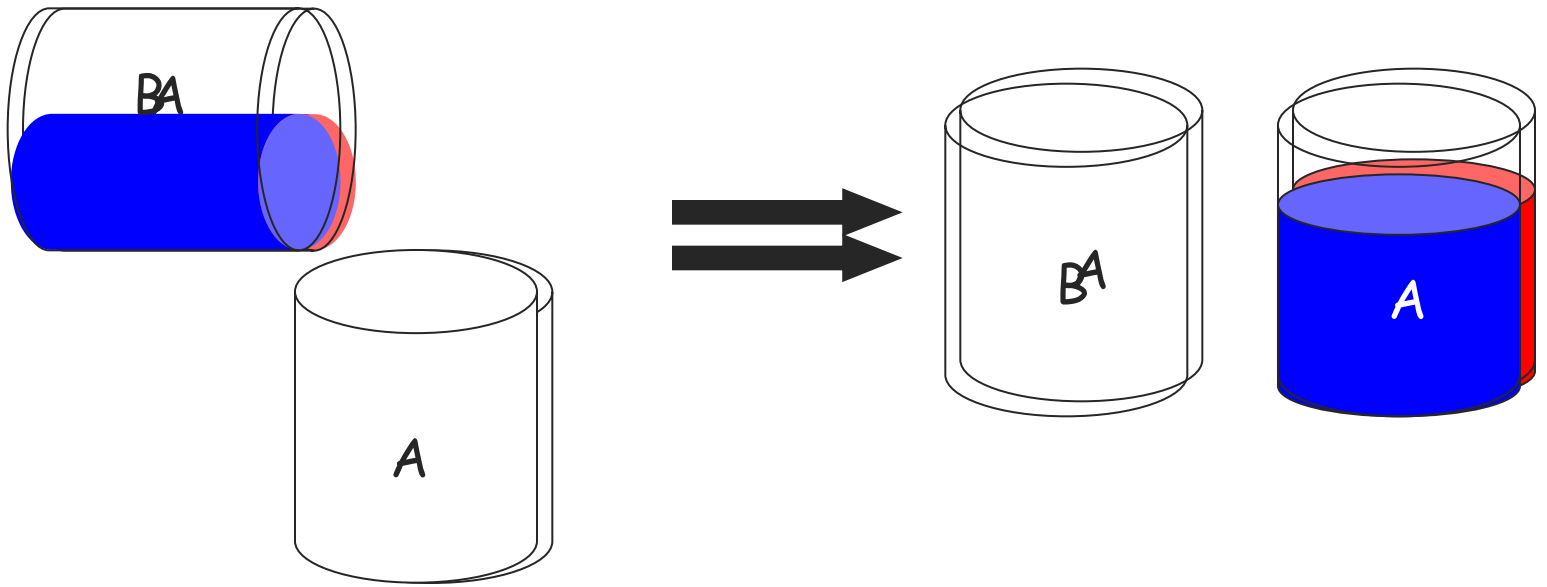
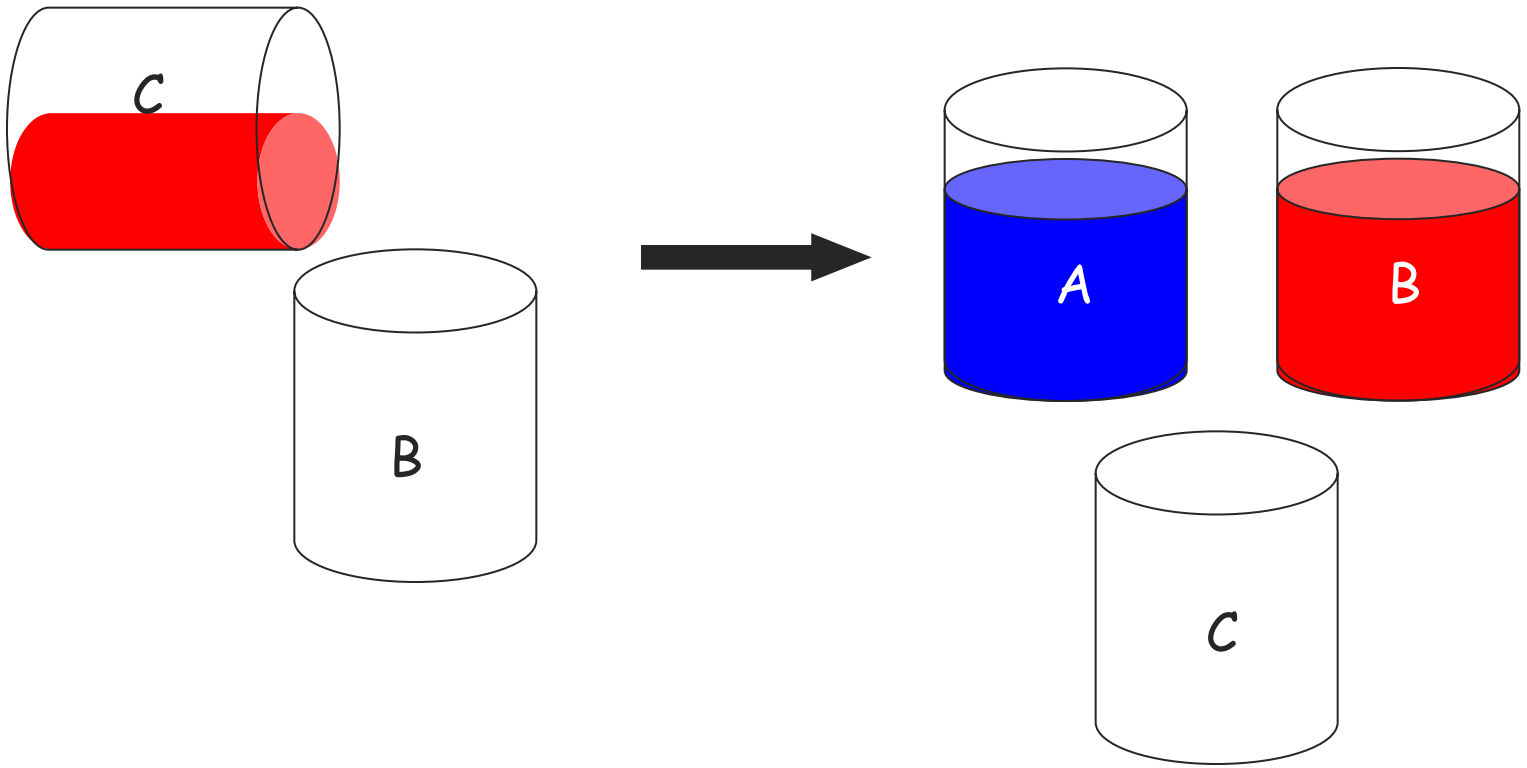


Illustration of Exchange Value with Variable



Ilustration of Exchange Value with Variable



EXERCISE

Exercise 1

Turn the process of exchange value with variable into:

- Descriptive Analysis
- Flow Chart
- Pseudo Code

Exercise 2

Make algoritm for exchange value without variable (this case only suitable for integer) in:

- Descriptive Analysis
- Flow Chart
- Pseudo Code

Exercise 3

Make algoritm for basic arithmetic operation (add, substract, multiply, and divide) in:

- Descriptive Analysis
- Flow Chart
- Pseudo Code

THANK YOU

GRACIAS

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