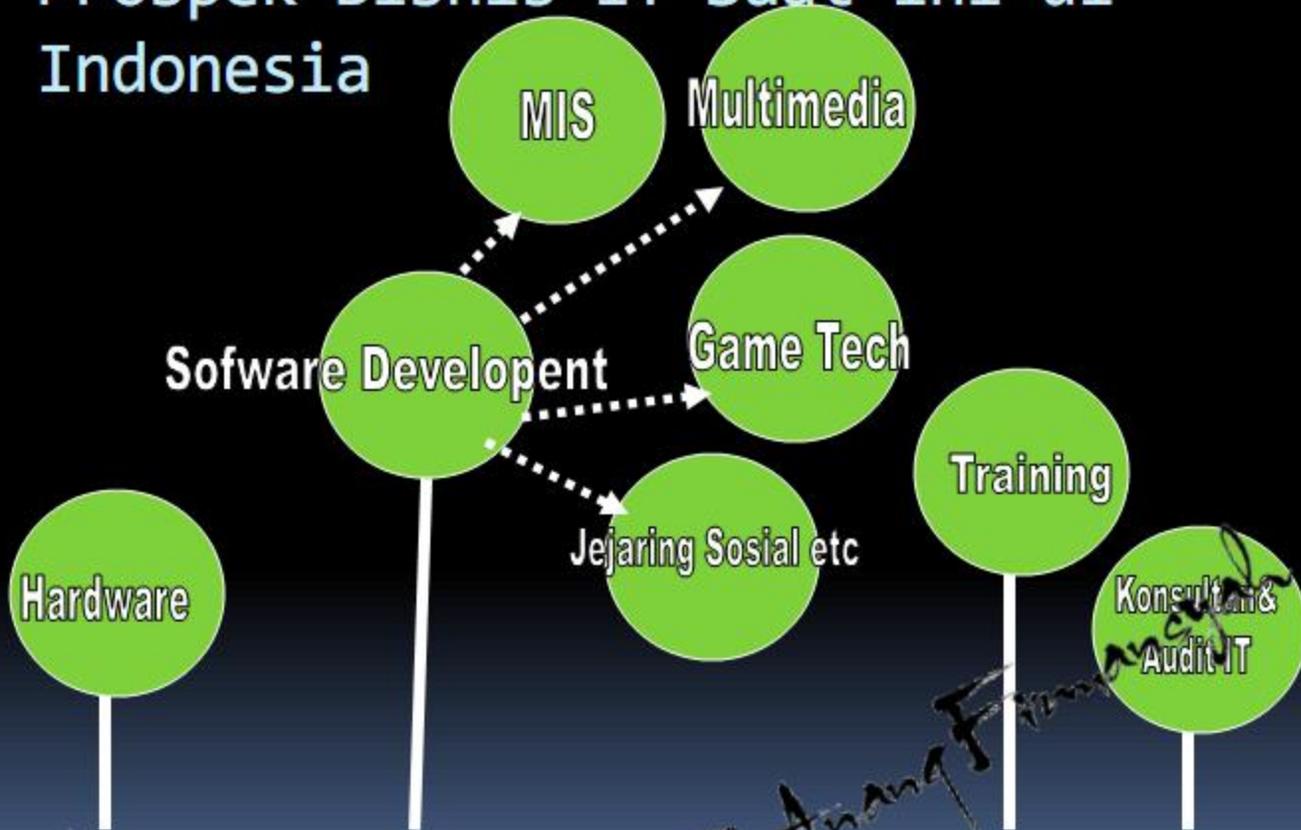


# Pentingnya Perancangan dan Pengembangan Sistem Informasi

## BAB 13

*M. Anang Fauzan*

# Prospek Bisnis IT Saat ini di Indonesia



# Memulai Bisnis IT

- Mulai dari Hobby

- Lihat sumber daya yang dimiliki

- Inkubator, small office dll.

- Tentukan Goal setting

- Urus izin legalitasnya

- Jualan, produksi, implementasi dan sosialisasi

M. Anang Fauzan

# Resource

- SDM: ( Engineer:Ahli Jarkom,Sistem analisis, programmer, teknisi, marketer, manajer etc)
- Modal Usaha:
  - Small office software House: 3-5 engineer
    - Investasi :3-5 PC= Rp.9 jt s/d 15 jt
    - Biaya operasional: rp. 6 jt-10 jt perbulan (bagi hasil)
    - Target: project :borongan, tanpa tender, siap di broker
  - Medium office software House: 10-15, 15-20 engineer
    - Investasi :10-15 PC= Rp.30 jt s/d 45 jt
    - Biaya operasional: rp. 20 jt-30 jt perbulan (bagi hasil)
    - Target: project :borongan, tanpa tender, tender terbatas,siap di broker
  - High office software House: >20 engineer
    - Investasi banyak investor
    - Biaya operasional: diatas 1 M
    - Target: project :Tender tak terbatas, memiliki R&D cukup tinggi
- Berapa banyak relasi:Pemerintah, vendor IT, Swasta dll.

*W. A. F. F. F.*

# Tentukan Goal Setting

GOAL adalah Impian dengan batas waktu pencapaian

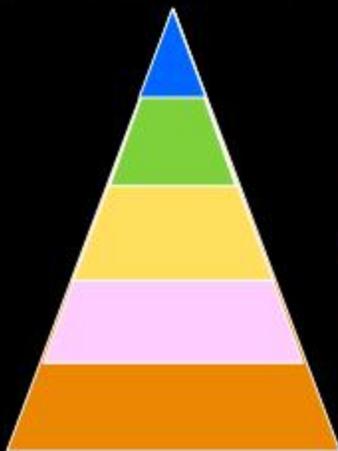
*Impian tanpa batas waktu, hanyalah angan-angan saja*

1. Tentukan Apa yang Anda inginkan dari usaha Anda? Berapa Target Omset Anda 1 tahun ini ? Seberapa besar jangkauan pasarnya ? Profit ? Kapan BEPnya?
2. Tuliskan dalam selembar kertas Goals tersebut.
3. Tuliskan waktu pencapaian untuk masing<sup>2</sup> Goal.
4. Buat daftar segala usaha yang memungkinkan Anda mencapai Goals Anda.
5. Atur daftar tersebut menjadi Rencana kerja mingguan, bulanan, quarterly sampai setahun kedepan.
6. Aktualisasikan rencana Anda dalam "Action", secepatnya, bukan hanya pada kertas. Kebanyakan rencana yang hebat menjadi usang karena penundaan.
7. Lakukan sesuatu tiap harinya yang membuat Anda selangkah lebih dekat dengan Goal Anda.

(Brian Tracy)

# Project Management Strategy

- 5 Steps to improve project management



## Value Added

High Reliability/Performance,  
User-Friendly Interface

## Productivity

Development Environment,  
Reusability

## Quality

Test Theory, Design Review,  
Problem solving method

## Management

Documentation, Mile-stone control,  
Software Metrics

## Chaos

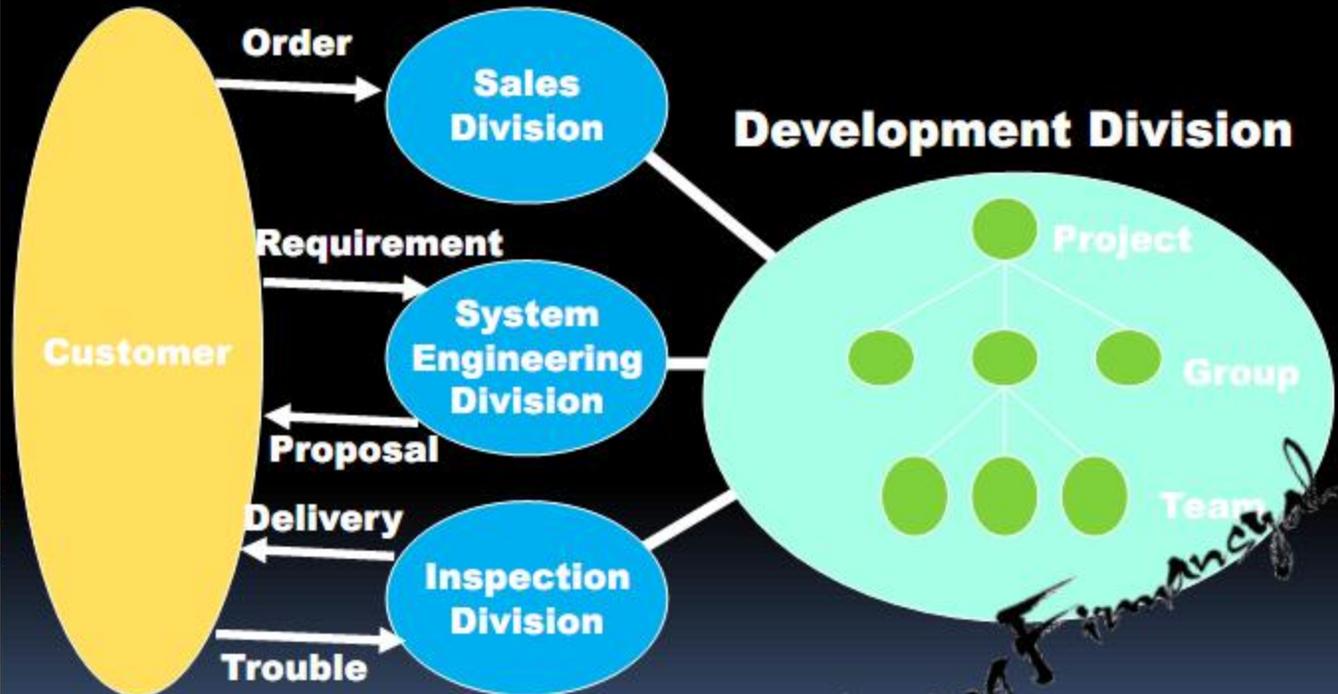
Difficult to forecast the schedule  
and the quality

### Order of Actions is important

- Without management platform,  
you cannot evaluate the quality.
- You can't ship the system under quality.
- If you pursue the productivity  
then the product does worse.

*M. Anang Firmanto*

# Project Organization



M. Anand

# Development Stage

## Step by Step Development

No		Stage	Definition	Output
1	SD	System Design	System requirement, system architecture	System Spec.
2	FD	Function Design	Module structure, feature, data	Design Doc.
3	DD	Detailed Design	Module internal design	API Doc.
4	PG	Programming	coding and unit test	Source File
5	CT	Connection Test	Test under all systems are connected	Test Scenario
6	ST	System Test	Multiple service test, illegal/error test, etc.	Test Scenario Manual
7	IT	Inspection Test	Test by the independent quality assurance division	Test Scenario
8	AT	Acceptance Test	Test by the customer, including customer training	Test Scenario
9	SV	Service		

Name of stage, output may differ according to the system/organization.

# Design Stage

## Design Activities

- To read upper documents and list up study issues
- To investigate the study issues
- To write down Specification/Design Documents
- To review the documents

## Viewpoints of Project Management

- Design Sheet
  - Summary paper on investigation of a study issue
  - The background or reason of technical judgment is to be kept, because the specification often tells us nothing about it
- Design Review
  - Review is the cheapest way to detect a bug, and the best way to understand the system
- Interim Inspection
  - Check of the design output by the inspection division
  - We cannot proceed to the next stage without passing it

# Gant Chart

Gant Chart is useful to see  
the progress of many parallel activities

Gant Chart										
	05/4	5	6	7	8	9	10	11	12	
Total	SD	HD	DD	PG						
					CT		ST	IT	AT	SV
Group1	SD	HD	DD	PG	CT		ST	IT	AT	
Group2	SD	HD	DD	PG	CT		ST	IT	AT	
Tool		HD	DD	PG	CT					

M. Anang Fauzan

# Test Stage

- Test Activities
  - To list up Test Items, and review them
  - To execute a Test Item
  - To submit a Problem Form, if there is a problem
  - To remove a bug from a program
- How to select Test Items?

**Random Test**



Select test items  
hitting your head

**System Test**

**White Box Test**



Select test items  
from source codes

**Unit Test**

**Black Box Test**



Select test items  
from specifications

**Connection Test**

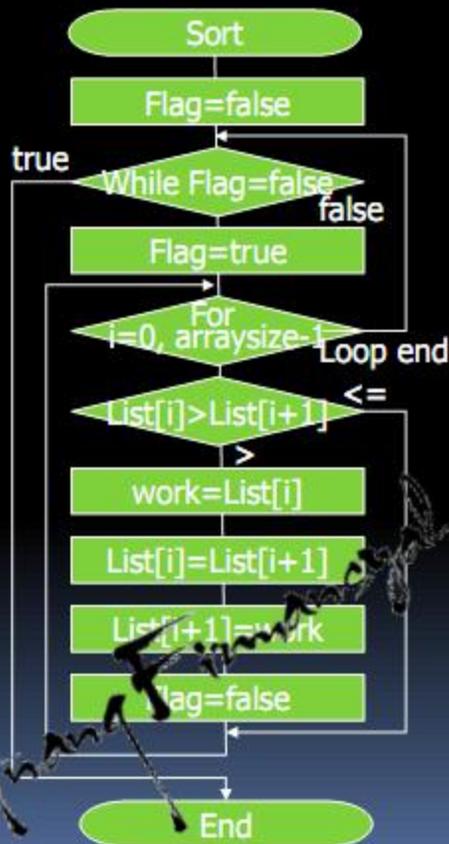
# How many test items?

- Example
  - Sort of List table
  - Input: integer array
- Question
  - How many test items?

#1	#2	#3	#4	#5
4	1	3	3	No List
3	2	1		
2	3	3		
1	4	2		

## Test Criteria

- 1: Cover all codes
- 2: Cover all flow lines
- 3: Check boundary conditions
- 4: Illegal conditions

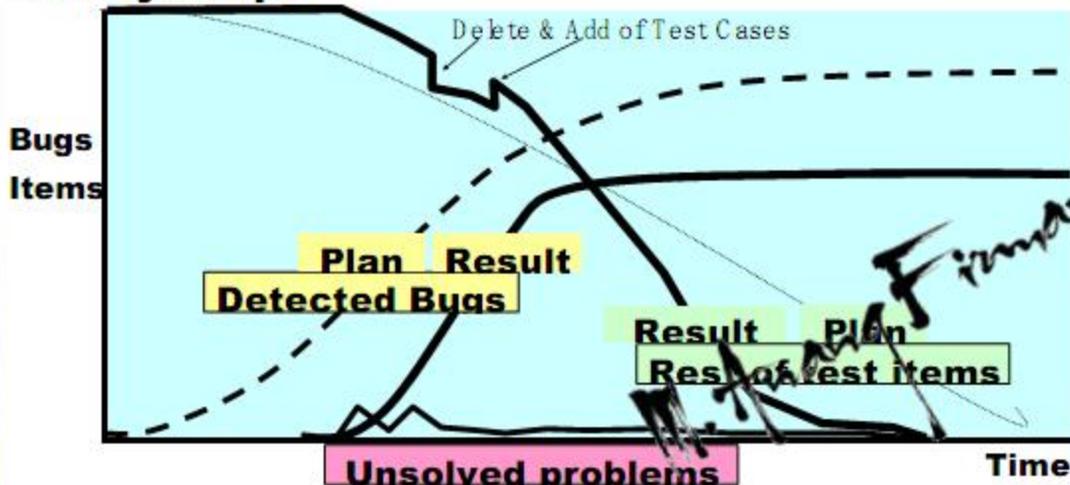


# Quality Graph

Test Progress and Quality are shown on the Quality Graph

- Completion Criteria
  - When all the test cases completed, the curve of detected bugs is saturated and no unresolved problems is left.

## Quality Graph



PROBLEM SOLVING

# BAB 14

*M. Anang Firmansyah*

# How to solve the problems

- Viewpoints of Project Management
  - To check the properness of selected Test Cases
  - Even if a project is small, all problems are to be recorded

## When a problem happens?

- **One error indicates other similar errors in it.**

Project Management = Statistics + Psychology

*M. Anang Triandono*

**A Problem once happened surely happens again.**

**Be careful about an unintentional miss-operation.**

**One error indicates other similar errors in it.**

*M. Anang F. M. M. M.*

**Human beings are those who makes a mistakes.**

**A Problem once happened surely happens again.**

**Be careful about an unintentional miss-operation.**

**One error indicates other similar errors in it.**

*M. Anang F. Anang*

**A Problem once happened surely happens again.**

**Be careful about an unintentional miss-operation.**

**One error indicates other similar errors in it.**

*M. Anang Fauzan*

**Be careful about an unintentional miss-operation.**

**One error indicates other similar errors in it.**

*M. Anang Fauzan*

# Major Forms for Project Management

No	Form	Contents
1	Project Summary Sheet	Project basic information, Gant chart, Quality Graph
2	Sub Project Sheet	Same as Project Summary Sheet
3	Weekly Report	Weekly report by each group on progress data, delay reason, planned actions, etc.
4	Design Study List	Summary List of Design Study Form
5	Design Study Form	One page study summary on study requirement and study result
6	Test Item List	Test item list with execution result
7	Problem List	Summary List of Problem Form
8	Problem Form	One page study summary on problem, cause and reapiir

M. Anang Firmansyah



# Software Training in Japan

## Formation

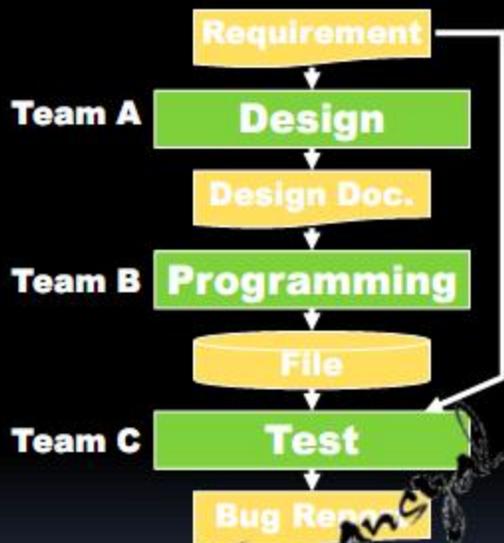
- 3 different topics for three teams
- Each team is consist of several engineers

## Process

- Design, Programming and test are done by a different team.
- One month per one stage

## Purpose

- The importance of accurate document and readability of source code
- Milestone keeping
- Pattern or tendency of errors



Experience is the best way to learn Project Management