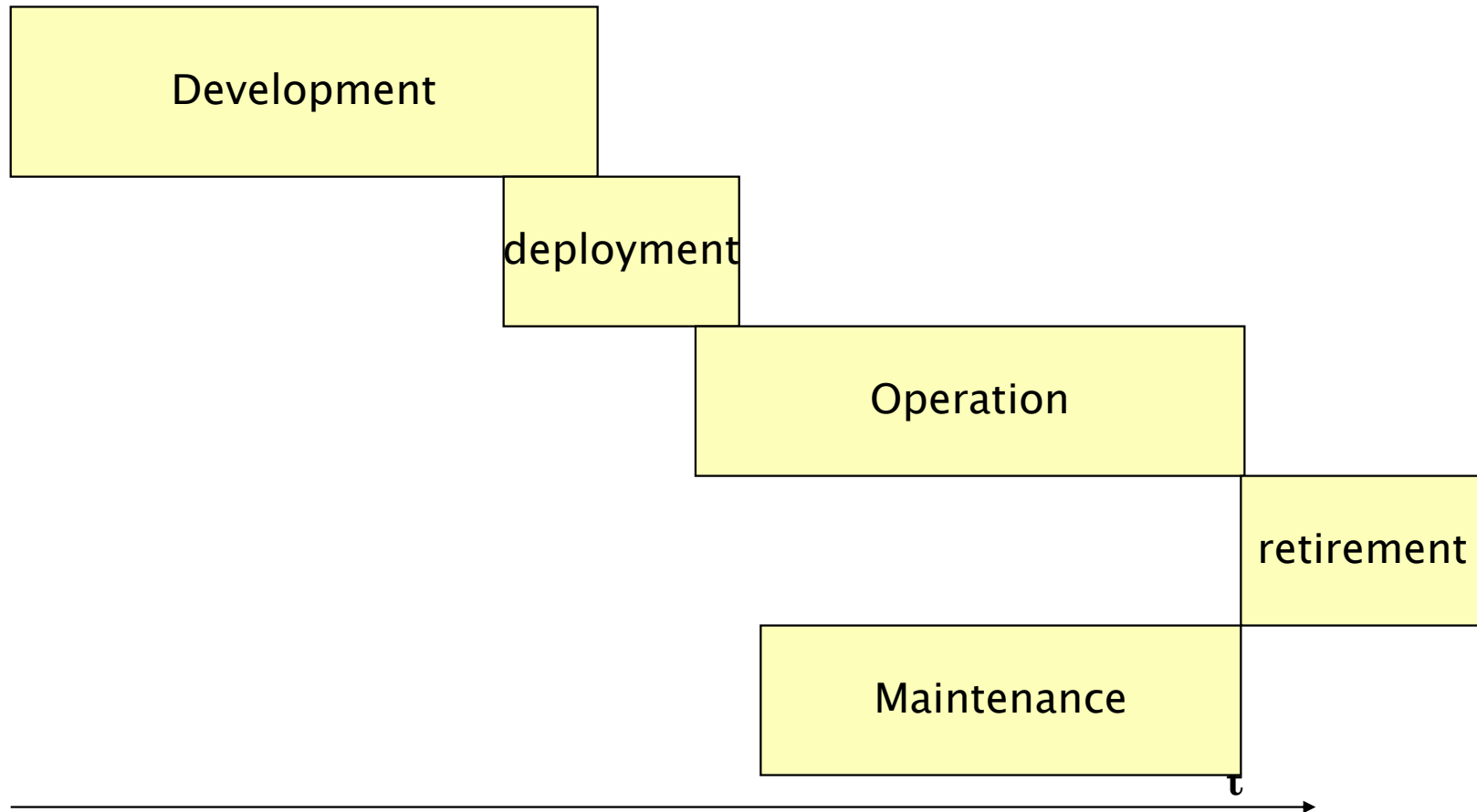
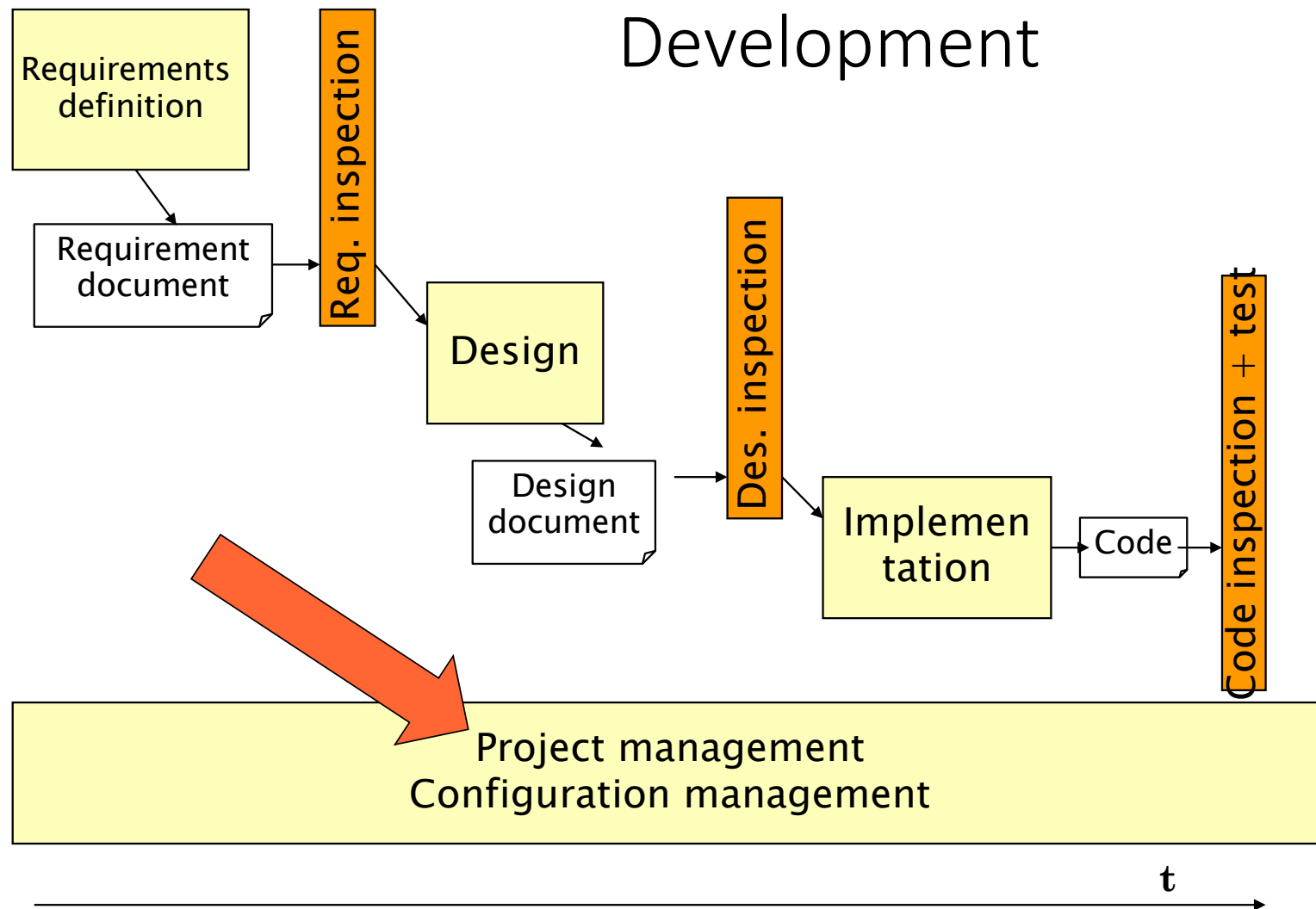


Project Management

Main Phases



Development

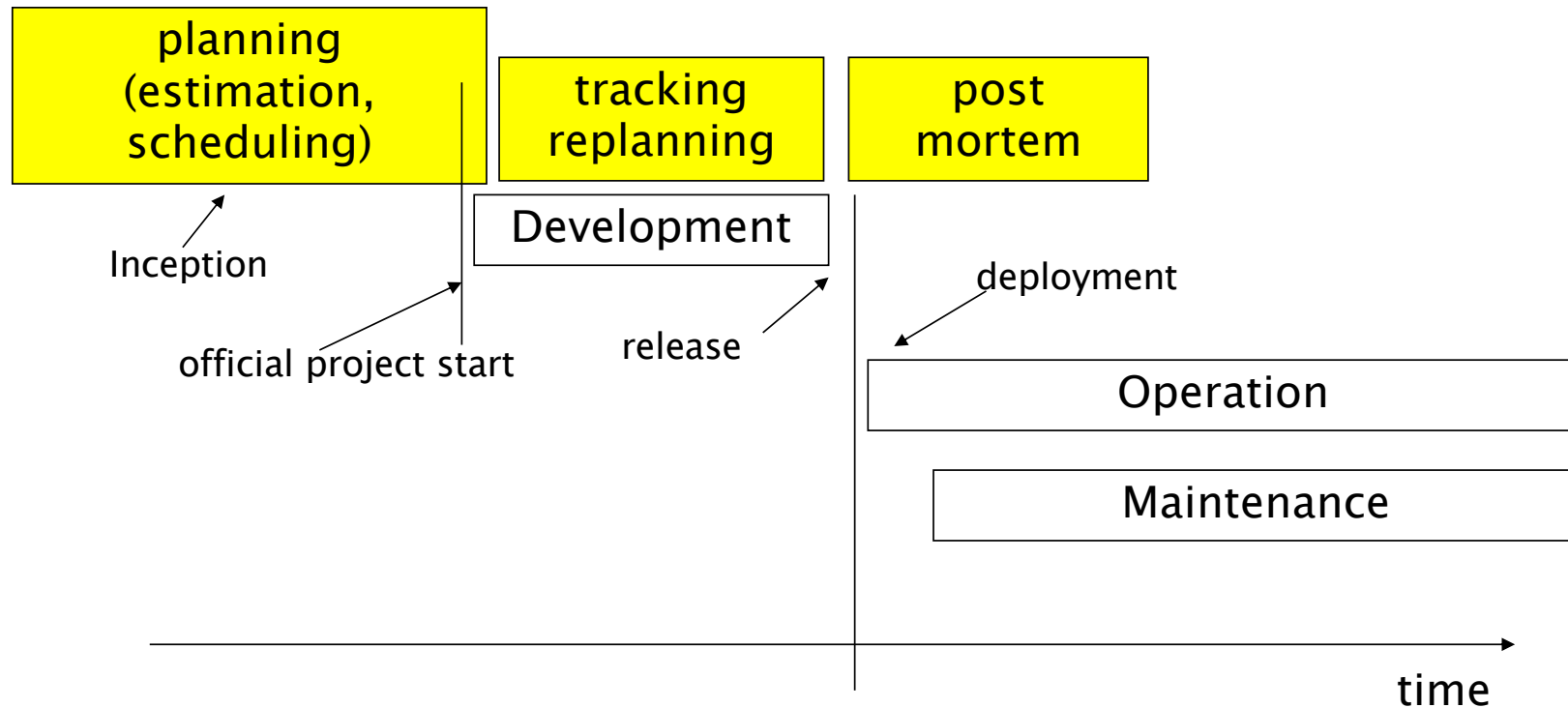


- Plans are worthless
- But planning is everything
 - Dwight Eisenhower

Project management

- How much?
 - Upfront: Estimation
 - During and after: tracking
- When ready?
 - Upfront: Estimation, scheduling
 - During and after: tracking
- Who does what?
 - Team organization, scheduling, work allocation

PM activities



Concepts and techniques

Project

- Project: collaborative endeavour to achieve a goal, with defined limits of time / money
 - Ex Manhattan project

Resource

- Person
- Tool

Activity, phase

- Activity
 - Time passed by resource to perform defined, coherent task
- Phase
 - Set of activities

Milestone

- Key event/condition in the project
- with effects on subsequent activities
- ex. requirement document accepted by the customer
 - if yes then ..
 - if no then ..

Milestones example

- M0: deliver requirements + UI
- M1: deliver full project

Deliverable

- Product (final or intermediate) in the process

Deliverables

- Ex in course project
 - Requirements document
 - GUI prototype
 - Time sheet

Measures

Calendar time, or duration

- Days, weeks, months, on calendar
- Relative, from project start
 - Month1, month2, etc
- Absolute
 - September 12

Effort

- time taken by a resource to complete a task
- Depends on duration and on #resources employed
duration * resource
- Measured in person hours (ieee 1045)

Effort

- 1 person works 6 hours → 6 ph
- 2 persons work 3 hour → 6 ph
- 6 persons work 1 hour → 6ph
- 2 persons work ½ hour → 1ph

Typical conversions

- 1 person day = 7 ph
- 1 person week = 35 ph
- 1 person month = 140 ph
- 1 person year = 1680 ph

Calendar time vs. effort

- Always linked
- Mathematical link. 6 ph can last
 - 6 calendar hours if 1 person works
 - 3 calendar hours if 2 persons work in parallel
 - 1 calendar hour if 6 persons work in parallel

Effort and cost

- Effort can be converted in cost, knowing cost per ph
 - Staff cost = person hours * cost per hour

Size

- Of source code
 - LOC (Lines of Code)
- Of documents
 - Number of pages
 - Number of words, characters, figures, tables
- Of test
 - N test cases

Techniques

Time sheet

- Basic tool to collect actual effort spent by employees
 - Per day, Per project, per activity in project
- Allows to collect
 - Actual effort spent per project
- To track project status
- To compute cost of project

Time sheet - ex1

Employee name: John Smith - week 13-17 apr 2019					
day	Project X	Project Y	Sick leave	Vacation leave	Training
13 apr	4	4			
14 apr				8	
15 apr		8			
16 apr		4			4
17 apr					
TOT	4	16		8	4

Time sheet - ex2

Employee name: John Smith - week 13-17 apr 2019							
day	Project X - req	Project X - design	Project X - coding	Project X - testing	Sick leave	Vacation leave	Training
13 apr	2	2	4				
14 apr						8	
15 apr			4	4			
16 apr		2					4
17 apr							
TOT	2	4	8	4		8	4

Course Project timesheet

Week	Requirement Engineering	Design	Coding	Unit Testing	Integration Testing	Acceptance Testing	Management	Git
apr 15 - 21								
apr 22 - 28								
apr 29 - 5								
may 6 - 12								
may 13 - 19								