Introduction to IT project management

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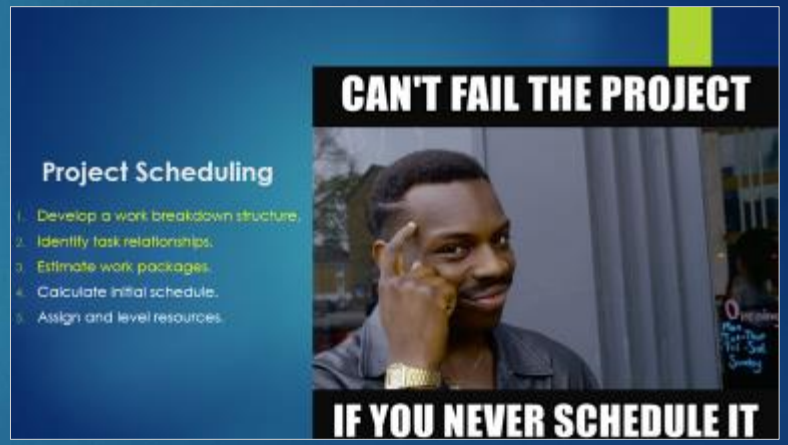
Planning

„FAIL TO PLAN, PLAN TO FAIL" – ROY KEANE

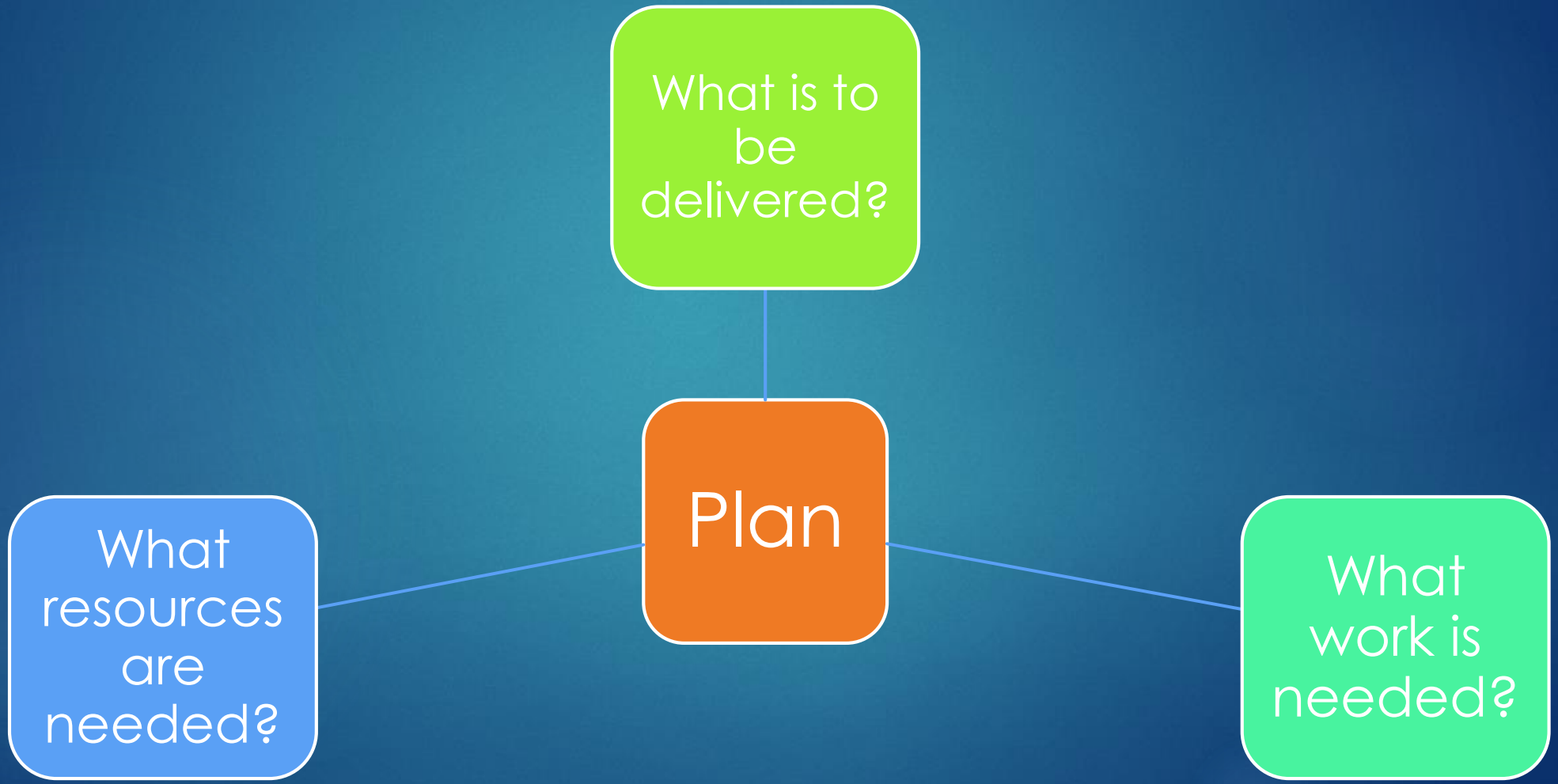
Todays plan…

Developing the Project Plan
What is to be deliverect?
Plan
What resources are needed?
What work is needed?

Risk management
Possible Risks
1422. Alien Invasion
1423. City destroyed by angry Monkey God
1424. Building eaten by giant pig
"Well he certainly does a very thorough risk analysis."


Project Scheduling
1. Develop a work breakdown structure.
2. Identify task relationships.
3. Estimate work packages.
4. Calculate initial schedule.
5. Assign and level resources.
CAN'T FAIL THE PROJECT
IF YOU NEVER SCHEDULE IT

Developing the Project Plan

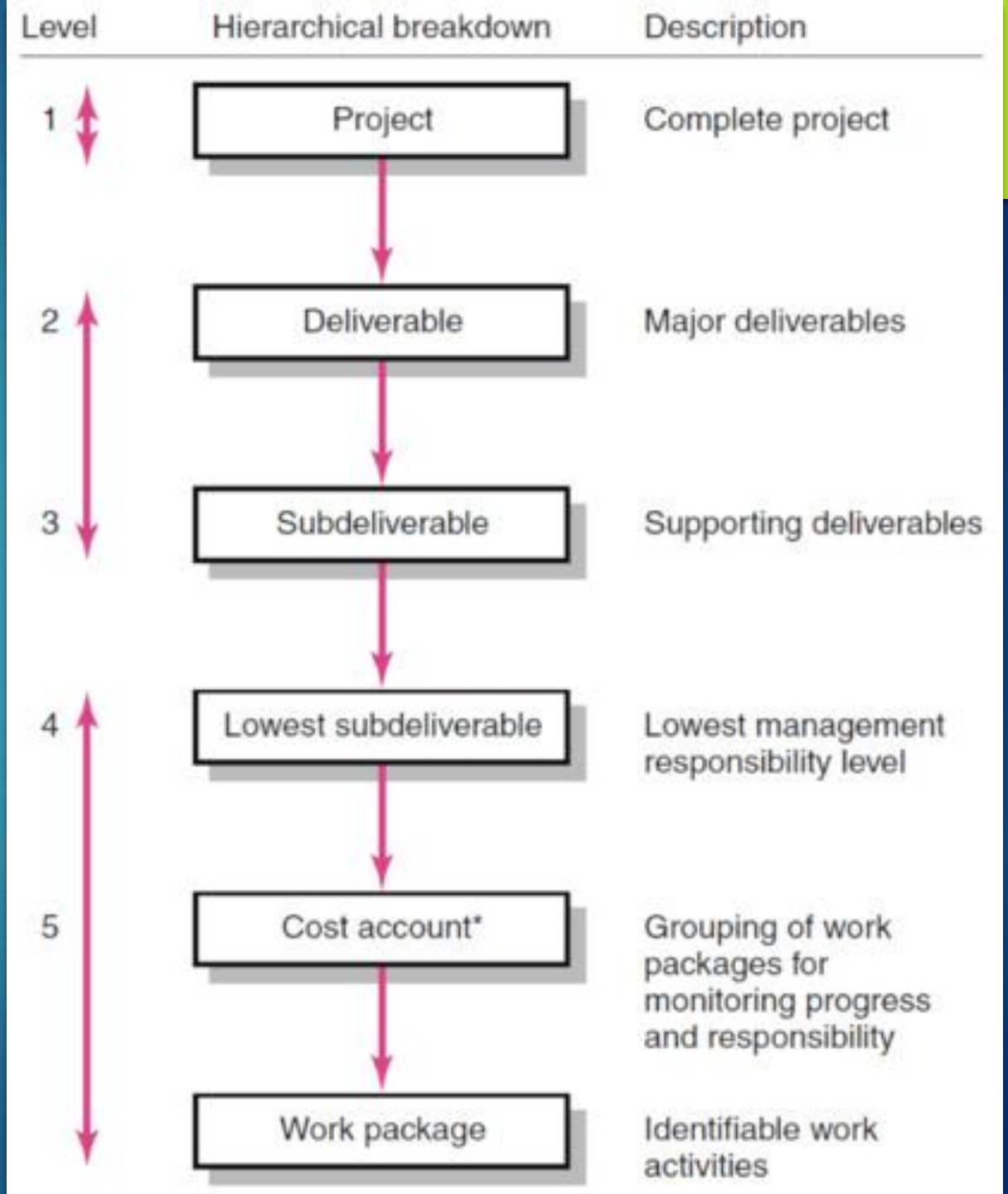


Work Breakdown Structures

- A diagram which breaks down the overall project into smaller chunks
- This proces is called **„decomposition”**
- You decompose until you reach Work Packages

Hierarchical breakdown of the WBS

A hierarchical method that subdivides the work of the project into smaller detail.
-WBS is an outline of the project with different levels of detail.



WBS

Work Package

- Lowest level of WBS
- short-duration tasks that have a definite start & stop point, consume resources & represent cost
- Work package manager is responsible for seeing that the package is completed on time, within budget & to technical specifications.

WBS

Coding System

- used to define levels and elements in the WBS, organization elements, work packages & budget & cost information.
- The codes allow reports to be consolidated at any level in the structure. Common used is numeric indention.

Work breakdown dictionary

- provides detailed information about each element in the WBS. The dictionary typically includes the work package level (code), name, and functional description

WBS

Identification of the project independently of the contribution of each stakeholder

Defining the boundary of the "scope of work" (no "scope creep")

Breaking the scope of work into manageable work packages

Building the base for project planning and control, in terms of time, cost, quality etc.

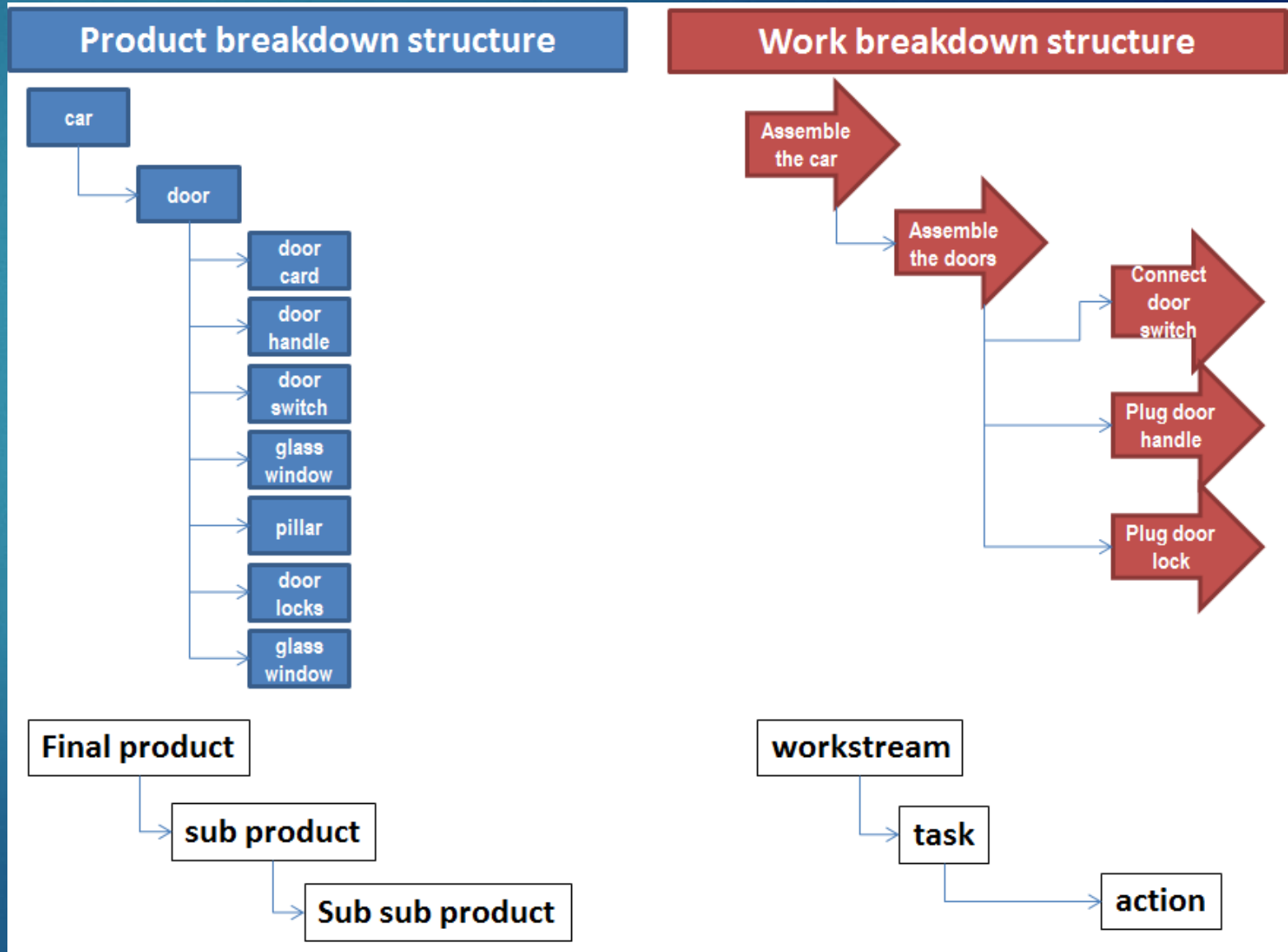
Coherence between synthetic view (upper level) and analytic view (lower level) of the project

Identification of repetitive and non repetitive components of the project

The WBS allows for pointing out project interfaces (operational, managerial, organizational) between different WP

Product Breakdown Structure

PBS breaks down the scope of work based on **product** and **service** elements with an increasing detail level (systems, groups, parts).



PBS - Product Breakdown Structure

Functional approach

based on systems functionally completed and consequently independently testable (commissioning)

Structural approach

groups of parts physically connected (construction)

Market approach

we can identify for each product element a specialised supplier in a specific market sector. It is dominating in the procurement phase.

Modular approach

there is the coincidence between functional approach and structural approach, since each single module corresponds to a specific function. It is the best possible situation, because if we are able to increase the modularisation, the management is easier.

ABS - Activity Breakdown Structure

Breaking down the scope of work into proces elements with an increasing detail level (phase, work package, activity,..).

Work Package questions

You need to answer them for each Work Package:

How long will it take to complete?

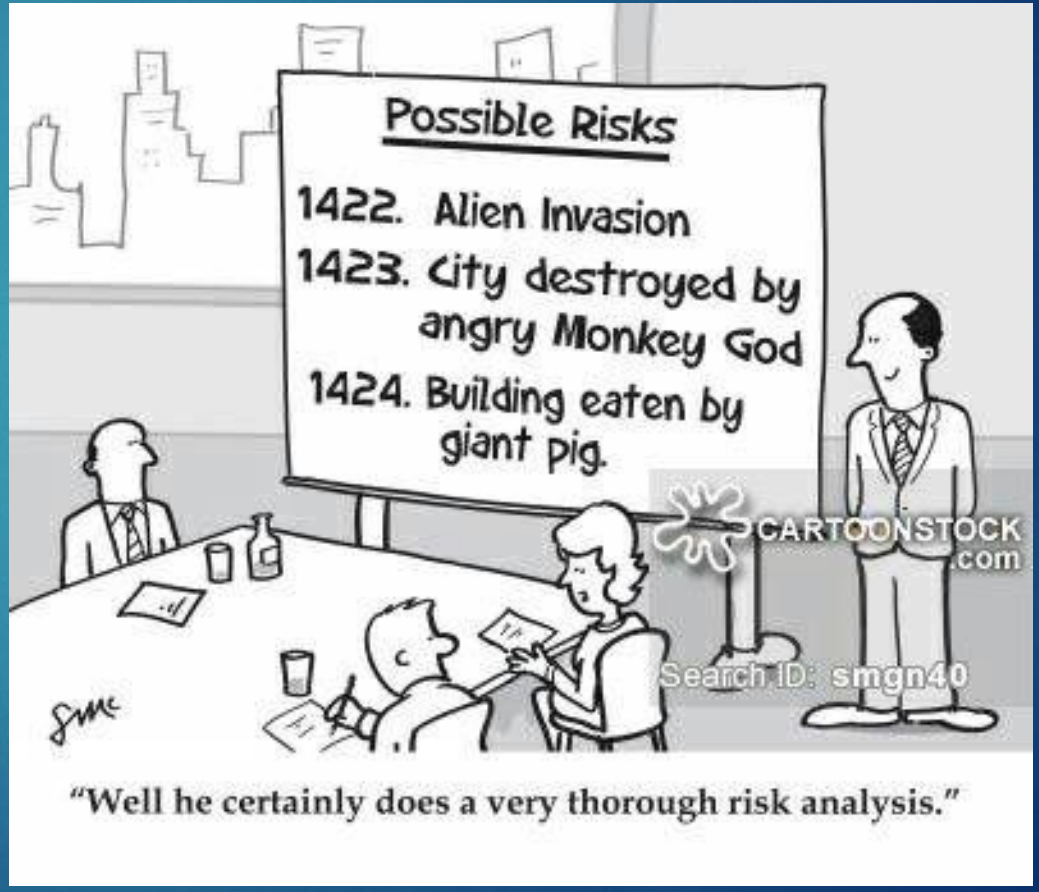
How much will compliting cost?

What resources are required to complete this?

What planning really is?

- Project planning consists of two main stages: **Risk Management** and **Project Scheduling**
  - The goal of the risk management stage is to **identify project risks** and take **the necessary precautions**.
  - The goal of project scheduling is to make a **detailed schedule** of all the tasks that need to performed, with **specific time frames** and **resource allocations**.

Risk management



Risk management framework

Identify risks

Find all the factors that threaten project objectives.

Analyse and proritize

Assess each risk in terms of its possible damage and likelihood of occurrence.

Develop a response

Create strategies for reducing the possible damage and/or probability the risk will occur.

Establish reserves

Set aside additional funding for the project that will be used for known risks and unknown risks

Continuous risk management

Implement strategies and monitor the effects of these changes on the project.

Identify the risks

Risk

- Name
- Possible impact
- Time frame
- Probability
- Type

Analyze and prioritize the risks

Risk Assessment Matrix				
Impact of Risk (Consequence)	Major	Medium	High	Extreme
	Moderate	Medium	Medium	High
	Minor	Low	Medium	Medium
Seriousness of Risk = Probability x Impact		Unlikely (0-33%)	Moderately Likely (33%-66%)	Highly Likely (66%-100%)
		Probability of Risk (Likelihood)		

Develop Response Plans

Accept the risks

This implies that you understand the risk and decide to do nothing about it. This is a common strategy when the impact or the probability are low.

Avoid the risk

You can try to avoid a risk by choosing not do to specific parts of the project or by selecting a lower-risk option for meeting the project goals.

Contingency plans

When you cannot ignore, nor avoid the risk and have no impact on the probability, you can try to reduce the negative impact and have a fall-back plan in place when the risk becomes reality. Note that contingency plans require a continuous monitoring of the risks, such that you can activate the continuous plans on time. This implies that this strategy can only be efficient if there is a way to detect the risk on time.

Transfer the risk

This strategy typically boils down to paying for insurance. Another approach is setting up a fixed-price contract that will get the work done on time for a fixed price. Note that this could however introduce new risks as more external parties get involved.

Mitigate the risk

This strategy tries to reduce the risk and more particularly the probability that the risk occurs. This often implies taking extra actions.

Establish Contingency and Reserve Funds

Continuous Risk Management

Project Scheduling

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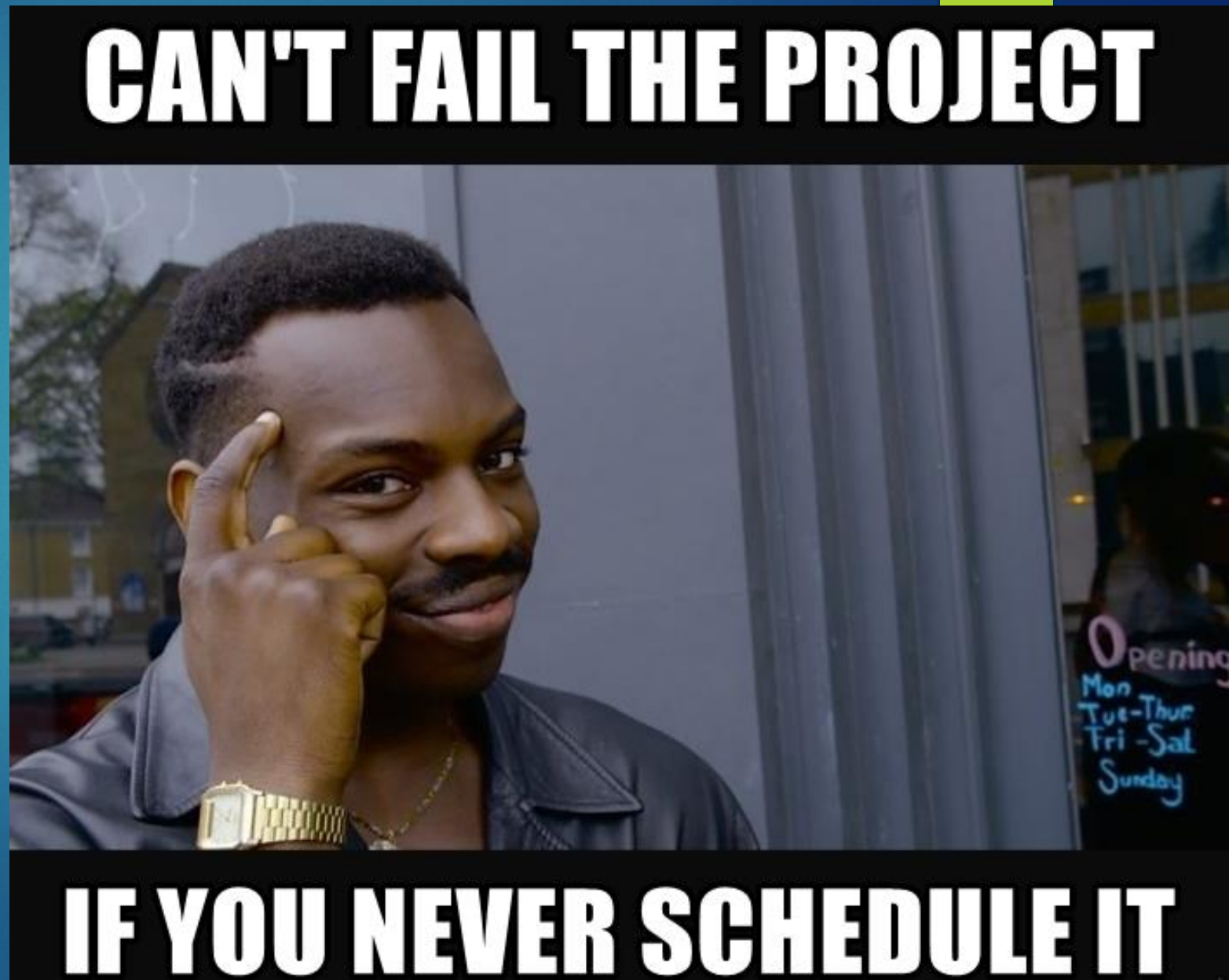


Calculate an Initial Schedule

Forward pass

determine the earliest starting point (ES) and finish time (EF)

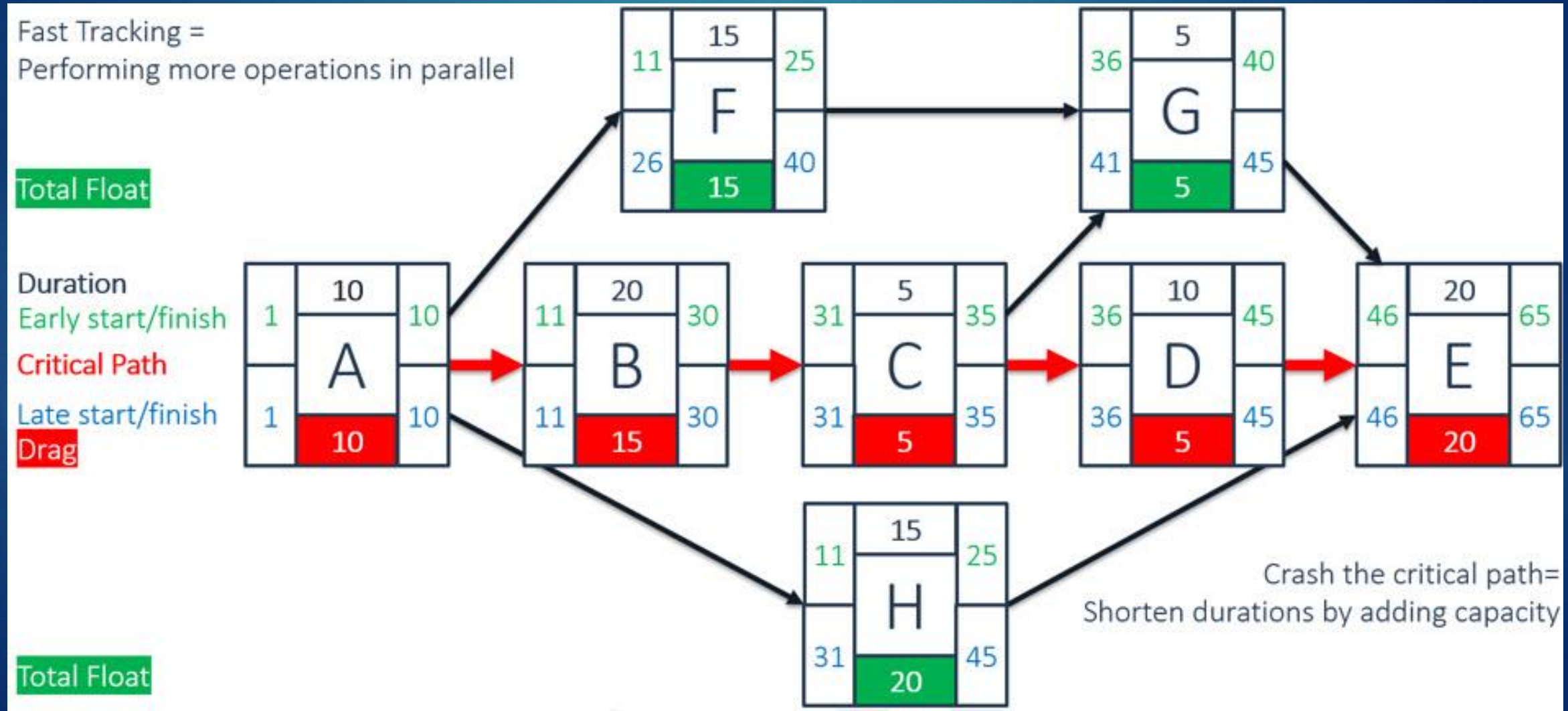
Backward pass

determine the latest start time (LS) and latest finish time (LF) of each task

Float of each pass

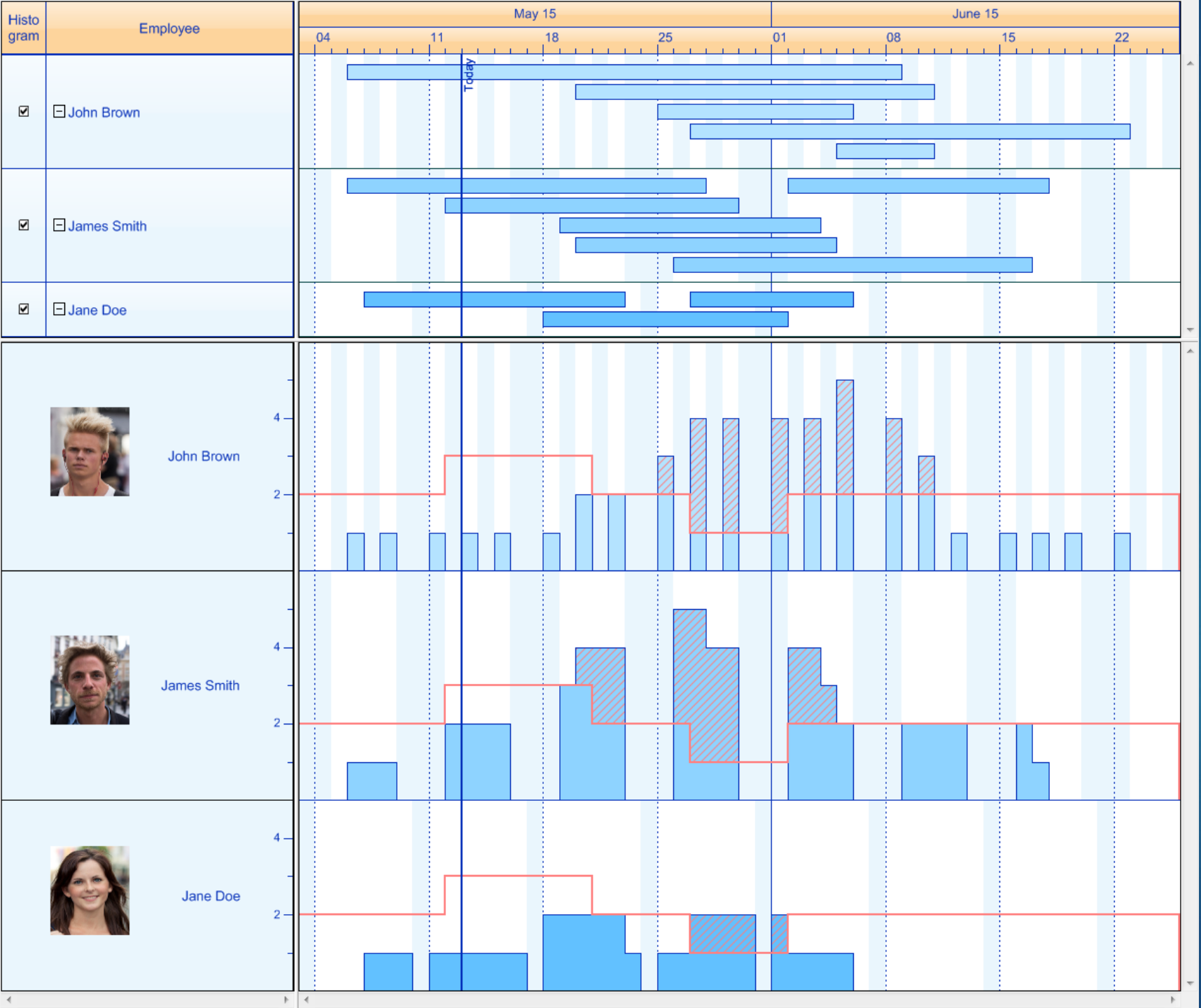
The float of an activity is the difference between its ES and LS (or EF and LF) and represents to what extent the start of an activity can be postponed in relation to its ES

Critical path



Assign and level resources

- Forecast the resource requirements throughout the project for the initial schedule.
- Identify the resource peaks.
- At each peak, delay non-critical tasks within their float.
- Eliminate the remaining peaks by re-evaluating the work package estimates.



Assign and level resources

THAT'S ENOUGH NOW