Plánování

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Plánování času a zdrojů

- **JAK,** ne CO
- definuje v jakých termínech a časových sledech budou práce na projektu probíhat
- aktivity založené na WBS nebo logickém rámci

Plánování času a zdrojů

Hlavní nástroje:

- Ganttův diagram
  - + přehlednost
  - + jednoduchost konstrukce
  - - neukazují přehledně závislosti mezi úkoly (činnostmi)
  - - změna v délce jedné činnosti se většinou (automaticky) nepromítne do zbývající části
- CPM – critical path method – kritická cesta
  - + souhrnně prezentuje souvislosti
  - + umožňuje hledat alternativy
  - + definuje kritickou cestu
  - - složitost
  - - nepřehlednost

The time is the only thing that cannot be bought☺

Odhadování

- Window method ☺
- Top-down, Bottom-up
- Groupe estimation technique (Delphi, Crawford´s slip etc.)
- Expert guess (SME)
- Comparative or analogous estimation
- PERT – uses Three-point estimating
- Planning poker

Odhadování - Three-point estimating

- dobu trvání stanovují na základě optimistických, realistických a pesimistických variant odhadů trvání činností

$$T = \frac{t_O + 4t_M + t_P}{6}$$

Critical Path Method

- An algorithm for scheduling a set of project activities
- Why we need it? It provides us with:
  - Project finish date
  - Activities that can float in the schedule
  - Activities that cannot float - RISK

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Critical Path Method - Inputs

What do we need to use CPM?

- **Network diagram** including relations among activities
- Activities duration **estimates**
- **Demands for resources** for each activity
- Key dates

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CPM – how to describe a nod (an activity)

ES – early start - the earliest date a task can start

EF – **early finish** - the earliest date a task can be completed

ES	Total float	EF
Duration (days)	Activity	
LS	Free float	LF

LS – **late start** - the latest date a task can start without delaying the project finish date

LF – **late finish** - the latest date a task can finish without delaying the project finish date

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Critical Path Method

How to calculte the project´s finish date?

- **Forward pass calculation** (Early Start and Early Finish) – searching for a maximum of early finish of immediate predessesors = early start of an activity
- **Backward pass calculation** (Late Start and Late finish) – searching for a minimun of early start of immediate successors = late finish of an activity

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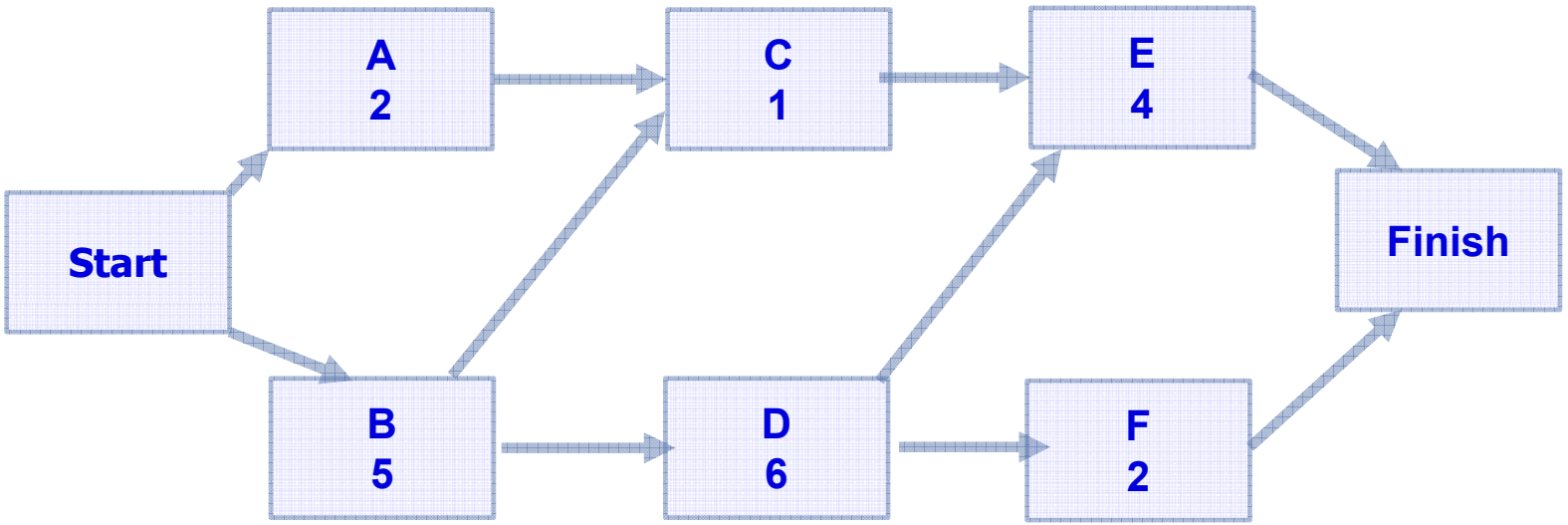
CPM example



Forward pass (early start+duration= early finish) – searching for a maximum of early finish of immediate predessesors = early start of an activity
Backward pass – searching for a minimun of early start of immediate successors = late finish of an activity

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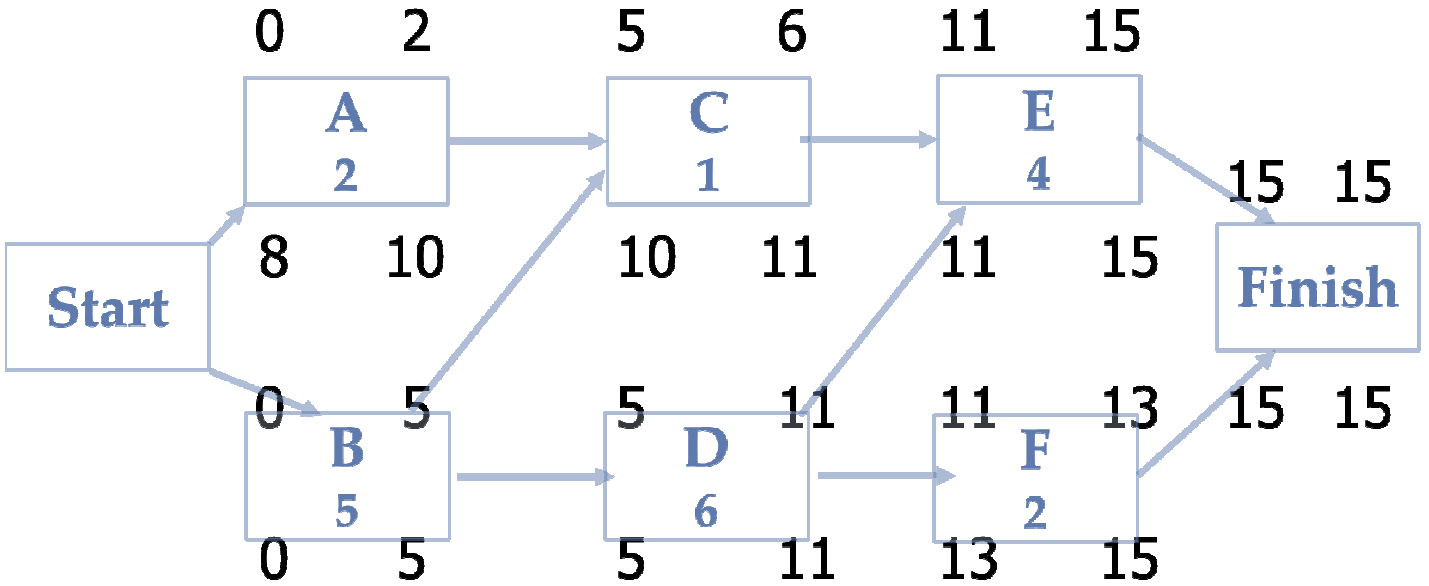
CPM example

Check
www.lucidchart.com



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Why are we doing this? ☺

– The purpose of backward pass is **to find a float**

- **Float (slack)** – the amount of time an activity can be delayed or lenghtened
- **Total float** – the amount of time an activity can be delayed without extending the overal project´s completion time
- **Free float** - the amount of time an activity can be delayed without delaying the early start date of its subsequent tasks

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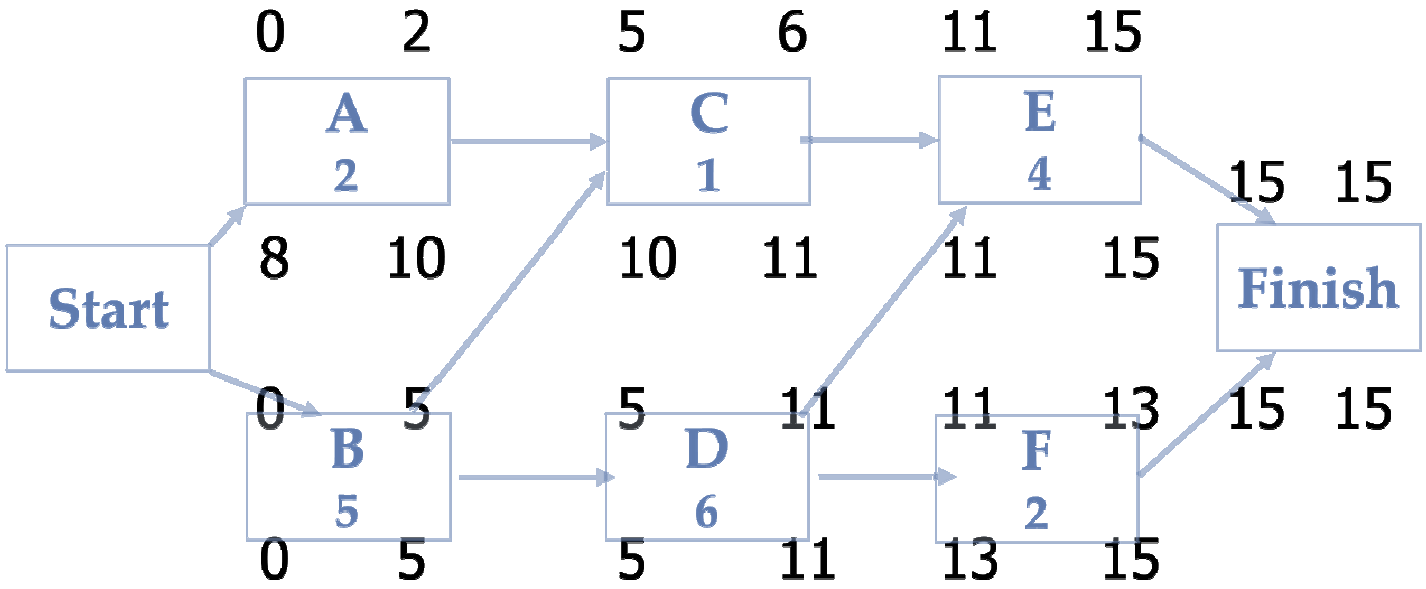
Total Float: CPM example



What is the total float for activity A in our example?

Total float – the amount of time an activity can be delayed without extending the overal project´s completion time

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Total Float

Total float – the amount of time an activity can be delayed without extending the overal project´s completion time

TF=LF-EF

TF=LF-ES-D

TF=LS-ES

ES	Total float	EF
Duration (days)	Activity	
LS	Free float	LF

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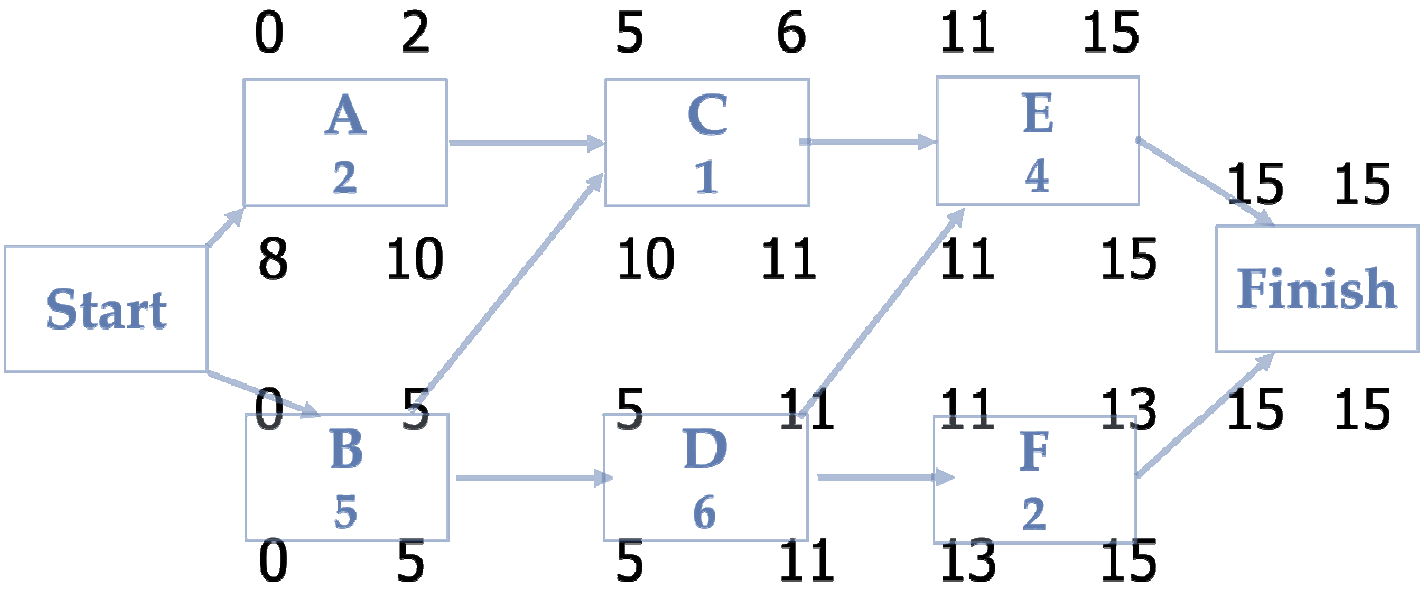
Free Float: CPM example



What is the free float for activity A in our example?

What about activity C and D?

Free float - the amount of time an activity can be delayed without delaying the early start date of its subsequent tasks

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Critical Path Method

- Why floats are important in CPM?

- Critical activities have the least amount of flow
- Floats determine the critical path

- If an activity has a TF=0, what does it mean?

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Critical Path

- Is made of activities that cannot be deayed without delaying the whole project
- Items on critical path have zero float
- Path with longest duration
- Can be more than one

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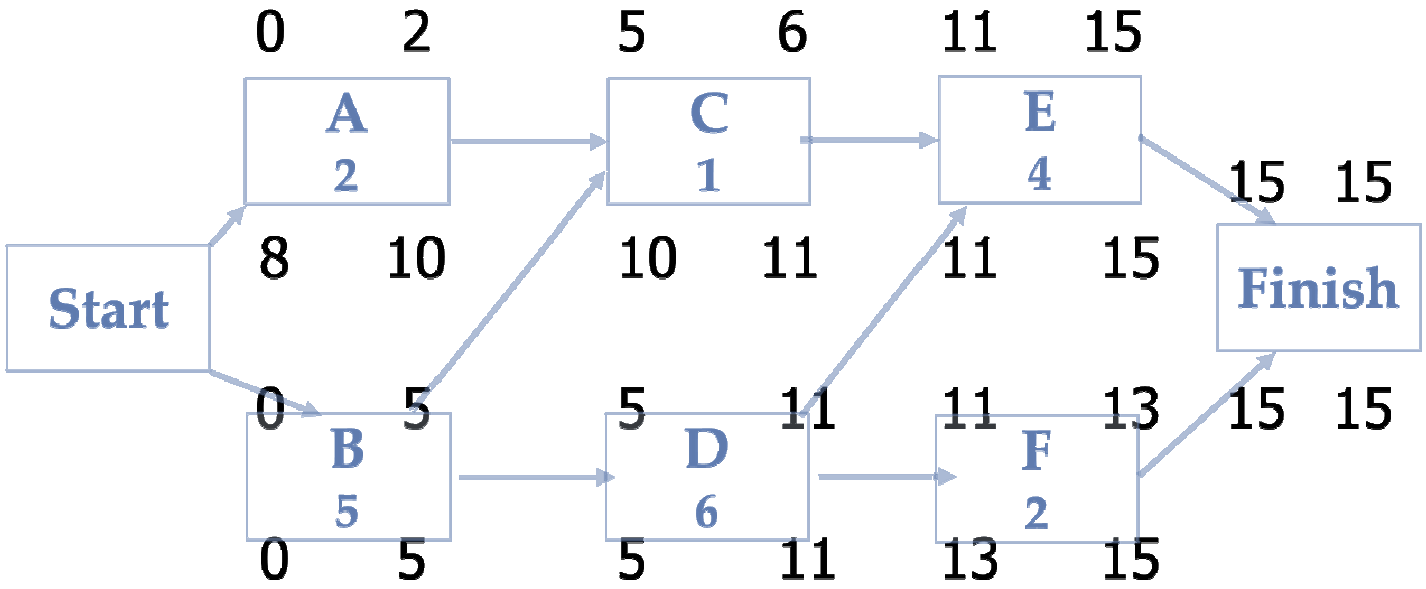
Can you find the critical path?



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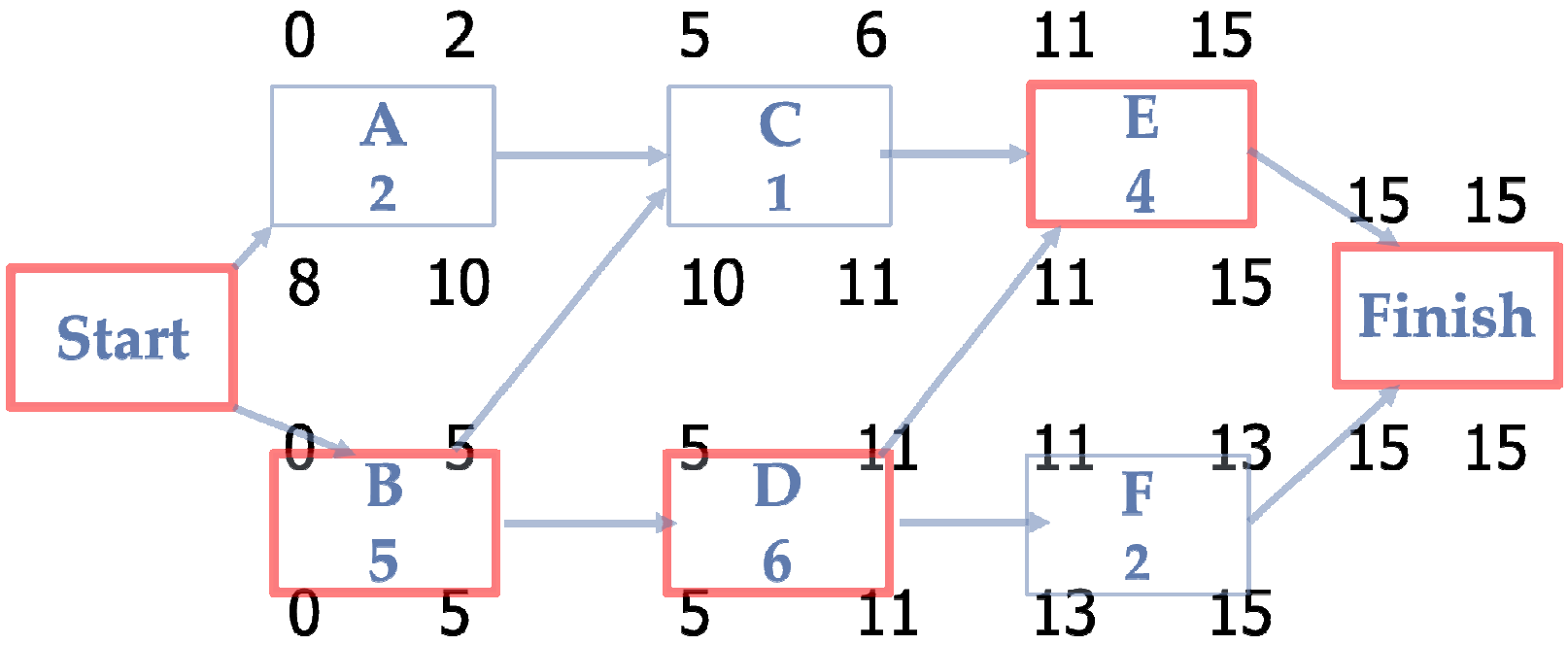
Yes, you can☺



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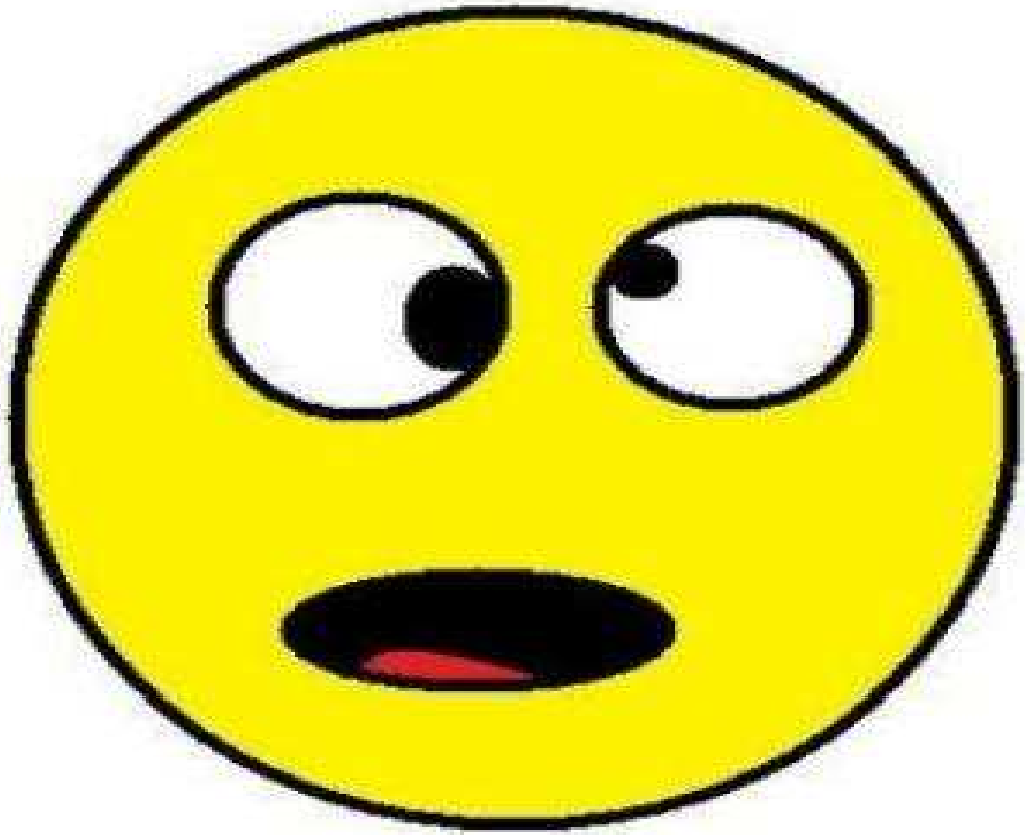


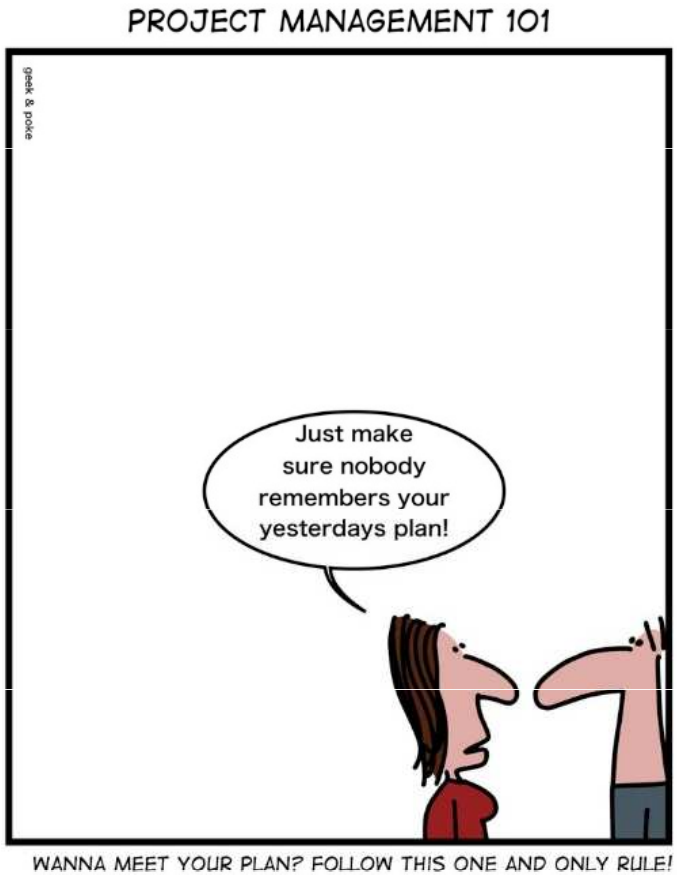
Plánování času a zdrojů

Optimalizace plánu

- Fast-tracking
- Crashing

Konflikty zdrojů

- Resource Leveling
- Resource Smoothing


PROJECT MANAGEMENT 101
geek & poke
Just make sure nobody remembers your yesterdays plan!
WANNA MEET YOUR PLAN? FOLLOW THIS ONE AND ONLY RULE!

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Děkujeme! Máte otázky?

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