Estimation 1

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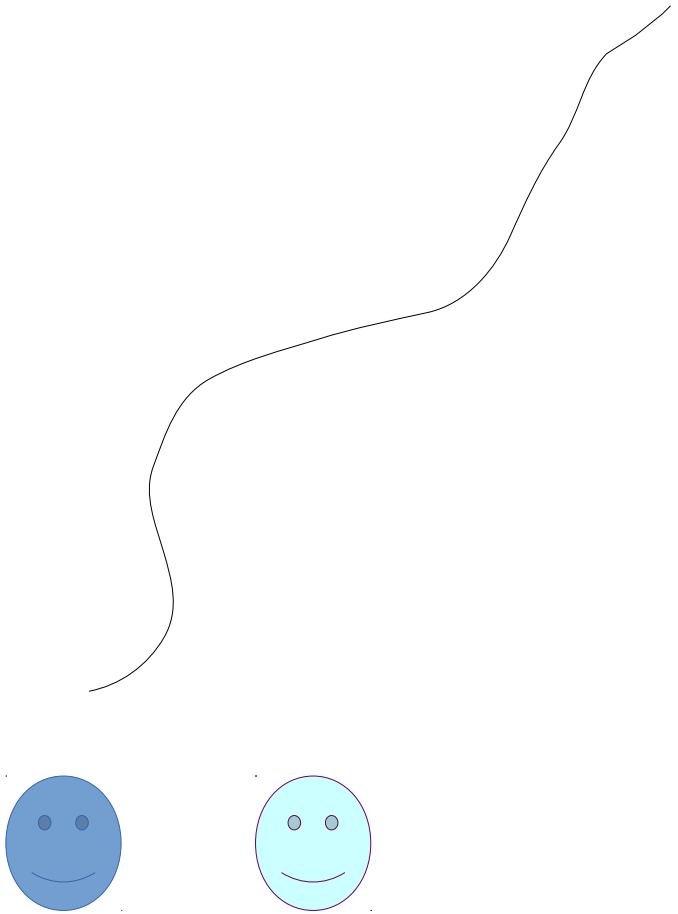
Individual Software Process

Estimation

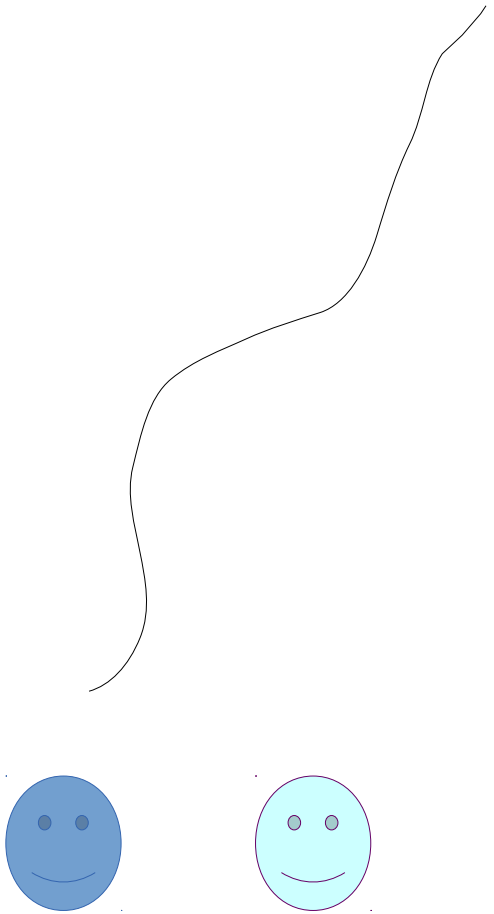
- Estimation is a crucial part of project planning.
- What to estimate?
  - Developer's effort
  - Time
  - Cost
  - Project/task size

Basic math 1: going to Chiang Mai



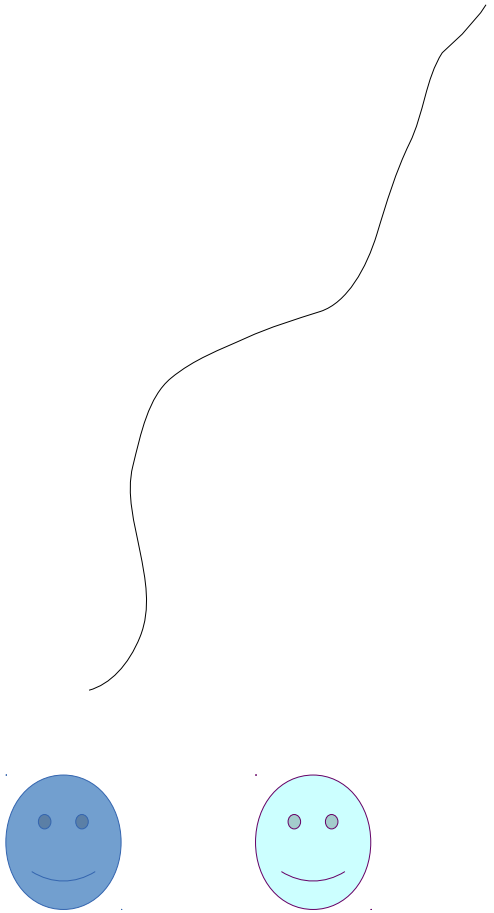
- Driving distance 700km
- A drives on average 100km/h, so it'll take A 7 hours.
- B drives on average 80km/h, so it'll take B 8 hours 45 minutes.

Basic math 2: going to Chiang Mai



- Driving distance 700km
- A drives **on average in Bangkok** 100km/h, how long will it take A to reach Chiang Mai? 7 hours?

Basic math 3: going to somewhere close to Chiang Mai



- Driving distance 700km to Chiang Mai
- The place we are going to is **close to** Chiang Mai.
- A drives **on average in Bangkok** 100km/h, how long will it take A to reach Chiang Mai? 7 hours?

Do we need to answer?

- In many cases, we do not have enough information to accurately answer how long someone will drive to the place.
- But we can't avoid making the decision, so we have to **estimate** (i.e., making *guesses* according to some beliefs).

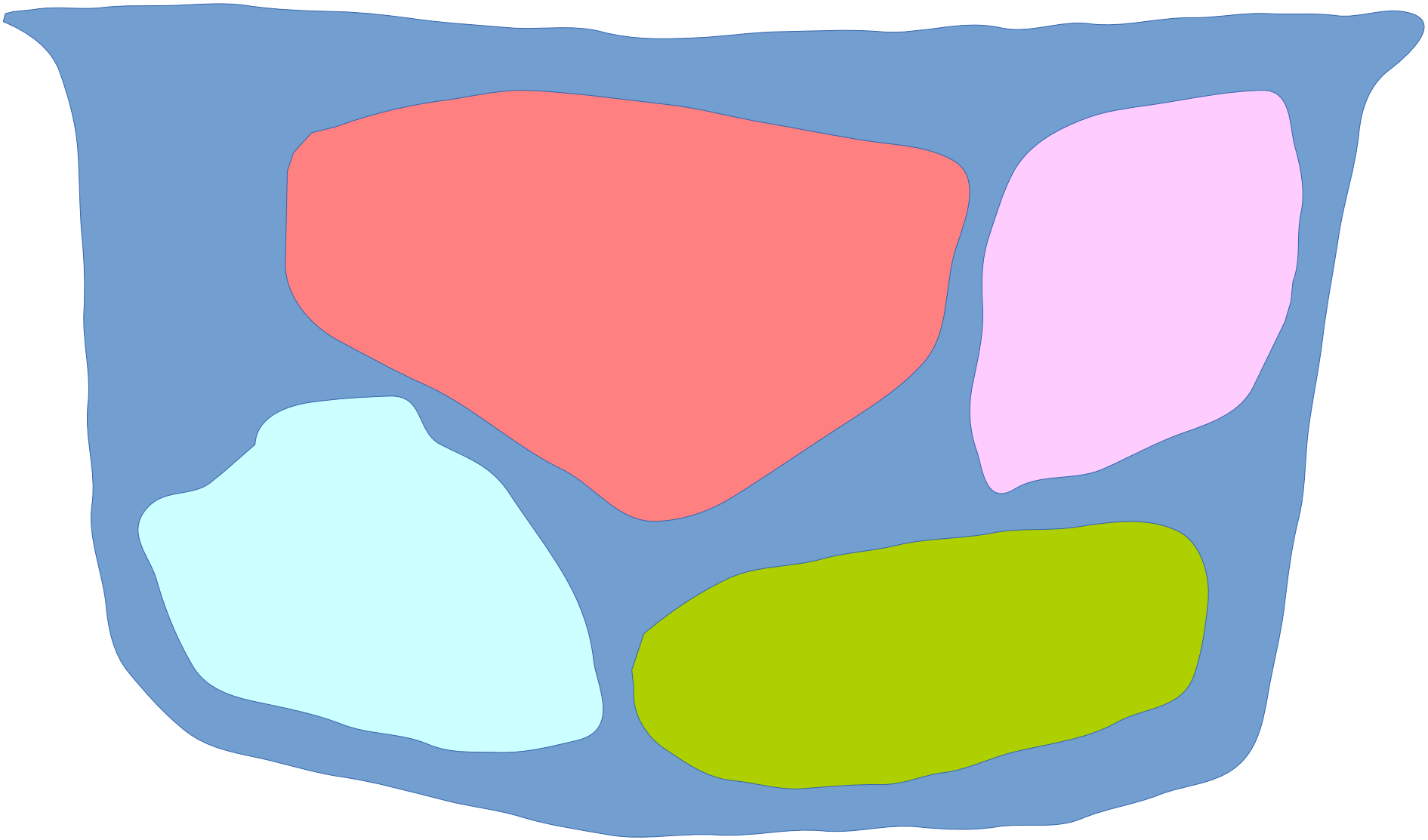
We have already done that!

- Let's go back to look at your 1st iteration planning.
- We ask you to think about what features/tasks you would do in the first iteration.
- Let's go back to look at the number.

Some statistics

# of features/tasks done	# of projects
Much more than the plan (>=150%)	16
Roughly the plan	10
Much less than the plan (<=50%)	2
None	0

Task allocation for the next iteration



What do we need to know?

- What to do next?
  - Most of what you have to do (list of tasks)
  - The priority of each task
- Estimate the time/effort you need for each task
- Estimate the amount of time you can work on this project

Old data points

- From the first iteration:
  - Do you remember the tasks that you have completed? If you don't, go look at your Trello board.
  - Do you remember how much time you spent on each task? (a rough estimate is OK)
  - Let's make a simple spreadsheet for that.

Let's collect some data

- There are usually too many factors you need to know to make a good estimation.
- However, good estimates are based on data.
- Think about this:
  - **Case 1:** We are going to Chiang Mai (700km from here). We know that we drive 100km/h *in Bangkok*, how long do you think we will be in Chaing Mai?
  - **Case 2:** We are going to Chiang Mai (700km from here). We know how to drive, but *have no idea how fast we drive*, how long do you think we will be in Chiang Mai?

Basic data: time used for each task

- For each task, we record the time we used to complete it.

Tasks	Time used (hours)
1. show background	0.5
2. show players	0.5
3. basic player movement (left/right)	1
4. jump (no obstacles)	0.5
5. jump (with obstacles)	1.5

*You can also record the time in minutes.

More detailed data (optional/when possible)

- For each task, you might also record how much time you spend for each activity.

Tasks	Time used (minutes)	Time for thinking/ designing	Time for coding	Time for testing and debugging
1. show background	20	5	10	5
2. show players	35	0	20	15
3. basic player movement (left/right)	55	10	25	20
4. jump (no obstacles)	25	5	15	5
5. jump (with obstacles)	120	30	30	60

How to track your time

- Manual
- Software
  - Desktop application
  - Web-based application
  - Mobile application
  - ** You can even write your own software!
- Pick one that is not obstructing your work.
- Also, note that we do not need extremely accurate data.
- (We will practice this in class.)