Part III

Brainstorming the pipeline

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Tutorial schedule

Introduction:
15 min

Part III: 15 min
Brainstorming pipeline

Break:
30 min

Part I: 20 min
Main Components

Part IV: 60 min
Set & Run Projects

Part VI: 20 min
Set & Run Projects cont.

Part II: 10 min
Introduction to Crowd Platform

Part V: 25 min
Theory on Aggregation

Part VII: 10 min
Results & Conclusions
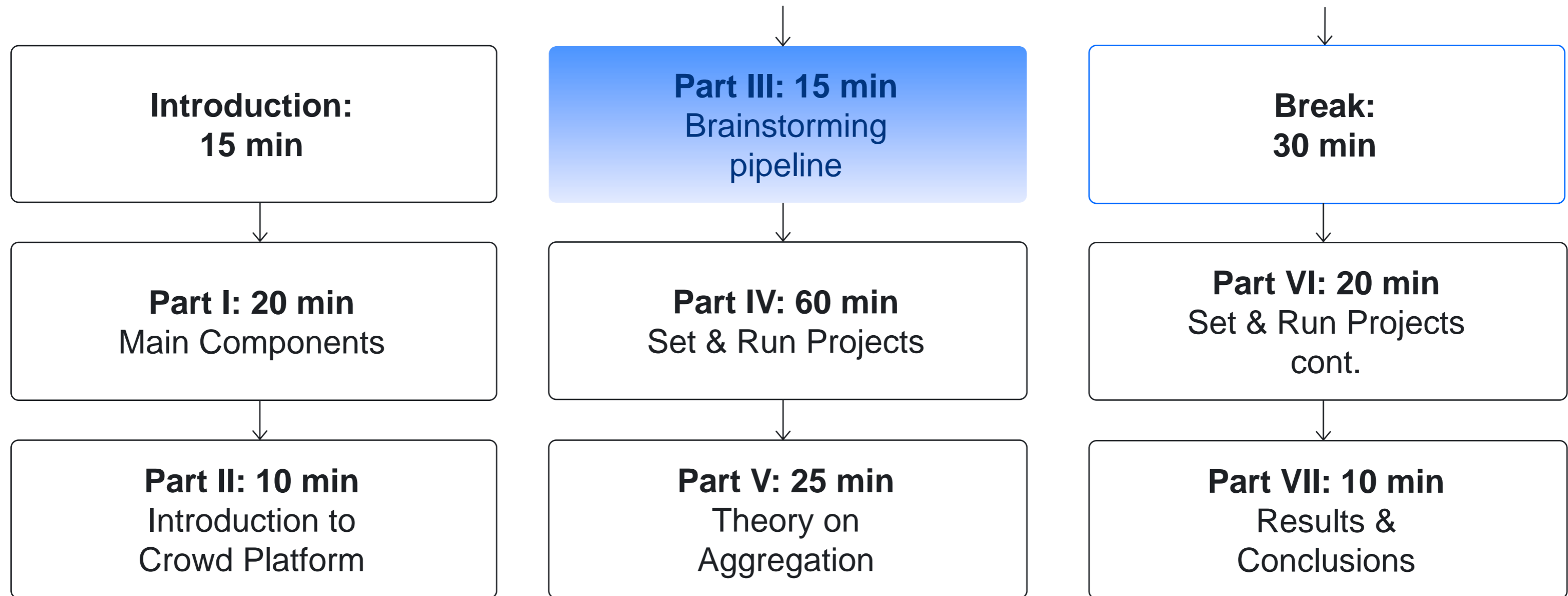
Practice session

Our practice session will consist of three parts:

Part I (now)	Part II (in 15 mins)	Part III (in 120 min)
Think and discuss how you would design a crowdsourcing pipeline	Run the best-practice pipeline on a real crowd on Toloka	Complete the pipeline on Toloka

Practice session: scope

Imagine that you develop a machine learning pipeline to help improve search quality at an online store to find substitutes

Practice session: scope

Imagine that you develop a machine learning pipeline to help improve search quality at an online store to find substitutes

► You have a dataset of pictures with people wearing different clothes

► You need to find a better substitute for the initial item in an image

► These collected data will further be used to train a search algorithm

This is your goal
for the practice
session of our tutorial

Dataset under study: pictures of people wearing different clothing items

Items to be matched in photos

Each photo may contain clothing items of different types, for example:

▶ Hats

▶ Shirts

▶ Jackets

▶ Coats

▶ Jeans

▶ Pants (trousers)

▶ Bags

▶ Sunglasses

▶ Other items

During your practice:

Choose one type of items you want to find substitutes for in the photos

For example: Shoes

Formal setup: find the best substitute item

► Each clothing item of a selected type in each photo from the dataset needs to be matched by a substitute item

► **Let us do it via crowdsourcing**
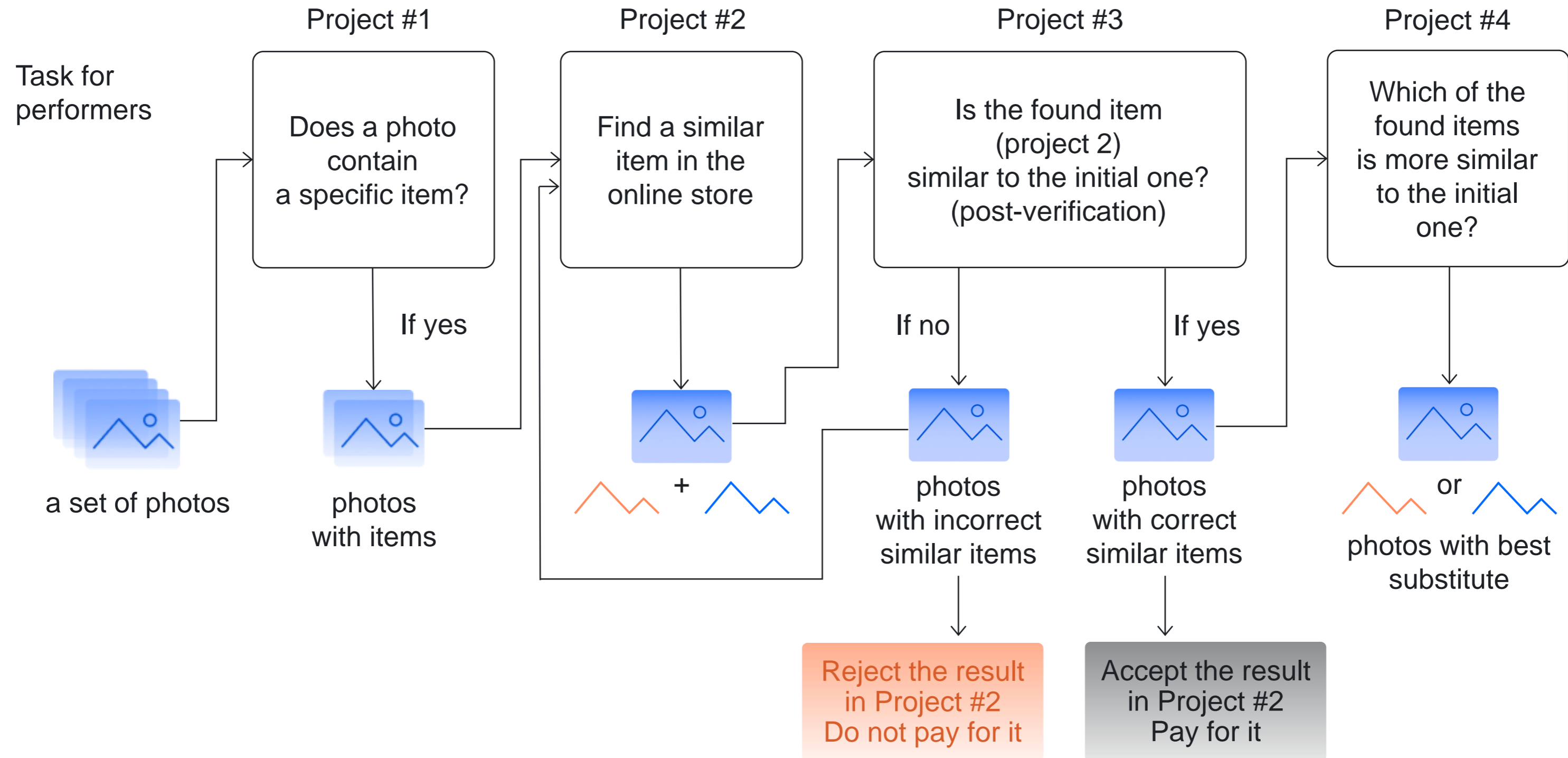
Example: I decided to find the best substitute for the shoes, so my pipeline would be like..

During your practice:

Think how you would design a crowd pipeline to find the best substitute!

Suggested pipeline

We suggest the following pipeline

Task for performers

a set of photos

Project #1

Does a photo contain a specific item?

If yes

photos with items

Project #2

Find a similar item in the online store

+

Project #3

Is the found item (project 2) similar to the initial one? (post-verification)

If no

photos with incorrect similar items

Reject the result in Project #2 Do not pay for it

If yes

photos with correct similar items

Accept the result in Project #2 Pay for it

Project #4

Which of the found items is more similar to the initial one?

or

photos with best substitute

We suggest the following pipeline

Task for performers

Project #1

Does a photo contain a specific item?

Project #2

Find a similar item in the online store

Project #3

Is the found item (project 2) similar to the initial one? (post-verification)

Project #4

Which of the found items is more similar to the initial one?

a set of photos

If yes

photos with items

+

If no

photos with incorrect similar items

If yes

photos with correct similar items

or

photos with best substitute

During the practical session we will help you implement and run this pipeline

Project #1: Filter out photos without objects

Task

► Does a photo contain an item of desired type?

Key setting

► Type: classification
► Quality control: golden set
► Overlap: 3 answers per photo
► Pay: $0.01 per a suite of 10 photo

Why?

► Save money: no need to process further photos without desired objects

Are there **shoes** in the picture?

○ Yes   ○ No   ○ Picture not found

Project #2: Searching for similar items on the online store

Task

► Find a similar item on the internet

Key setting

► Type: product photo search

► Quality control: post verification

► Overlap: 3 answers per photo

► Pay: $0.02 per 1 photo

Peculiar properties

► Hard to use golden set and consensus

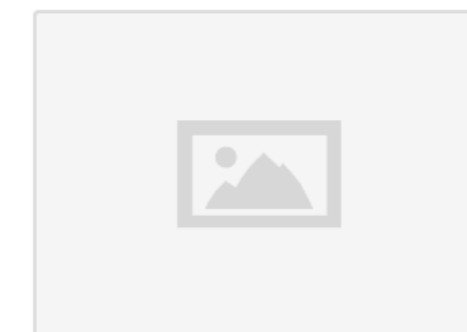► Results will be verified in Project #3

Find the same **shoes** on Marks and Spencer

Marks and Spencer

Shoes must be the same color and the same style.

Paste the link here

Upload the image here
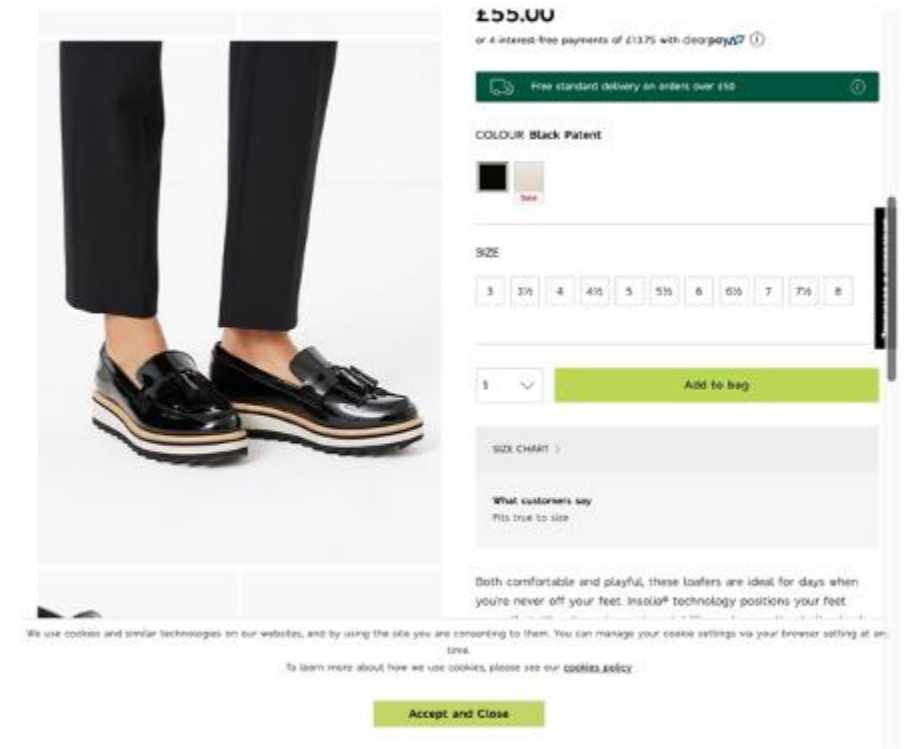
Project #3: Accept correctness of items found

Task

▶ Does an image contain a requested item?

Key setting

▶ Type: classification

▶ Quality control: consensus

▶ Overlap: 3 answers per photo

▶ Pay: $0.01 per a suite of 10 photo

Why?

▶ Need to verify the results obtained from Project #2

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Project #4: Decide which substitute works best

Task
► Which of the items is similar to the initial one?

Key setting
► Type: side-by-side image comparison
► Quality control: consensus
► Overlap: 3 answers per photo
► Pay: $0.01 per a task suite of 10 photo

Why?
► Need to understand which substitute fits best