

## Topics

Server-based chat application, supporting multiple users and rooms

Image processing service

Video processing service

Website archiving service

Folders synchronization service

Design chosen application using architectural patterns. You need to create a description of application design including diagrams. You may consult the teacher about the design.

Implement chosen application according to the design.

Defence:

1. upload PDF with design description to GitHub
2. present the design and answer the questions
3. upload project to GitHub
4. present working application
5. answer the questions

## Sample architecture for images processing service

What we want to have:

- a web server that accepts images, uploaded by a user (as an alternative way it may accept url to images which then will be downloaded automatically)
- user can set different options for image processing (such as rotation, flip, color changes, etc)
- after everything is set, user submits options by pressing a button
- the service processes the image according to options and returns the resulting image to the user

The magic part is between “user submits options by pressing a button” and “service returns the resulting image”. Here is how we can implement it:

- the web server puts the image and options into a queue
- there are several workers that take data from the queue and process it
- after a worker finished a job, it notifies the server about it
- when server received a notification from a worker, it returns the result to the user

So we will have:

- a web server
- a queue
- several workers