

# Version control: Git and GitHub

- The learning objectives for this week are:
  - Knowing the purpose of version control in the software development workflow
  - Knowing the purpose of GitHub and its relationship between the git version control tool
  - Knowing how to create a git project
  - Knowing how to use the most common git commands
  - Knowing how to publish a git project in GitHub
  - Knowing how to collaborate in a git project

# Version control

- When we are working on a software in software development team, we need to be able to *share our code* and *keep track on the changes in our code*
- *Version control* refers to a service used for storing code
- There are two primary reasons for using it:
  - It allows us to *store backups* of both the current and older versions of the software
  - It allows us to *share software related code* with other developers, which makes collaboration easy
- In practice, *every* software development project uses version control to manage the collaborative development of the project's code
- This makes it on top of programming the most important skill of software developer

# Version control

- Version control tools allow *marking a specific state of a project* as so that one can return to it later
- If something goes wrong in the development of new features, we can return to an older and functional version of the project
- Version control stores *all the marked states*, so any team member can follow the changes in the code, like who has done what and when
- This also makes finding bugs, or errors in the software, a lot easier

# Version control tools

- There are several different version control tools that offers the mentioned functionality
- *Git* is among the most popular version control tools and it is used heavily in the modern software development
- Knowing the basics of Git is commonly *considered a must have skill* for being able to work as a member of software development team
- Git has *graphical* and *command-line* interfaces
- The command-line interface might seem difficult to use at first, but being able to use a command-line interface is a very valuable skill in the industry
- During the course we will learn how to use the command-line interface

# GitHub

- Git provides the version control functionality, but it doesn't provide us with a way to *store* or *publish* projects outside our own computer
- For this, there are several different services, such as *Gitlab*, *Bitbucket* and *GitHub*
- The basic idea for these services is the same: they allow us to store and publish project related code into a single centralized *code base* which all team members contribute to
- During this course we will use the *GitHub* service to store and publish our project's code
- The software developer's GitHub account is commonly their *personal portfolio*: all their projects are there for others to see
- When applying for a job, having a GitHub account with projects is very beneficial because it is the easier way to showcase your work