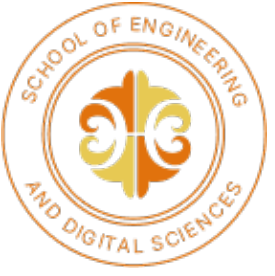




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Web Programming and Problem Solving

Development Environment Setup (**lab**)

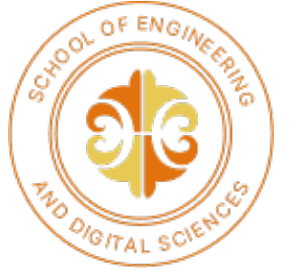
Date: 17.08.2022

Instructor: Zhandos Yessenbayev



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Content

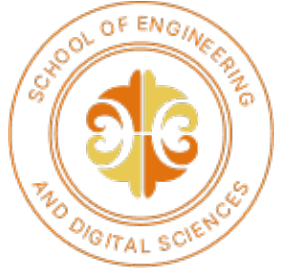


- Introduction
- Development Environment
 - Installing a Text Editor
 - Hello, World!
 - Browser Sync (optional)
 - Installing Git
 - Creating a GitHub Account
 - The First Commit
- Publishing your website



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Introduction

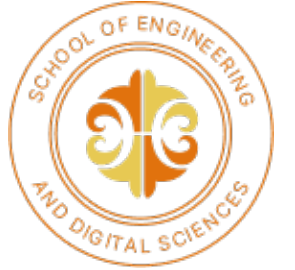


- In this **Lab** we will learn how to :
 - setup a development environment
 - work with version control system Git
 - interact with GitHub
 - publish our first web page
- **Deadlines:**
 - **Soft** deadline: Friday, 19.08.2022, until 23:59
 - **Hard** deadline: Sunday, 21.08.2022, until 23:59

Good luck!!!



Installing a Text Editor



- To write a code, we will need any **Text Editor**

Recommended:

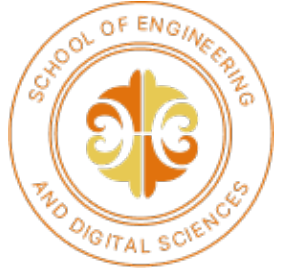
- Sublime Text - <https://www.sublimetext.com/>
- Visual Studio Code - <https://code.visualstudio.com/>
- Atom - <https://atom.io/>

Preinstalled:

- On Windows: Notepad (but not MS Word!)
- On Mac: TextEdit
- On Linux: nano, vim



Hello, World!



- Let's write our first program!
- Open a **Text Editor**
- Copy and Paste the code →
- Save file as *index.html*
- Open it with a **browser**

```
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8">
    <title>My Website</title>
  </head>
  <body>
    <h1>Hello, World!</h1>
  </body>
</html>
```



Browser Sync (optional)

- After any change to the code, we need to refresh a browser to see the actual change
- **BrowserSync** allows to automatically synchronize your code with the browser
- To setup BrowserSync (instructions at <https://browsersync.io/>):
 - Download and install **Node.js** - <https://nodejs.org/en/download/>
 - To check if it is really installed, in **command line** type :
`npm --version`
 - To install BrowserSync, type:
`npm install -g browser-sync`
 - To run and sync you files, type:
`browser-sync start --server --files "*"`



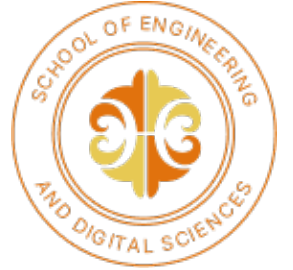
Installing Git

- To keep track of the changes to the code, we will use a Version Control System called **Git**
- Additionally, you will be publishing and submitting your assignments through Git
- Download and install Git <https://git-scm.com/downloads>
- To check if it is really installed, in **command line** type :
`git --version`





Basics of Git



- To create or clone a new git repository:

`git init`

`git clone <path/to/repository>`

- To add (stage) and commit files:

`git add --all`

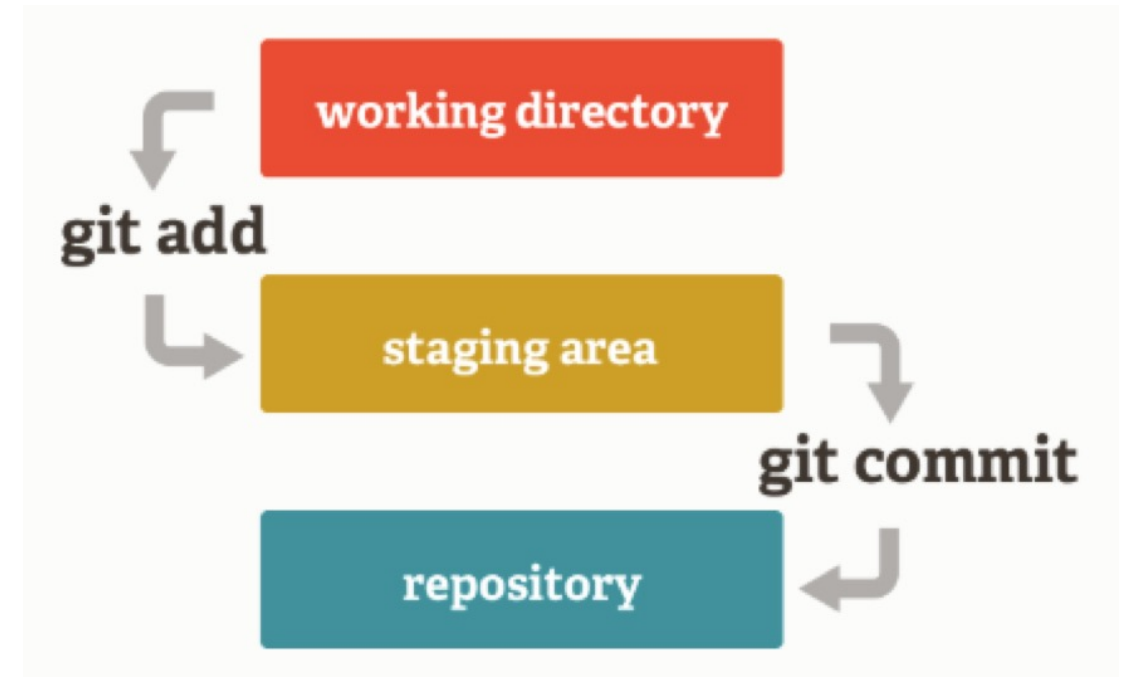
`git commit -m "Commit message"`

- To push changes to server:

`git push origin main`

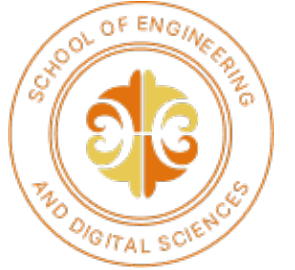
- To get status of repo:

`git status`

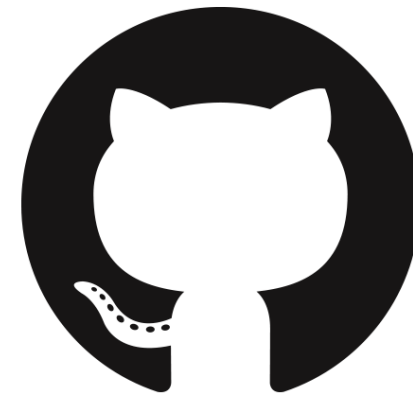




Creating a GitHub Account

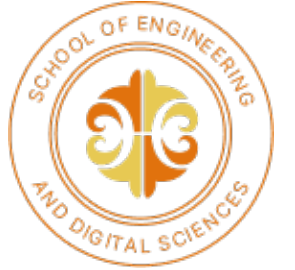


- **GitHub** is a web-based code hosting platform for version control and collaboration
- As of June 2022, GitHub reported having over 83 million developers and more than 200 million repositories, including at least 28 million public repositories [Wikipedia]
- To create an account:
 - Go to **GitHub.com** and sign up
 - Send your ***USERNAME*** to the instructor





The First Commit

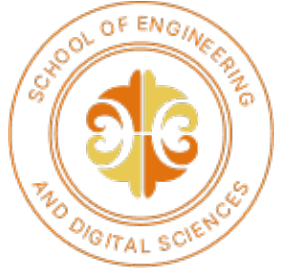


- To create a new repository:
 - Create a new repository **REPO** (Step 1) using the tutorial:
<https://guides.github.com/activities/hello-world/>
 - Clone your repository to the local machine with the Git command:
`git clone https://github.com/USERNAME/REPO.git`
 - Start working locally on your project, create a new file
 - Commit and Push your changes to the GitHub



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Authentication issues

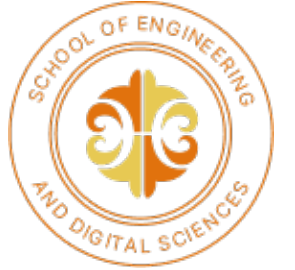


- To be able to push your files to GitHub via Command line, you need to create a **Personal Access Token** (similar to password)

<https://docs.github.com/en/authentication/keeping-your-account-and-data-secure/creating-a-personal-access-token>



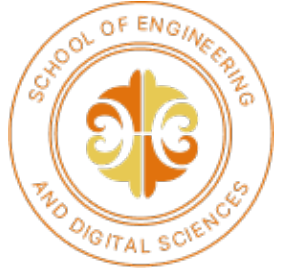
Publishing your Website



- Now it's time to publish your website!
- There are two ways to do that:
 - Setup and run your **own web server**
 - Use third-party **web hosting** services
- Third-party web hosting sites:
 - Hoster.kz, PS.kz (paid)
 - Google Cloud Hosting (12 months free)
 - **GitHub Pages**
 - many more ...



Publishing your Website



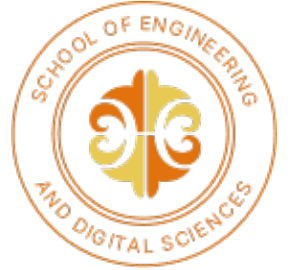
- We will be using **GitHub Pages**
- To setup a new website follow the instructions on <https://pages.github.com/>
 - Create a repository - ***username.github.io***, where *username* is your username on GitHub
 - Clone the repository: `git clone https://github.com/username/username.github.io`
 - Create a “Hello World” file in the repository folder (see the slide above)
 - Commit and push the file:

```
git add -all
git commit -m "Initial commit"
git push -u origin main
```
 - Fire up a browser and go to **`https://username.github.io`**



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Grading



Task	Points
Installing a Text Editor	5
Hello, World!	5
Browser Sync (optional)	5
Installing Git	5
Creating a GitHub Account	5
The First Commit	10
Publishing your website	10
TOTAL	40 + 5

Thanks for Attention!