Lab 1: Setup

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In the practical section of this lab you will follow a tutorial on how to install Anaconda, Flask, and Visual Studio Code on your computer:

- Step 1: Download and Install Anaconda

  Go to https://www.anaconda.com/products/distribution/ and download the version of Anaconda that is compatible with your operating system. Once the download is complete, open the installer and follow the prompts to install Anaconda on your computer. After the installation is complete, open the Anaconda Navigator and make sure that the installation was successful.

- Step 2: Create a Virtual Environment

  Open the Anaconda Navigator and select the Environments tab. Click on the Create button to create a new virtual environment. Give your environment a name, such as "flask_environment", and select Python as the package type. Click on the Create button to create the environment.

- Step 3: Install Flask

  Once the virtual environment is created, select it from the list of environments and click on the Not Installed tab. Type "flask" in the search bar and select Flask from the list of packages. Click on the Apply button to install Flask in your virtual environment.

- Step 4: Install Visual Studio Code

  Go to the Visual Studio Code website (https://code.visualstudio.com/) and download the version of Visual Studio Code that is compatible with your operating system. Once the download is complete, open the installer and follow the prompts to install Visual Studio Code on your computer. After the installation is complete, open Visual Studio Code and make sure that the installation was successful.

- Step 5: Configuring Visual Studio Code

  Open Visual Studio Code and go to the Extensions tab by clicking on the Extensions icon on the left sidebar or by pressing Ctrl + Shift + X (Cmd + Shift + X on Mac). Search for Python and install the Python extension

by Microsoft. Go to File ≫Preferences ≫ Settings or press Ctrl + , (Cmd + , on Mac) and search for python.pythonPath.

In the right panel, paste the path to your python executable from the environment you created on step 2, for example:

C: $\backslash Users\backslash username\backslash Anaconda3\backslash envs\backslash flask\_environment\backslash python.exe$

- Step 6: Create a Flask App

  Open Visual Studio Code and create a new file called app.py. In the app.py file, copy and paste the following code to create a simple Flask app:

```
from flask import Flask

app = Flask(__name__)

@app.route('/')
def hello():
    return "Hello World!"

if __name__ == '__main__':
    app.run()
```

Save the file and open the terminal in Visual Studio Code by clicking on the Terminal tab or by pressing Ctrl + (Cmd + on Mac). Activate your virtual environment by typing conda activate flask_environment in the terminal. Run the Flask app by typing python app.py in the terminal. Open a web browser and go to the URL http://localhost:5000/ to see the "Hello World!" message displayed.

Now to submit the changes you just made to a repository, you may use the git protocol with Github. Commonly, the development teams use the integrated functions within the IDE (Integrated Development Environment). Alternatively you may also use the console or other software specific apps such as GitHub desktop. To use Github within VSCode you may follow these instructions:

- First, you will need to have a GitHub account. If you don't have one, go to github.com and sign up for a free account.
- Next, you will need to install the GitHub Extension for VS Code. This extension will allow you to connect to your GitHub account and interact with your repositories directly from VS Code.
- After the GitHub Extension is installed, open VS Code and sign in to your GitHub account.
- Now, you can start working on your code in VS Code. When you're ready to save your changes, you can use the Git commands in the VS Code interface to commit and push your changes to your GitHub repository.

- To create a new repository, click on the "+" icon on your GitHub account and name your personal repository for the course as: "ISEG_WD_[student number]" ex: "ISEG_WD_11111".
- Now you can use the "git clone" command in the terminal of VS Code to clone the repository to your local machine and start working on it.
- Once you are done making changes, you can use the "git add" command to stage the changes, then use the "git commit" command to commit the changes to your local repository.
- Finally, you can use the "git push" command to push the changes to your remote repository on GitHub.

To get an assessment of the labs, create folders with all the documents you create every lab with the corresponding name: ex 'Lab_1' and inside it all the documents you created within this lab.

You should now have Anaconda, Flask, and Visual Studio Code installed and configured on your computer, and be able to create and run a simple Flask app. You can also use this setup to create more complex applications, by adding more routes and functions to the app, as well as using other modules and libraries that are available in the Python ecosystem.

It's important to note that this tutorial is a basic setup, and there are many other ways to configure and use these tools depending on your specific needs and requirements.

One important thing to keep in mind is to always make sure that you are using the correct version of Python and the packages that are installed in your virtual environment, so as not to create conflicts with other versions or packages that are installed globally on your system.

Additionally, to avoid any issues related to dependencies, it is always recommended to use a virtual environment for your application, as it ensures that all the packages and versions used are isolated from the system's python environment.

In case of any issues, you can refer to the official documentation of each tool for more detailed instructions and troubleshooting tips.