
A GUI-based Software Package for the Simulation of Queuing Networks

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1. Introduction

As this tool is a web application, there will be no installation of any packages for the tool itself. To check the helper tools and libraries used, refer to section 2.1.

2. Deployment Details

2.1 Tools Used and Their Installations

Before using the simulation tool, there are some instructions to follow for the project deployment and setup:

- 1) Download Python to select an interpreter for the tool to execute. Make sure to download one of the latest releases or at least 3.10.0. (Python 3.10.4 is used to implement this application) You can use the link below to go to the website to download the suitable version for your device:

<https://www.python.org/downloads/>

- 2) Make sure to have an IDE installed that is compatible for the languages Python, HTML and JavaScript such as PyCharm or an alternative IDE like Visual Studio on your device. You can use the provided links to download PyCharm and Visual Studio on your PC:

- **For PyCharm:**

<https://www.jetbrains.com/pycharm/download/#section=windows>

- **For Visual Studio:**

<https://code.visualstudio.com/download>

2.2 How to Download the Application Package?

Download the .zip file that contains the application codes as a project in your PC using one of the following links:

- **Google Drive:**

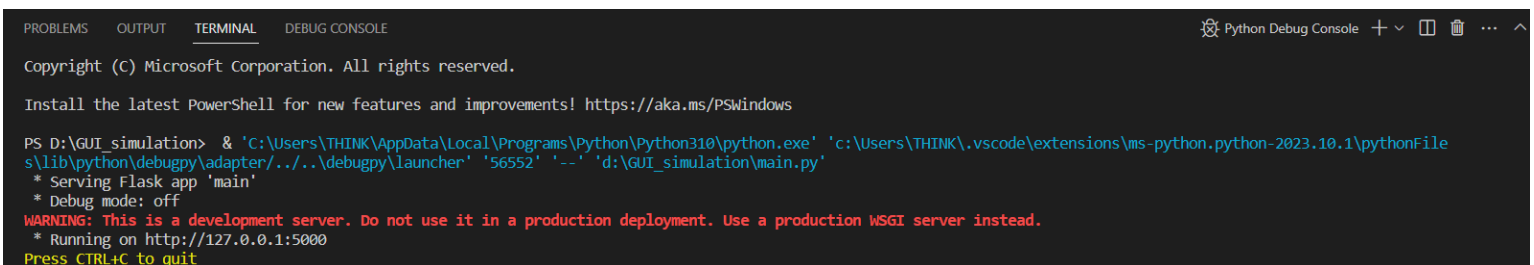
<https://drive.google.com/file/d/1kJqKWmfG6zMCL5H1vQ5xxgBUkhfTEs/view?usp=sharing>

- **GitHub:**

<https://github.com/eremaksoyy/GradProject.git>

2.3 How to Run the Application?

- 1) After downloading the project file using one of the options provided in Section 2.2, make sure every library used in the codes is downloaded on your PC. Python Flask is one of the essential libraries that have used in this project so please make sure that you have downloaded it using the provided link: <https://pypi.org/project/Flask/>
- 2) Open the IDE you will use to execute the code files (PyCharm or Visual Studio or any other alternative IDE that is compatible with Python. PyCharm version 2023.1.2 is used to implement and test this application).
- 3) Open the project folder in your respective IDE that you downloaded in Section 2.1.
- 4) Open the main.py file among the files the project has (all the files listed on the left side). Check the packages you need to download (Math and Random packages are needed to download at this step). You can simply click on their name and choose the 'Install Package' option, then the corresponding packages will be downloaded.
- 5) Run the main.py file.
- 6) After running the file, you will see a local host address provided in the terminal, which show where the server is running on. Click the address (127.0.0.1:5000 in the figure shown below) and you will be directed to the website. You are now ready to use the application. (Please refer to the User Manual to see how to create simulations)



```
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE
Python Debug Console + - [] ... ^

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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\GUI_simulation> & 'C:\Users\THINK\AppData\Local\Programs\Python\Python310\python.exe' 'c:\Users\THINK\.vscode\extensions\ms-python.python-2023.10.1\pythonFile
s\lib\python\debugpy\adapter\..\..\debugpy\launcher' '56552' '--' 'd:\GUI_simulation\main.py'
* Serving Flask app 'main'
* Debug mode: off
WARNING: This is a development server. Do not use it in a production deployment. Use a production WSGI server instead.
* Running on http://127.0.0.1:5000
Press CTRL+C to quit
```