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Technical Installation Manual for GND

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Version	Version History	Author
1.0	Initial release	AprilFour

Table 1: Version History

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1 Introduction

This document serves to outline the Technical Installation of the GDPR Non-Compliance Detector (GND) application. It is a blueprint that will detail the technologies required to run the application, the minimum system requirements, where to access the source code and the configurations required to run the application.

GND was orignally developed as a desktop application for Windows, however due to the use of Angular and Electron to design the user interface, the application may is able to run on most modern browsers. However using the application in this manner may require additional setup.

This document is useful for any developers that wish to work on and contribute to the project. Please note, as per the project owner's instructions, the GND application was designed to run on the Windows environment and may not be optimised for other operating systems such as Linux and MacOS. Therefore please note that this manual will cover installation for the Windows OS.

2 Prerequisites - Software

GND was developed using Python for all backend logic and Angular along with Electron for the frontend of the application. Machine Learning models used were accessed, stored and trained with the HuggingFace Transformers library.

2.1 Operating System

As previously mentioned, the application was designed with the Windows operating system in mind. Therefore it is recommended to use versions of Windows from **Windows 10 or later**.

2.2 Python (v3.7+)

Python v3.7 or later version can be downloaded from the official Python website: https://www.python.org/downloads/

To ensure that you have correctly installed Python, you can type `python --version` in your terminal.

2.3 Node.js (v20+)

Due to the use of Angular and Electron, the Node.js runtime environment will be need to be downloaded onto your system in order for the GND application to run. Node.js and npm (Node Package Manager) can both be downloaded here: https://nodejs.org/en/download/package-manager

To ensure that you have correctly installed Node.js and npm, you can type `node --version` and `npm --version` in your terminal.

2.4 Angular v18+

After downloading and installing Node.js and npm, you will need to install the Angular. This can be done by installing the Angular CLI via npm. You can install it globally by opening any terminal and typing the following command: `npm install -g @angular/cli`.

To ensure that you have correctly installed Node.js and npm, you can type `ng --version` in your terminal.

2.5 Git

In order to clone the project repo from GitHub correctly you will need to have Git installed on your device. The following resource may assist you in downloading and properly setting up Git: https://www.atlassian.com/git/tutorials/install-git

2.6 Python Virtual Environment - virtualenv

A python virtual environment isolates the packages and dependencies needed to run the application allowing consistent versions across packages. After the installing Python, `pip` will also be installed. You can install virtualenv with the following command: `pip install virtualenv`

3 Prerequisites - Hardware

The following table provides a guide as to the minimum specifications required to run the GND application, locally without suffering a dip in performance.

Hardware	**Minimum Requirements**
CPU	Intel i5 / AMD Ryzen5
Memory	8GB+
Storage	At least 5GB of free space

Table 2: System Requirements

4 Installation

4.1 Cloning the Repository

In order to access and utilise the project source code on you machine you will first need to clone the repository from GitHub. First create a folder that you will store the cloned repo in. Open your terminal and `cd` into this folder. You can then run the `git clone` command along with the link to the GDPR-data-noncompliance-detector repo at:
`https://github.com/COS301-SE-2024/GDPR-data-noncompliance-detector`

4.2 Installing Dependencies

4.2.1 Frontend

Open the folder in which you cloned the repo in your IDE of choice (VSCode is recommended). Bring up the terminal and then `cd gnd-app`. This will change the directory to the angular application used for the GUI. Run the following command to install all the required packages needed for the frontend to run: `npm install`. All the modules should now be installed.

4.2.2 Backend

1. After installing the frontend packages, run the following command in your terminal to return to the root directory: `cd ..`
2. Once you are back in the root directory, you will need to set up your virtual environment for the Python packages. Run the following command to create your virtual environment folder: `virtualenv venv`
3. To activate the virtual environment, run the following command:
   `venv\Scripts\activate`
4. Once you have activated your virtual environment, run the following command to install all the Python packages required:
   `pip install -r requirements.txt`

5 Running the Application

As previously mentioned, the GND application was designed as a Windows desktop application, however due to the use of Angular for the system's GUI, the app may also be run via the browser. This guide will explain how a user may do both.

5.1 Desktop Application

1. In order to run the desktop application via Electron, you first need to start in the project's root directory.
2. Then, `cd gnd-app` to navigate to the Angular application folder. Once in this folder, run the following command to build and run the application: `npm run electron`
3. After the app builds and starts you will be able to interact with the application.

5.2 Web Application

In order to run the application via the browser, additional steps will have to be taken.

1. Start in the project's root directory. Then, `cd backend` to navigate to the backend folder.
2. Run the following command to start the API server: `python flask_api.py`
3. Navigate back to the root directory and then `cd gnd-app` to navigate to the Angular application folder.
4. Run the following command to spin up and start the Angular development server: `ng serve`
5. You can now access the application via your browser at the following address: `http://localhost:4200`

6 Troubleshooting

The following are some common issues one may experience when trying to access and run the GND application.

- **Node.js**:
  - Ensure that your Node version installed is at least version 18+.
  - The following link may assist you in setting up Node.js and npm correctly, should you have any issues:
    `https://nodejs.org/en/learn/getting-started/introduction-to-nodejs`
- **Angular**:
  - Ensure that you installed the Angular CLI before trying to run the application.
  - Ensure that you have at least version 18+ of Angular installed.
  - The following link may assist you in setting up and using Angular correctly, should you have any issues:
    `https://angular.dev/overview`
- **Python Dependency Errors**:
  - Ensure that you have set up and are using a Python virtual environment. The use of this will ensure that you are using the versions specified in tghe project's requirements.txt file.

7 Conclusion

By following these steps laid out above, you should be able to install and set up the GND application on your local machine. For any issues or further assistance, please refer to the project documentation, our in-app or PDF version of the app's User Manual or contact the development team at: *aprilfour301@gmail.com*.