Tech Stack Selection

For the Information Office Web Application, we selected **Django** for Backend, **React** for Frontend, **MySQL** for the Database.

We will use **CSS** for the layout and design of pages and **JSX** (HTML-like syntax within JavaScript) for creating the elements of the page in React.

React

React is selected for frontend because its Component Based architecture allow us to build reusable UI components, which makes collaborative work easier among the team. This modular approach will allow a streamlined development of the web application while also making it easier to modify specific parts if required in future. React also has a vast ecosystem of libraries and tools such as React Router and Redux. React also has a vast existing community around it which allows us to leverage existing solutions to accelerate development and enhance functionality.

Django

Django provides us with a wide range of built-in features, including an admin interface, authentication, and an ORM (Object-Relational Mapping) system. This helps in speeding up the development of the project, by allowing us to focus on core functionalities. Django also focuses on securities with built-in protection against common vulnerabilities such as SQL injection and protection against majority of cross site scripting (XSS) attacks. Django is also modular making it easy to scale our project as the user base grow.

In Django we currently planning to use **Gunicorn** Python Web Server Gateway Interface (WSGI) HTTP server, **Celery with Redis, Daphne** as ASGI.

MySQL

It is a well-established open-source relational database, it is known for its reliability. It handles large volumes of data efficiently. In MySQL we can define clear relationship between different data entities which will help us ensure data integrity and consistency, which would be important for high school database that will be managed via the application. MySQL will also allow us to easily make analysis of the data that is collected