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Proposal Document

In this document, we will explain how our groups have implemented the project. Our Economic Analysis application was created by the 4 of us, two front-end developers, one back-end developer, finally one full-stack developer:

- Lucas: Front-End Developer
- Nathan: Front-End Developer
- Pablo: Back–End Developer
- Tom: Full-Stack Developer (Front & Back)

In order to have a smooth workflow for our team, we used **Github** as our main project versioning manager, then we decided on the different technologies & techniques to use to implement the application.

Technologies

- **Frontend**: We decided to go with **Next.js**, a web development framework powered by **React**, accompanied by components library such as **shadcn**
- **Backend:** We implemented our backend using **Fastapi,** a modern & fast web framework using **Python** at its foundation.
- **Database:** We decided to use **SQLAlchemy**, a powerful & flexible python library, for database interactions directly connected to the backend
- **Others:** We also used numerous other python libraries for this project such as **numpy** for the different calculation method through the project, or **pydantic** for data validations

Project

Through this class, we managed to create a web-based application that can help software engineering teams evaluate economic decisions throughout the Software Development Life Cycle (SDLC).
Users are able to create an account, and log in to the application. They are then able to create multiple economic analysis projects, in which they can input various parameters such as team size, estimated lines of code, timeframes, resources costs, and risks.
Finally, users are able to compare the different estimation costs and budget of multiple projects at once for a better evaluation and decisions.

In conclusion, through this project's completion, we understood and gained practical experiences in both application development, as well as interpreting economic theory in software engineering contexts. This project has sharpened our knowledge and skills and made us gain a deeper appreciation for software engineering economics.