GitHub Research Insights Tool (GRIT)

Søknadsfrist:

21.12.2024

Utdanningsnivå:

Påbegynt bachelor/master (1.-3. år)

Utdanningsområde:

Data og informasjonsteknologi

Type oppdrag:

Masteroppgave

Bacheloroppgave

Arbeidssted:

Trondheim eller remote

Arbeidsoppgaver:

IT - utvikling og brukerdesign

Arbeidssted (fylke / by):

Hele Norge

Trondheim

Gjøvik

Ålesund

Troms

Trøndelag

Informasjon om hvordan man søker:

Ta kontakt på e-post med CV og motivasjonsbrev.

E-post for søknad:

viggo.wivestad@sintef.no

We are looking for a talented bachelor student with web or desktop application development knowledge to design and build a highly intuitive and user-friendly application. The goal of this project is to create a tool that allows non-technical users to easily extract statistics from public GitHub repositories, export this to user-friendly formats, and visualize the data using simple plots. The application will be used for **research purposes in the field of Software Engineering (SE)** to gather insights and trends from various repositories.

Project Description:

The application will allow users to select GitHub repositories and extract core statistics such as:

- Number of commits
- Lines of code
- Number of contributors

The data should be exportable in e.g. CSV format, and the application should provide basic visualizations (e.g., bar charts, pie charts). The solution should handle **long-running processes** and allow users to pause and resume if it runs locally. If it is web-based, background execution on services like Azure is preferred.

The tool should be built with a **modular, future-proof design** to accommodate potential expansions, such as support for private repositories and more advanced metrics.

GitHub API Usage:

GitHub offers both a **REST API** and a **GraphQL API**, and the student can choose the most appropriate option for the project.

Key Requirements:

- **User-Friendliness**: The application must be intuitive and simple to use.
- **Data Extraction and Export**: Extract repository statistics via the GitHub API and export data in CSV format.
- **Data Visualization**: Provide basic visualizations of extracted data.
- **Support for Long-Running Jobs**: Either through a pause/resume feature for desktop or background execution in a web app.
- **Future-Proof Design**: Ensure the application can be expanded later to support additional features.

Desired Skills:

- Proficiency in frontend development (e.g. React, Vue.js, etc.) or desktop app development (e.g. Electron, PyQt, etc.).
- Familiarity with the GitHub API (REST or GraphQL).
- Experience with basic data visualization libraries (e.g. Chart.js, D3.js, etc.).

What You Will Gain:

- Hands-on experience in building an application for Software Engineering research.
- Insight into web or desktop app development, data extraction, and user-centric design.
- The opportunity to contribute to the field of research, and - if of interest - collaborate on writing a scientific paper announcing and describing the application.

Arbeidssted

Vi sitter i Trondheim, men er åpne for at oppgaven kan være remote dersom dette godkjennes av utdanningsinstitusjonen.

Utdanning:

Anvendt Datateknologi

Dataingeniør

Datateknologi

Informasjonsbehandling

Informatikk

Ingeniørvitenskap og IKT

Innebygde Datasystem

Programmering

Webdesign

Webutvikling

Applikasjonsutvikling webdevelopment Webutvikling Frontend frontendutvikling Fullstack Fullstack-utvikler webdesign Applikasjon Research Github GraphQL REST API

SINTEF

Bransje
Universitet/høgskole/forskningsinstitusjon

Virksomhet følgende steder
Troms
Ålesund
Oslo
Trøndelag

www.youtube.com/watch?v=0yx-50G9hyw&t=4s

Kontakt →

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