

Programming Task Python & JavaScript

Task: Create a backend in Python FastAPI (<https://fastapi.tiangolo.com/>) and create a JavaScript web-frontend in React (<https://react.dev/>) with UI5 Web Components (<https://sap.github.io/ui5-webcomponents-react/>). Describe how you would deploy the backend and frontend on Kubernetes.

The backend should fulfil the following functions:

- Implement data model with CRUD capability (see ER diagram below and CSV files)
- Import of the given csv data (the import can be CLI based)
- Create a REST API for each entity in the diagram:
 - o Overview: list of all instances
 - o Detail: a detailed view of one instance and edit the instance
 - o Create an entity instance with HTTP POST
- Create a REST API showing at least the following statistical information:
 - o Average employee age of department
 - o Employees per department
 - o Number of Projects per department

The web-frontend should fulfil the following functions:

- Create a JavaScript web-frontend based on React with OpenUI5:
 - o Use the REST APIs to display the department, project and employee overview and detail views
 - o Create Forms that use the HTTP POST APIs to add a department, project or employee

Please upload your code into a git repository and share it with us. Please upload your final code at least 1 day before your interview.

ER-Diagram:

