aurva

Coding Assignment (Backend)

This is not an open assignment, please attempt only if it was shared with you by Aurva (we have candidate email list shared by college coordinators, so please email the assignment to us using that email address, others will not be considered)

Objective

Test your problem-solving skills by working on a project similar to what you'll be tackling at Aurva.

> Your submission will serve as a foundation for further interview rounds, where we'll discuss your solution in-depth and/or ask you to enhance it further.

Task

Develop a tool to scan data stored in a file (which can be uploaded from a local machine). The tool should identify and classify data such as PAN card numbers, US Social Security Numbers (SSN), medical record numbers, medical test results, health insurance information, credit card numbers, and classify them as PII (Personally Identifiable Information), PHI (Protected Health Information), or PCI (Payment Card Information). Provide additional context on what sensitive fields were found, and store this information in a database. Additionally, create backend APIs using any programming language and web framework. Develop a few HTML pages that allow us to upload a file and display a list of all scans.

Deadline

Within 72 hours of receiving the assignment. If you need more time, please reach out to talent@aurva.io .

Stack

You are free to use any programming language, any database of your choice, and any HTML rendering tool (most web frameworks come with built-in HTML rendering capabilities).

Functional Requirements

- Ability to scan files uploaded from a local machine and identify sensitive data from the scanned information (using regular expressions or other methods you deem fit) and store this into a database.
- Ability to retrieve information about all files scanned.

- Ability to delete scan information for an entity from the database.
- Develop a web page where we can upload a local file to scan.
- The webpage must be able to list all scanned objects, information about the last scan and the sensitive information found.
  [It doesn't have to be aesthetically pleasing or even involve frontend frameworks]

Judgement Criteria

- Working Prototype: Functional HTML pages and APIs.
- Code Quality: Clean, modular, and well-documented code with robust error handling and validation.
- Code Coverage: Include unit tests for critical functions.
- Attention to Detail: Thorough and meticulous execution.
- Documentation: Clarity and completeness of diagrams and instructions.

Submission Requirements

- Source Code: Send the source code of your git repository in a zip file. Do not publish this to a public repository on GitHub/GitLab or any other tool.
- Documentation: Include a README.md file with:
  - A diagram of the system and database design.
  - Instructions to set up and run the project locally.
- Submission should be sent as a zip file containing everything and emailed to this address talent@aurva.io

Bonus Points (Weightage in Order of Priority)

1. Provide 100% test coverage for your code.
2. Include a one-paragraph write-up on how your code can be prepared for and deployed in production.
3. Deploy the backend to render.com, koyeb.com, or railway.app.
4. Use Docker to containerize the application along with a docker-compose file to run the database, app server, and any other necessary components.
5. Run a linter on the submission code.
6. Utilize any advanced Machine Learning (ML) model to classify data.