**Brain Module (Backend Intelligence)**

**Module Name: Brain Module**

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**Purpose:**

The Brain Module serves as the central coordinator of the system. It provides REST APIs to receive user input, validate repository links, and trigger Heart Module automation. It also manages user deployment history and authentication tasks like password reset.

**Technologies Used:**

* **Java 17+**
* **Spring Boot Framework**
* **Spring Security**
* **MySQL** (read/write via Laravel DB layer)
* **RESTful Web Services**
* **JavaMailSender** (for password reset feature) (optional)

**Responsibilities:**

* Expose REST endpoints for GitHub link submission and status queries
* Validate incoming GitHub URLs and user tokens
* Trigger Heart Module via command-line or REST call
* Track user deployment history
* Map deployments to user IDs

**Endpoints Overview:**

* POST /deploy – Accept GitHub repo link and user ID
* GET /status/{userId} – Check deployment status
* POST /forgot-password – Send reset token email
* PUT /reset-password – Accept new password using token

**Integration:**

* Communicates with Heart Module over local/remote shell
* Database interactions handled via Laravel ORM or JDBC templates