**6. Spring Boot**

1. What is an API?

API stands for application programming interface which a software intermediary allow two applications to communicate and share data with each other.

1. What are http methods?

GET : Fetch a resource

POST : Insert new resource

PUT :Replace existing resource

PATCH : Only necessary part of the resource update

DELETE : Delete a resource

1. Create a spring boot application
2. Create a new controller class
3. Add a new end-point to return and string
4. Test the endpoint with postman

Graphical user interface, text, application, email

Description automatically generated

1. Create a Student class (attributes: id, name, date of birth, average)
2. Create a new controller class for students
3. Create a new service class for students
4. Add an endpoint to get list of students
5. Add an endpoint to get a student with id
6. Add new endpoint to create a student
7. Run mongodb as a docker container
8. Insert student received to endpoint created in step 12 to database
9. Extend step 10 and 11 to query data from database
10. Add an endpoint to delete a student with id.
11. Delete the student with id from database
12. What are http status codes
13. Briefly explain the meaning of following status codes

200 : OK : status code denotes success of the request. The result meaning of “success” depends on the http method.

201 : Created : Denote request succeeded and a new resource was created as a result. This is typically the response sent after POST , PUT request.

301 : Moved Permanently : Denote the URL of the requested resource has been changed permanently. The new URL is given in the response.

400 : Bad Request : The server cannot or will not process the request due to something that is perceived to be a client error

401 : Unauthorized : Although the HTTP standard specifies "unauthorized", semantically this response means "unauthenticated". That is, the client must authenticate itself to get the requested response

403 : Forbidden : The client does not have access rights to the content; that is, it is unauthorized, so the server is refusing to give the requested resource. Unlike 401 Unauthorized, the client's identity is known to the server

404: Not Found : The server cannot find the requested resource. In the browser, this means the URL is not recognized. In an API, this can also mean that the endpoint is valid but the resource itself does not exist.

405: Method Not Allow :The request method is known by the server but is not supported by the target resource. For example, an API may not allow calling DELETE to remove a resource.

500 : Sever Internal Error : The server has encountered a situation it does not know how to handle.

501 : Not Implemented : The request method is not supported by the server and cannot be handled. The only methods that servers are required to support (and therefore that must not return this code) are GET and HEAD.

502 : Bad Gateway : Denote that the server, while working as a gateway to get a response needed to handle the request, got an invalid response

503 :Service Unavailable : Denote that the server is not ready to handle the request. Common causes are a server that is down for maintenance or that is overloaded.

504 : Gateway Timeout : This error response is given when the server is acting as a gateway and cannot get a response in time.

1. Using docker-compose run spring boot application and mongodb
2. Create new branch “spring-boot-app-v1” and push the project you created
3. Add your codes and answer sheet to a directory named “spring-boot-basic-training-v1” and push it to your training github repository
4. Create a pull request to main branch and assign it to your trainer