**6. Spring Boot**

1. What is an API?

* API stands for Application Programming Interface is a set definitions and protocols used build and integrate software applications. API is way for two or more computer programs to communicate with each other using requests and responses.

1. What are http methods?

* HTTP stands for Hypertext Transfer Protocol, which is client-server protocol used to transfer data between client and server via requests and responses. There are 5 main http methods,

GET – Request data from a specified resource.

POST – Sends data to a server to create a new resource.

PUT – Sends data to a server to update a resource with new values.

DELETE – Delete specified resource.

PATCH – Apply partial modifications to 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
5. Create a Student class (attributes: id, name, date of birth, average)
6. Create a new controller class for students
7. Create a new service class for students
8. Add an endpoint to get list of students
9. Add an endpoint to get a student with id
10. Add new endpoint to create a student
11. Run mongodb as a docker container
12. Insert student received to endpoint created in step 12 to database
13. Extend step 10 and 11 to query data from database
14. Add an endpoint to delete a student with id.
15. Delete the student with id from database
16. What are http status codes

A message which sends by the web server to web browser indicating whether or not the request can be fulfilled.

1. Briefly explain the meaning of following status codes

* 200 – Depending on the HTTP methods this means the request is successful.
* 201 – New resource successfully created.
* 301 – URL of the requested resource has been changed permanently. New URL is given in the response.
* 400 – Invalid or bad request.
* 401 – Unauthorized, user needs to authenticate himself to get requested response.
* 403 – Client does not have access to the content.
* 404 – Server can not find the requested resource.
* 405 – Requested method not allowed.
* 500 – Internal Server error
* 501 – Requested method is not supported by server. Not implemented.
* 502 – Bad gateway. Invalid response.
* 503 – Server not ready to handle the request. Service unavailable.
* 504 – Gateway timeout. Server cannot get response on 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