

-DS1 2022 : List of Suggested Topics-

2BI

*Be Confident, Be Strong, Be Creative and Clever for a BETTER
Future.*

Best of Luck Great Dear Students

-Suggested Subjects-

1 Subjects :

1. User authentication and authorisation using spring security (@PreAuthorize, @PostAuthorize, @PreFilter, @PostFilter,...).
2. Using JWT (Json Web Toolkit) with Spring Security OAuth
3. Automate your CI/CD pipeline with GitHub Pages and GitHub Actions (for spring-boot rest API).
4. Using TaskScheduler to plan jobs in spring-boot.
5. Spring Quartz framework for job scheduling.
6. dockerize a Spring Boot Application : Docker, Docker-compose and docker-swarm **(a group of 5 students)**.
7. micro-frontend architecture.
8. OpenCv face detection and recognition on spring-boot.
9. Testing in Spring-boot : Junit5, MockBean and DataJpaTest **(a group of 5 students)**.
10. Using Spring-boot and Plivo for voice recognition.
11. Quick tour of Terraform and spring boot API deployment.
12. Building Spring-boot application on Jenkins.
13. Build microservices with Quarkus on Openshift.
14. Spring boot Cache with Redis.
15. Deep Learning with Spring Boot and DJL (Deep Java Library)
16. Jackson ObjectMapper in Spring-boot.
17. Testing Spring Boot Applications With REST Assured.
18. Create java API using API Gateway.
19. Control Sessions with Spring-boot and Spring security
20. Software Architecture Patterns (Layered pattern, Client-server pattern, Master-slave pattern, Pipe-filter pattern, Broker pattern, Peer-to-peer pattern, Event-bus pattern, Model-view-controller pattern, Blackboard pattern and Interpreter pattern) **(a group of 5 students)**.

2 Required Work :

The project has two parts :

- **Theoretical part** : do some search on the net and find relevant information about the selected subject. Then, prepare a powerpoint presentation about it. Try not to exceed 30 slides.
- **Practical Part** : build an example that illustrates your theoretical search. In some cases, you haven't to build an example but just to do some configurations or use some commands or give some steps with justifications or just gives some explanations illustrated with examples like for the 20th subject.

3 Note :

- You have to choose one subject and send me a mail with the chosen topic and the students names of the group (group of 3 or 4 students) then fill the google sheet with chosen subject and students names
- I'll adopt FIFO strategy to assign topics.
- Each topic is assigned just one time for the first group that request it.
- The project must be achieved by 3 or 4 students.
- You have to **upload on Moodle (Software Architecture course)**, **a power point file (The theoretical part)** , the **source code** of the implemented example and some **print-screens** that shown done tests (you could add a demo video).
- You'll present your work **the last two sessions of the course**.
- No additional time could be granted after the deadline.