

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI

SECOND SEMESTER 2020-21

SESAP ZG629T PROJECT WORK

Project Work Outline

BITS ID No. 2017Hs70012

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Name of Supervisor: Sudhanva Laxminarayan

Designation of Supervisor: Senior Developer

Qualification and Experience: Senior Developer

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Title of Project Work: Automated Deployment Pipeline for Mono-Repo system

Name of First Examiner: Vidya Shetty

Designation of First Examiner: Senior Developer

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Supervisor's rating of the Technical Quality of this Project Work Outline

EXCELLENT / GOOD / FAIR/ POOR (Please specify): _____

Supervisor's suggestions and remarks about the outline:

(Signature of Student)

Date:-----

(Signature of Supervisor)

Date:-----

Discussion on Topic

1.Purpose and expected outcome of the work:

To develop a Jenkins deployment pipeline which will be able to trigger the Jenkins job for deploying applications to the production environment, for the defined frequency. We will also be storing the data of these deployment in a postgres database located in the AWS and use these data's to get various insight like, the failure reasons, time taken for deployment in each regions, etc.,

Existing Process and Limitations:

Currently most of the units have quarterly release and so they manually trigger a deployment to the production environment during the release week , but our unit now need to do every day deployment similar to feature based release so we need a strong pipeline which does the deployment multiple time in a day to the Production.

Benefits:

This deployment pipeline will be designed in a way that deployment to production environment will be automatically triggered every day in certain interval.

Scope:

Set-up an end-to-end deployment pipeline which will make sure the services required for applications are created in the live regions and after deploying latest version of application , old components should be deleted and all the bindings made to those component must also be unbonded along with routes switching and requires test to run in prod as a sanity check after latest deployment.

Resources needed:

- Jenkins
- Webhooks
- Grafana server
- Postgres database

2. Detailed Plan of Work (for 16 weeks)

Serial Number of Task	Tasks or subtasks to be done (be precise and specific)	Planned duration in weeks	Specific Deliverable in terms of the project
1.	Jenkins job to trigger the deployment pipeline in mentioned interval of time	3	Jenkins job which can trigger another pipeline for a defined interval
2.	Set-up deployment environment	3 -Setup yaml files for deployment 1.Production regions (1 week) 2.Development/test regions (1 week)	Files with services and components required for

		-Dynamic service creation yaml files (1 week)	different production environment
3.	Deployment pipeline	4 -Category of Actions to performed (push/deploy/switch/clean/test) (2 week) -Scripts to perform the actions defined during deployment (1 week)	Pipeline which can deploy applications and services to production regions
4	Alert Notification	1	Send deployment notifications to Slack channel
5	Store deployment metrics	2	Writing data to the postgres database
6	Grafana – for monitoring dashboards	1	A running Grafana instance
7	Monitoring dashboards	2	Dashboards on Grafana showing deployment related data's