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COURSE

Introduction to DEVOPS (Merged - CSIZG514/SEZG514)(S1-24)

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Assignment 1

Opened: Tuesday, 20 August 2024, 12:00 AM
Due: Sunday, 15 September 2024, 11:55 PM   E-learn Portal 🔗

Hello all,

Your
assignment will be of 20 marks. You can choose any one assignment problem statement. Kindly share the screenshots of the operations performed for the chosen assignment. Make sure the screenshots contain your User ID / Login ID to identify it is not copy-paste content.

Problem Statement 1: Practical

The objective of this
assignment is to have hands on experience of Git Workflow. You are required to
create or fork a repo on Git and use Git bash on the desktop for completing the
tasks. You are required to create one manager role for the repository and
others as collaborators. The manager will act as a reviewer and decision
maker.

Checklist of the tasks that
are required to be performed:

- Add team members as collaborators and
  assign them appropriate rights (if you are performing individual then create
  one dummy account for the task)
- Create a
  branch(development/production/feature)
- Edit files or create new files
  followed by commit
- Clone the repo and Create
  pull-request
- While collaborating your work,
  showcase how conflicts are resolved
- Create tag such as open issue, or
  feature-added
- Do a force push/commit and then later
  reset the changes
- Stage "development branch to
  production branch"
- Showcase how features are released in
  versions (merging production to master branch)
- Also, state importance of Readme and
  gitignore files and their usage while working in a distributed environment.
- Pull
  Requests to be linked with e-mail to the manager who finally approves the
  changes.

Problem Statement 1: Case Study

1.1) The COVID-19 pandemic has
given rise to unimaginable circumstances for companies around the world. Almost
without warning entire business world has been pushed into remote work. Which
converted daily face-to-face meetings to skype calls, physical classroom
learning to virtual meetings. Engaging 50-100 attendees at once and

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meetings/coaching going on for more than 60 minutes required a robust and quick
solution to keep the business moving. The situation demanded robust, failure
proof and quick delivery of the solutions.

Think of possible situation
and timeline that would have required without DevOps.

Now explain how DevOps
plays an important role in various stages from development to delivering of the
solution, considering the distributed environment, servers and data, load
handling and availability of the software.

1.2) Consider you are part of
startup, working on a product development in business reporting platform
domain. The product is expected to generate business reports using AI for the
stakeholders. The product should serve features such as, Data Loading, Data Cleaning,
Data Preprocessing and Artificial Intelligence for Report Generation, Report
Exporting in PDF/Word and integration with a mailing system.

During recent Fintech event
start-up got a big investment for the product to scale and deliver as SaaS to
the users. Product must be converted as SaaS solution and made available for
about 100 stakeholders each generating 1 lakh reports on monthly basis. To
satisfy the request, it requires load balancing, parallel and distributed
execution and error free as these reports contain great value to the
stakeholder's company and timely generation. How this product development
delivery can be accelerated with the help of DevOps?

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