CSE

COMPUTER SCIENCE & ENGINEERING

LAB WORKBOOK

18CS3230 CONTINUOUS DELIVERY AND DEVOPS

Team DevOps

K L UNIVERSITY | CONTINUOUS DELIVERY AND DEVOPS – 18CS3230

LABORATORY WORKBOOK

STUDENT NAME	
REG. NO	
YEAR	
SEMESTER	
SECTION	
FACULTY	

Table of Contents

Organization of the STUDENT LAB WORKBOOK

The laboratory framework includes a creative element but shifts the time-intensive aspects outside of the Two-Hour closed laboratory period. Within this structure, each laboratory includes two parts: Prelab and In-lab.

a. Pre-Lab

The Prelab exercise is a homework assignment that links the lecture with the laboratory period - typically takes 2 hours to complete. The goal is to synthesize the information they learn in lecture with material from their textbook to produce a working piece of software. Prelab Students attending a two-hour closed laboratory are expected to make a good-faith effort to complete the Prelab exercise before coming to the lab. Their work need not be perfect, but their effort must be real (roughly 80 percent correct).

b. In-Lab

The In-lab section takes place during the actual laboratory period. The First hour of the laboratory period can be used to resolve any problems the students might have experienced in completing the Prelab exercises. The intent is to give constructive feedback so that students leave the lab with working Prelab software - a significant accomplishment on their part. During the second hour, students complete the In-lab exercise to reinforce the concepts learned in the Prelab. Students leave the lab having received feedback on their Prelab and In-lab work.

2020-21 EVEN SEMESTER LAB CONTINUOUS EVALUATION

Sl No	Date	Experiment Name	Pre-Lab (10M)	In Lab			Viva Voce (5M)	Total (50M)	Faculty Signature
				Writeup (10)	Execution (15)	Results (10)			
1									
2									
3									
4									
5									
6									
7									
8									

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10									
11									
12									

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

SUBJECT CODE : 18CS3230
CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Deploy to GitHub via Git : A Practical #1

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **Software Engineering Methodologies..**
- **Python Programming.**
- **Basics of Web Development.**

Pre-Lab Task:

1) What is DevOps.

Ans:-

2) Why do you think models are important while developing a software.

Ans:-

3) What are the differences between waterfall model, The agile model.

Ans:-

In Lab Task:

1) **Deploy to GitHub via Git : A Practical**

- **Install Git and set up your GitHub account**
- **Execute the most popular commands in Git**
- **Push all the files from local repository to GitHub.**

Writing space for the Problem:(For Student's use only)

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Jenkins Installation and Configuring on windows #2

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **Overview and Applications of DevOps in Development life cycle.**
- **Overview of Git.**
- **Web App Development.**
- **Python Programming.**

Pre-Lab Task:

1) What are the stages in DevOps Lifecycle and briefly explain each stage.

Ans:-

2) What are the benefits of DevOps and In what way DevOps can achieve the goals of cloud computing.

Ans:-

In Lab Task:

1) Jenkins Installation and Configuring on windows**.**

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Continuous Integration with Jenkins: A Practical #3

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **DevOps life cycle.**
- **Web Development.**

Pre-Lab Task:

1) Categorise the DevOps tools and technologies that are used, according to the stages in the DevOps Lifecycle.

Ans:-

2) What Explain at least 2 tools and their limitations that are used in the DevOps Lifecycle at each stage.

Ans:-

3) Define CI/CD and List out the benefits of CI/CD.

Ans:-

In Lab Task:

1) Continuous Integration with Jenkins: A Practical

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ENTERPRISE PROGRAMMING WORKBOOK

Build Python apps from the azure platform: A Practical #4

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **Azure Environment.**
- **Git and GitHub.**
- **Java Programming.**

Pre-Lab Task:

1) What is pipeline.

Ans:-

2) What is Azure?

Ans:-

In Lab Task:

1) Build Python apps from the azure platform: A Practical.

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Use CI/CD to deploy a Java web app to Azure App Service: A Practical #5

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **Web Development.**
- **Azure Environment.**
- **Basic Concepts of distributed computing.**
- **Java and Python Programming.**

Pre-Lab Task:

1. What are the sequence of phases that are present in Maven's Build Lifecycle and clean lifecycle?

Ans:-

2. What is a Maven repository and what the types of maven repositories?

Ans:-

3. What is the maven basic project structure?

Ans:-

In Lab Task:

1) Use CI/CD to deploy a Java web app to Azure App Service: A Practical.

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Create a static HTML web app in Azure for Devops Operations: A Practical #6

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **Linux Environment.**
- **Idea of VM.**
- **Azure Environment and tools.**
- **Git and GitHub.**

Pre-Lab Task:

1) In DevOps, what role does pipeline?

Ans:-

2) What is CI and CD in Azure?

Ans:-

3) What type of applications does Azure deploy?

Ans:-

In Lab Task:

1) Create a static HTML web app in Azure for Devops Operations: A Practical.

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Creating an Account in Docker Hub: A Practical #7

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Prerequisite:

- **SQL**
- **Docker.**
- **Git and GitHub.**

Pre-Lab Task:

1) Define Docker
Ans:-

2) List out Docker Features
Ans:-

3) Docker Workflow
Ans:-

In Lab Task:

1) Creating an Account in Docker Hub: A Practical

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Implement MySQL in Docker: A Practical #8

Date of the Session:___/___/___ **Time of the Session:_____to_____**

Pre-Lab Task:

1) What is a Docker?

Ans:-

2) What is a Container? How are containers different from virtual machines.

Ans:-

3) List some use cases where Docker can be used.

Ans:-

In Lab Task:

1. Implement MySQL in Docker: A Practical.

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Configuration Management Process using Puppet : A Practical#9

Date of the Session:___/___/____ **Time of the Session:___to___**

Pre-Lab Task:

1) List out Docker Benefits
Ans:-

2) Define Virtualization
Ans:-

3) Virtualization Advantages What is a Data Warehouse?
Ans:-

In Lab Task:

1) Configuration Management Process using Puppet : A Practical

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Automated Testing using Cucumber: A Practical #10

Date of the Session:___/___/____ **Time of the Session:___to___**

Pre-Lab Task:

1) Deine Software Testing and summarize Software Testing Checklist
Ans:-

2) List out Agile Testing Advantages
Ans:-

3) List out Popular Testing Tools
Ans:-

4) List out the Primary and Secondary keywords of Gerkin?
Ans:-

In Lab Task:

1) Automated Testing using Cucumber: A Practical.

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ENTERPRISE PROGRAMMING WORKBOOK

Kubernetes on Windows: A Practical#11

Date of the Session:___/___/____ **Time of the Session:___to___**

Pre-Lab Task:

1) What is Kubernetes
Ans:-

2) Explain Kubernetes Components?

In Lab Task:

1) Kubernetes on Windows: A Practical.

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CONTINUOUS DELIVERY AND DEVOPS WORKBOOK

Working with Nagios Monitoring Tool: A Practical#12

Date of the Session:___/___/____ **Time of the Session:___to___**

Pre-Lab Task:

1) What is Continuous Monitoring
   Ans:-

2) Role of Monitoring Systems
   Ans:-

3) Types of Monitoring
Ans:-

4) List out Popular Monitoring Tools
Ans:-

In Lab Task:

1. Working with Nagios Monitoring Tool: A Practical

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