

THE NATIONAL COLLEGE Autonomous Jayanagar, Bangalore-560070

PROJECT REPORT ON HYPERLEDGER FABRIC BLOCKCHAIN BASED FABLAPTOP APPLICATION

BY

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Under the guidance of

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FabLaptop project report submitted in partial fulfilment of the requirements of

VI Semester BCA, THE NATIONAL COLLEGE JAYANAGAR



THE NATIONAL COLLEGE Autonomous Jayanagar, Bangalore-560070

CERTIFICATE

This is to certify the project report titled "FabLaptop Application" is a work done by Likitha S D of THE NATIONAL COLLEGE, Jayanagar, Bengaluru, in partial fulfilment of the requirements of VI Semester BCA during the year 2021-2022.

DEPARTMENT **HEAD OF THE**

Examiners: Dept. Of Comp. Science 1. VALUED Exeminer (1) Authorised Signatory **Examination Centre**

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DEPARTMENT OF COMPUTER SCIENCE

PAGE:3

FABLAPTOP APPLICATION

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I)	Project Goal (Problem Statement)
II)	Solution Proposed7
III)	Input Data and Verification9
IV)	Project/ Solution (FabLaptop) Design 10
V)	Tools/ Technologies Used
VI)	Project Team Members
VII)	Referenced Documents:
VIII	Project / Solution Setup13
1)	Account and EC2 Instance creation and connection
a) Op	Create an AWS free account and further create an EC2 instance with Ubuntu erating System
b) Tei	Connect to the AWS EC2 Instance through "Putty" Software and open the rminal. Change over to "root" directory with Admin permissions
2) Insta EC2	Download the required pre-requisite tools and Software into the EC2 ance, transfer the "FabLaptop" Project files from Windows System to Instance using "FileZilla" and setup the project in the EC2 Instance 13
a) Fa	Download and install all the pre-required tools and software for the Hyperledger bric based Blockchain set-up in the created EC2 Instance
b) Hy ba	In the EC2 instance, clone the "fabric-samples" directory, download and install the perledger Based Blockchain Binaries Version 1.4.6 and download the Hyperledger sed Docker images from Docker hub
c) In:	Transfer these program and files from Windows System to the created AWS EC2 stance using the "FileZilla" software
d) an fil	Go to "FabLaptop-network" directory and create Cryptographic based certificates d update the "docker-compose.yaml" file with the relevant CA certificate and save the e 14
e) un	Create a directory "channel-artifacts" and create genesis.block and channel.tx files ader that directory and verify. Covert the "start.sh" file into an executable file
f) "t	Go to "FabLaptop" directory and covert the "startFabLaptop.sh" and eardownFabLaptop.sh" files into executable ones14
g) di	Execute the command "npm install" and verify the creation 969of "node_modules" rectory
IX)	Project / Solution Execution
1) co	In the "FabLaptop" directory, execute the command "./StartFabLaptop.sh" ommand and verify that the Blockchain Network is up and deployed
2) ei	Execute the command "node enrollAdmin.js" and verify that the "Admin" is arolled successfully
3) r) Execute the command "node registerUser.js" and verify that the "user1" is egistered and enrolled successfully

PAGE:4

FABLAPTOP APPLICATION

4) Lar	Execute the command "node query-All-Laptops.js" and verify that the all the otop data stored inside the blockchain are read and displayed successfully
5) are	Execute the command "node query-Laptop4.js" and verify that the Laptop4 details read from the blockchain and displayed successfully
6) got	Execute the command "node invoke-Laptop10.js" and check that the Laptop10 has stored into the blockchain successfully
7) is re	Execute the command "node query-Laptop10.js" and check that the Lapop10 data ead from the blockchain and displayed successfully
8) the	Execute the command "node invoke-Laptop10-Owner-change.js" and check that new owner of Laptop10 has got stored into the blockchain successfully
9) is re	Execute the command "node query-Laptop10.js" and check that the Laptop10 data ead from the blockchain and displayed successfully with new Laptop owner
X)	Setup and loading of "FabLaptop Frontend"
1) the	Open the "/FabLaptop-front/src/App.js" file and update the Public IP address of FabLaptop EC2 Instance and save the file
2) bac	From the "FabLaptop" directory, execute the command "node FabLaptop- kend.js" and verify the display of "Listening on port 4001"24
3) dire suce	Create the duplicate session of the EC2 Instance, navigate to "FabLaptop-front" ectory in that instance, execute the command "npm run start" and verify the cessful starting of the React App Development Server
4) "ht Fab	Load the "FabLaptop-frontend" onto the Chrome browser by using the url: tp://Public IP of the Instance:3000/ and verify the successful display of the Laptop frontend
xD	Interaction with the FabLaptop Blockchain Network using FabLaptop
Fron	tend from Windows System Browser
1)	Click on "QUERY ALL" option and then "SEARCH ALL" button
2)	Click on QUERY, enter Laptop4 and then click on "SEARCH" button
3) "CI	Click on CREATE option, enter the new Laptop details and then click on REATE" button
4)	Click on QUERY option, enter Laptop11 and click on "SEARCH" button
5) Ow	Click on TRANSFER option, enter Laptop11 for LAPTOP ID and Prakash for New ner and then click on "TRANSFER" button
6)	Click on QUERY option, enter Laptop11 and click on "SEARCH" button
XII)	Closing of "FabLaptop" Project
XIII) Project Summary