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THE NATIONAL COLLEGE

Autonomous

Jayanagar, Bangalore-560070

CERTIFICATE

This is to certify the project report titled “**Bigmart Sales Prediction Solution**” is a work done by **SUHAS A BHARDWAJ [20NCJB444]** of THE NATIONAL COLLEGE, Jayanagar, Bengaluru, in partial fulfilment of the requirements of IV Semester BCA during the year 2022.


HEAD OF THE DEPARTMENT


PROJECT GUIDE

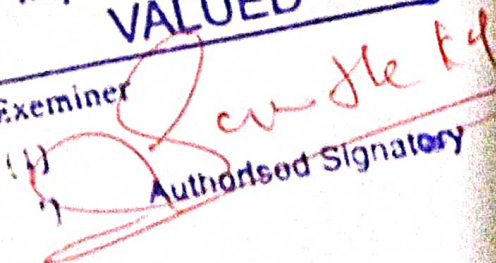
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Examiner


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Examination Centre

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Date of Examination:




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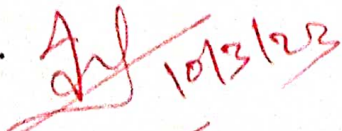

CERTIFICATE

This is to certify the project report titled "AWS Project using EBS Demonstration using EC2 Windows Server Instances" is a work done by **SUHAS A BHARADWAJ** of THE NATIONAL COLLEGE, Jayanagar, Bengaluru, in partial fulfilment of the requirements of Vth Semester BCA during the year 2023.


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CERTIFICATE

This is to certify the project report titled "eVoting for Bikes" is a work done by **Suhas A Bharadwaj** of THE NATIONAL COLLEGE Jayanagar Bengaluru, in partial fulfilment of the requirements of VI Semester BCA during the year 2022-2023.

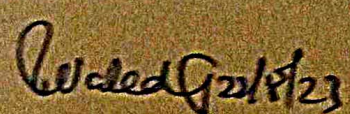

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PROJECT GUIDE

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1. Introduction

1. Define Project Goal, Problem Statement, Proposed Solution and Solution Steps

1.1) Project Goal

To understand the given problem, propose a suitable solution and implement the proposed solution and verify the result.

1.2) Problem Statement

Design and develop a Regression prediction model by which we can successfully predict the Bigmart Sales values for the given customer data.

1.3) Solution Proposed

We will design and implement a Python based Regression prediction Model which will learn from the given training data and then predict the Bigmart Sales values for the provided Customer data.

1.4) Solution Steps

To design, develop and verify the “Bigmart Sales Prediction Solution” having the following features:

- a) To read, analyse, preprocess the given training dataset besides giving the Pre-processed data for using in further programs.
- b) To execute and find out the applicability of remaining Data Preprocessing tasks (Multicollinearity, Outlier data, Feature selection and Dimensionality Reduction) on the Preprocessed dataset.
- c) To execute and verify all the applicable Regression algorithms on the Preprocessed dataset and identify the most suitable Regressor out of these based on the Test/CV based accuracy values.
- d) To predict the Bigmart Sales values for the given Customer data using the finalized Regressor (from Step (c)) and writing out Customer Data file with the predicted values as one of the columns

2. Tools and Technologies Used

2.1) Tools/ Technologies Used

- O/S: Windows 10 and above 64-bit
- Browser: Chrome Browser
- Google Drive
- Colab (Google Colaboratory)
- Python Notebooks
- Python Libraries
- Regression Algorithms
- Anaconda Navigator-64 bit for windows
- VS code

Front-end tools: Streamlit, Python, CSS

Back-end tools: CSV file, Pickle file, Machine Learning Algorithms

Introduction

1) Project Goal

To design, develop and demonstrate the usage of AWS EBS Demonstration using EC2 Windows Server Instances by Creating a Custom VPC, Subnets, Route Tables, etc. and Creating EC2 Windows Server Instances and EBS Volume in the just created Custom VPC and Demonstrating the EBS Demo.

2) Tools / Technologies Used

Cloud Computing Amazon Web Services (AWS) Services.

- EC2 Windows Server Instances
- Custom VPC, Subnets, Route Tables etc.
- EBS Volume, Snapshots
- Remote Desktops

3) Solution Design

Block diagram

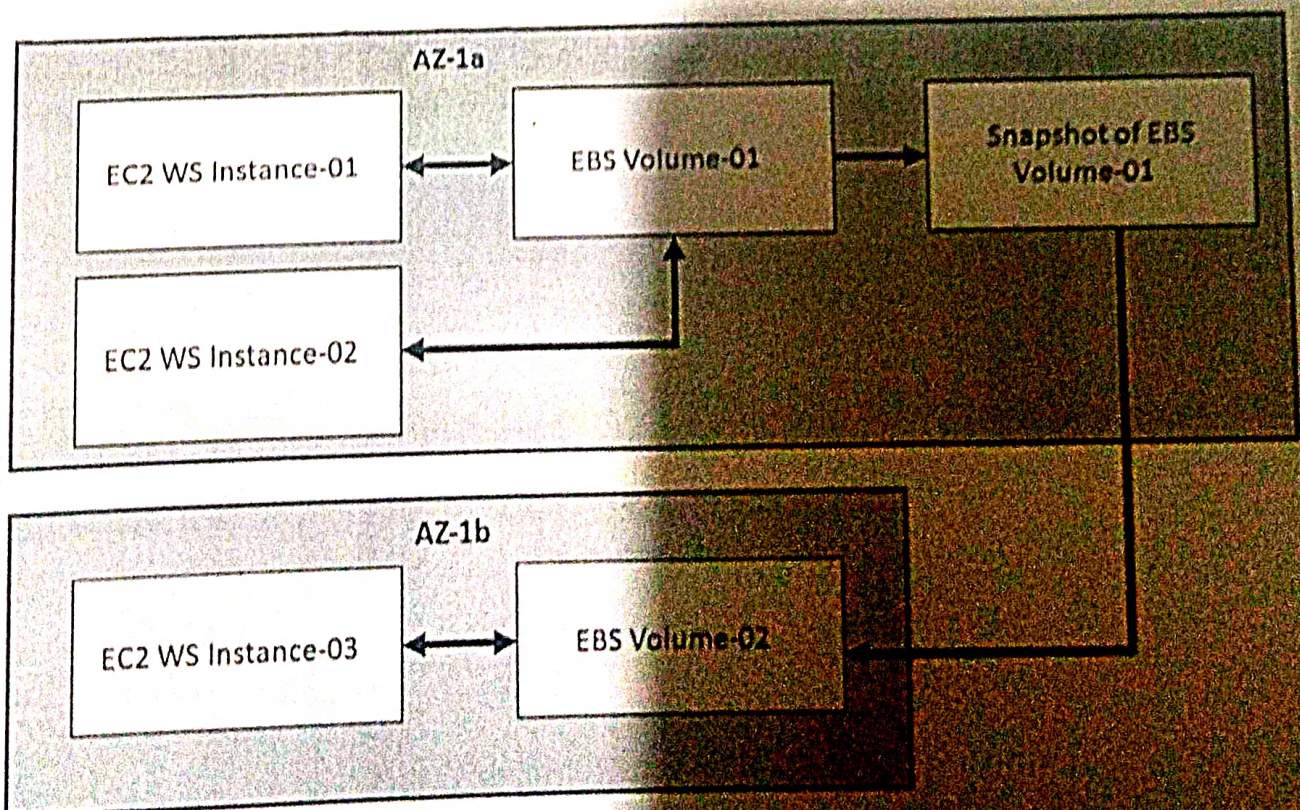


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VII) Setup the Ethereum Blockchain based Project “eVoting for Bikes Application” in the Windows System	7
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1) Execute “ganache-cli” command. Copy the Ether accounts and Private keys in a Notepad. Connect the Metamask with Ganache by importing one of its accounts	7
2) Sign-in to the Metamask, select the network “Localhost 8545”, import the first account of the Ganache Blockchain and make sure that the account is in “connected” state	8
3) Compile and deploy the smart contract on to Ethereum Test Blockchain on to Ganache using Ether through Metamask	11
4) Click on “ADMIN” option and fill-in the relevant info under “About Admin”, “About eVoting” and click on “Start eVoting” button. Click on the “Confirm” button of the Metamask. Verify that the eVoting process got started	14
5) Click on “Add bikes” option and fill-in the info related to the books for which you need eVoting. Create 3 bikes for eVoting	15
6) Click on “Registration” and register 4 Voters	17
7) Select the “Admin-Account” in Metamask, refresh the screen, click on “Verification” link and as an Admin approve all the 4 Voters	24
8) Click on “Voting” link and check the Bikes Info displayed	29
9) Select the “Vote1-Acct” in Metamask, make sure that the account is in “connected” status, refresh the screen, confirm that “Vote” buttons are enabled now, click on “Vote” button against the Bike model “R15 V4”	29
10) Select the “Vote2-Acct” in Metamask, make sure that the account is in “connected” status, refresh the screen, confirm that “Vote” buttons are enabled now, click on “Vote” button against the Bike model “MT 15”	32
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12) Select the “Vote4-Acct” in Metamask, make sure that the account is in “connected” status, refresh the screen, confirm that “Vote” buttons are enabled now, click on “Vote” button against the Bike model “FZ X”	36
13) Select “Admi-Acct”, make sure that the account is in “connected” status, refresh the page, click on “ADMIN” and click on “eVoting End” button as an Admin	38
14) Click on “Results” link and verify the eVoting Results	38
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I) Project Goal (Problem Statement)

To design, develop and verify the “eVoting for Bike Application” having the following features:

- a) Display the front-end of the Application on the default Browser
- b) Setup the “Admin” related info and start the eVoting process
- c) Add 3 bikes for eVoting
- d) Register 4 Voters
- e) As an “Admin” approve all the 4 Voters
- f) Perform eVoting for Bikes using 4 Voters account
- g) As an “Admin” close the eVoting Process
- h) Verify the result of eVoting

II) Solution Proposed

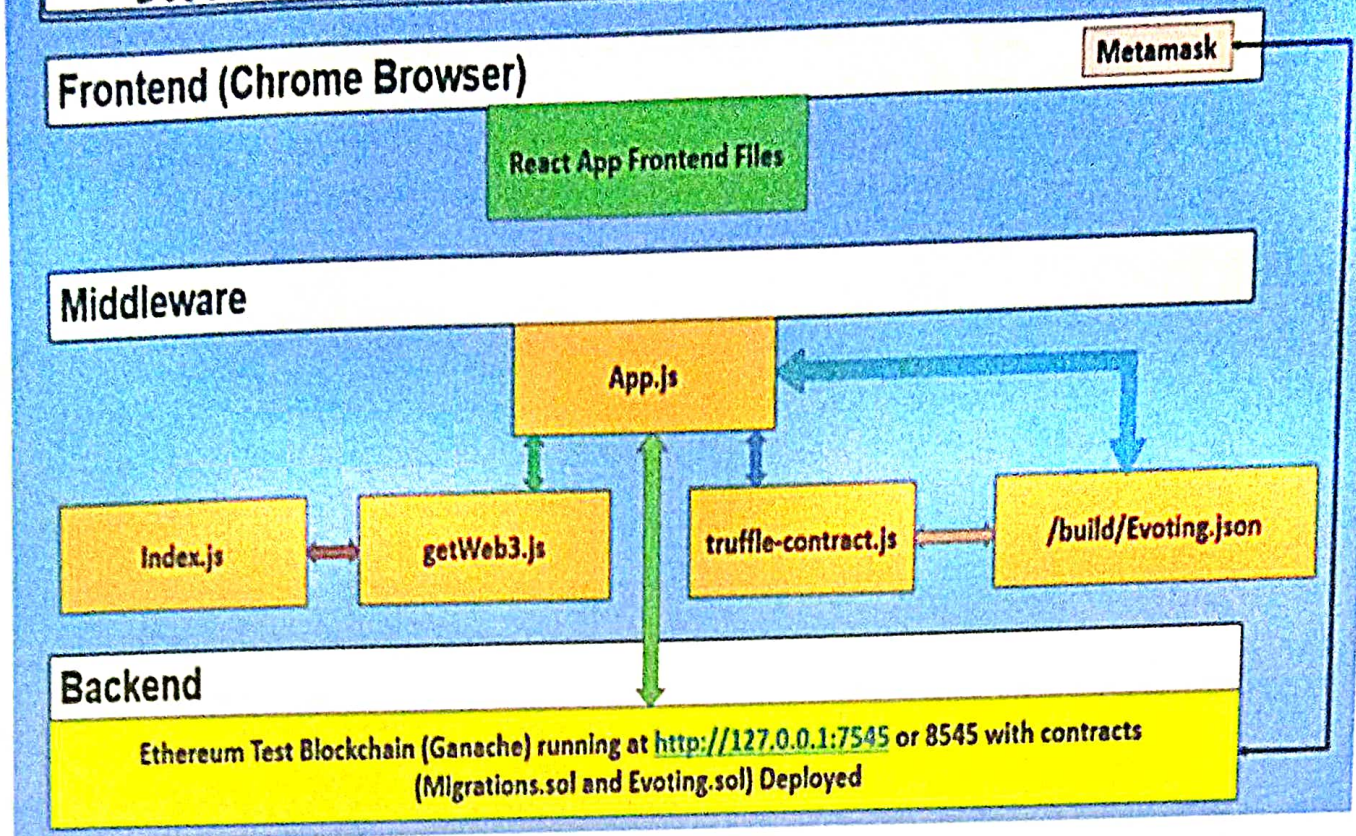
We will design, develop, implement and verify the Ethereum Blockchain based solution namely “eVoting for Bikes Application” which will be executed in a Windows System. The proposed Solution will meet all the features specified in the Problem statement

III) Input Data

SL.NO	BIKE MODEL	MODEL YEAR
1	RI5 V4	2023
2	MT 15	2020
3	ZAY ZR	2019

IV) Project/ Solution (eVoting for Bikes Application)

Block Diagram of ("eVoting for Bikes Application)



High Level:

- 1) Create / provide the following in the Windows System:
 - a) Create and set the Ethereum Blockchain environment in the Windows system
 - b) Create the Project folders and files using "Truffle" in the Windows System
 - c) Write the Solidity program "Evoting.sol" capturing the main logic of the solution
 - d) Write the required frontend, middleware and other required files for the solution
 - e) Provide the Solution data using .JSON file

Details:

- a) Set-up the Ethereum Blockchain environment in the Windows System by installing NodeJS, NPM, Truffle, Ganache and Metamask
- b) By using Truffle, setup the project folder and required files in the Windows System.
- c) Write a Solidity language program namely "Evoting.sol" in which we will implement the main logic of the Solution.

- d) Write the middleware program using JavaScript and Web3.js
- e) Start the Ethereum Test Blockchain "Ganache" and sign-in to the Metamask. Connect the Metamask with the Ganache Test Blockchain by importing an account
- f) We will also create a frontend (React App based) for the solution so that you can interact with the Blockchain application through your browser.

V) Tools/ Technologies Used

- a) List of Tools and Technologies
 - O/S: Windows 10
 - Browser: Chrome Browser
 - Nodejs and NPM
 - Truffle
 - Ganache (Ethereum Test Blockchain)
 - Metamask
 - HTML
 - CSS
 - JavaScript
 - Web3.js
 - Front-end Tools:
 - HTML, CSS
 - Development Server (lite-server)
- b) Backend:
 - Ethereum based Test Blockchain linked with Metamask
- c) Middleware:
 - JavaScript with Web3.js

VI) Install the Tools required for the Ethereum Based Blockchain Project in Windows System

(For the detailed instructions, please refer "Appendix-A" document of this Project Report)

VII) Setup the Ethereum Blockchain based Books Application in the Windows System

(For the detailed instructions, please refer "Appendix-B" document of this Project Report)