DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

ST JOSEPH ENGINEERING COLLEGE, MANGALURU-575028

INTERNSHIP LOGBOOK

Student Name	Pranith Rao		
USN	4SO18CS088	**Section:** B	**Semester:** 8th
Company Name	Exposys Data Labs		
Internal Guide Name	Ms. Gayana M N	**Signature:**	

Affiliated to Visvesvaraya Technological University,Belagavi

2021-2022

Student Details:

Name of the Student		Pranith Rao	
USN		4SO18CS088	
Semester / Section		8thsem / B-sec	
Name of the Internal Internship Guide		Ms. Gayana M N	
Area of work		Data Science	
Internship Period	**From**	06th April 2022	
	To	05th May 2022	
Duration		**Weeks:** 4	**Days:** 30

Company Details:

Name of the Company	Exposys Data Labs
Address	P.M R. Residency Ground Floor, No-5/3 Sy. No.10/6-1 Opp Nithyotsava Wedding Hall Doddaballapur Main Road Singanayakanahalli, Yelahanka Bengaluru, Karnataka 560064
Website	www.exposysdata.com
Company Head	Mr. Vishnuvardhan Y
Name of the Industry Guide	Mr. Abhishek Kumar
Contact No	+917795207065
Email - ID	hr@exposysdata.com

Ms. Gayana M N
Name & Signature of the Internal Guide

Mr. Abhishek Kumar
Name of the External Guide

Mrs Supritha Salian
Name & Signature of the Internship Coordinator

Dr. Sridevi Saralaya
Name & Signature of the HOD

VISION OF THE DEPARTMENT

To be recognized as a centre of excellence in computer and allied areas with quality learning and research environment.

MISSION OF THE DEPARTMENT

1. Prepare competent professionals in the field of computer and allied fields enriched with ethical values.
2. Contribute to the Socio-economic development of the country by imparting quality education in computer and Information Technology.
3. Enhance employability through skill development.

Undergraduate Programme in Computer Science and Engineering (B.E.) PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

I. To impart to students a sound foundation and ability to apply engineering fundamentals, mathematics, science and humanities necessary to formulate, analyse, design and implement engineering problems in the field of computer science.

II. To develop in students the knowledge of fundamentals of computer science and engineering to work in various related fields such as network, data, web and system engineering.

III. To develop in students the ability to work as a part of team through effective communication on multidisciplinary projects.

IV. To train students to have successful careers in computer and information technology industry that meets the needs of society enriched with professional ethics.

V. To develop in students the ability to pursue higher education and engage in research through continuous learning.

PROGRAMME OUTCOMES (POs)

By the end of the undergraduate programme in CSE, graduates will be able to:

1. **Engineering Knowledge**: Apply knowledge of mathematics, science, engineering fundamentals, computer science and engineering to solve complex engineering problems.
2. **Problem Analysis**: Identify, formulate, research literature, and analyse complex engineering problems in reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/Development of Solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct Investigations**: Conduct investigations of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern Tool Usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **Engineer and Society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and Sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Teamwork**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions.
11. **Project Management and Finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Lifelong Learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

By the end of the undergraduate programme in CSE, graduates will be able to:

1. **Entrepreneurship and Freelancing**: Understand the principles underlying entrepreneurship, freelancing and the requirements to initiate a start up in the IT or related domains.
2. **Competitive Exams**: Participate effectively in competitive examinations related to certification, career growth and admission to higher studies.

COURSE OUTCOMES (COs)

18CSI85.1	Explain the industry practices and the tools used with respect to the project carried out.
18CSI85.2	Demonstrate problem-solving skills gained through the internship experience.
18CSI85.3	Demonstrate effective verbal and written communication skills.
18CSI85.4	Collaborate with teams as a team leader/ team member during the course of the project and build a professional network.
18CSI85.5	Illustrate the various ways of effective management of personal behaviour, ethics and attitude.
18CSI85.6	Illustrate the various ways of adaptation to changing needs while working in the industry.

CO – PO Mapping

Keywords (PO/PSO)	Apply Knowledge	Solve Problems	Design/ Development of Solution	Conduct Investigations	Use Modern Tools	Engineer and Society	Environment and Sustainability	Professional Ethics	Individual and Team Work	Communicate Effectively	Project Management and Finance	Lifelong Learning	Entrepreneurship, Freelancing & start-up	Competitive Exams & Higher Studies
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
18CSI85.1	-	-	-	-	3	-	-	-	-	-	3	-	3	-
18CSI85.2	-	-	-	-	-	-	-	-	-	2	3	-	3	-
18CSI85.3	-	-		-	-	-	-	-		3	2	-	2	-
18CSI85.4	-	-		-		-	-	2		-	3	-	3	-
18CSI85.5	-	-		-	-	-	-	3		-	1	-	2	-
18CSI85.6	-	-		-	2	-	-			-	2	-	2	-

INTERNSHIP WORK PLAN

Area of Work	Virtual
Internship Topic	Data Science
Objectives of the Internship	• Gain Industry Experience • Learn about supervised and unsupervised learning techniques
Real Time Applications	NIL
Expected Outcomes	• To be able to understand data and generate datasets out of the pool of existing data • To devise a solution based on a given problem • To be able to interpret the results
Skills acquired during Internship	Technical • Pre-process a dataset and prepare it for machine learning algorithms • Classification, linear regression • Random forest, clustering, decision tree Non-technical • Problem Solving • Time management
Challenges faced during Internship	No challenges faced
Any other Comments	None

Daily Work Plan

Day 1: Joining date

Date	06th April 2022
Task Assigned	Joining formalities
Task Objective	Communication with Mentor
Task Outcome	Establish means of communication with the company and understand the work assigned.
Brief Description of the Work	
Mentor contacted me via WhatsApp and explained me the work assigned and in what ways I can approach the problem statement.	

Day 2-4: Understanding Python

Date	07th April 2022 - 09th April 2022
Task Assigned	Basics of Python
Task Objective	Understand python basics
Task Outcome	Understand the logic and implementation of the python basics
Brief Description of the Work	
I had to set up the Environment Variables and install Python software with Jupyter Notebook initially. Following that, I had to look over the documentation for various keywords, identifiers, statements, datatypes, and understand the usage of variables, functions, and arguments.	

Day 5-7: Python and its application in Machine Learning

Date	10th April 2022 – 12th April 2022
Task Assigned	Python in Machine Learning
Task Objective	Understand python in ML
Task Outcome	Understand Simple Machine Learning model in Python
Brief Description of the Work	
I had to train a simple Linear Regression Model and compare its outcomes to the expected outcomes.	

Day 8-10: Supervised and Unsupervised Learning

Date	13th April 2022 – 15th April 2022
Task Assigned	Simple Linear Regression, Multiple Linear Regression, Clustering.
Task Objective	To understand the concept of Simple Linear Regression, Multiple Linear Regression.
Task Outcome	To be able to comprehend and apply the Pre-processing, Simple Linear Regression, Multiple Linear Regression, Concepts.
Brief Description of the Work	
Learning about pre-processing was necessary as format of the data has to be in a proper manner for achieving better results from the applied model in Machine Learning projects. And as multiple variables were responsible in deciding the value of the target variable, I went through some models which were helpful in predicting the same.	

Day 11-12: Knowledge about different techniques

Date	16th April 2022 – 17th April 2022
Task Assigned	Homoscedasticity and Heteroscedasticity error terms
Task Objective	To understand the heteroscedasticity of error terms.
Task Outcome	To be able comprehend metrics of regression techniques.
Brief Description of the Work	
I learned about various strategies as well as why and how the heteroscedasticity variance of mistakes does not remain constant across data.	

Day 13-14: Clustering and Sentiment Analysis

Date	18th April 2022 – 19th April 2022
Task Assigned	KMeans Clustering, Random Forest approach, Lasso Regression
Task Objective	To understand about the types of clustering and recommendation engine. Also, about

	interaction between machine such as computers and natural languages used by human beings.
Task Outcome	To be able to comprehend and apply the learned concepts in project work.
Brief Description of the Work	
Since I had to use at least 2 models to predict the target variable and chose the best among it I went through different training models and used the best among them for my project.	

Day 15: Project work

Date	20th April 2022
Task Assigned	The project assigned was to create a ML model that can be used in 'Start-up profit prediction'
Task Objective	To be able to understand the concepts which was learnt during this internship, and apply it to the project work.
Task Outcome	To be able to apply the learnt concepts in the project works.
Brief Description of the Work	
I started to work on the project assigned to me by the external guide. The project assigned was to create ML models that can be used in 'Start-up profit prediction' and to work on its accuracy score.	

Day 16-17: Collection and preparation

Date	21st April 2022 – 22nd April 2022
Task Assigned	Collecting data for training the ML model
Task Objective	The data set is collected from Kaggle
Task Outcome	List of attributes used for prediction were collected
Brief Description of the Work	
Collecting data for training the ML model is the basic step in the machine learning pipeline. The data set and the attributes were shared to me via email and additional dataset were collected from Kaggle for better training of the model.	

Day 18-19: Data pre - processing

Date	23rd April 2022 – 24th April 2022
Task Assigned	• Cleaning the data and making and it suitable for a machine learning model. • Finding missing values and eliminating inconsistencies.
Task Objective	Replace null and eliminate duplicate values.
Task Outcome	Improve the accuracy and efficiency of a machine learning model.
Brief Description of the Work	
Data pre-processing operations are required for cleaning the data and making it acceptable for a machine learning model, which improves the model's accuracy and efficiency. I checked for null and duplicate values but none were present so there was no need of any data replacement and elimination.	

Day 20-22: Technique selection

Date	25th April 2022 – 27th April 2022
Task Assigned	Selection of techniques relevant to the given data.
Task Objective	Techniques that train the model better to determine the target attribute were to be selected.
Task Outcome	Techniques like Multi-linear regression and random forest regressor were selected.
Brief Description of the Work	
I chose multi-linear regression and random forest regressor techniques to train my model to determine the profit of start-ups as multiple variables were responsible for determining the value of the target variable.	

Day 23-24: Splitting data into train data and test data

Date	28th April 2022 – 29th April 2022
Task Assigned	Splitting data into two subsets: training data and testing data.

Task Objective	To make predictions on the test data using Linear Regression and Random Forest Regressor.
Task Outcome	The split percentage is 70 and 30 respectively for train and test data
Brief Description of the Work	
I divided the data into two categories: training and testing. For train and test data, the split percentage is 70% and 30%, respectively. I used Linear Regression and Random Forest Regressor to fit the model to the train data in order to generate predictions on the test data.	

Day 25-27: Performance evaluation

Date	30th April 2022 – 2nd May 2022
Task Assigned	Improve model performance
Task Objective	• Accuracy • Prediction
Task Outcome	The training score was found for both the models and the best model was chosen to predict the profit of start-ups based on different expenditures.
Brief Description of the Work	
A predictive system was built to estimate start-up profit based on several spending metrics that will be provided as inputs to the machine learning model.	

Day 28-30: Project Submission

Date	3rd May 2022 – 5th May 2022
Task Assigned	To prepare the final internship report
Task Objective	To prepare the report and submit the same as a sign of successful completion of the internship.
Task Outcome	To document the entire internship process.
Brief Description of the Work	
I submitted a video demo explaining the entire project, project report and a PPT presentation all zipped in a file via email marking the completion of my internship.	

Internship Closure Report

Write a brief description of the internship outcomes achieved	
Internship Objectives:	The objective of this internship is to introduce students' machine learning using python programming. Students will learn the differences between supervised and unsupervised learning techniques, various machine learning algorithms and then apply it to project work.
Objectives Accomplished:	• Learnt difference between supervised and unsupervised techniques • Gained knowledge of algorithms
Objectives could not be Accomplished:	All objectives were accomplished.
Reasons for Non-Accomplishment	None
Sills acquired during the internship period	Technical • Learned python • Learned to use different tools • Understood various types of machine learning models Non-Technical • Time management • Personality Development • Communication skills
Challenges faced during internship Period	No challenges faced
Overall Outcome of Internship Training	Learnt the basics of python and various machine learning models.

Signature of the student with Date

FACULTY INCHARGE REMARKS

About the Company:

About Student Performance:

Signature with Date