ARCHITECTURE DESIGN

CREDIT CARD DEFAULT PREDICTION

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DOCUMENT VERSION CONTROL

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24/08/2023	1.1	First Draft	Nagalakshmi M
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Abstract

Financial threats are displaying a trend about the credit risk of commercial banks as the incredible improvement in the financial industry has arisen. In this way, one of the biggest threats faces by commercial banks is the risk prediction of credit clients. The goal is to predict the probability of credit default based on credit card owner's characteristics and payment history.

1. Introduction

1.1 What is Architecture Design Document?

Any software needs the architectural design to represent the design of the software. IEEE defines architectural design as “the process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system.” The software that is built for computer-based systems can exhibit one of these many architectures.

Each style will describe a system category that consists of:

- A set of components (eg: a database, computational modules) that will perform a function required by the system.

- The set of connectors will help in coordination, communication, and cooperation between the components.

- Conditions that how components can be integrated to form the system.

- Semantic models help the designer to understand the overall properties of the system.

1.2 What is Scope?

Architecture Design Document (ADD) is an architectural design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined during requirement analysis and then refined during architectural design work

2. Technical specifications

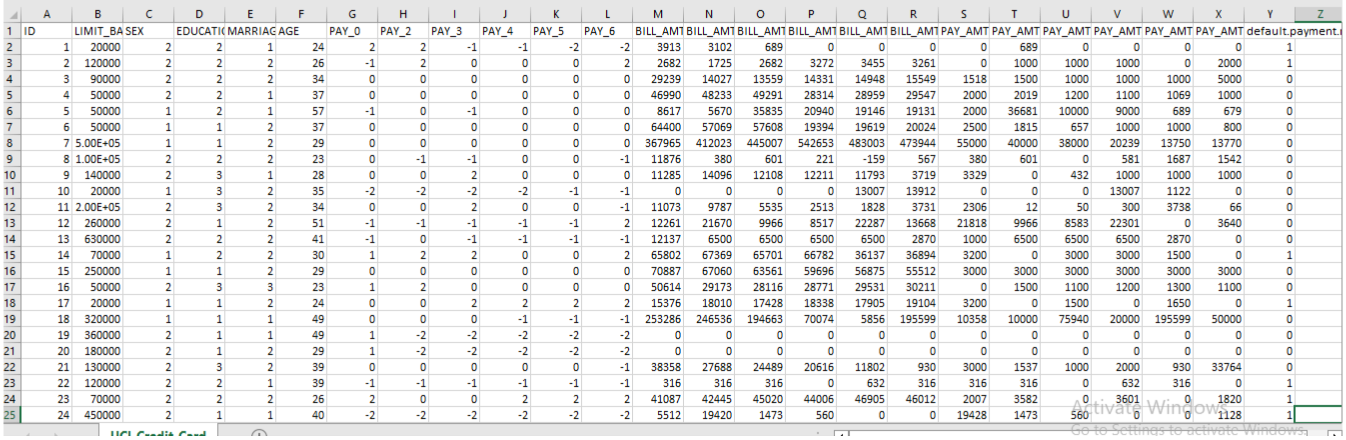
2.1 Dataset

The Dataset was taken from iNeuron Provided Project Description Document.

https://drive.google.com/file/d/1AGRq2hG8zUbM_8LCo48cbcYy6W-2ujZC/view?pli=1

2.2 Dataset Overview

The dataset consists 30000 customers record with 25 columns



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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5	4	50000	2	2	1	37	0	0	0	0	0	0	46990	48233	49291	28314	28959	29547	2000	2019	1200	1100	1069	1000	0	
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12	11	2.00E+05	2	3	2	34	0	0	2	0	0	-1	11073	9787	5535	2513	1828	3731	2306	12	50	300	3738	66	0	
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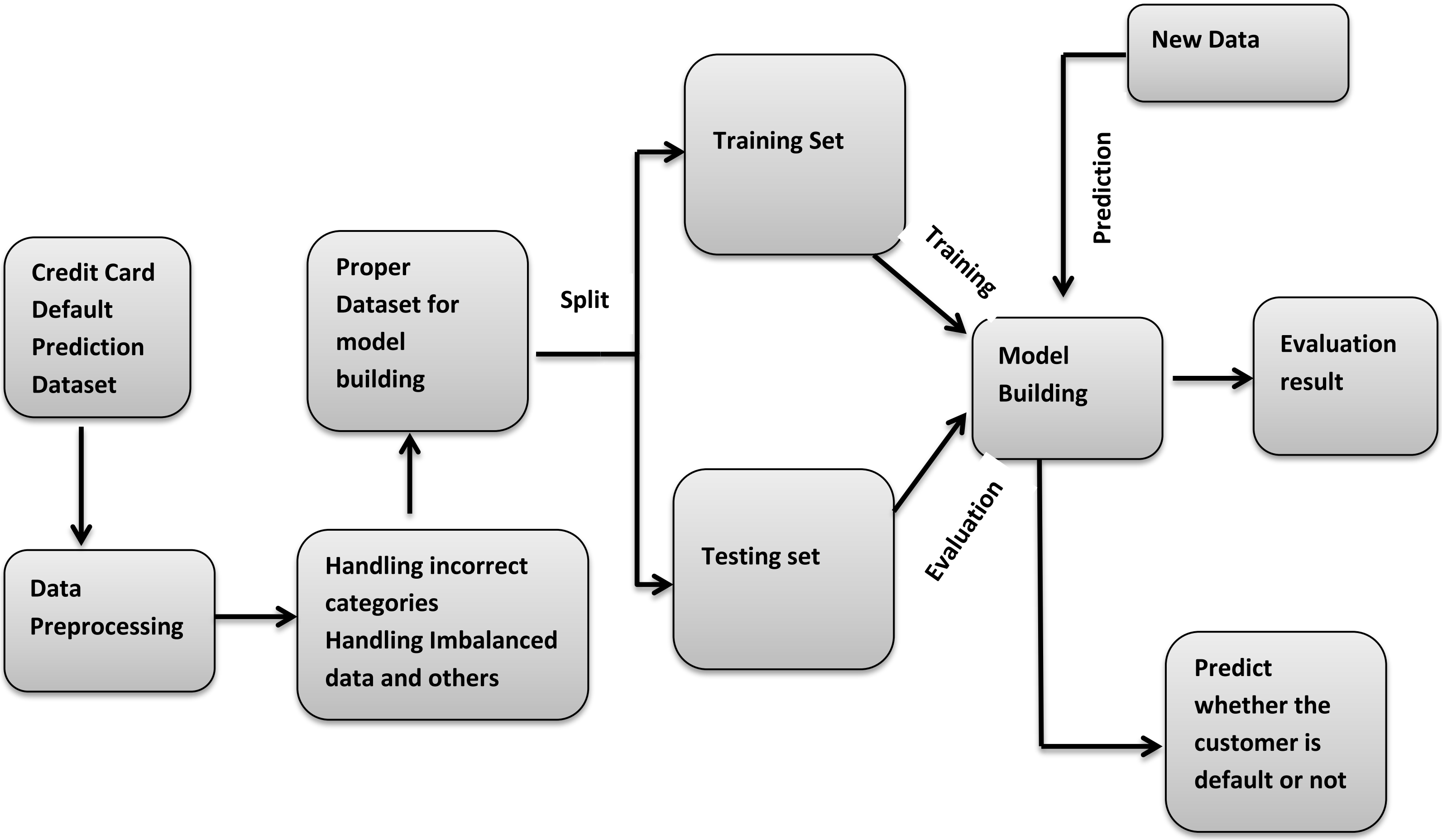
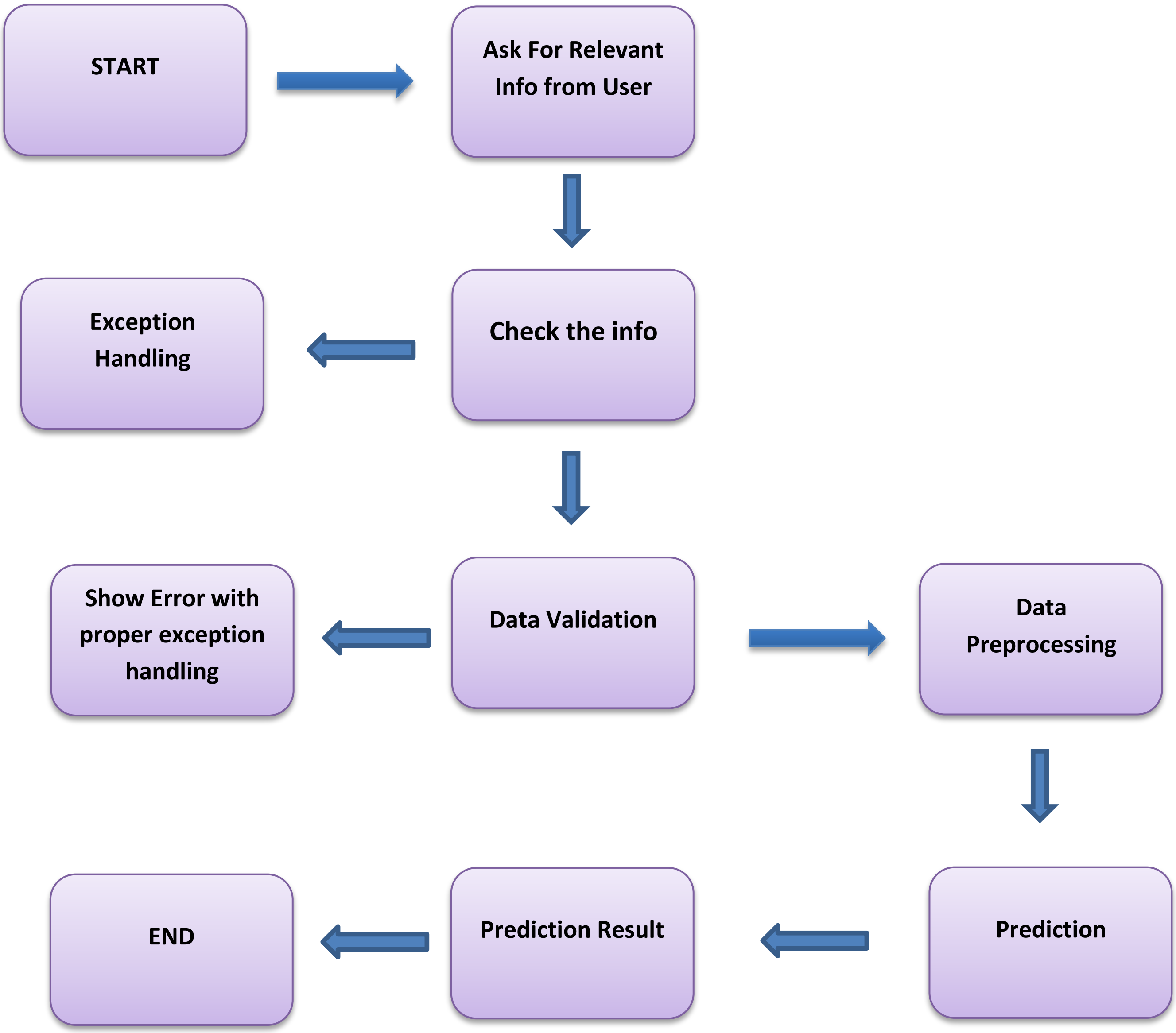
3. Technology Stack

Frontend	*Python, Spyder*
Backend	*Streamlit*
Database	*My SQL*
Deployment	*Local Server*

4. Model Training and Validation Workflow


Credit Card Default Prediction Dataset
Data Preprocessing
Handling incorrect categories Handling Imbalanced data and others
Proper Dataset for model building
Split
Training Set
Testing set
Training
Evaluation
New Data
Prediction
Model Building
Evaluation result
Predict whether the customer is default or not

5. USER I/O WORKFLOW



6. Test Cases

Test Case Description	Pre-Requisite	Expected Result
Verify whether the Application URL is accessible to the user	Application URL should be defined	The application URL should be accessible to the user
Verify whether the user can input all the required input filed	Application is accessible	The User should be able to input the necessary input field
Verify whether the user gets submit button to submit the inputs		User Should get the submit button to submit the inputs
Verify whether the user is presented with results on clicking submit		The User should be presented with results on clicking submit