## Artificial Intelligence and Machine Learning

Project Report

Semester-IV (Batch-2022)

**Case Study**: - Amazon Purchases Dataset

[Url:-](file:///C:\Users\spars\Desktop\AIML%20Project\-) <https://drive.google.com/drive/folders/1HNPr0QMsHPTWM2NZoexngND2mIrYlhHu?usp=drive_link>

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**Supervised By: Submitted By:**

Rajeev Bharadwaj Sparsh Mittal

Roll Number: -2210990865

Group - 13

**Department of Computer Science and Engineering**

## Chitkara University Institute of Engineering & Technology,

## Chitkara University, Punjab

**Description about Case Study: -**

* Read dataset Amazon Purchases
* Display Top 10 rows
* Display the Last 10 rows
* Check the datatype of Each column
* Check null values in the Dataset
* How many rows and columns are in our dataset
* Highest and lowest purchase price in the dataset
* Average purchase price
* How many people have French 'fr' as their Language
* The job title contains engineer
* Find the email of the person with the following IP address: 132.207.160.22
* How many people have Mastercard as their Credit Card Provider and Purchased above 50?
* Find the Email of the person with the following Credit Card number:4105595335494659
* How Many People Purchase During the AM and How Many People Purchase During PM?
* How Many People Have a Credit Card That Expires In 2020
* Top 5 Most Popular Email Providers (Gmail.com, Yahoo.com, etc.)

**Library: -**

* Pandas

**Methods: -**

1. **read\_csv():**

Description: Reads a CSV file and converts it into a data frame.

1. **tail():**

Description: Displays the last few rows of the data frame.

1. **head():**

Description: Displays the first few rows of the data frame.

1. **shape():**

Description: Returns the shape (number of rows, number of columns) of the data frame.

1. **info():**

Description: Provides basic information about the data frame, such as column types and missing values.

1. **isnull():**

Description: Returns True/False for each value in the data frame, indicating whether the value is missing (NaN) or not.

1. **sum():**

Description: Calculates the sum of values in each column of the data frame.

1. **drop():**

Description: Removes specific rows or columns from the data frame.

1. **value\_counts():**

Description: Counts the unique values in a specific column of the data frame.

1. **nunique():**

Description: Returns the count of unique values in a specific column of the data frame.

1. **contains():**

Description: Checks if a specified substring or value is present in a column of the data frame.

1. **max():**

Description: Returns the maximum value in a column of the data frame.

1. **min():**

Description: Returns the minimum value in a column of the data frame.

1. **mean():**

Description: Calculates the mean (average) value of a column in the data frame.

1. **len():**

Description: Returns the number of rows in the data frame

1. **value\_counts():**

Description: Counts the unique values in a specific column of the data frame.

1. **apply():**

Description: Applies a function to transform the values in the data frame.