# Survey Exploration – Data Visualization Report

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Data Visualization

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## Introduction

## This report presents an analysis of the class survey results from the 'Data Visualization Student Information' dataset. The goal is to visually describe key characteristics of the class by identifying three major features, representing them through suitable visualizations, and interpreting the findings. The analysis and visualizations were conducted using Microsoft Excel.

## 1. Selection of Features

After exploring the dataset, three main features were selected to best represent the diversity and habits of the class:

1. Average Weekly Study Hours – to understand students’ academic effort and workload distribution.

2. Level of Expertise in Python – to assess technical readiness for data visualization tools.

3. Social Media Usage (Minutes per Day) – to analyze digital behavior and time management.

Each feature was chosen because it provides a distinct perspective: study habits, technical proficiency, and lifestyle balance. Together, these factors create a well-rounded picture of the class.

## 2. Visualizations

### Feature 1: Average Weekly Study Hours

Visualization Type: Histogram

A graph with numbers and a number of columns

AI-generated content may be incorrect.

A histogram effectively displays how study hours are distributed among students, revealing patterns of learning behavior.

Findings: Most students dedicate between 10–25 hours per week to studying, with a few outliers above 30 hours. This suggests a generally consistent and focused student body.

### Feature 2: Level of Expertise in Python

Visualization Type: Bar Chart

A graph of a graph

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A bar chart provides a clear comparison between different categorical levels of skill ('Unfamiliar', 'Basic Use', 'Advanced Use', 'Expert').

Findings: The majority of students are 'Unfamiliar' or 'Basic Use', while only a few report 'Advanced' or 'Expert' levels. This indicates that the class will benefit from foundational programming lessons before tackling advanced visualizations.

### Feature 3: Daily Social Media Usage

Visualization Type: Box Plot

A screenshot of a computer

AI-generated content may be incorrect.

A box plot visualizes the range and variability of social media usage, identifying outliers in daily digital habits.

Findings: Social media usage ranges from 20 to over 300 minutes daily, with an average around 120 minutes (2 hours). This highlights the diverse digital behavior among students.

## 3. Data Challenges

1. Missing and Incomplete Data

Some responses were left blank (such as GPA or study hours), requiring data cleaning to ensure valid results.

2. Inconsistent Formatting in Categorical Data

Several categorical entries (e.g., 'Unfamiliar' vs 'Unfamilar') required standardization before analysis.

## 4. Overall Document

The visualizations highlight how students balance study time, possess varying technical skills, and manage social media use. Understanding these aspects helps tailor course expectations and supports student success.