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**Vellore Institute of Technology**  
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# Course Project

Internet and Web Programming

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Slot: E2+TE2

Course Code: BCSE404L

Faculty: Dr. A. Mary Mekala

## Background

In the modern day, training AI and ML models for domain specific implementations. For this, we need to quickly view and analyse the datasets available online in various formats like JSON APIs, csv files, etc.

## Problem Statement

Dockerized Multi-source data acquisition, visualization and analysis dashboard using HTML, CSS, JS, NodeJs and MongoDB.

## Demo Video Link

[https://drive.google.com/file/d/1YF53MEk7DM9iU21KHCA7YUvbs\\_5q1\\_FJ/view?usp=sharing](https://drive.google.com/file/d/1YF53MEk7DM9iU21KHCA7YUvbs_5q1_FJ/view?usp=sharing)

## Github Link

The entire code is available at as its too big:

<https://github.com/exMachina316/Data-Analysis-and-Plotting>

## Results

### 1. Landing Page

The screenshot shows the DataDash landing page. At the top, there's a dark purple header with the title "DataDash". Below the header, a large blue banner features the text "Analyze Public Datasets with Ease" and a "Go To Dashboard" button. To the right of the text is a logo with the words "DATA DASH" and "FROM DATA TO UNDERSTANDING". The main content area has a light gray background. It includes sections for "Key Features" (Data Import, Visualization, Statistical Tools) and "How It Works" (Import Your Data, Visualize & Analyze, Gain Insights). Each section is numbered 1, 2, or 3 and contains descriptive text and small icons.

**DataDash**

Home Features About

## Perfect For

**Students & Researchers**  
Analyze research papers, create visualizations for papers, and understand statistical relationships without complex software.

**Business Analysts**  
Quickly explore business metrics, sales data, and customer information to make data-driven decisions.

**Data Enthusiasts**  
Explore public datasets, discover insights, and visualize trends in areas like climate, economics, and social data.

## Why Choose DataDash?

**No Installation Required**  
Access the dashboard directly from your browser. No downloads, no setup, just start analyzing.

**Beautiful Visualizations**  
Create stunning, interactive charts that make your data come alive and tell compelling stories.

**Fast & Responsive**  
Built with modern web technologies for lightning-fast performance on any device.

**Easy to Learn**  
Intuitive interface designed for users of all skill levels. No credits or technical expertise required!

**DataDash**

Home Features About

## Ready to Start Analyzing?

Join thousands of users who are already making sense of their data with DataDash.

Create Free Account

## About the Project

DataDash was created to democratize data analysis by providing a simple yet powerful tool for analyzing public datasets without requiring any programming knowledge. Built with pure HTML, CSS, and JavaScript, it showcases modern web development practices while remaining accessible to everyone.

Whether you're a student working on a research project, a business analyst exploring market trends, or simply curious about data, DataDash provides the tools you need to transform raw numbers into meaningful insights.

**DataDash**  
Making data analysis accessible to everyone.

**Quick Links**  
Home Dashboard Features About

**Resources**  
Documentation Tutorials Sample Datasets Support

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## 2. Login Page

The screenshot shows the DataDash login page. At the top, there is a navigation bar with the brand name "DataDash" on the left and links for "Home", "Login" (which is highlighted in blue), and "Sign Up" on the right. The main content area features a white rectangular form titled "Login to Your Account". It contains two input fields: "Username or Email" and "Password", both with placeholder text. Below these is a blue "Login" button. At the bottom of the form, there is a link that says "Don't have an account? [Sign up here](#)".

## 3. Signup Page

The screenshot shows the DataDash signup page. At the top, there is a navigation bar with the brand name "DataDash" on the left and links for "Home", "Login", and "Sign Up" (which is highlighted in blue) on the right. The main content area features a white rectangular form titled "Create Your Account". It contains five input fields: "Username", "Email (Optional)", "Password", "Confirm Password", and a "Sign Up" button. Below the "Sign Up" button is a link that says "Already have an account? [Login here](#)".

## 4. User Dashboard

The screenshot shows the DataDash user interface. At the top, there is a navigation bar with links for 'Home', 'Logout', and a welcome message 'Welcome, abc!'. Below the navigation bar, a green banner displays the message 'Dataset loaded successfully!'. The main area is divided into two sections: 'Import Dataset' and 'Data Preview'. The 'Import Dataset' section contains a form for 'Data Source Configuration' with a dropdown for 'Data Source Type' set to 'Sample: Sales Data'. It includes a note that the sample dataset will be loaded automatically and a dashed box for file upload with the instruction 'Or Upload a File' and a 'Load Dataset' button. The 'Data Preview' section shows a table with four columns: month, sales, profit, and region. The data for the first four months is as follows:

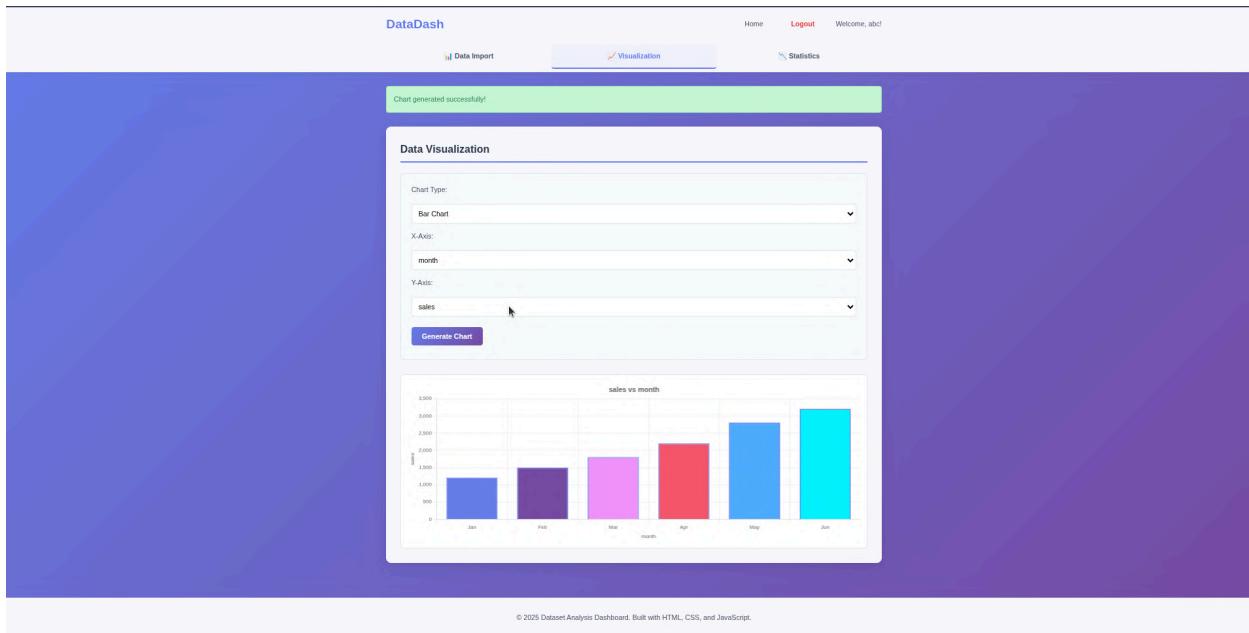
month	sales	profit	region
Jan	1200	400	North
Feb	1500	600	North
Mar	1800	700	South
Apr	2200	900	East

## 5. Visualization Page

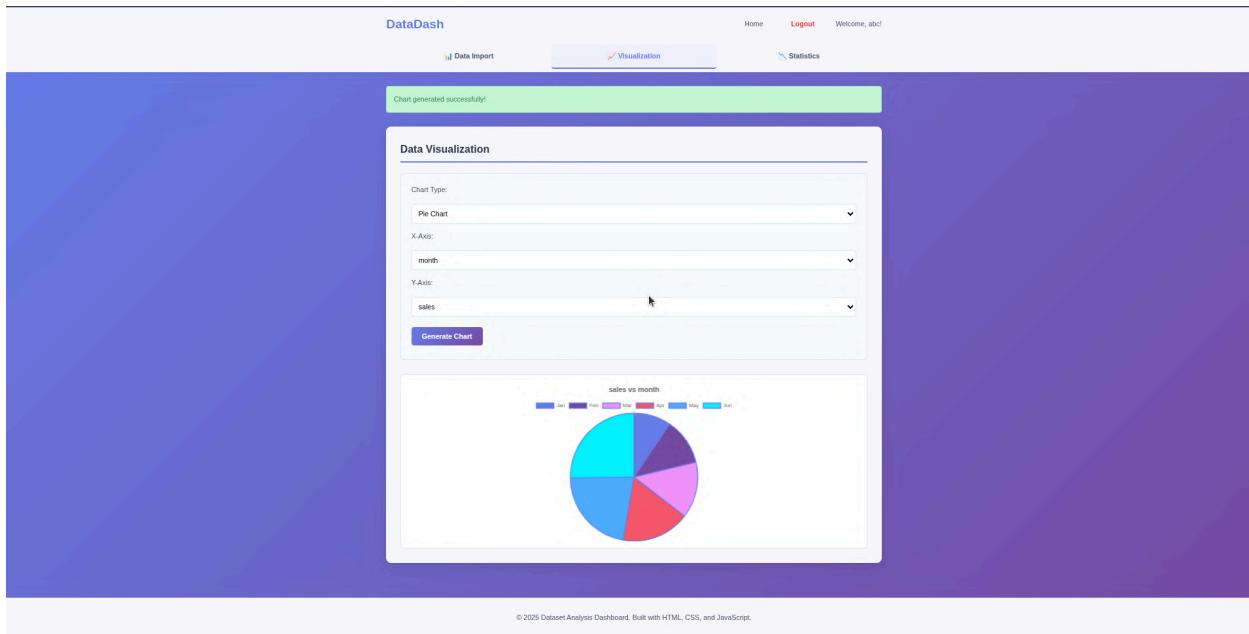
### i. Line Chart

The screenshot shows the DataDash visualization page. At the top, there is a navigation bar with links for 'Data Import', 'Visualization' (which is currently selected), and 'Statistics'. Below the navigation bar, a green banner displays the message 'Chart generated successfully!'. The main area is titled 'Data Visualization' and contains a form for 'Chart Type' set to 'Line Chart'. It includes dropdowns for 'X-Axis' (set to 'month') and 'Y-Axis' (set to 'sales'). A 'Generate Chart' button is located below these fields. To the right of the form is a line chart titled 'sales vs month' showing the trend from January to June. The Y-axis represents sales values ranging from 1,200 to 3,000, and the X-axis represents months from Jan to Jun. The chart shows a steady increase in sales over time.

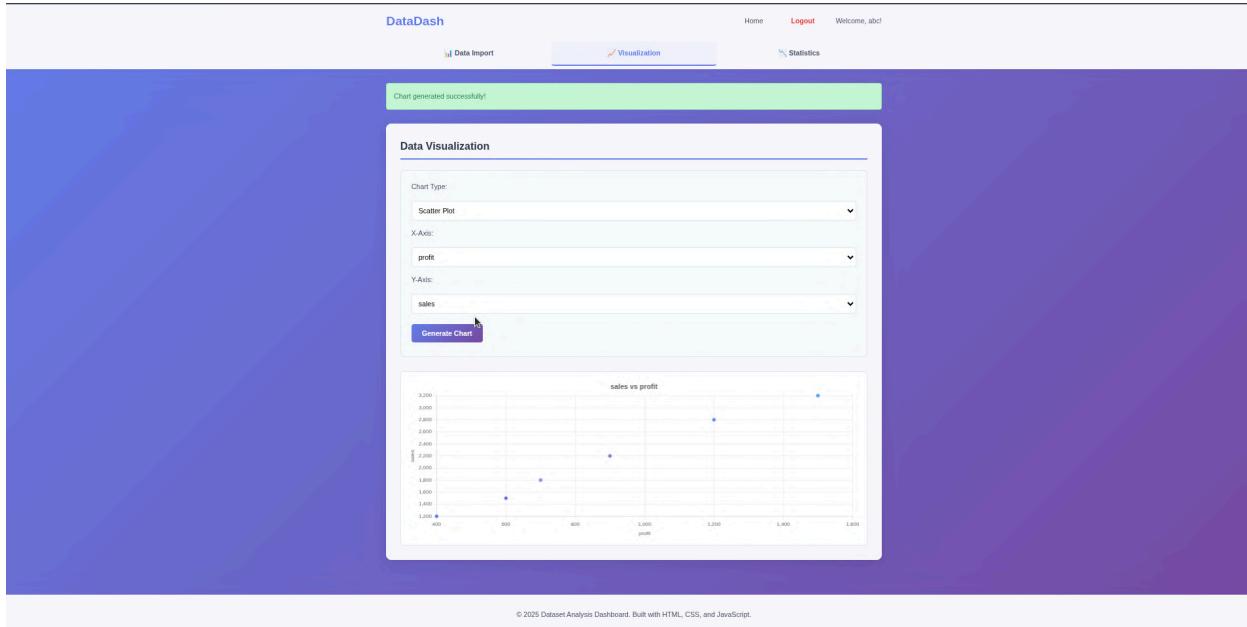
## ii. Bar Chart



## iii. Pie Chart

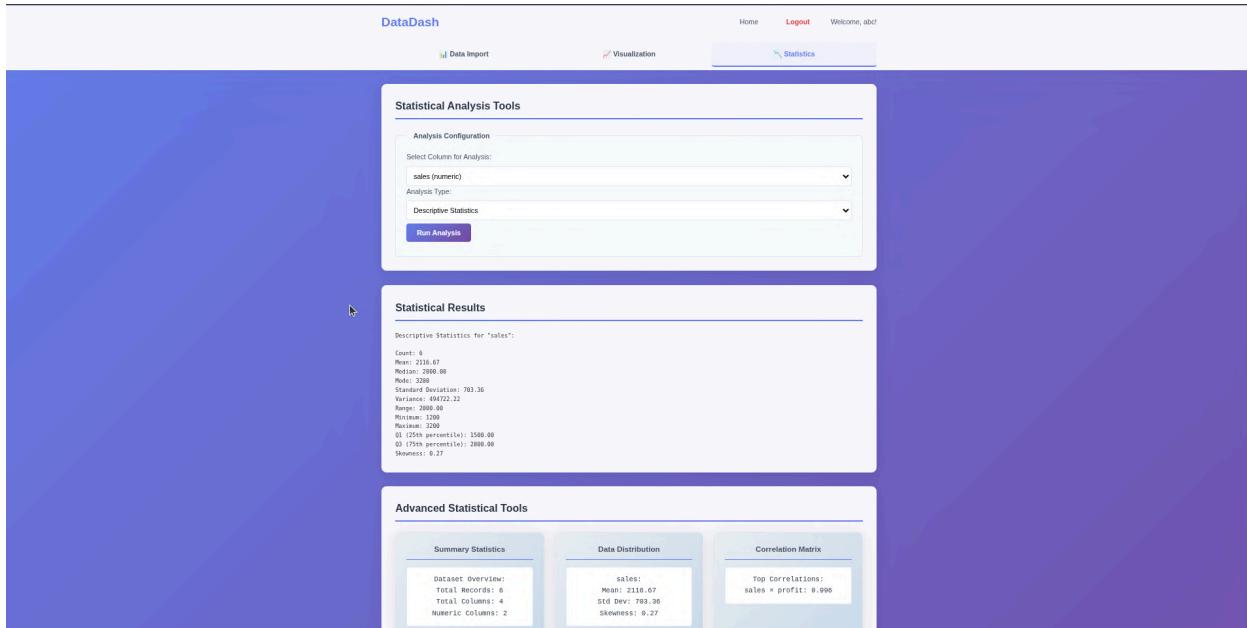


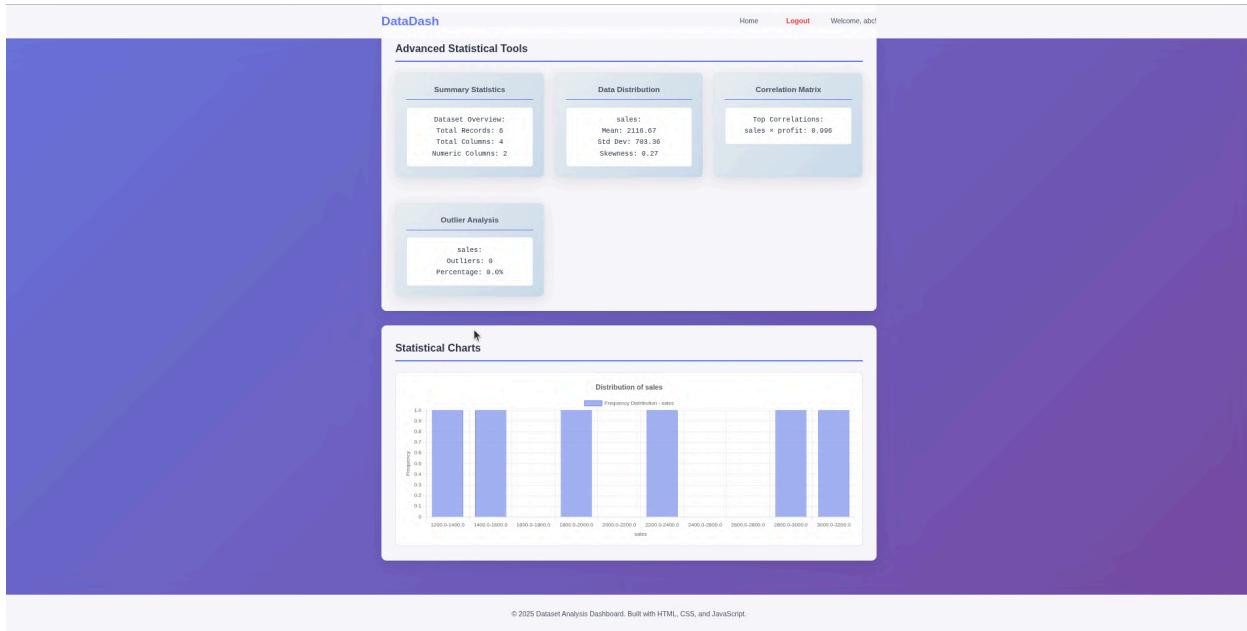
#### iv. Scatter Plot



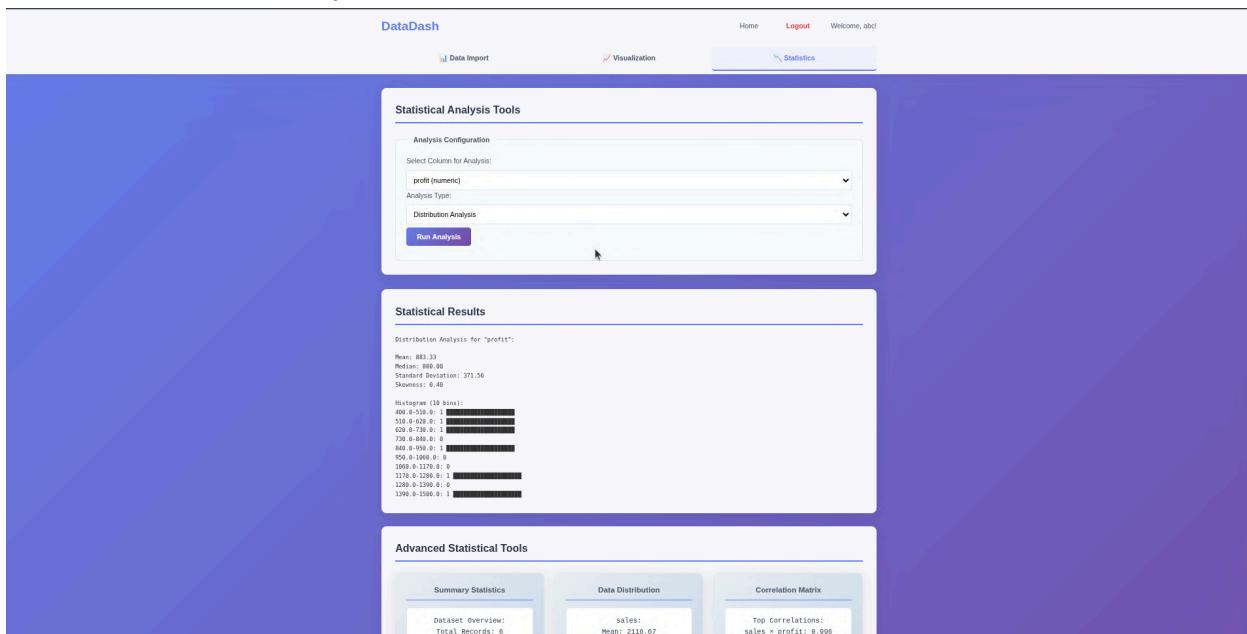
### 6. Statistics Page

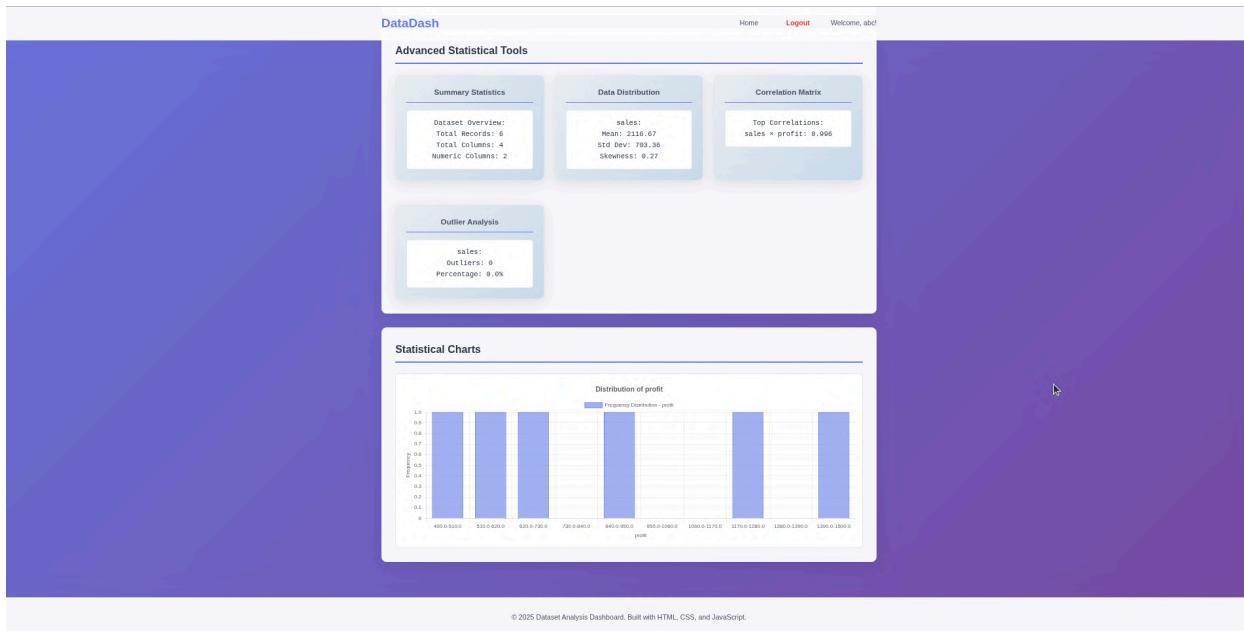
#### i. Descriptive Statistics



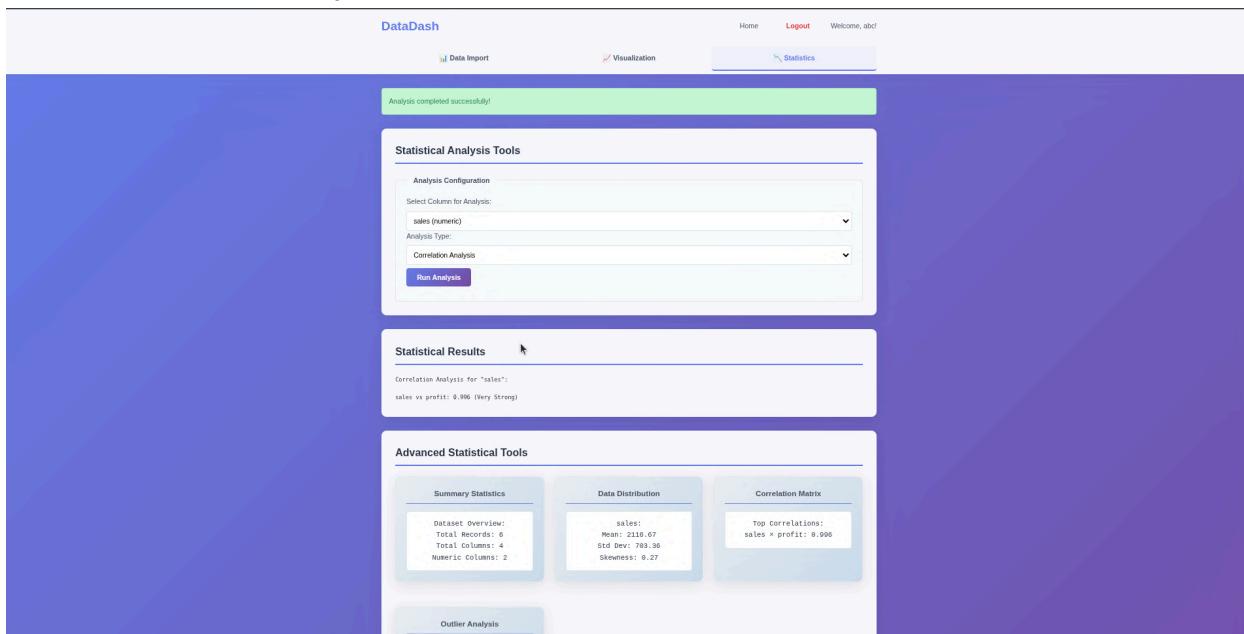


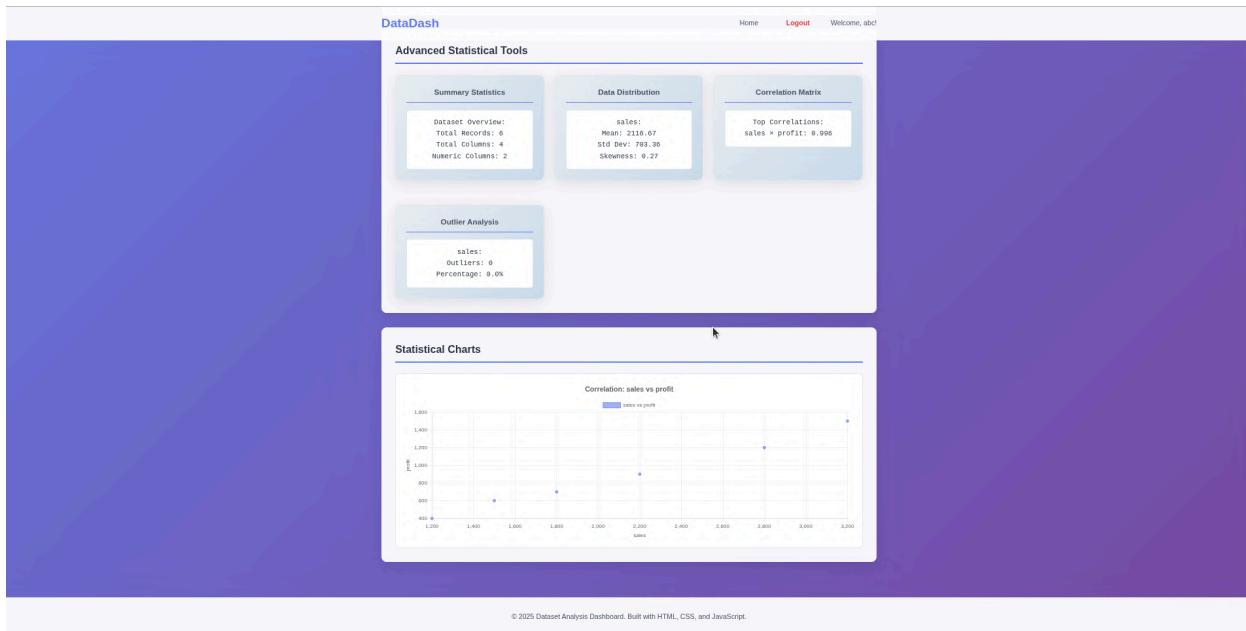
## ii. Distributive Analytics



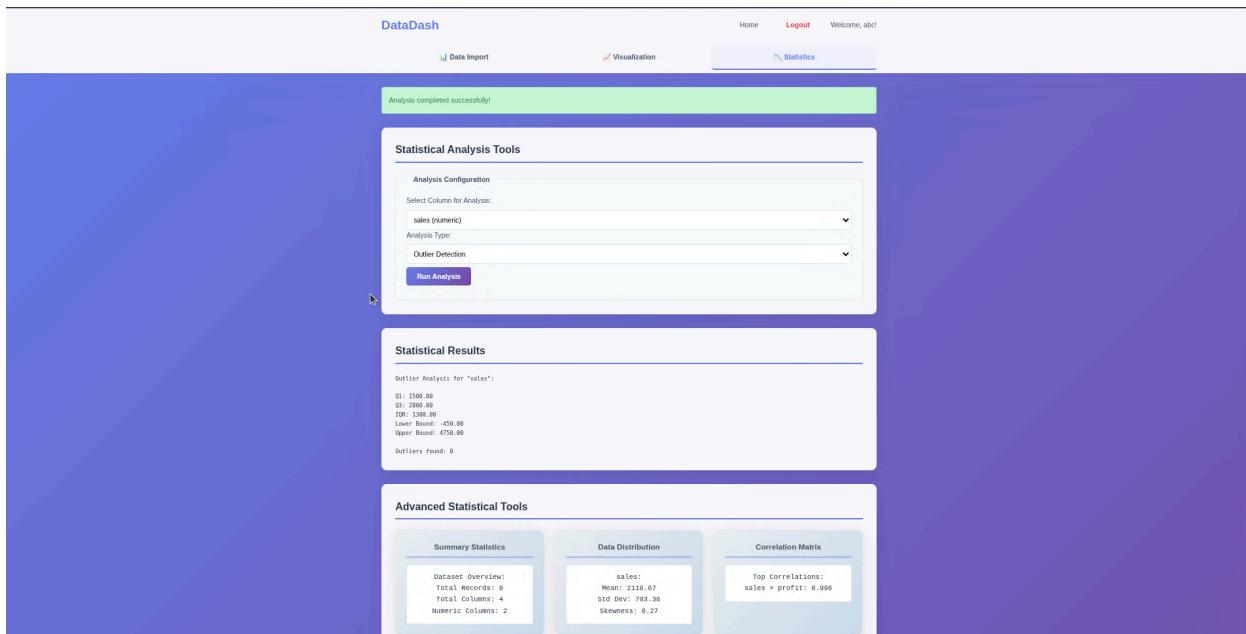


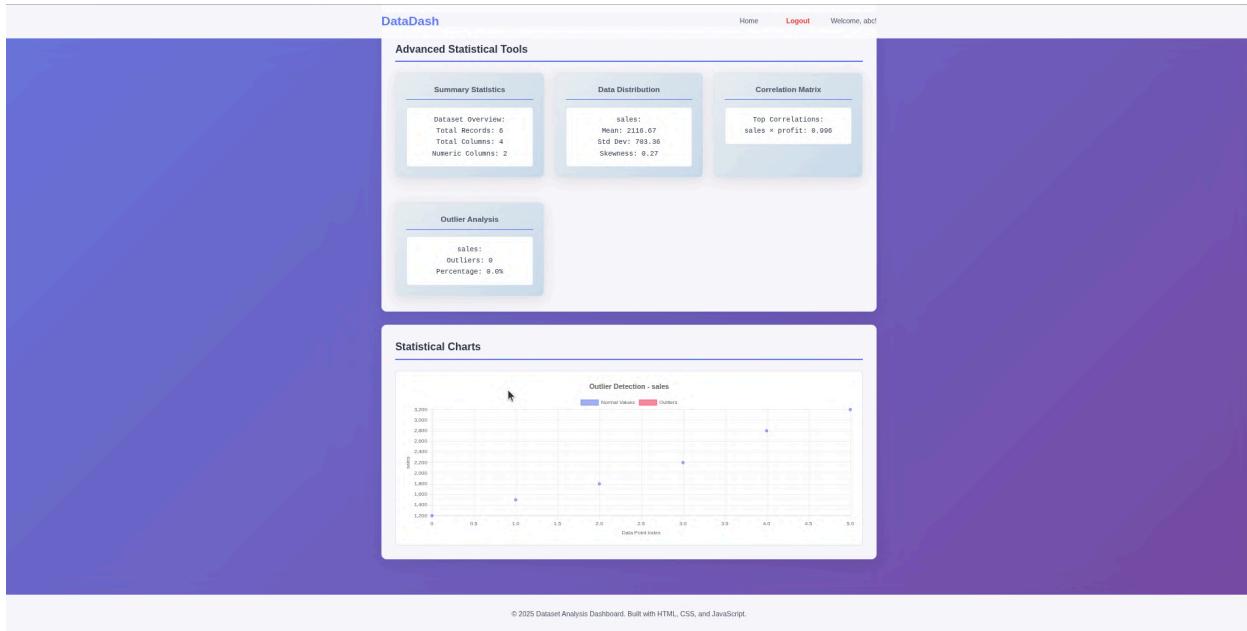
### iii. Correlation Analysis





#### iv. Outlier Detection





## 7. Mongo DB Atlas Deployment

`_id: ObjectId('690660f7884fb1daed097ec3')`  
`id: '1017855c-a442-43ba-8c46-9a79896247a6'`  
`username: 'admin'`  
`email: 'admin@gmail.com'`  
`passwordHash: "52b5105e9d0x0u2G7o9jPbx3xuuAT6T2N7Qnw1B8jfkAkOaQsqPImGKU2"`  
`createdAt: "2023-11-01T19:35:19.387Z"`  
`__v: 0`

`_id: ObjectId('690708d9d4be0688aa16125')`  
`id: 'd29c83e1-99b4-4ebc-9031-e9bee6f8b85'`  
`username: 'abc@gmail.com'`  
`email: 'abc@gmail.com'`  
`passwordHash: "52b5105c1zCPBtueLJMczPUkGfxOCghwOV48yvEfga2InSC5zmGk4nVyzah"`  
`createdAt: "2023-11-02T20:48:02.972Z"`  
`__v: 0`