

Statistical Test Selector

Overview and Purpose:

The Statistical Test Selector is a Python-based interactive application designed to assist users in selecting the appropriate statistical tests for their data analysis needs. Built with the Tkinter library for a user-friendly GUI experience, this tool guides users through a series of questions regarding their dataset and analysis requirements. Based on the responses, it suggests the most suitable statistical tests, including but not limited to chi-square tests, Mantel-Haenszel tests, and Fisher's exact tests.

This continuation covers the process of guiding the user through decisions related to the nature of their data and its distribution, leading to a test suggestion. Each function contributes to a decision tree that incrementally narrows down the appropriate statistical test for the user's dataset, with the UI reflecting each step of the decision-making process.

Features

- 1)Interactive Questionnaire: Guides the user through a series of detailed questions about the data and desired analysis.
- 2)Dynamic Test Suggestions: Offers tailored suggestions for statistical tests based on the user's inputs.
- 3)Educational Tool: Serves as an educational resource for students and researchers learning about various statistical tests and their applications

Setup Application and dependencies:

-> we have also uploaded an exe file to run the application you can simply download it and run.

->Ensure all prerequisites(e.g customtkinter package) are installed on your system.

->Download Tkinter.py to your local machine.

By execution "pip install customtkinter" on cmd prompt.

->Open a terminal or command prompt.

->Navigate to the directory containing Tkinter.py.

->Run the application with the command: python Tkinter.py.

Prerequisite condition:

The screen should be in full.

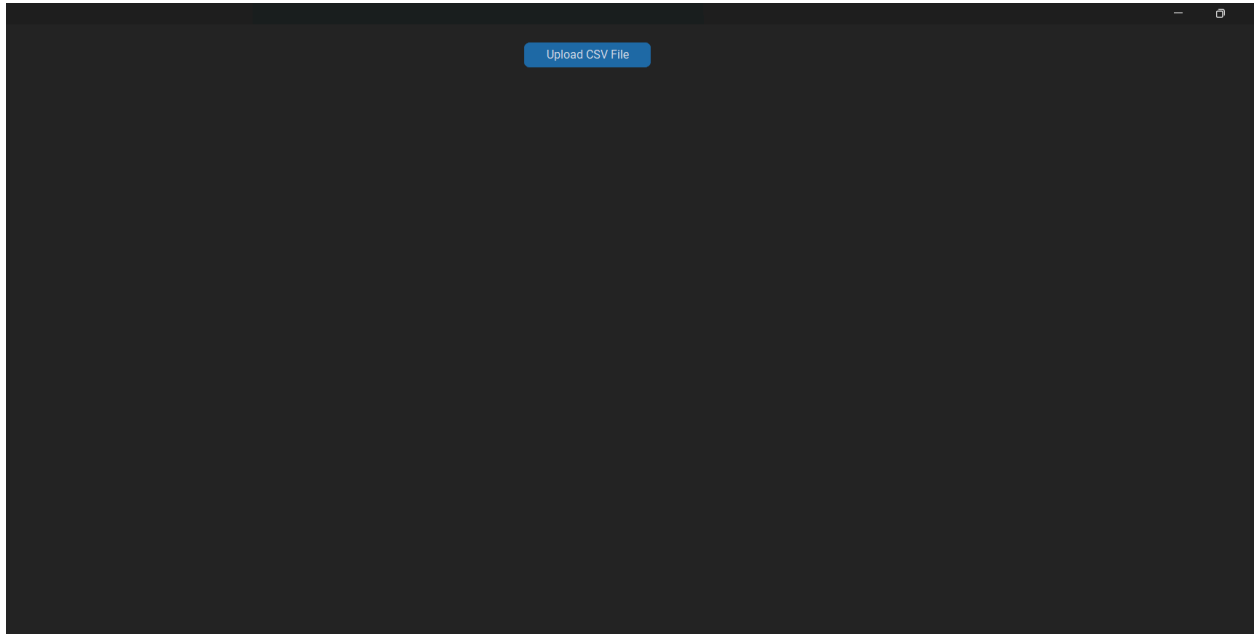
We have a single csv file which is submitted in the folder itself

We have pasted the below the flow of the Application in snapshot form;

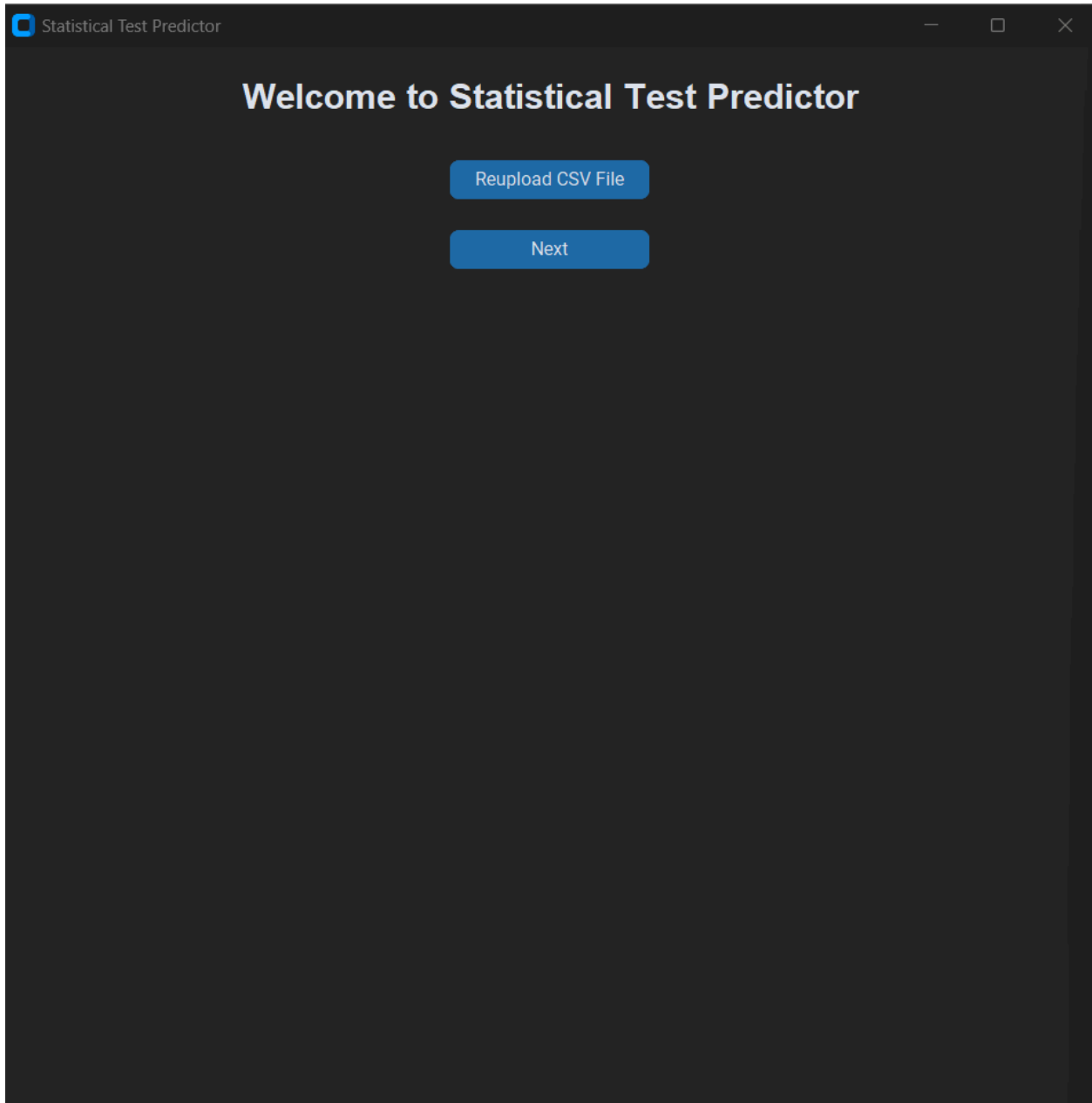
Working demo:

We have attached below snapshots of a part of the application but if you want to run the application we have attached it in the folder itself.

First user have to upload the csv file



They have two options either reload the file or go with the same file



Selection of variable of interest:

Welcome to Statistical Test Predictor

Back

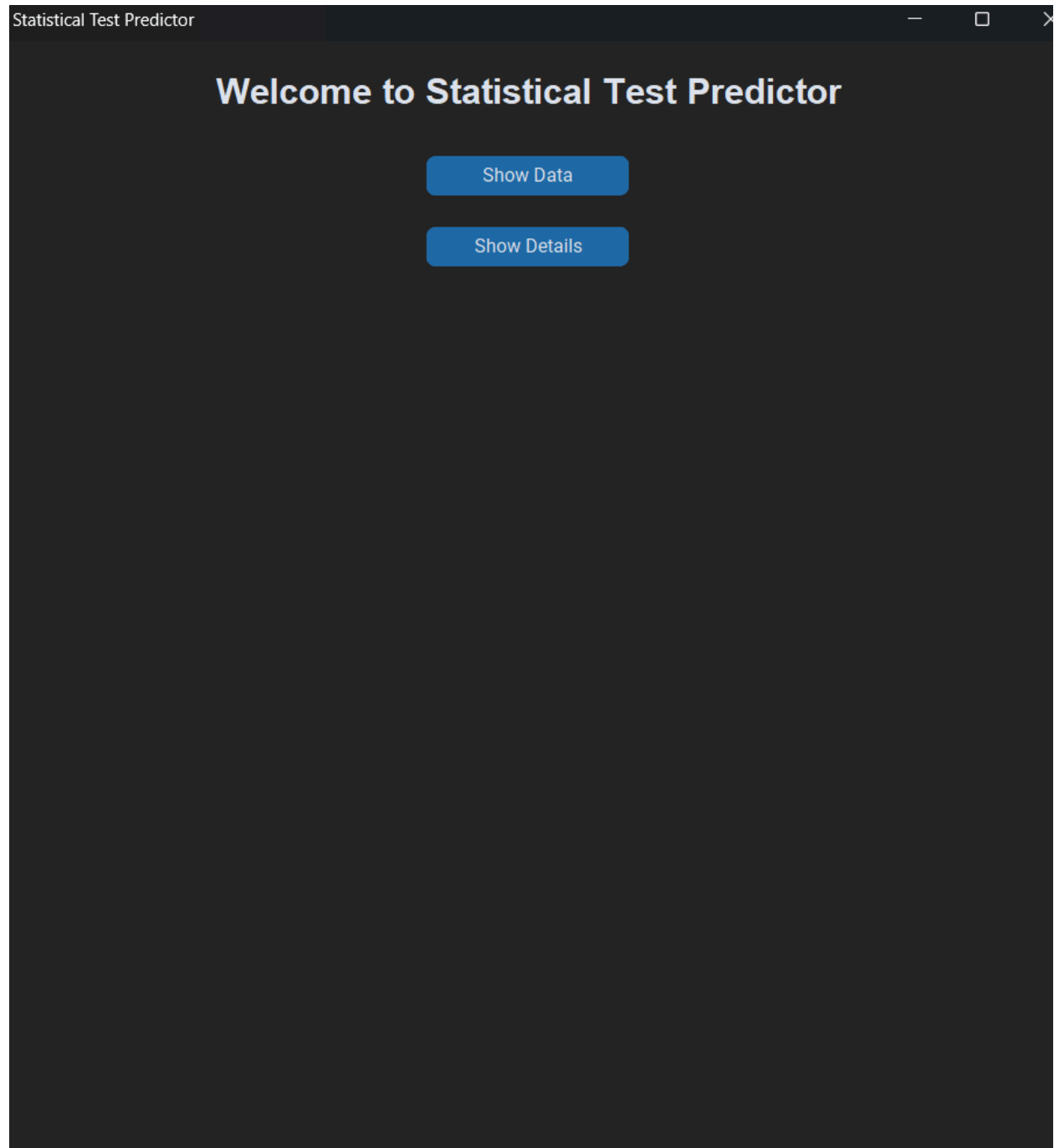
Next

Select Variables of Interest:

Year
Industry_aggregation_NZSIOC
Industry_code_NZSIOC
Industry_name_NZSIOC
Units
Variable_code
Variable_name
Variable_category
Value
Industry_code_ANZSIC06

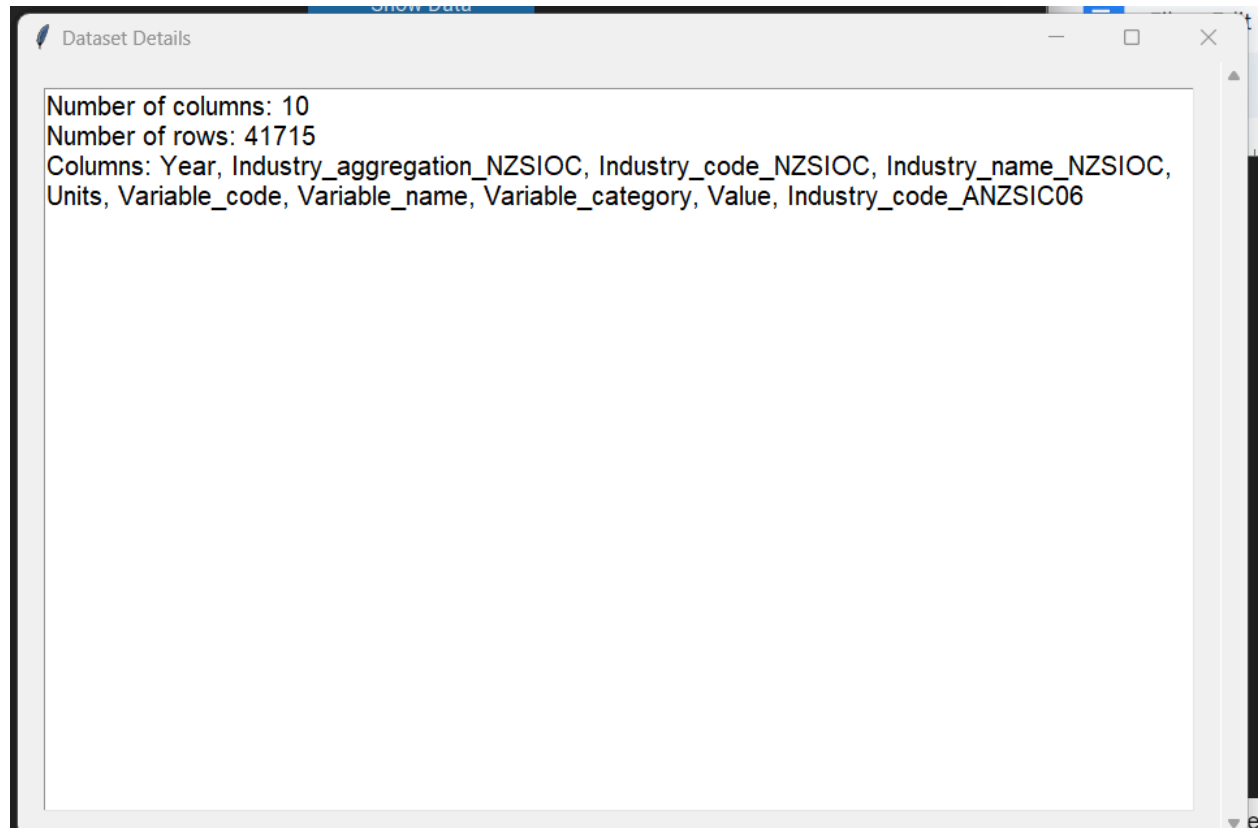
Then we have two interface:

- i) show data
- ii) show details

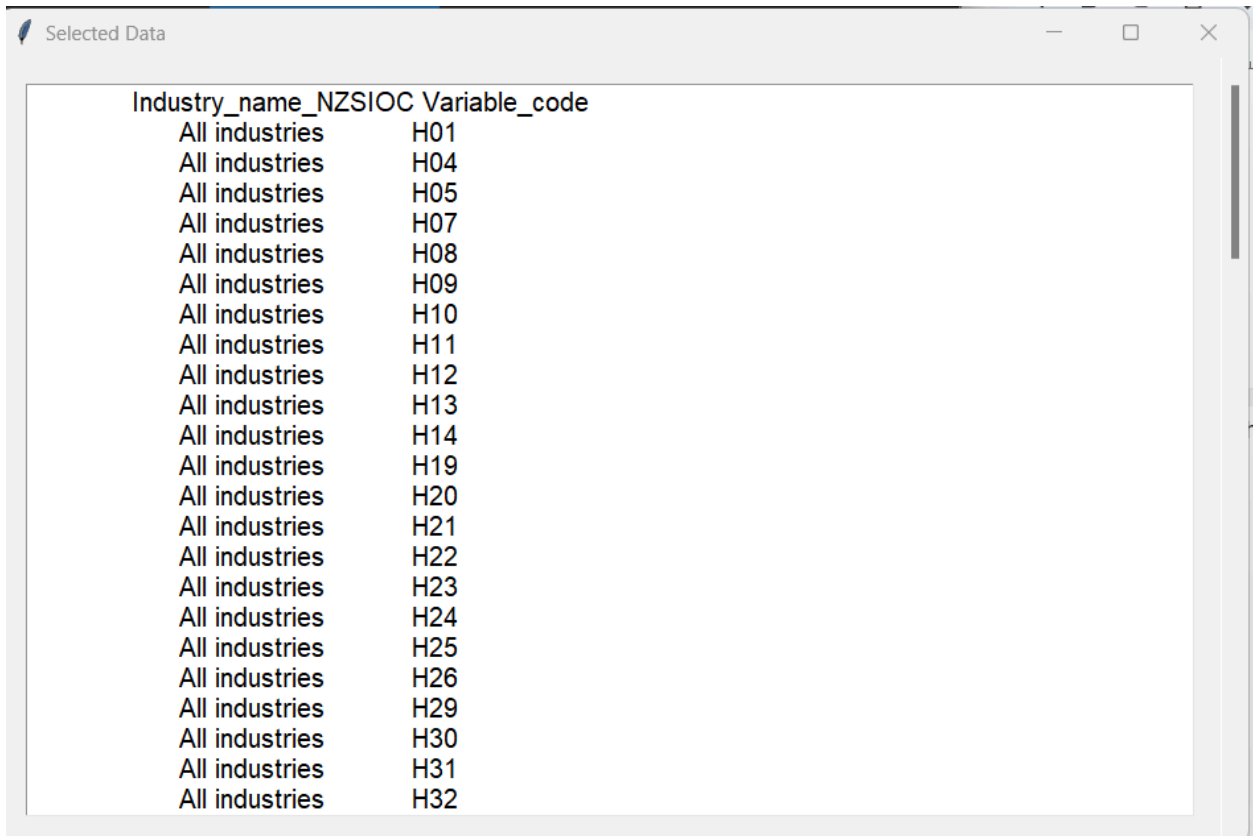


Below is the details of dataset:

- i) number of columns
- ii) number of rows
- iii) column names



The data show page will be looking as below:



The image shows a window titled "Selected Data" with a list of data entries. The list has two columns: "Industry_name_NZSIOC" and "Variable_code". The "Industry_name_NZSIOC" column contains the text "All industries" for every row. The "Variable_code" column contains a series of codes starting from H01 and ending at H32, with some gaps (e.g., H04, H05, H07, H08, H09, H10, H11, H12, H13, H14, H19, H20, H21, H22, H23, H24, H25, H26, H29, H30, H31, H32).

Industry_name_NZSIOC	Variable_code
All industries	H01
All industries	H04
All industries	H05
All industries	H07
All industries	H08
All industries	H09
All industries	H10
All industries	H11
All industries	H12
All industries	H13
All industries	H14
All industries	H19
All industries	H20
All industries	H21
All industries	H22
All industries	H23
All industries	H24
All industries	H25
All industries	H26
All industries	H29
All industries	H30
All industries	H31
All industries	H32

Then application will ask some questions:
Which is upload in the assignment tree:

Welcome to Statistical Test Predictor

Only one variable of interest? (Select Yes or No):

Yes

No

Reset

Welcome to Statistical Test Predictor

Is the data one sample? (Select Yes or No):

Yes

No

Reset

Welcome to Statistical Test Predictor

Is the distribution normal? (Select Yes or No):

Yes

No

Reset

Statistical Test Predictor

— □ ×

Welcome to Statistical Test Predictor

Do you know about mean, variance, and median? (Select Yes or No):

Yes

No

Reset

Final page to give the which test should be implemented by the user after asking questions.

