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.

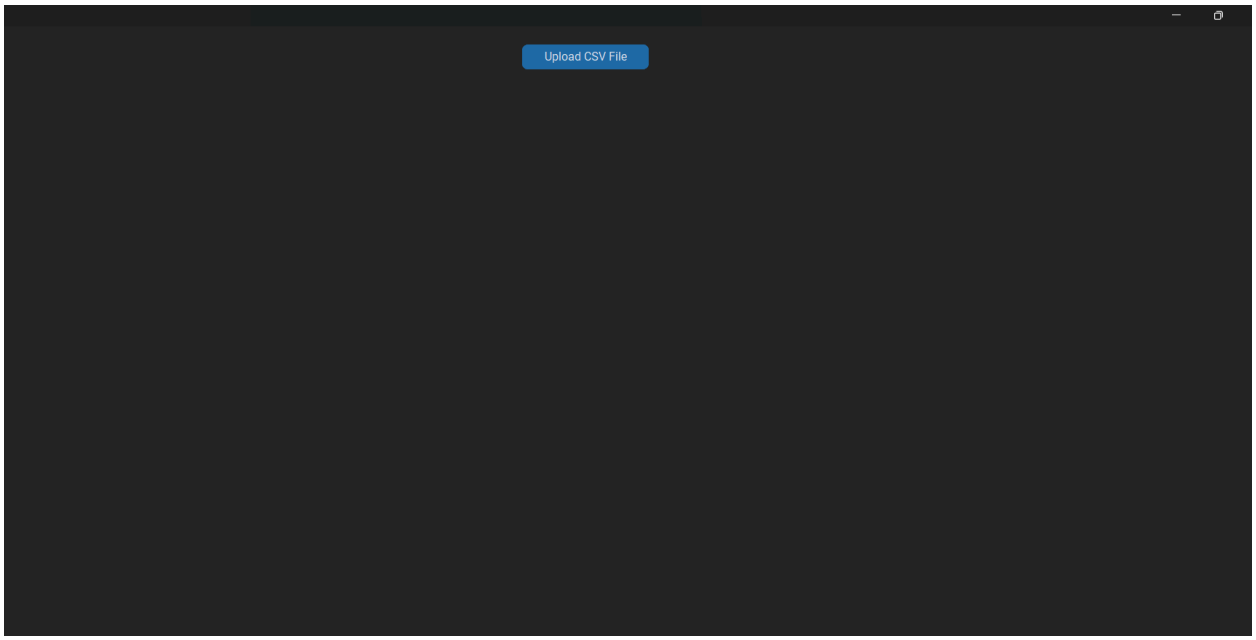
We have a single csv file which is submitted in the folder itself

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

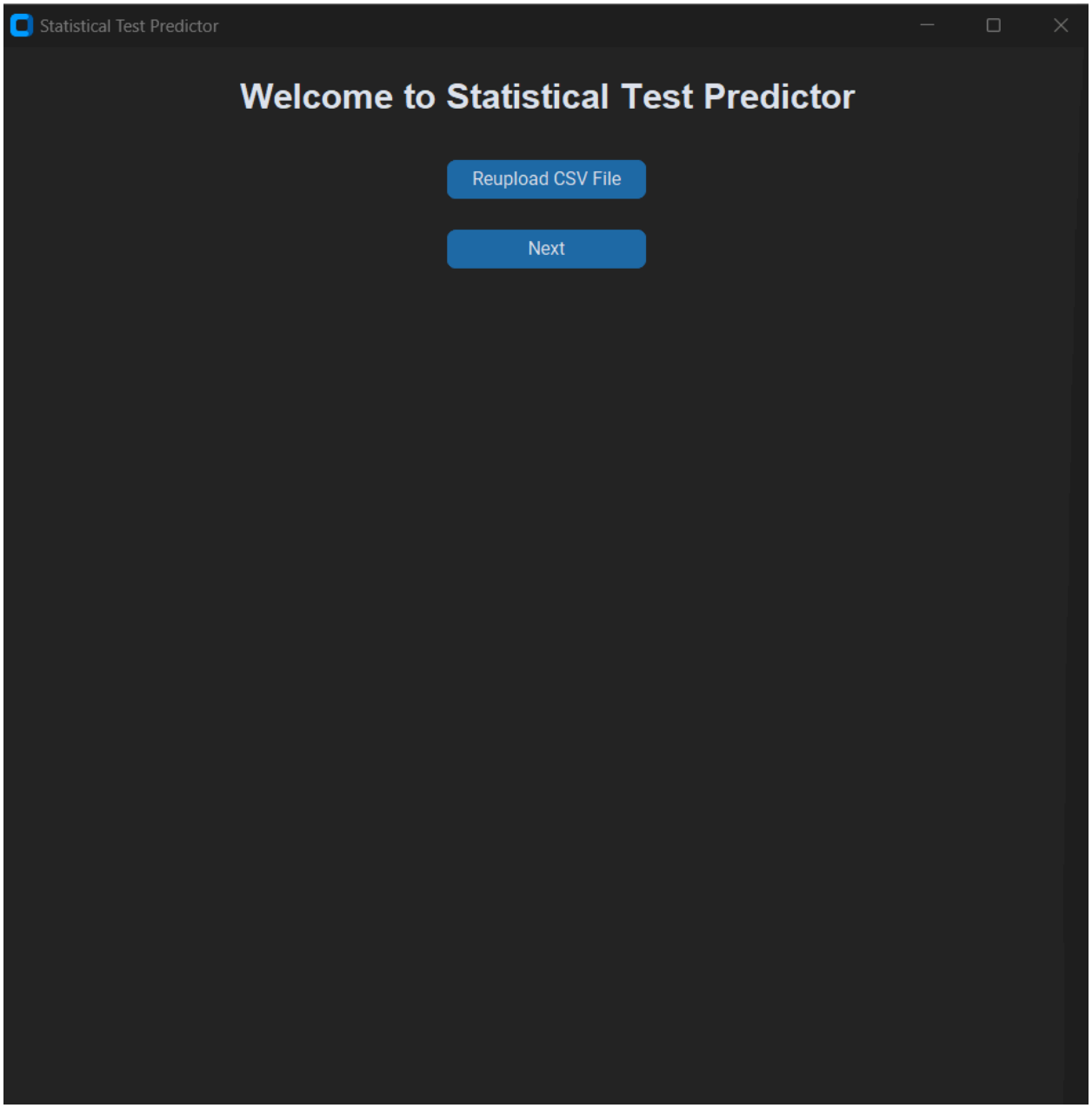
Working demo:

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.

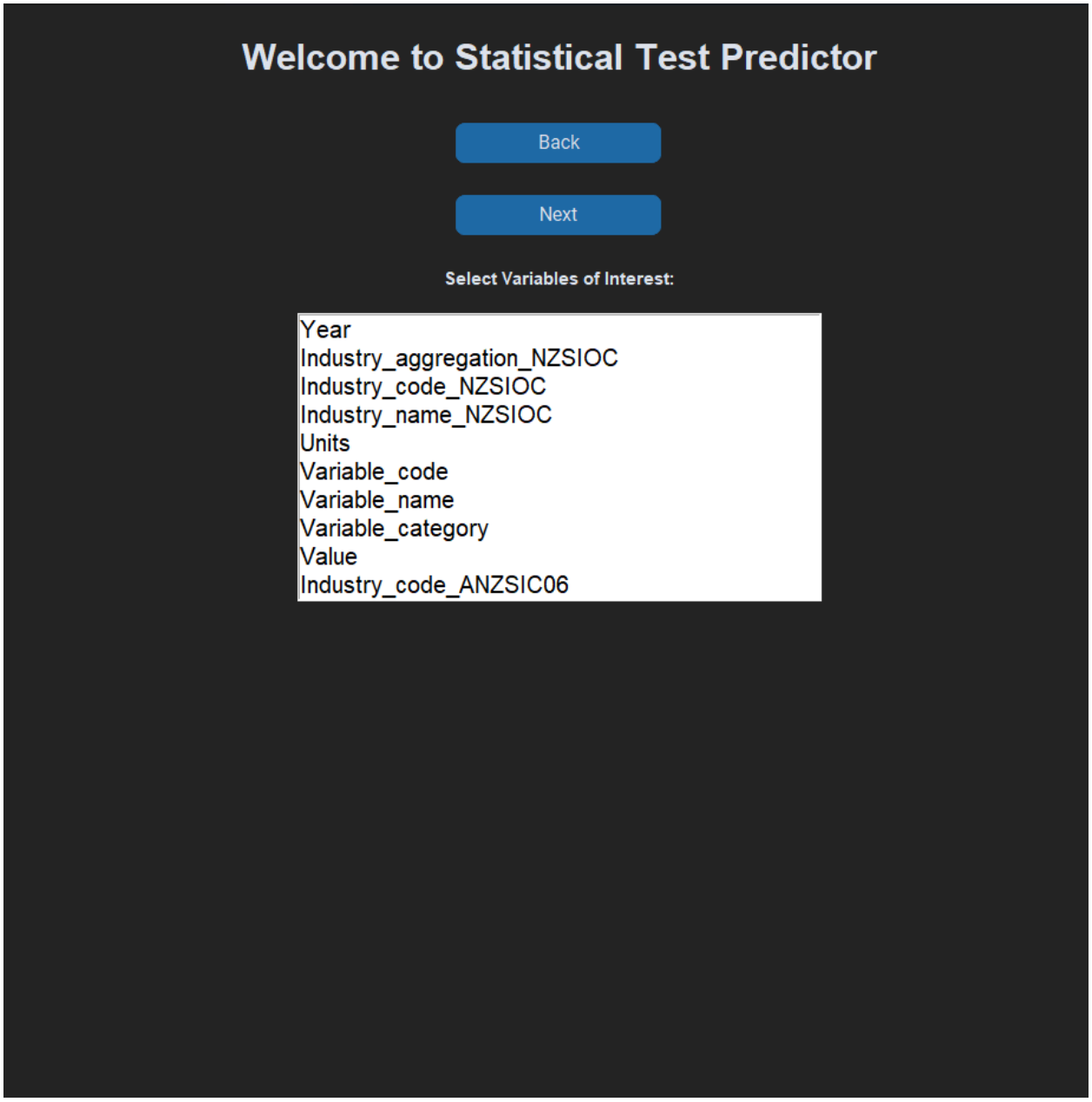
First user have to upload the csv file



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



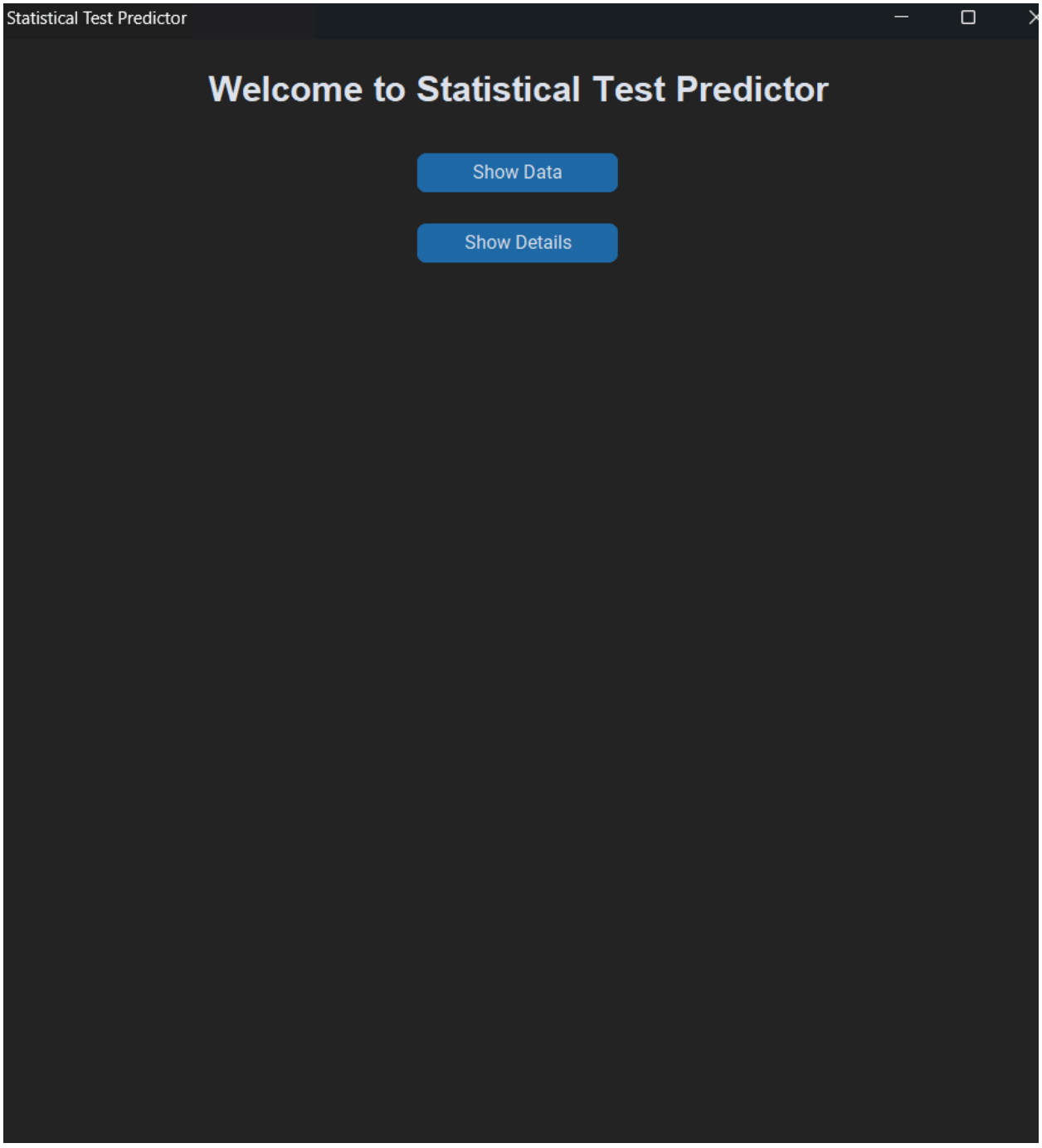
Selection of variable of interest:



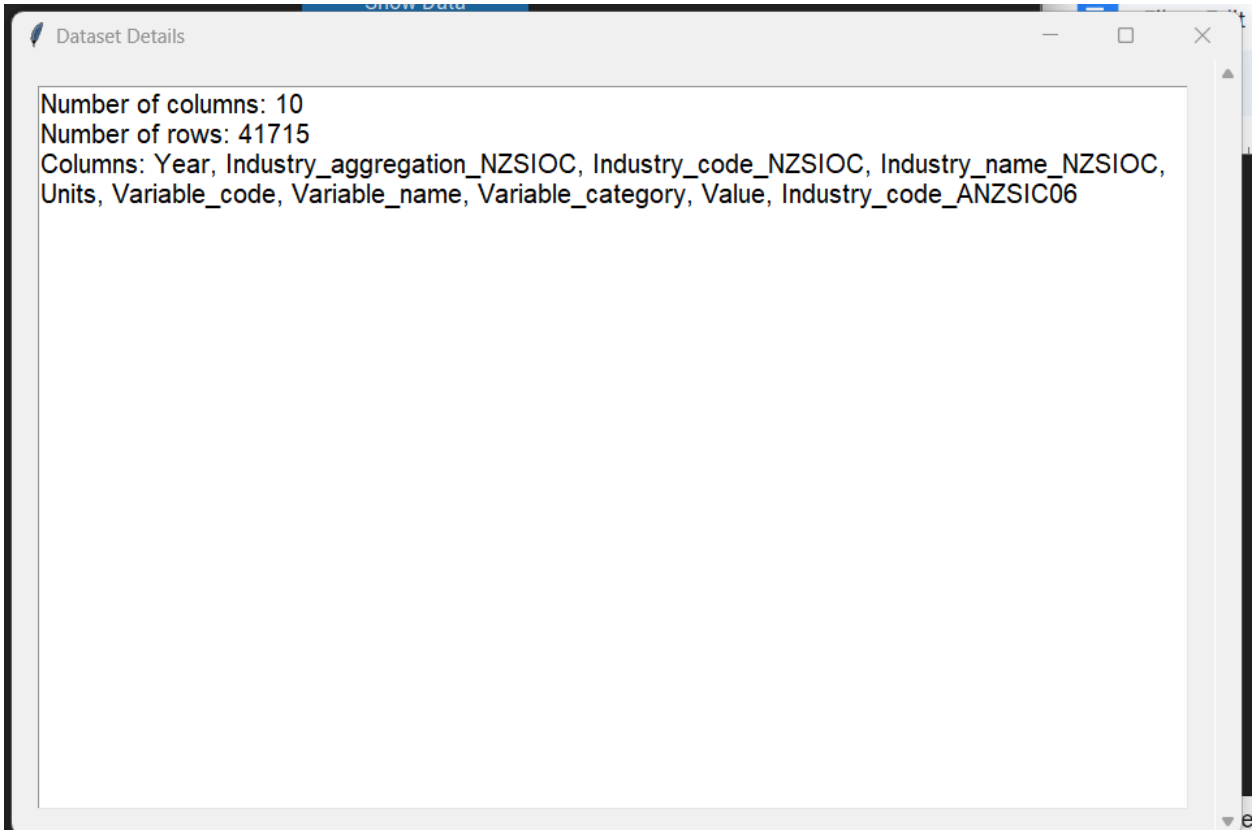
Then we have two interface:

i) show data

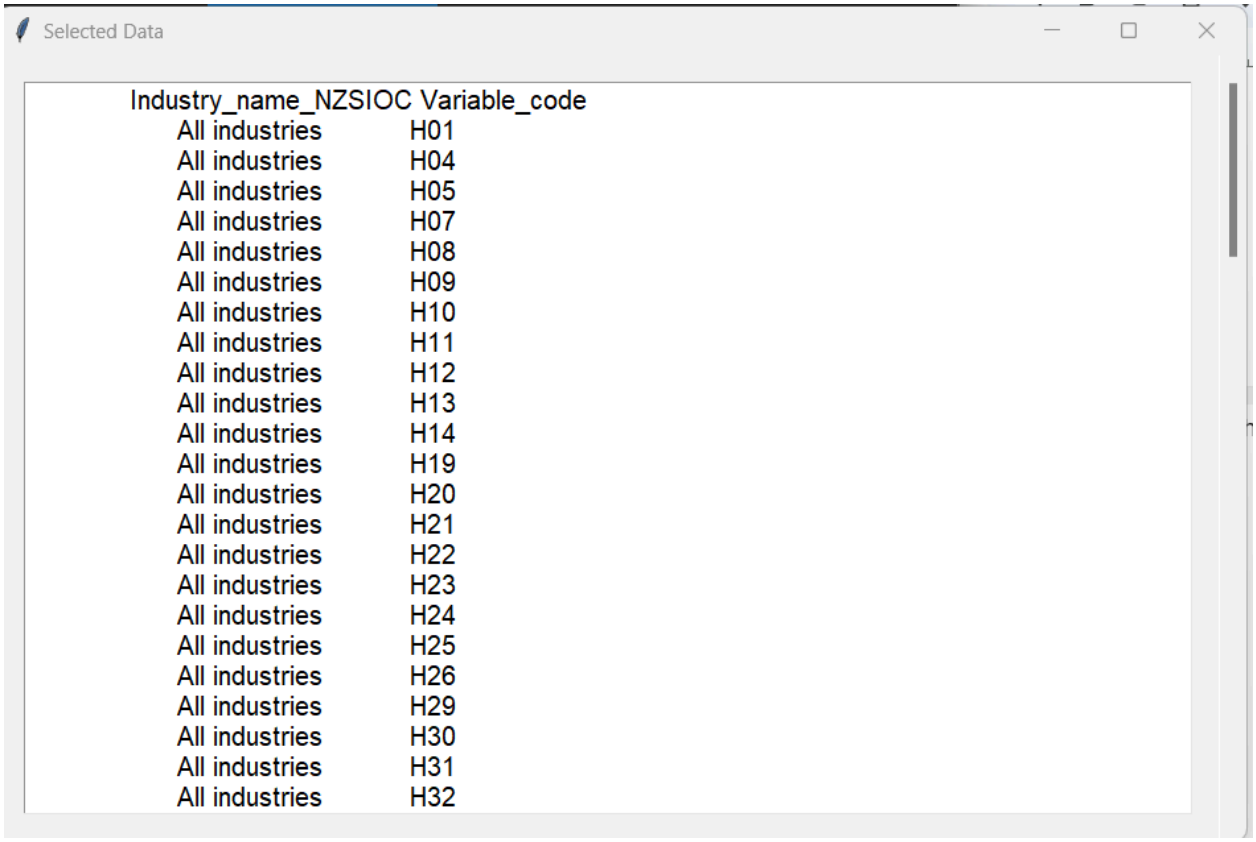
ii) show details



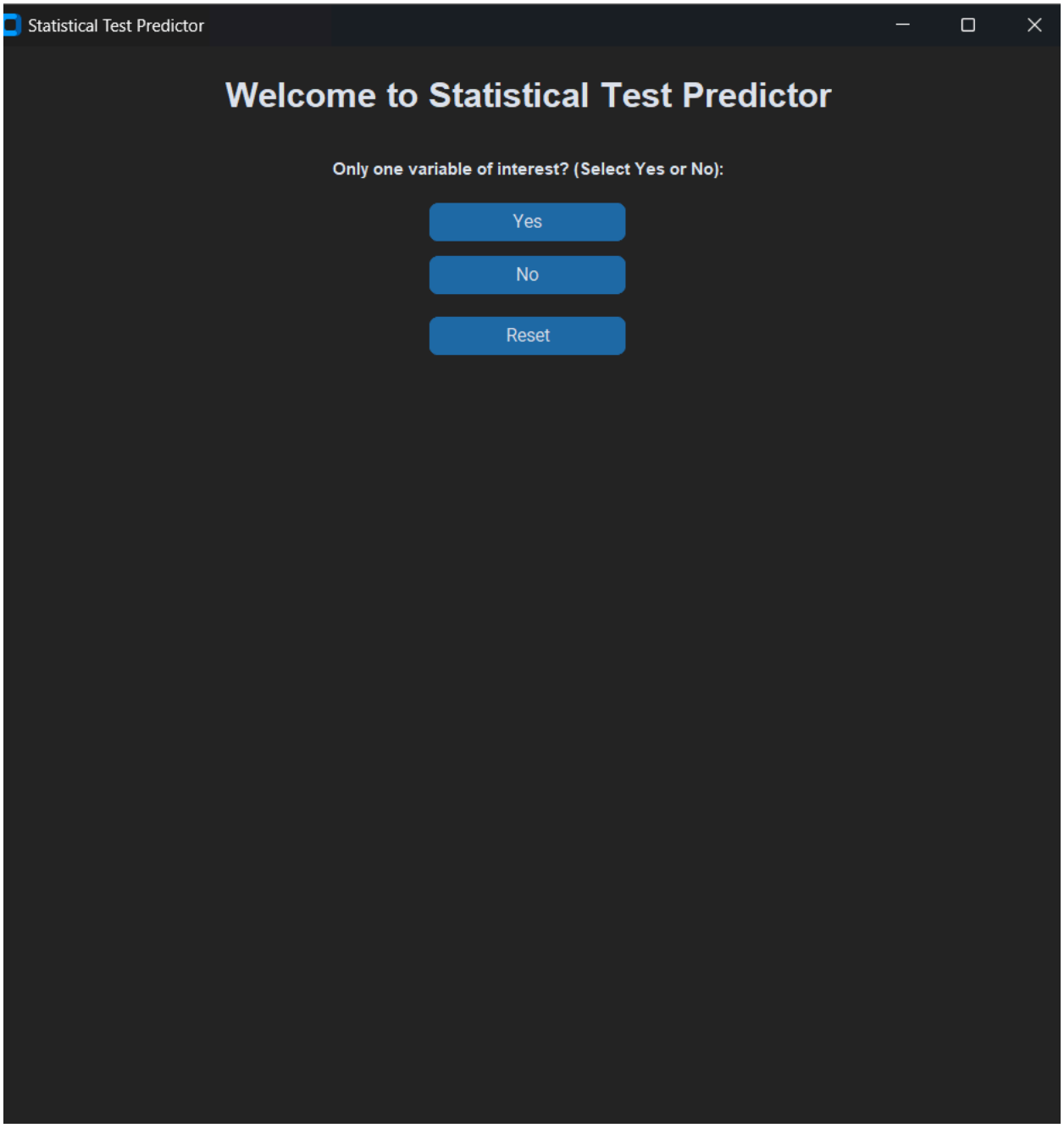
Below is the details of dataset:
i) number of columns
ii) number of rows
iii) column names

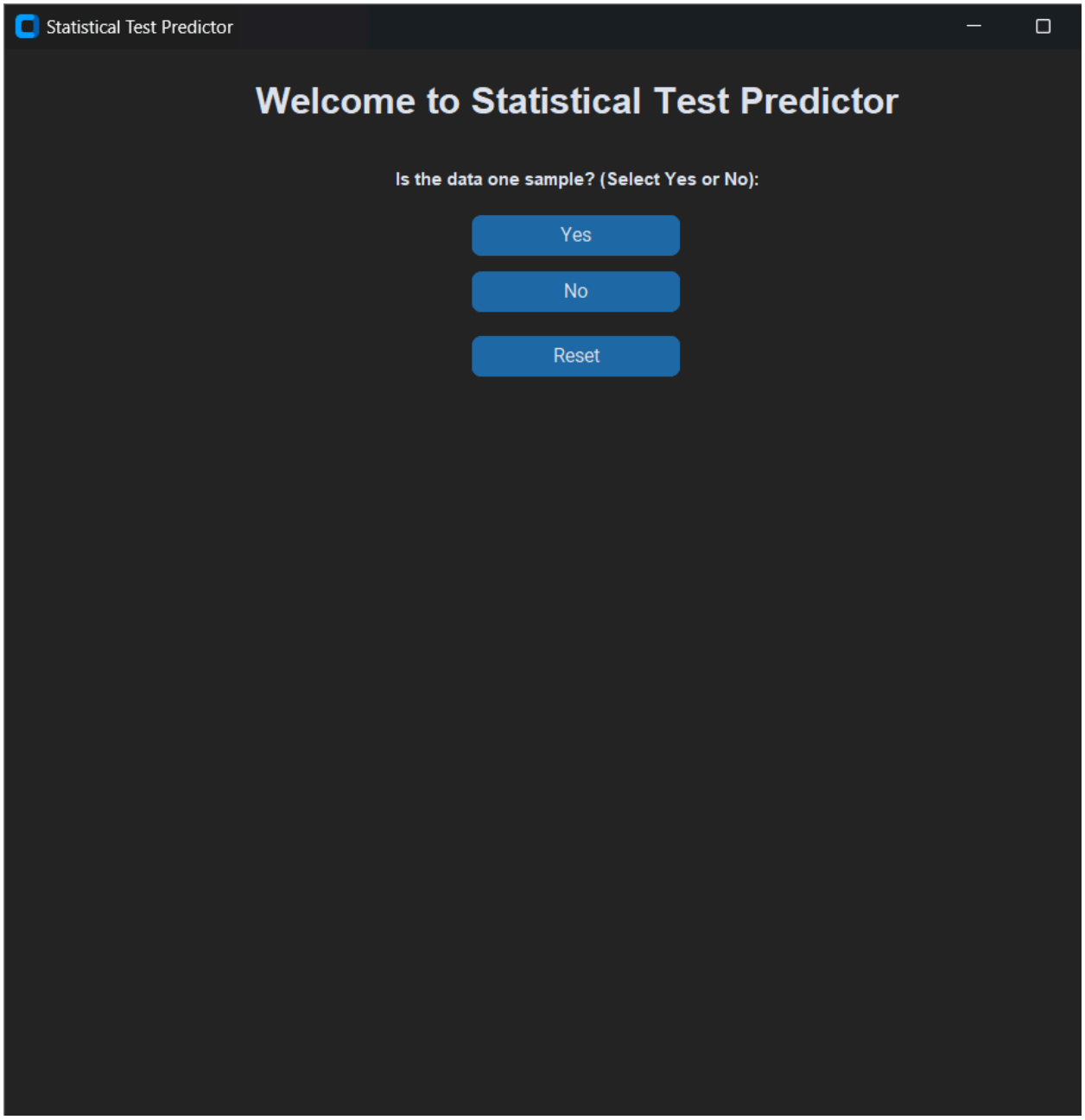


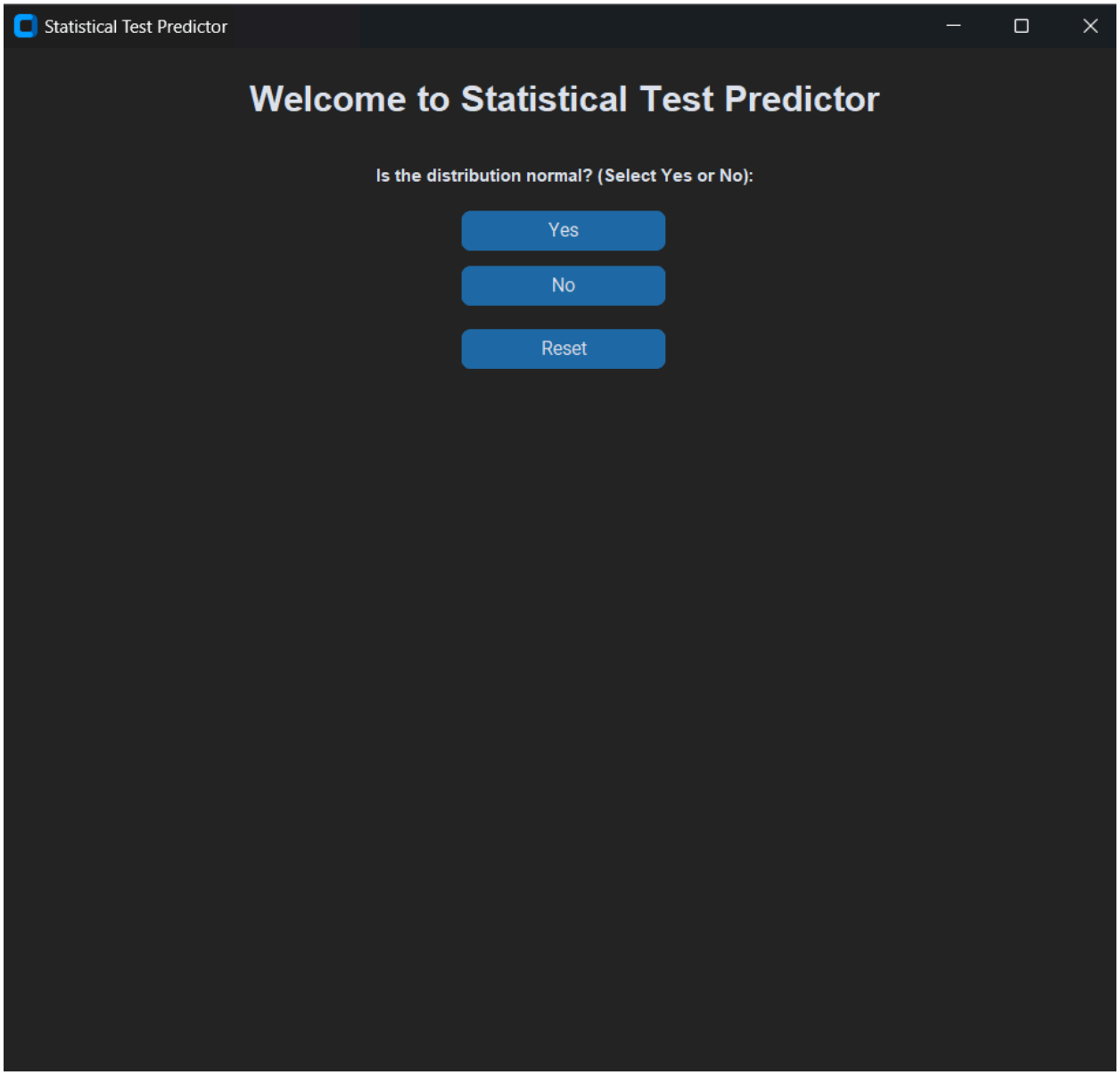
The data show page will be looking as below:

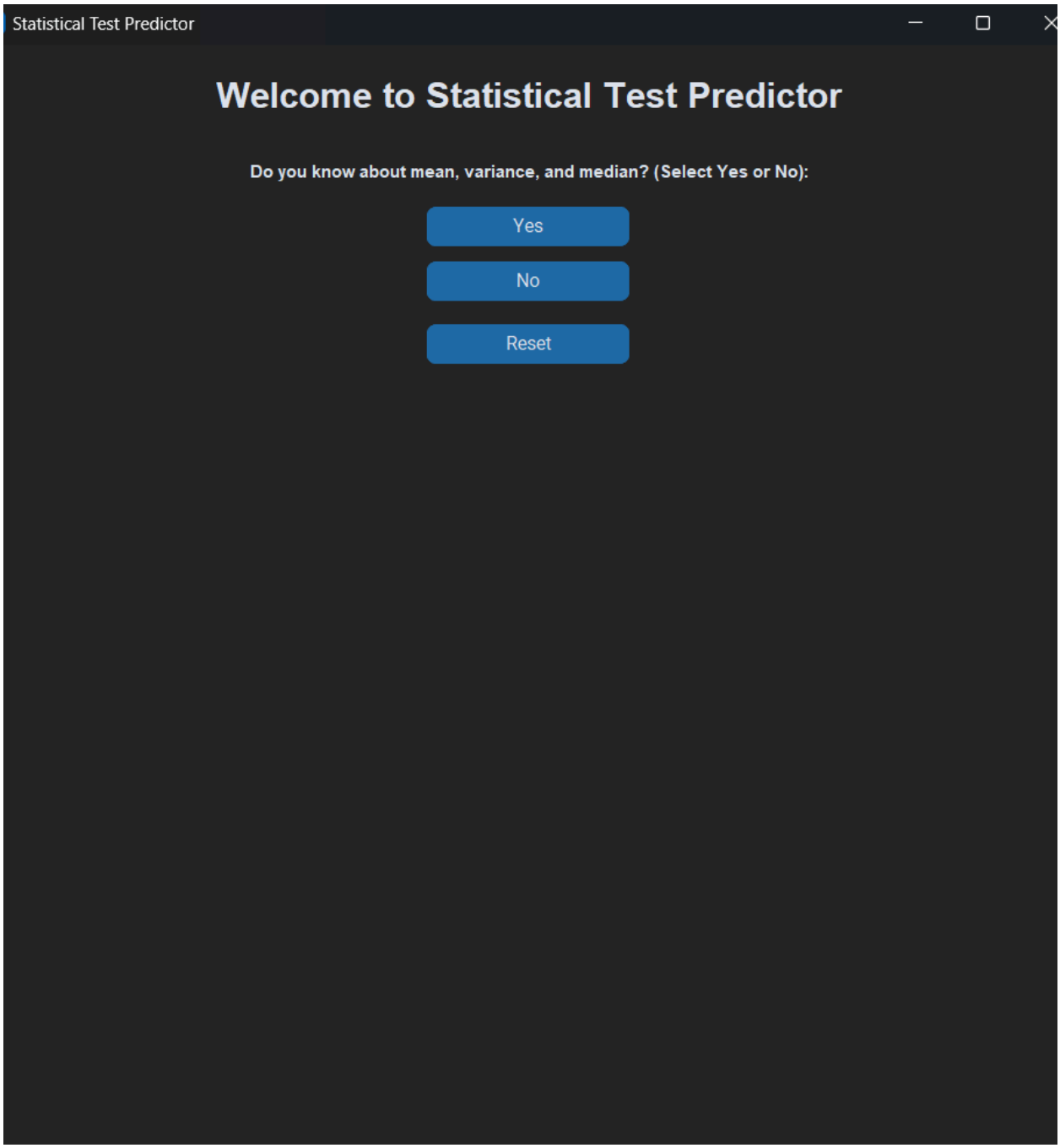


Then application will ask some questions:
Which is upload in the assignment tree:

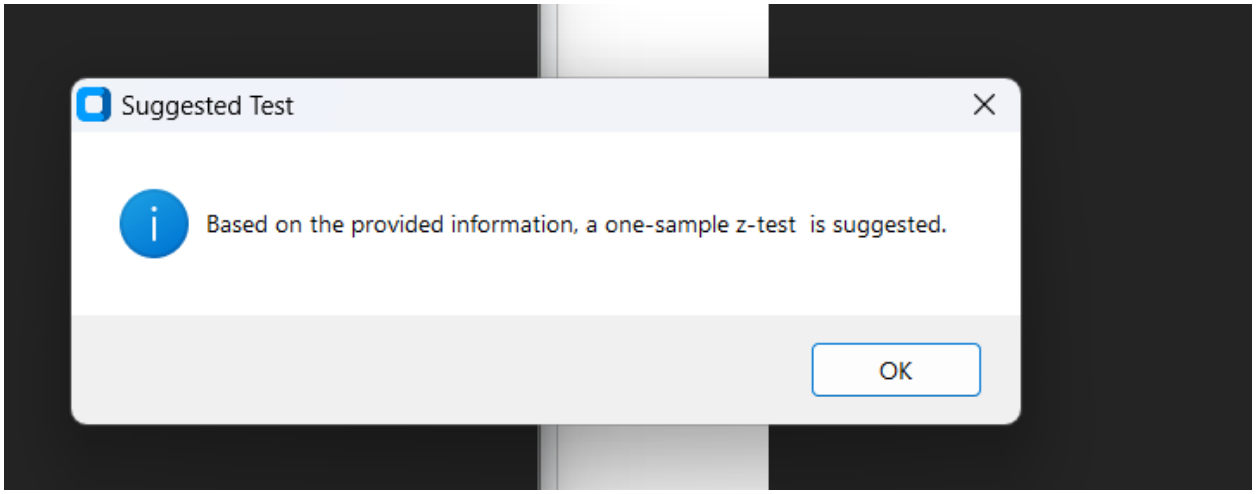

Statistical Test Predictor
Welcome to Statistical Test Predictor
Only one variable of interest? (Select Yes or No):
Yes
No
Reset


Statistical Test Predictor
Welcome to Statistical Test Predictor
Is the data one sample? (Select Yes or No):
Yes
No
Reset


Statistical Test Predictor
Welcome to Statistical Test Predictor
Is the distribution normal? (Select Yes or No):
Yes
No
Reset



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


Suggested Test
Based on the provided information, a one-sample z-test is suggested.
OK