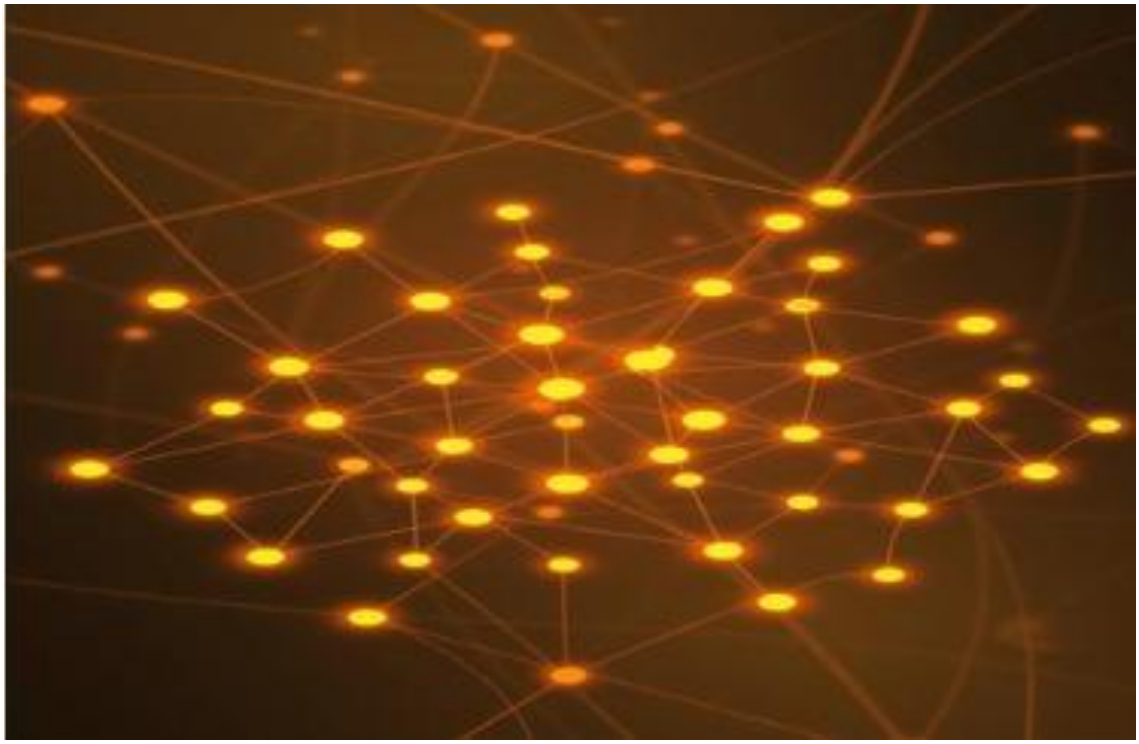
Detecting Citation Anomalies in Hyperbolic Space with the Poincaré Ball Model



User manual

1.Introduction

This user manual provides instructions for utilizing the **ADIHS system** (*Detecting Citation Anomalies in Hyperbolic Space with the Poincaré Ball Model*), a model designed to enhance the integrity and reliability of scientific communication by detecting citation anomalies through hyperbolic geometry, specifically leveraging the Poincaré ball model.

This manual will guide you through the application's functionalities and how to use them effectively.

2. Getting Started

To set up the environment, follow the next steps:

1. Open a terminal or command prompt.

2. Clone the repository from GitHub using the following command line:

$ git clone https://github.com/YotamG12/1.-Analyzing-Dynamic-neural-network-graph-within-Hyperbolic-Space.git

3. Navigate to the project directory and install the required packages (python 3.10 is required):

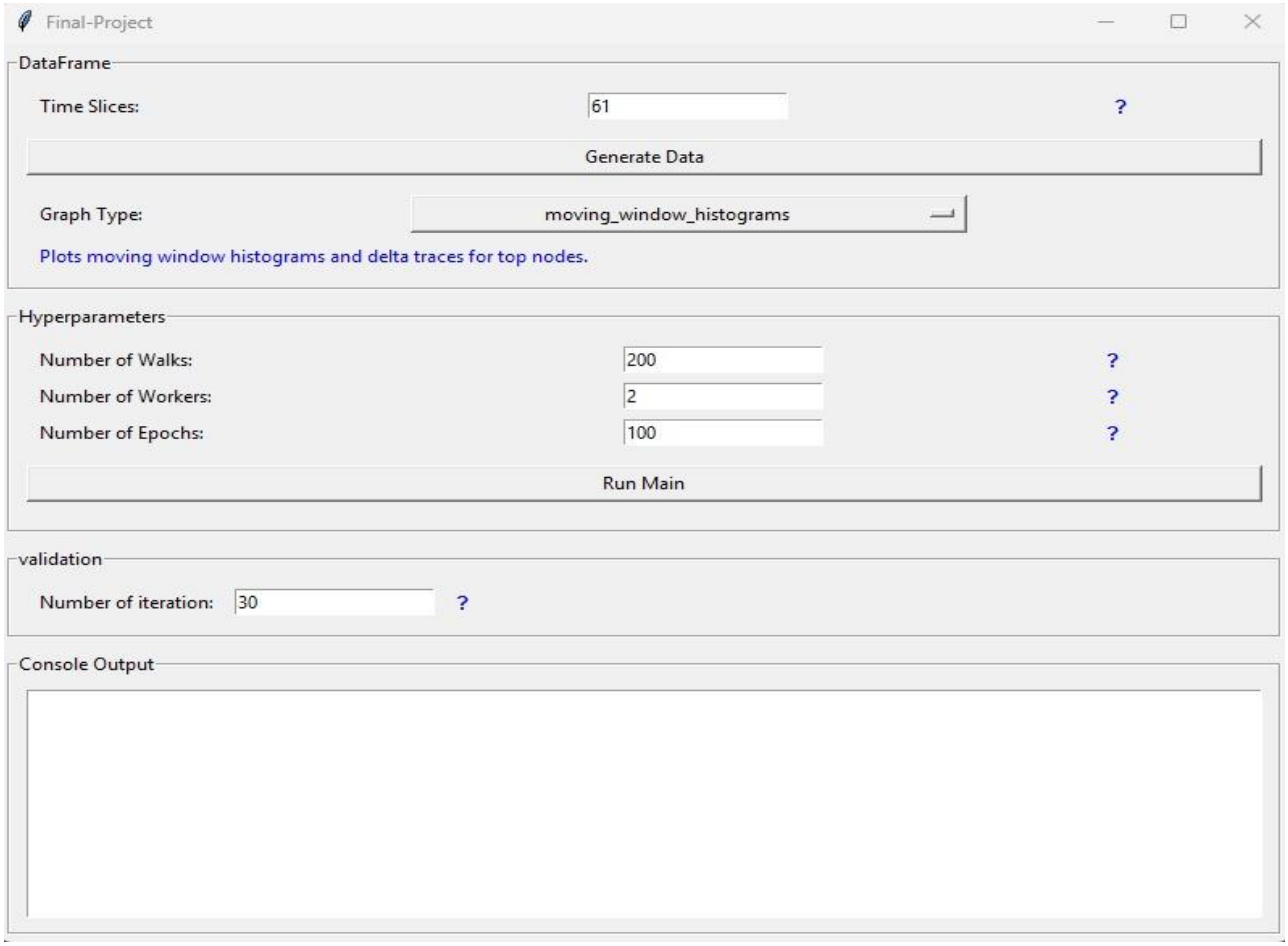
    $cd src

    $ pip install torch

    $ pip install -r requirements.txt

4. Open the UI:

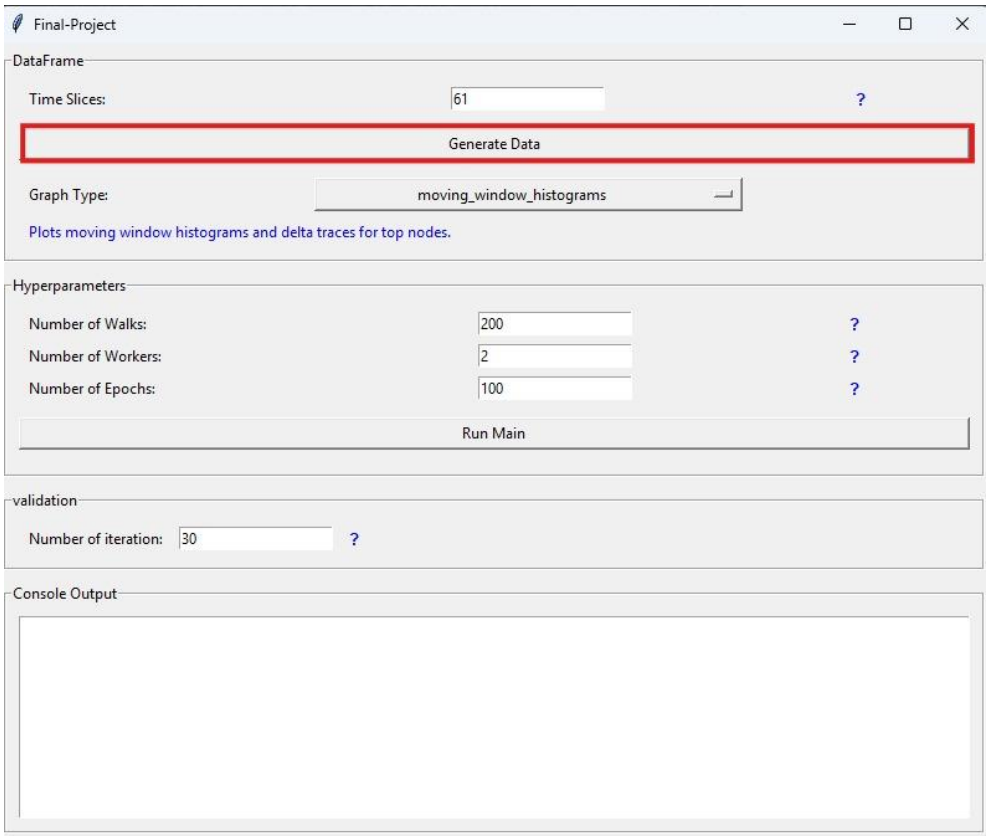
    $ python UI.py



3.Operating the System

3.1 Loading the Dataset:

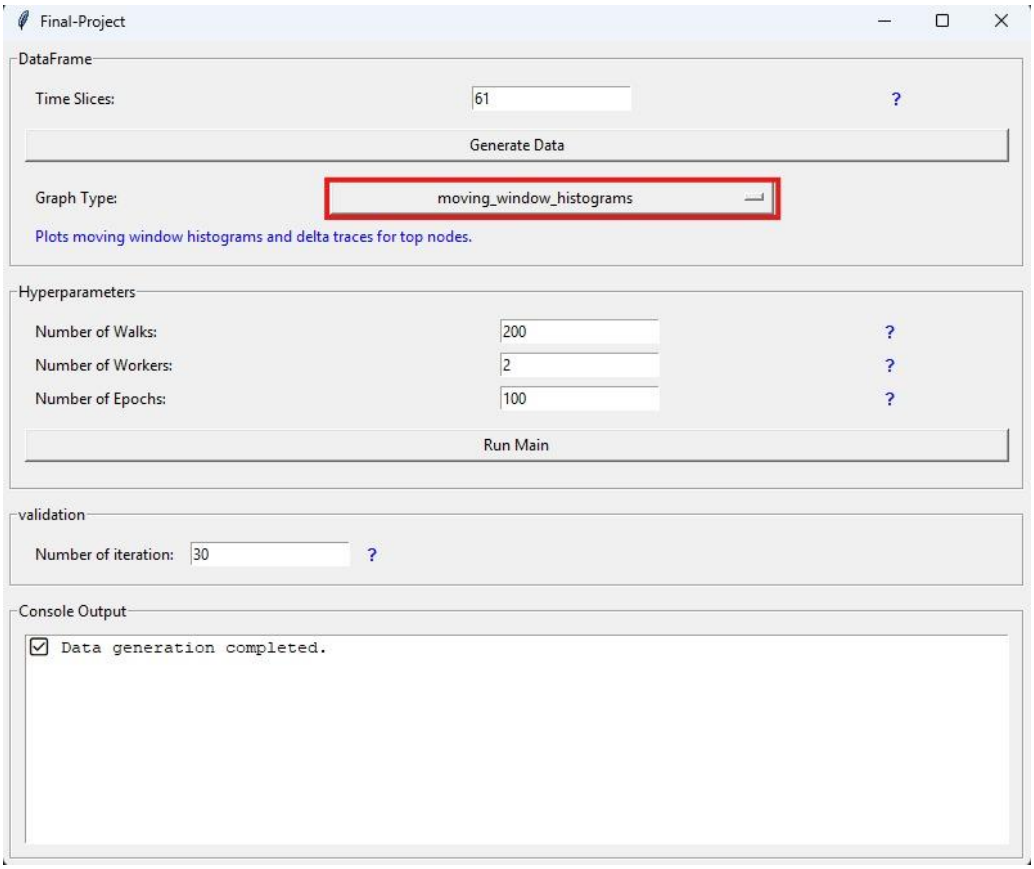
To load the dataset, click the Generate Data button (highlighted in red in the UI). The system will process and load the data based on the selected time slice



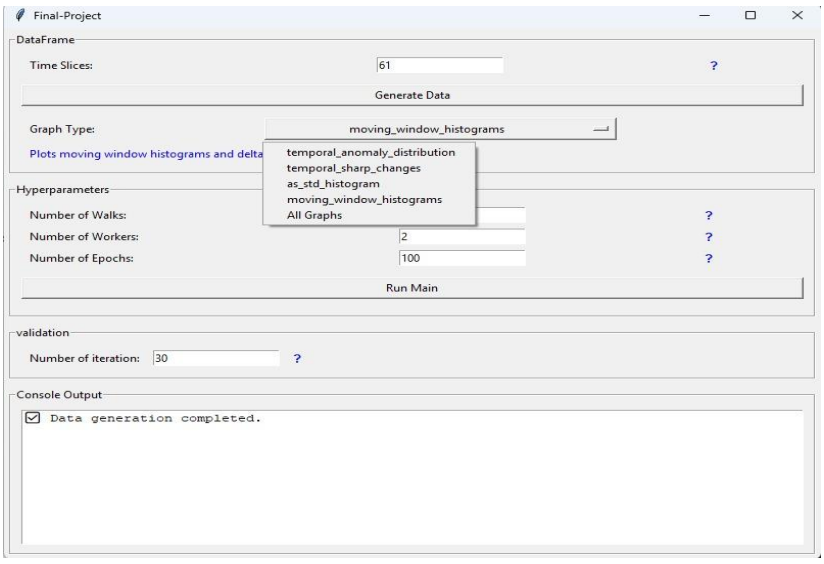
Once the data is fully loaded, a confirmation message will be displayed:

3.2 Graph Selection-

The UI provides a Graph Type Selection panel where users can choose from a variety of statistically analyzed plots. Each graph includes additional descriptive information to assist in interpretation:



Users can choose a specific graph or opt to display all available visualizations:

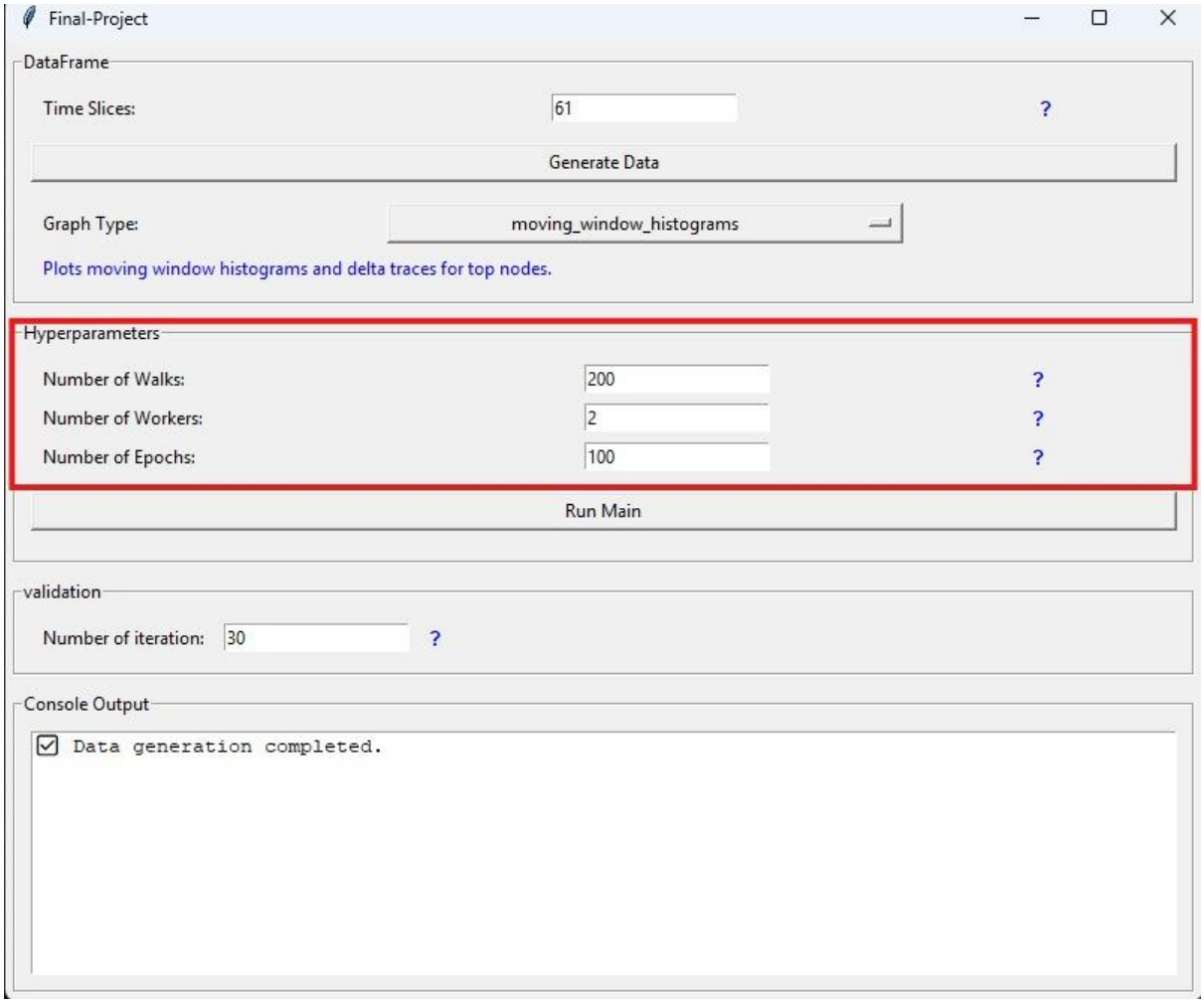


3.3. Hyperparameters Selection-

The Hyperparameters section allows users to configure model settings before training Users may either:

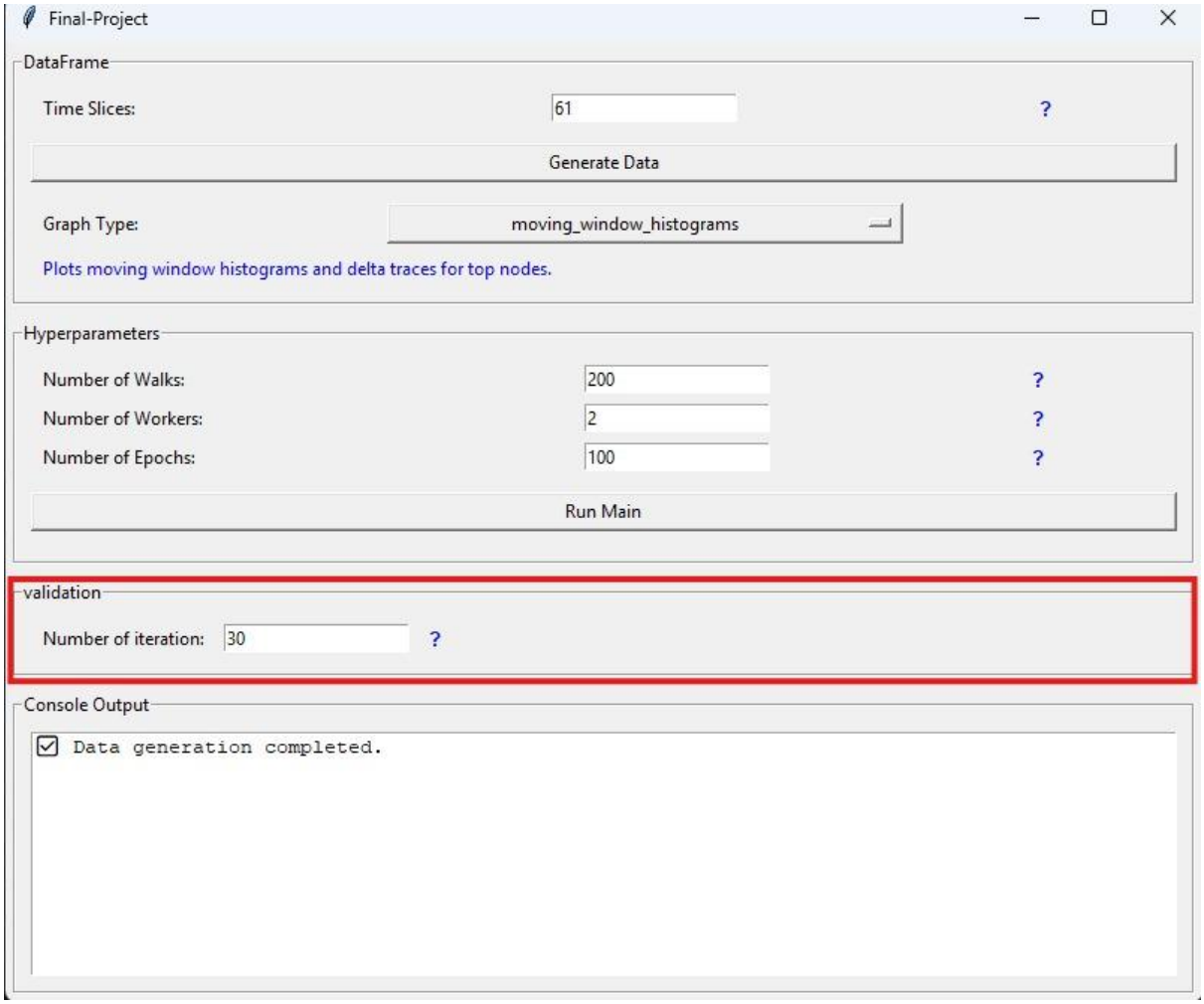
- Manually adjust each hyperparameter
- Use the default global settings

Clicking the question mark (?) icon next to a parameter displays a tooltip with additional explanations.



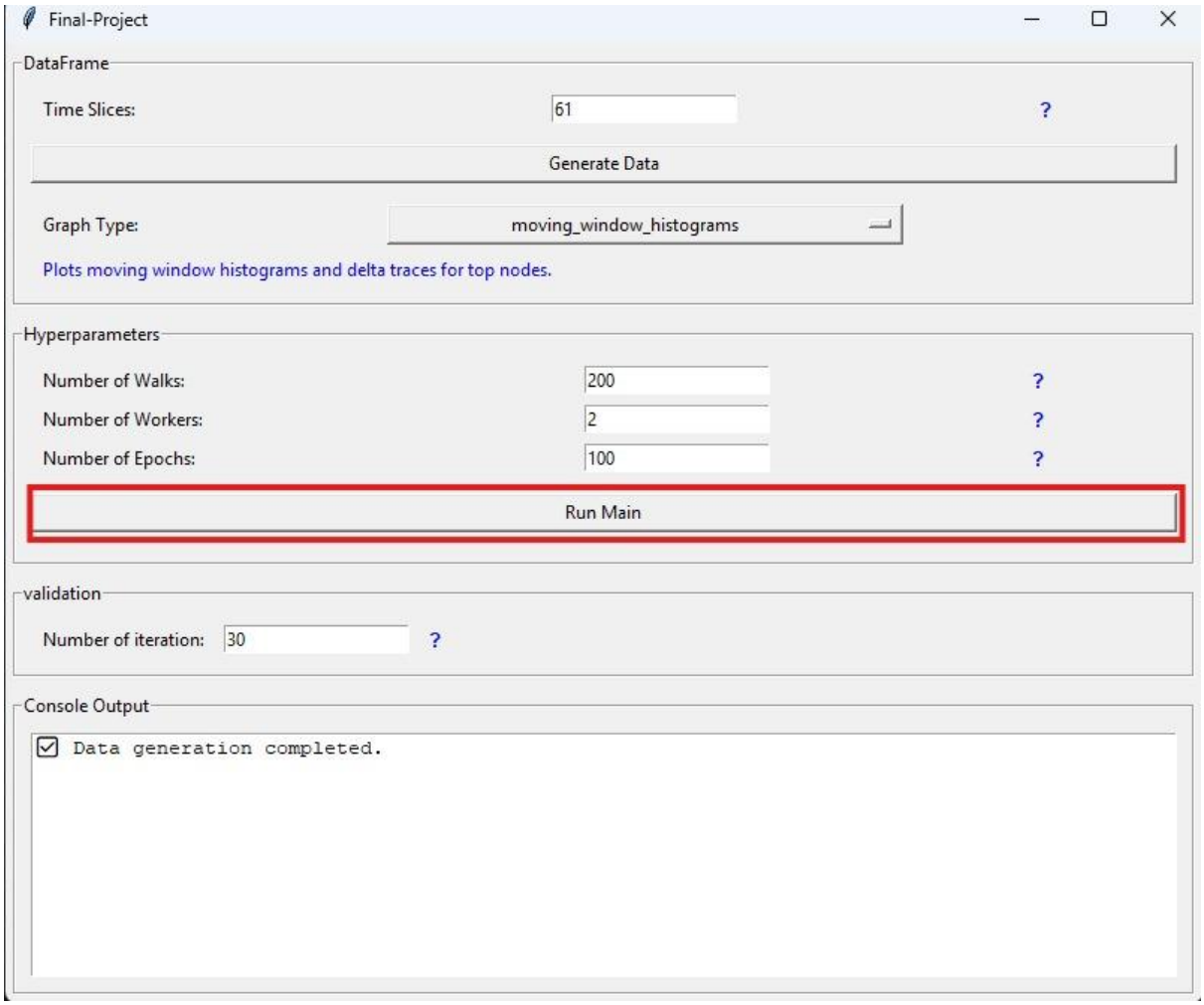
3.4 Validation Iteration-

Users can specify the number of iterations to be used during the validation process. This setting determines how many times the system will repeat the validation phase to ensure consistent and robust evaluation results.

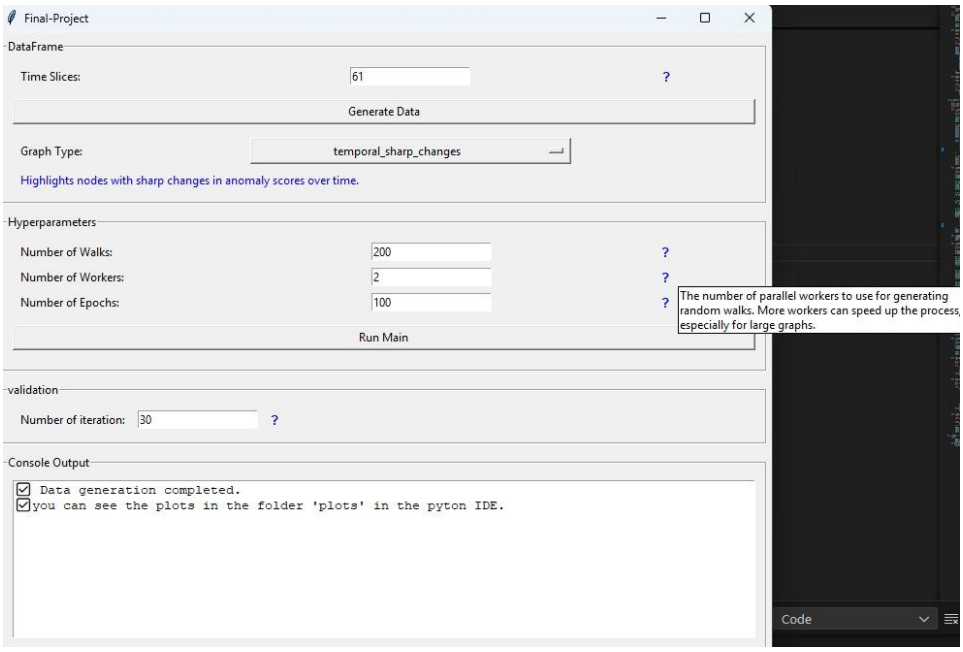


3.5 Run Main-

Once all configurations are set, click the “Run Main” button to execute the main algorithm using all the selected settings.



After the algorithm finishes running, the generated plots will be saved to the output folder. Their location will be displayed in the console output within the UI:



You can also view the plots directly in the VS Code file explorer under the designated folder: