



Middle East Technical University Northern Cyprus Campus
Computer Engineering Program

CNG 492 Computer Engineering Design II

DIP
**Discovering Issue-tracking Profiles of Software
Development Teams**

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User Manual

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Chapter 1

Installation

1.1 Git Repository

Every part of the developed tool is kept under the GitHub repository named GithubTracker under the DIP Group.

- Link: <https://github.com/DIP-Group/GithubTracker>

Researchers who want to use the tool should create a clone on their own computers via this repository. It should be installed directly using the .exe file in this repository, or manually by following the steps in the installation guide.

1.2 Environment

While developing the program, Python 3.8 programming language was used in the Windows operating system. These conditions must be met before use and the libraries specified in the Installation Guide must be loaded.

Chapter 2

Usage

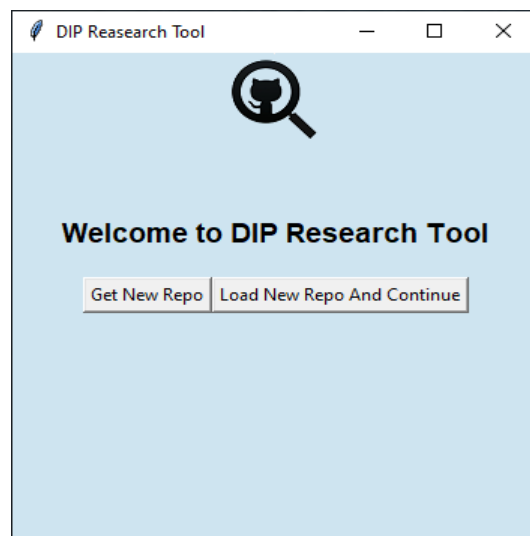


Figure 2.1: Graphical User Interface Main Menu

When the program is run, the main screen appears first. On this screen, two buttons "Get New Repo" and "Load New Repo and Continue" are waiting for the user to choose. The user must click on the "Load New Repo" option to save a new repository file on her/his computer. Figure 2.1 shows the main menu.

2.1 Save a Repository

If the user selects the "Load New Repo" option on the main screen, the "Get Repo" screen will open. Figure 2.2 shows the get repo page.

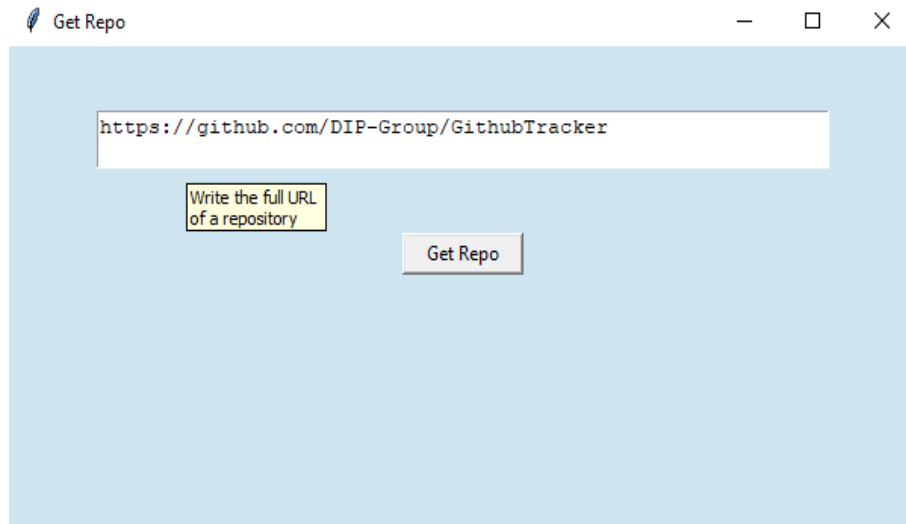


Figure 2.2: Graphical User Interface Get Repo Page

The user should type the full address of the repository s/he wants to download into the TextField on this screen. An additional infobox directs the user to do this. After that the user should click the "Get Repo" button. The program will save a .pkl file containing the repository information in the same directory. Figure 2.3 shows an example .pkl file.



 GithubTracker.pkl	8.07.2021 12:56	Adobe Acrobat D...	14 KB
 Gui_v26.py	7.07.2021 00:03	PY Dosyası	59 KB

Figure 2.3: Repository File in Folder

2.2 Load Repository and Continue

When the user clicks the "Load New Repo and Continue" button on the main screen, a File Explorer appears.

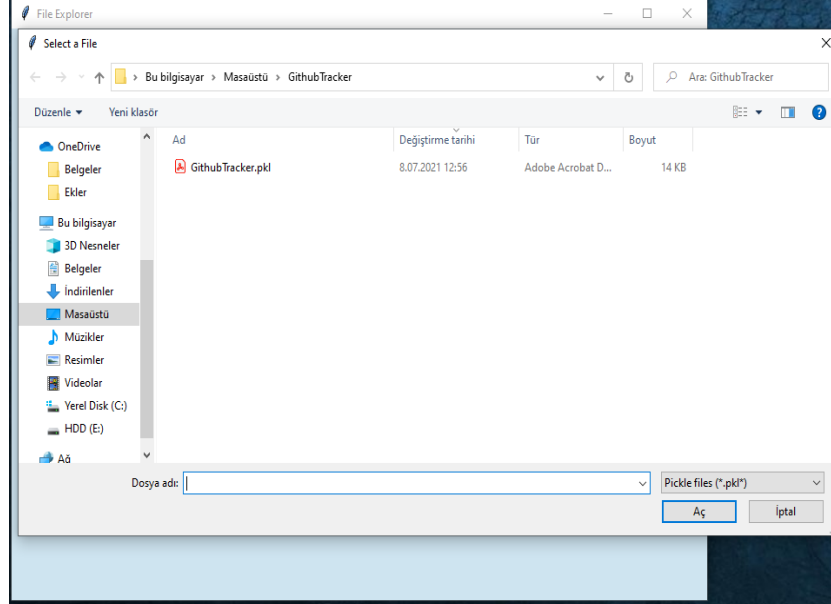


Figure 2.4: File Explorer

Figure 2.4 shows the file explorer. Through this File Explorer, the user must select the repository file s/he wants to examine. This is followed by a screen where the user can select metrics and questions. Figure 2.5 shows the metric tab of metric and question selection page.

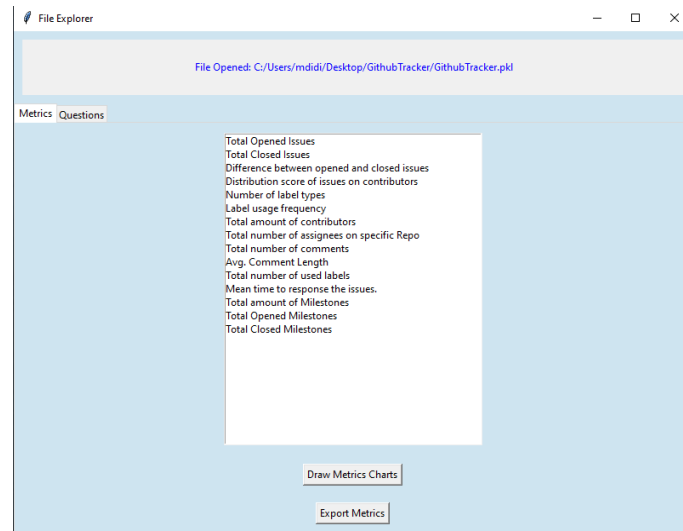


Figure 2.5: Metric and question selection page

The user can navigate between metrics and questions via the tabs above. After the user selects the metrics s/he wants on this screen, selects the "Draw metric charts"; after s/he selects questions, and then clicks the "Answer the questions" buttons.

2.2.1 Metric Results

Program offers the answers on the "Calculation Results" page. As many tabs as the user chooses metrics appear at the top. The user can navigate between the questions via these tabs. Figure 2.6 shows an example for results based on our own test repository

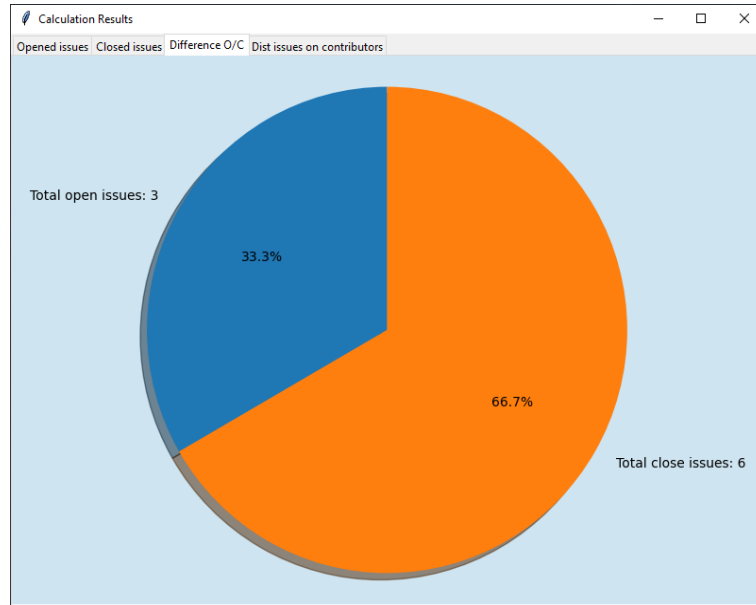


Figure 2.6: Calculation Results Page

2.2.2 Question Answers

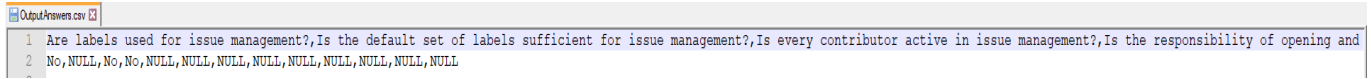
Program offers the answers on the "Question Answers" page. A single page appears here and the answers to all selected questions are tabulated on this page. Figure ?? shows the answers to our questions based on our own test repository.

Question Answers	
Questions	Answers
Are labels used for issue management?	No
Is the default set of labels sufficient for issue management?	Yes
Is every contributor active in issue management?	No
Is the responsibility of opening and closing issues equally distributed among contributors?	No
Are the life times of the issues consistent?	No
Are the comments made by the contributors equally distributed among contributors?	No
Is commenting used consistently in all issues?	No
Are the issues with assignee completed earlier compared to the ones without assignee?	No
What is the ratio of the opened issues grouped under milestone and those not grouped under milestone?	100
What does the average time between opening and closing the issue?	36.0
What does the average time between opening and closing the milestone?	7.0
Are the comments posted after the issues are closed or during the process?	No
Are the issues grouped under milestone completed earlier compared to the ones not grouped under milestone?	Yes

Figure 2.7: Answers to Questions

2.3 Save Results as .csv File

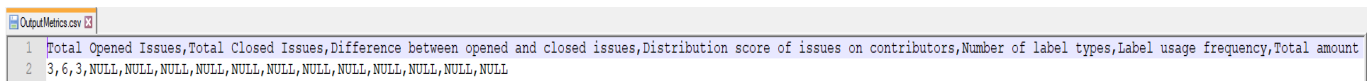
If the user wants to save the results on their own computer after viewing the results through the program, they can do so via the .csv file. By going back to the "Load Repository and Continue" page and clicking the "export metrics" button for the metrics and the "export answers" button for the questions, the user can save it to his/her own computer as .csv file.



1	Are labels used for issue management?,Is the default set of labels sufficient for issue management?,Is every contributor active in issue management?,Is the responsibility of opening and
2	No,NULL,No,No,NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL

Figure 2.8: Calculation Results Page

Figure 2.8 shows an example from an answer file.



1	Total Opened Issues,Total Closed Issues,Difference between opened and closed issues,Distribution score of issues on contributors,Number of label types,Label usage frequency,Total amount
2	3,6,3,NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL,NULL

Figure 2.9: Calculation Results Page

Figure 2.9 shows an example from a metric results file.