

Test Runner

VSCoDe Extension for Students
Third Delivery

By: HCI Team

4



INTRODUCTION & GOALS

Target User Review | Goal | Executive Summary



INTRODUCTION TARGET USER REVIEW

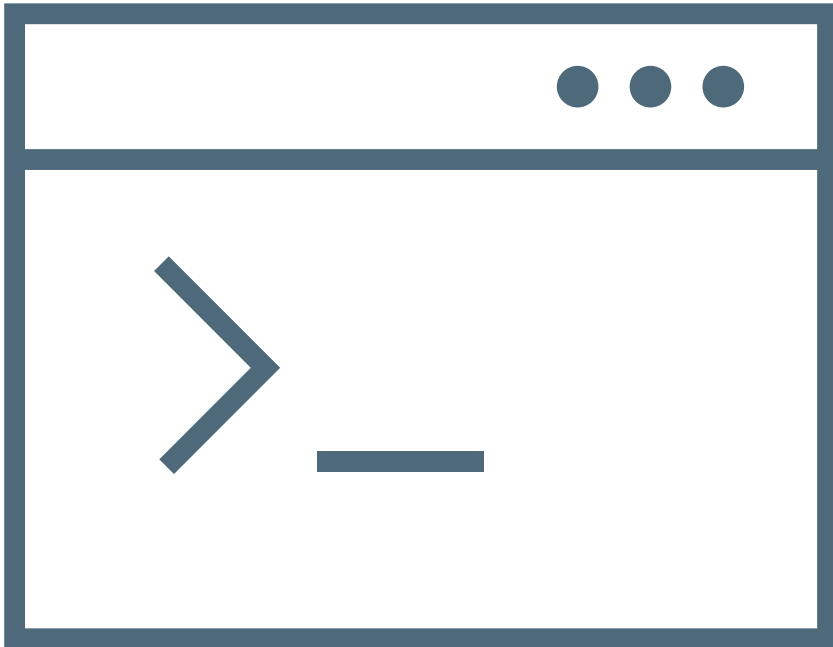


About Test-Runner

The Test-Runner is an extension designed to make the process of testing code easier and more efficient for programming students. It works within your coding environment to provide immediate feedback, letting you know whether your code passes or fails against pre-defined tests.



INTRODUCTION TARGET USER REVIEW



What is the problem?

The terminal, while powerful, can be a daunting maze of commands and cryptic messages. It lacks the intuitive visual clarity of a user-friendly interface, making it challenging for both beginners and experienced users alike.



INTRODUCTION WHY USABILITY TESTING?



Why Usability Testing?

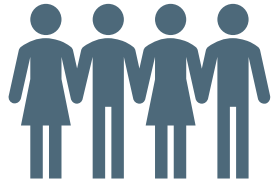
By observing how real users interact with Test-Runner, we can identify any areas of confusion or frustration and make improvements to ensure a smooth and intuitive experience.



INTRODUCTION EXECUTIVE SUMMARY



Usability testing for the "Test-Runner VSCode extension for students" app was conducted at UADY from May 16 to May 17, 2024, by the HCI Team 4. Both remote and in-person usability testing styles were conducted for the purpose of finding possible improvements in the UX design for the app.



Four user testing participants were recruited for both qualitative and quantitative analysis using Maze.



Based on the data received, the HCI Team was able to uncover 8 positive findings, 1 negative finding and 1 improvement finding.



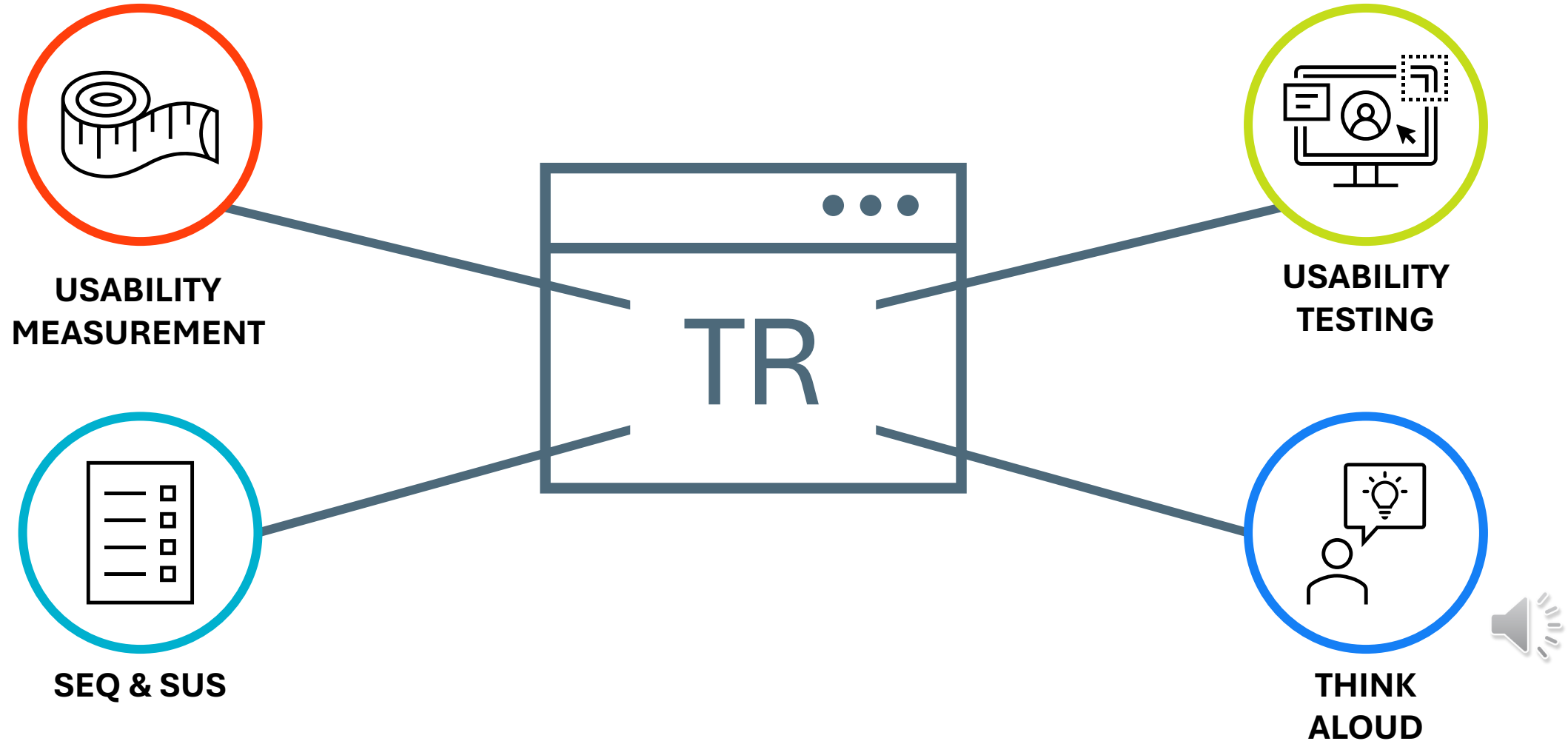
METHODOLOGY

Methodology | Research Benefits | Goal | Executive Summary



METHODOLOGY

REVIEW APPROACH TO SOLVING USABILITY PROBLEMS



METHODOLOGY

SINGLE EASE QUESTION



What is SEQ?

Single-Ease Questionnaire is a
usability metric...

*"How easy was it to complete
the task using the system?"*



METHODOLOGY

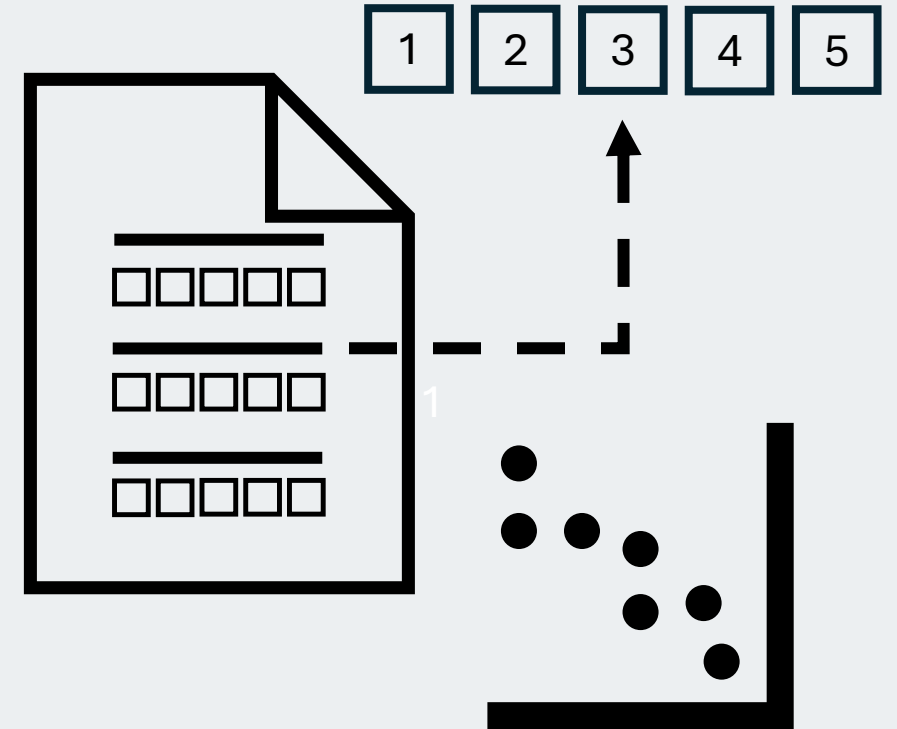
SYSTEM USABILITY

SCALE



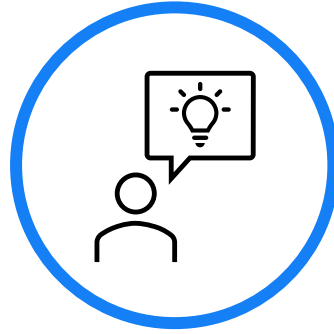
What is SUS?

System Usability Scale is a ten-item questionnaire...



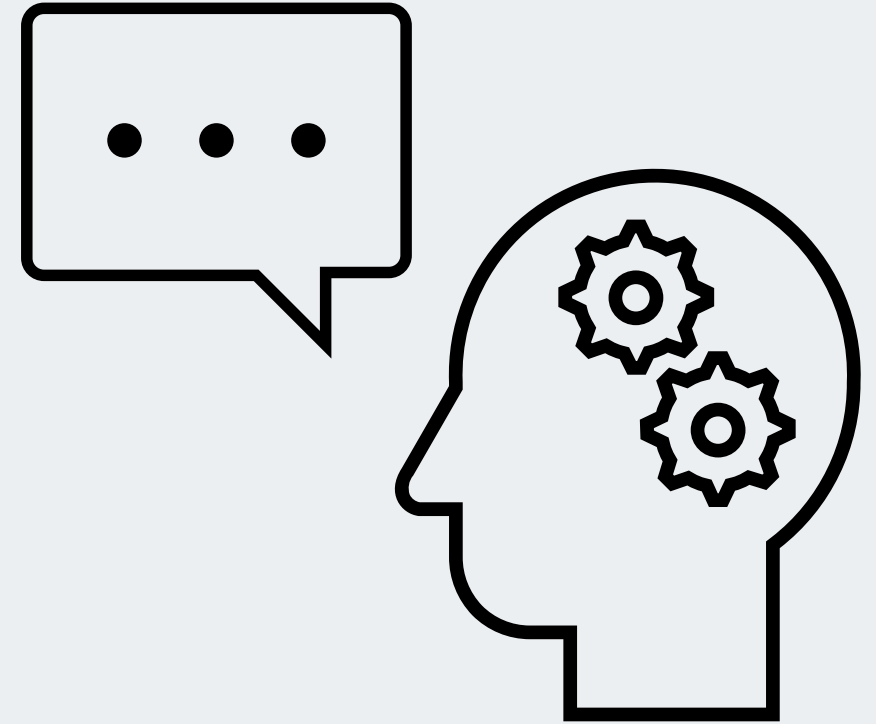
METHODOLOGY

THINK ALOUD



What is Think Aloud?

What is the purpose of the Think Aloud?



METHODOLOGY

USABILITY TESTING



What is Usability Testing?

Performance Metrics



Percentage of tasks completed by the expected path.



Number of errors caused by testers.



SET THE STAGE

For What Team Hopes To Learn From Usability | Approach For User Testing



APPROACH FOR USABILITY TESTING

Participants

- Software Engineering Student
- Age 18-22
- Basic knowledge on VSCode and programming environments

Research Tool



Scenario

Jon Doe wants to verify that his programs do what they are supposed to do.

Tasks

1. Install the extension
2. Run the Help command
3. Install the Test Runner
4. Run a test



WHAT THE TEAM HOPES TO LEARN FROM USABILITY TESTING

Insights:

Through usability testing, we aim to uncover any remaining usability hurdles in our VSCode extension for Test Runner. We're particularly focused on understanding the clarity of instructions, ease of installation, and overall intuitiveness of the interface. These insights will be crucial in refining the extension to ensure a seamless and user-friendly experience for students.

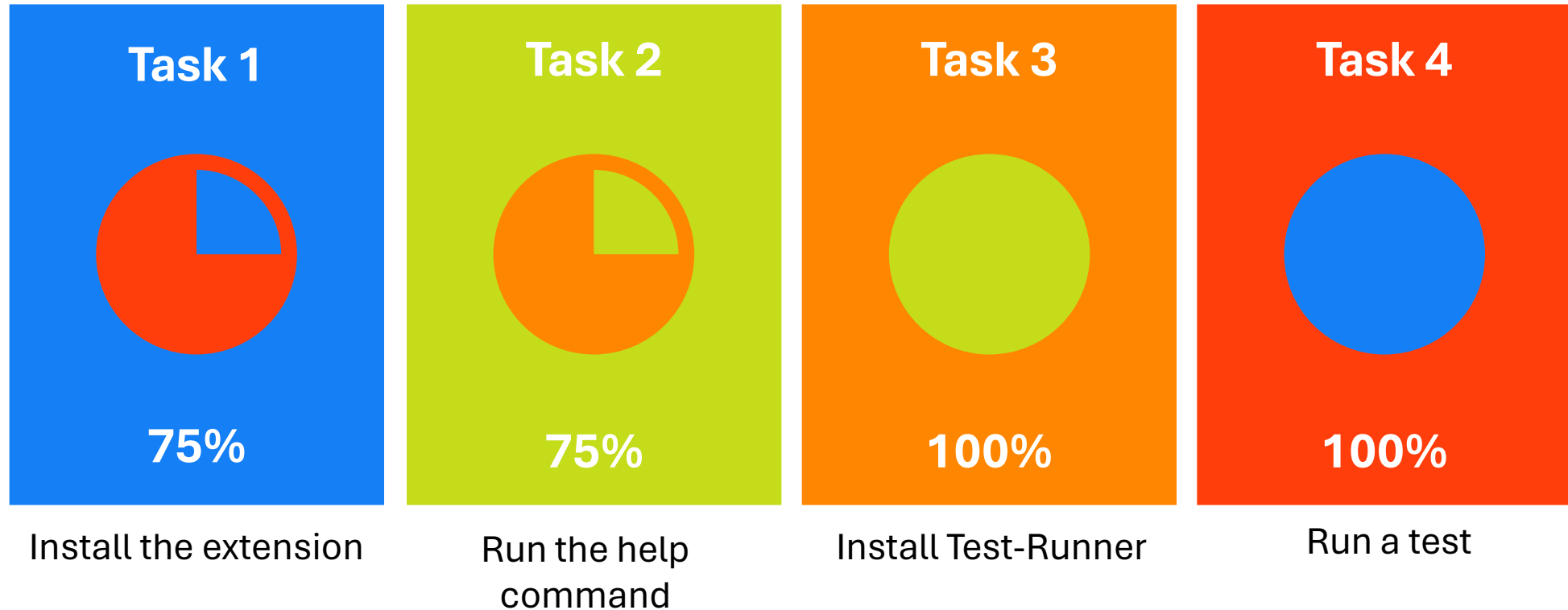


USABILITY MEASUREMENT

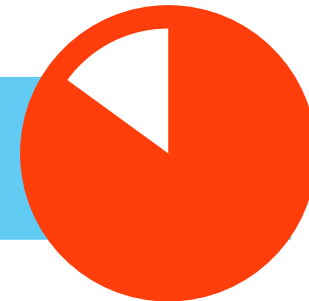
What We Measure | Approach For User Testing



EFFECTIVENESS RATE OF PERFORMING TASKS



Average Effectiveness Rate: 87.5%



NUMBER OF USER ERRORS

Task 1: 1.25 Average

Task 2: 0.75 Average

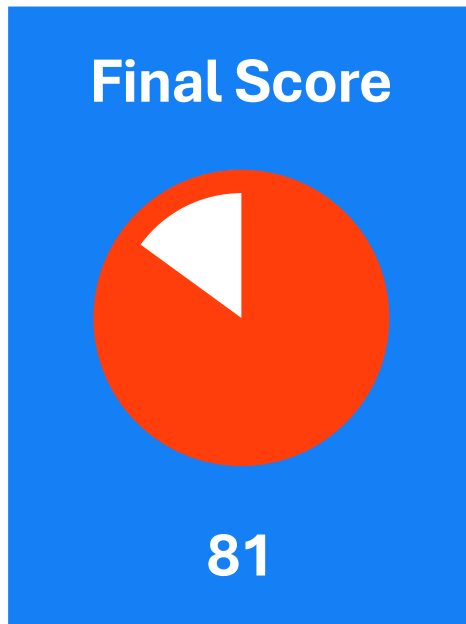
Task 3: 0.5 Average

Task 4: 0 Average

Error Average: 0.625. That is Acceptable and Excellent.



SUS SCORE



The final average based on the SUS Score was 81/100. And using the “Table. SUS Results”, our final grade is A, that is Acceptable and Excellent.



KEY FINDINGS

Test Application with Maze | What We Discovered



KEY FINDINGS

POSITIVE FINDINGS



IMPROVEMENT FINDINGS



NEGATIVE FINDINGS



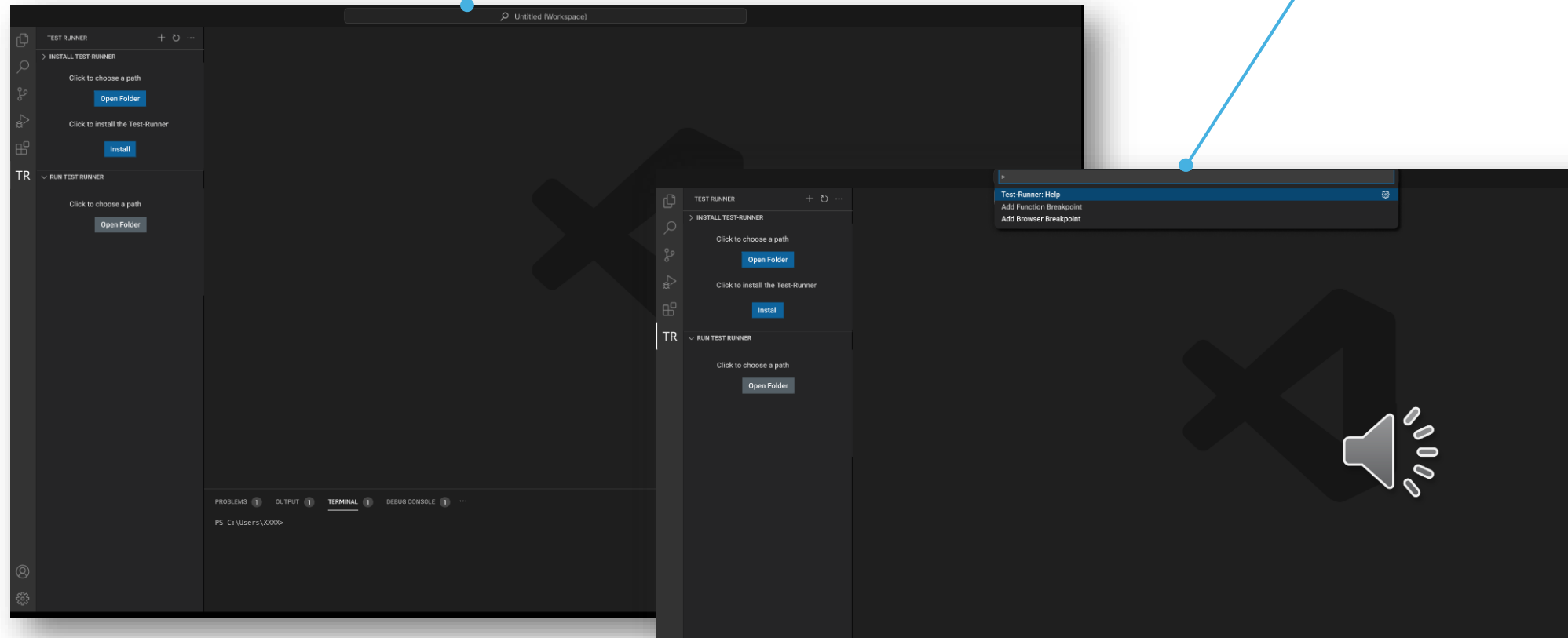
POSITIVE FINDINGS



USERS WERE ABLE TO **EASILY EXECUTE** THE HELP COMMAND

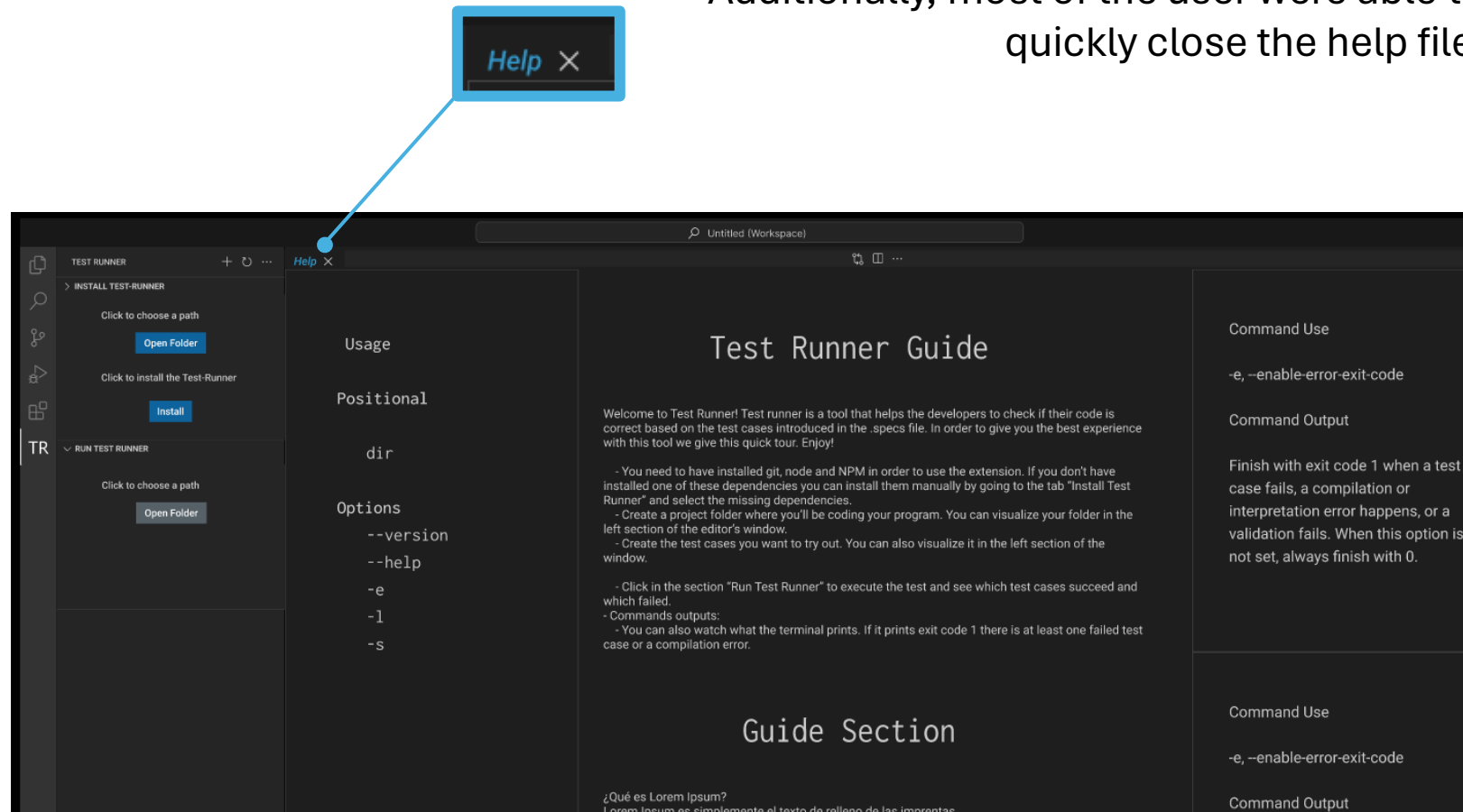
Easy to Find the Command Bar ✓
Users quickly found the command bar.

✓ **Easy to Identify the Help Command**
Users quickly found the "Help" command.



USERS WERE ABLE TO **EASILY EXECUTE** THE HELP COMMAND

Additionally, most of the user were able to quickly close the help file.

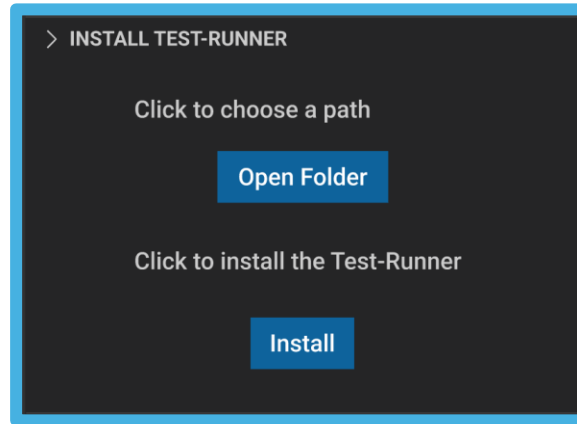


USERS WERE ABLE TO **EASILY FIND** THE MAIN SECTIONS



Easy to Find "INSTALL TEST-RUNNER" section

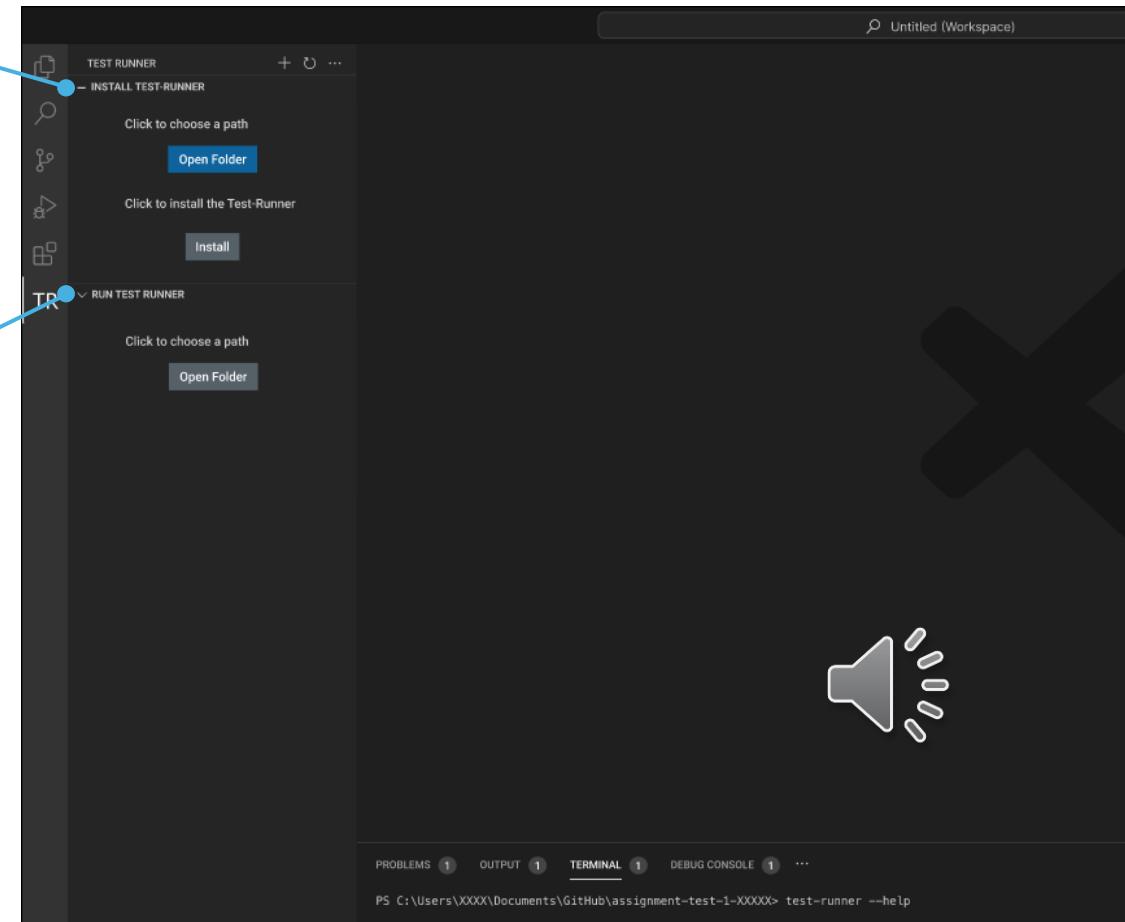
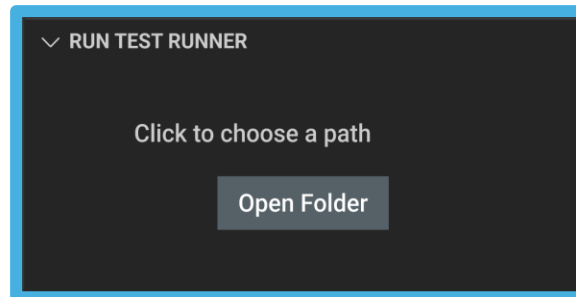
Users had no problems finding the section.



Most of the users, in general terms, understood what the Test-Runner installation process is.



The "RUN TEST-RUNNER" section turned out to be easily identifiable in the same way.

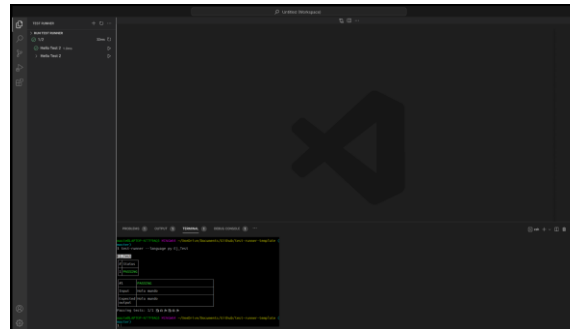


USERS MANAGED TO RUN THE TESTS **WITH EASE**



The Change in Test Status is Easily Identifiable

Users were able to perceive the change in state once the tests were completed.



Easy to Find the "Test Execution" button

Users had no problems finding the button to run the tests.



USERS EASILY LOCATED THE TESTS RESULTS



Users Had no Problems Identifying the Results in the Terminal

Users were able to quickly locate the results of the tests execution in the terminal.

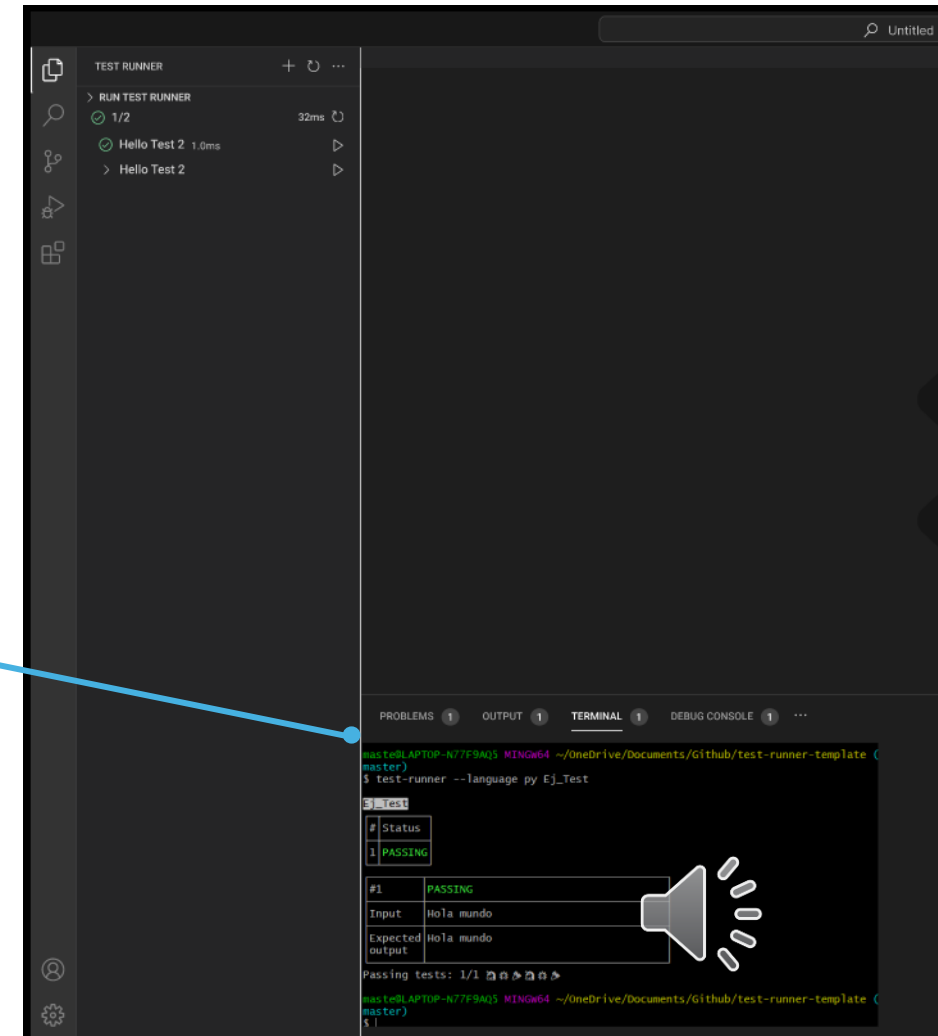
```
maste@LAPTOP-N77F9AQ5 MINGW64 ~/OneDrive/Documents/Github/test-runner-template (master)
$ test-runner --language py Ej_Test

Ej_Test
# Status
1 PASSING

#1 | PASSING
Input | Hola mundo
Expected output | Hola mundo

Passing tests: 1/1 🎉🎉🎉🎉🎉

maste@LAPTOP-N77F9AQ5 MINGW64 ~/OneDrive/Documents/Github/test-runner-template (master)
$
```



IMPROVEMENT FINDINGS



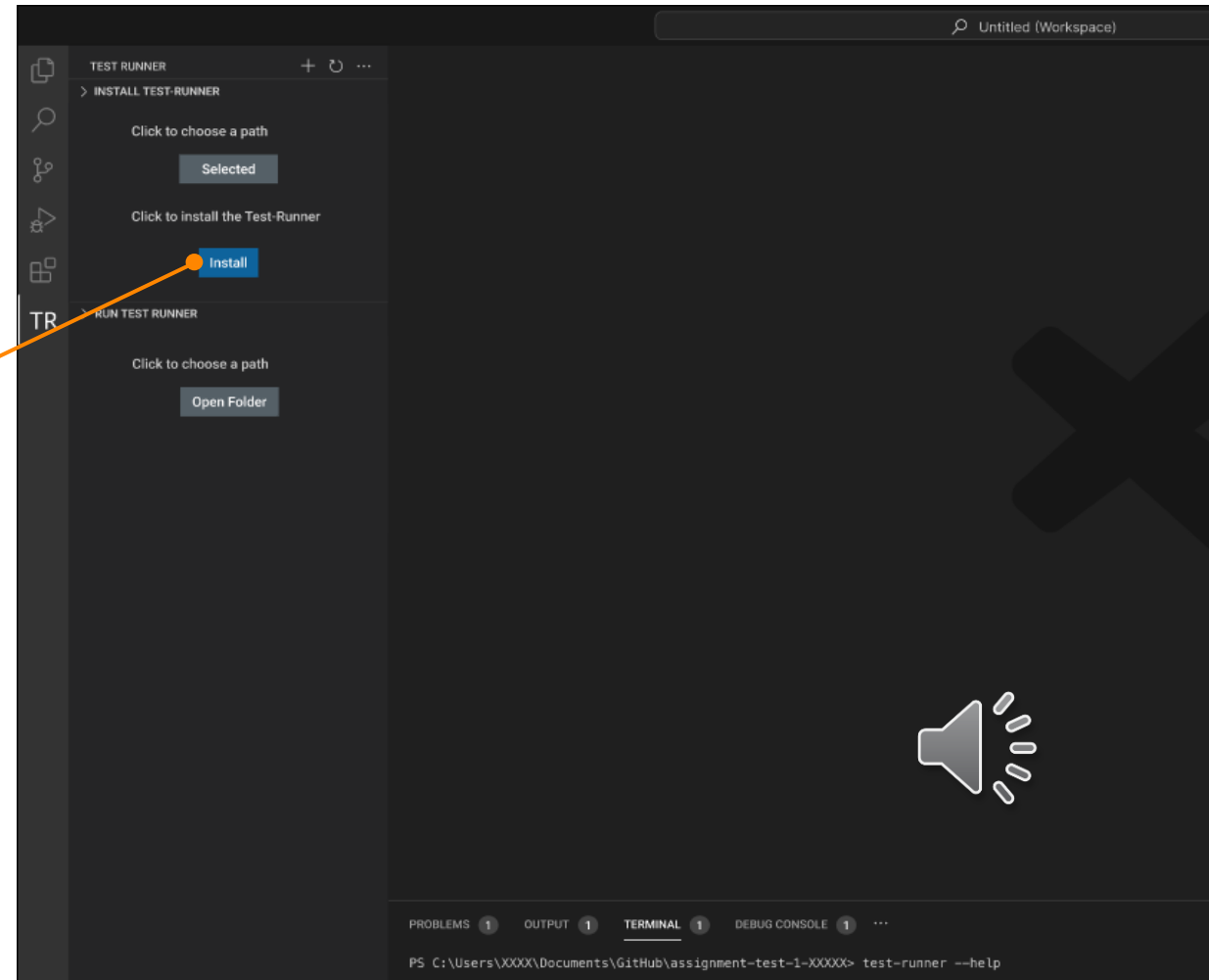
SOME USERS **FOUND** THE INSTALLATION PROCESS **CONFUSING**

Confusion in the Order of the Steps

Some users misunderstood the order of the steps for the installation, pressing the "Install" button before having selected a folder.



Install



NEGATIVE FINDINGS

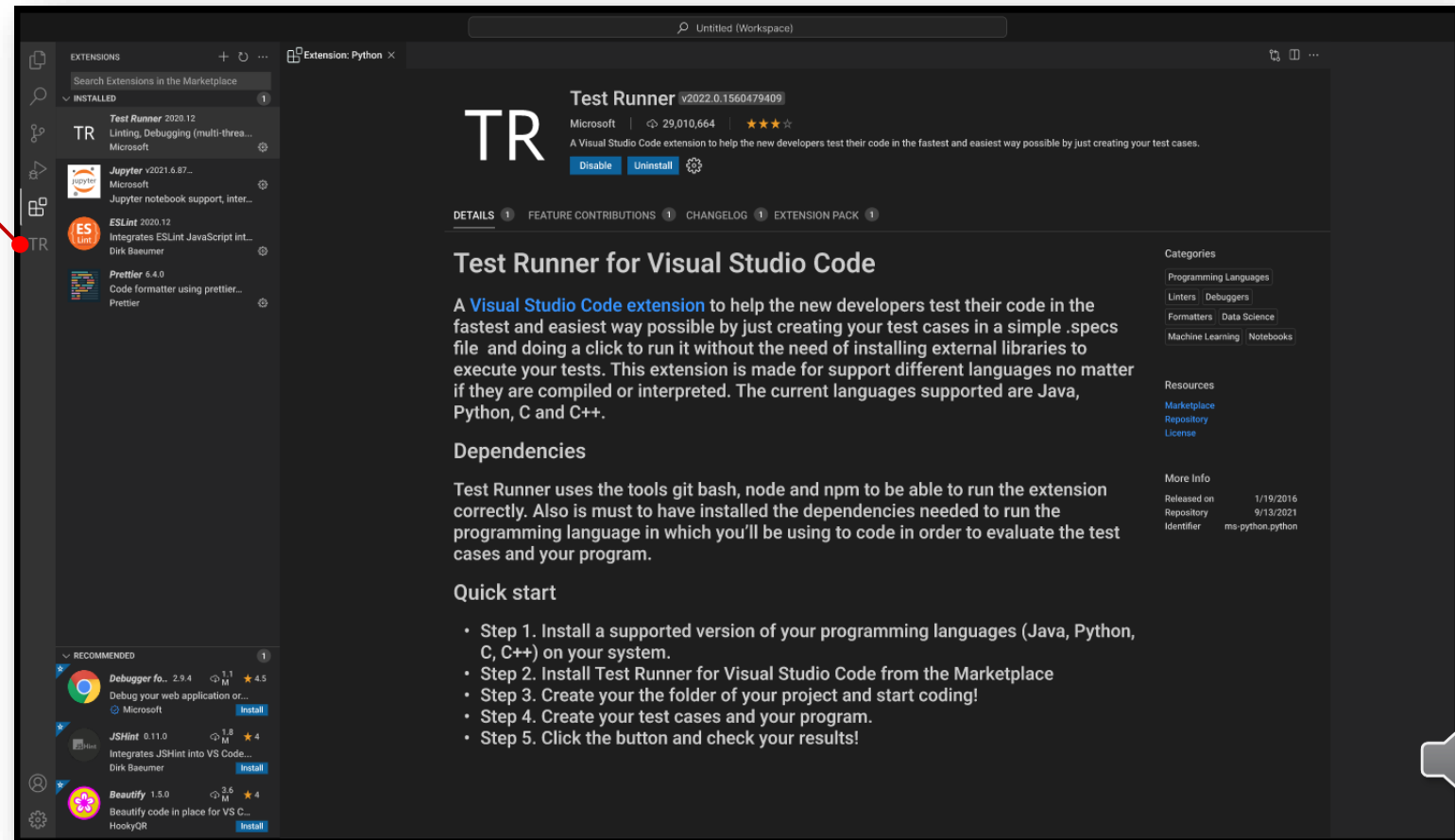


USERS HAD TROUBLE FINDING THE EXTENSION ICON



Difficult to Find

Most users had trouble identifying the extension icon once they pressed the "Install" button.



CONCLUSION

Methodology | Research Benefits | Goal | Executive Summary



MEASUREMENT SUMMARY TABLE

METRIC	SCORE	VALUE
Effectiveness Rate	87.5%	Within the average
No. of User Errors	0.625 per task	Easy of use
SUS Score	81	Acceptable
SEQ Average Score	6.5	Task were easy to finish



FINDING SUMMARY TABLE

ISSUE TYPE	ISSUES	PAGE	RECOMMENDATIONS	EASE OF FIXING
Icon goes Unnoticed	Users have trouble identifying the current extension icon.	Extension Description Screen (Installed)	Make a new, more representative and striking design, for the extension icon.	Medium
Installation Process Confusing	The "Install" button was pressed several times without first having gone through the process of selecting a folder for the installation.	Test-Runner Installation	Hide the "Install" button if the user has not previously chosen a folder to install the Test-Runner.	Easy



CONCLUSION

FINAL ACTIONABLE RECOMMENDATIONS

The development of the VSCode extension for Test-Runner presents a significant opportunity to enhance the user experience, particularly for students new to programming and development environments.

The usability tests highlighted crucial areas for improvement, notably the need for a more intuitive and easily discoverable extension icon, a streamlined installation process, and clearer feedback mechanisms within the extension interface.

Moving forward, we recommend prioritizing the redesign of the extension icon to enhance its visibility and memorability.



THANK YOU



*For more information,
follow our GitHub
repository*

