Dhanush Kandukuri

Dr. Nupoor Ranade

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Usability Test Report: User Guide for Getting Started on PyCharm (IDE)

Background

PyCharm community edition is a Python Integrated Development Environment (IDE) provided by JetBrain especially for python language developers. Since this guide covers simple needs up to a certain intermediate level, it is suitable for both academic and personal programming pursuits. It is an open-source and can be installed on any operating system which includes Windows, Mac OS, and Linux operating systems.

The goal of this usability testing is to determine the extent of effectiveness and clarity of the instructional guide developed for the PyCharm Community Edition. This present guide is an attempt at trying to give these users a simple and easy-to-follow guide in downloading and installing the IDE, and also creating a first project and running their first bit of Python code. Since configuration of the development environments is quite a technical task, this guide is very useful for making ordinary and rather complex setup accessible for computer beginners, novice programmers, and those who do not want to experiment with the settings themselves, but the suite needs to be used for the advanced tasks without the help of the expert at hand.

As for the activities of the usability test, its primary concern was to determine how effectively testers with varying experience levels could follow the given guide to accomplish the goal, which involves installing the software, setting up development environments, and running a basic Python program. It also intended to find out which parts could have possibly created confusion or posed challenge in completing the test hence, give idea on areas that can be considered for enhancement of the guide.

In following this test, the primary aim was to improve the user friendliness of PyCharm Community Edition to capture the market of students or amateur developers who have little to no experience with Python or programming for that matter. In order to ensure that first time users will be more encouraged to initially start using the IDE, the guide should be well through of and

easy to understand in the sense that they can directly use the application with out most of the complication described above.

Method

Tools Used

The primary interface that was under test for its usability was the PyCharm Community Edition. To use this IDE to develop the software, participant had to possess a computer with this facility, thus running on Windows, macOS, and Linux systems. Apart from PyCharm, screen sharing of the setup was used to monitor participants' actions during testing , and messaging tools for their feedback in case of any challenges.

Process of Testing

The testing process was structured to simulate a typical user's experience when interacting with the Quick Start Guide for the first time. The sequence of activities included:

1. Downloading and Installing PyCharm: Users were asked to visit the JetBrains official website for PyCharm edition and follow the download and installation process of this application.
2. Setting up a New Project: Following instructions, users created a new Python project to configure the IDE environment.
3. Running a Python Script: Users wrote a simple "Hello, World!" program and executed it within the IDE to verify the setup.

Participants were informed that each session would be video and audio recorded, and the identification of the participants was captured as they were selected from my big family group. I guided the participants through the process, prompting them to verbalize their thoughts and experiences during each step to gather qualitative data.

Participants

Regarding the participants, 4 participants were selected for the usability test whereby they reflect a cross section representing common types of users:

1. Participant A: A complete novice to programming, with no prior experience in Python or any programming language.

2. Participant B: A college student with basic knowledge of Python but new to the PyCharm IDE.
3. Participant C: An experienced programmer familiar with other IDEs but new to PyCharm.
4. Participant D: A professional developer experienced in Python and familiar with various IDEs, including older versions of PyCharm.

Participants were selected through a family WhatsApp and social media groups. This makes sure that the participants were comfortable talking with me, and they are selected randomly.

Process

The usability test was designed to measure how well participants could use the Quick Start Guide to install and begin using PyCharm Community Edition. The tests were all conducted remotely, and participants performed their work on their laptops. This setup was chosen to represent a realistic environment where users would probably try to follow the guide independently.

Steps Followed During the Test

1. Preparation: Before the test, each participant received a copy of the Quick Start Guide. They were instructed to prepare their computer with a stable internet connection and with the required permissions to install the software.
2. Screen Sharing Setup: Participants were invited to share their screens using a secured online meeting tool. This way, I could view what they were doing and listen to them thinking out loud while completing tasks described in the guideline.
3. Task Execution:
    a. Installation: Participants started by downloading the PyCharm Community Edition from the official JetBrains website. They followed the installation instructions provided in the guide, noting any difficulties or uncertainties.
    b. Project Setup: After installing PyCharm, participants were guided to create a new project. This step tested the guide's clarity in explaining IDE-specific concepts and procedures.

   c. Writing and Running Code: The final task was to write and run a simple Python script ("Hello, World!"). This tested the practical application of the setup and provided insight into the guide's effectiveness in getting a user from installation to actual use.
4. Feedback Collection: The participants were permitted to verbalize their thoughts and difficulties. Open questions about more profound insight into raised issues followed suit from the observer. The latter also took care of feedback about the clarity, completeness, and usefulness of the information in the guide.

Monitoring and Evaluation

- Qualitative Monitoring: I focused on participants' ability to follow the guide without external help, the relevance of the content to their needs, and the usability of the guide's layout and language.
- Quantitative Evaluation: Data points collected included the time taken to complete each task, the number of external resources accessed (if any), and the success rate of completing the tasks as intended.

This approach provided a comprehensive view of the user experience, highlighting both the strengths and weaknesses of the Quick Start Guide.

Findings

The usability test brought valuable insight into the effectiveness of a Quick Start Guide for PyCharm Community Edition. The results are divided into qualitative and quantitative results, which, when taken together, give a comprehensive view of how the guide performed.

Qualitative Results

1. Ease of Installation:
   a. Participant A struggled with understanding some technical terms used during the installation but found the step-by-step instructions helpful.
   b. Participant B noted that while the installation process was straightforward, clearer annotations or tooltips could enhance the guide for beginners.

   c. Participant C and Participant D both found the installation instructions clear and easy to follow.
2. Project Setup and IDE Configuration:
   a. Participant A faced challenges in navigating the PyCharm interface to set up a new project, suggesting that additional screenshots or a video tutorial might be helpful.
   b. Participant B appreciated the detailed instructions but recommended more context about why certain settings are recommended.
   c. Participant C and Participant D had no issues with this step but suggested that a section on customizing the workspace could be beneficial for new users.
3. Writing and Running Code:
   a. Participant A had difficulty understanding how to run the program and would benefit from a more detailed explanation of the IDE's run configurations.
   b. Participant B successfully ran the "Hello, World!" program but suggested including troubleshooting tips for common errors that might occur.
   c. Participant C and Participant D found this part of the guide well-executed but mentioned that linking to additional resources for learning Python could be useful for complete beginners.

Quantitative Results

- Task Completion Rates: All participants successfully installed PyCharm and created a new project. However, only three participants (B, C, D) were able to successfully run the "Hello, World!" script without assistance.
- Time taken:
  - Installation: Averaged 10 minutes across all participants.
  - Project Setup: Averaged 5 minutes for experienced participants (C, D) and 10 minutes for less experienced participants (A, B).
  - Writing and Running Code: Averaged 5 minutes for experienced participants and 20 minutes for participant A (took my assistance).

These findings, therefore, suggest that the Quick Start Guide was indeed practical at orientation and guiding them toward the initial setup and use of PyCharm. Still, in some areas, further

guided support would improve the user experience for those users with a less technical background.

Recommendations

Based on the findings from the usability test, several recommendations can be made to improve the quick start guide:

1. Enhance Installation Guidance:
    a. Include a glossary of technical terms used in the installation process.
    b. Provide tooltips or pop-up explanations for technical steps within the digital or interactive version of the guide.
2. Improve Project Setup Instructions:
    a. Add visual aids such as screenshots or video tutorials to guide new users through the IDE interface.
    b. Offer a brief explanation of each setting during the project configuration to help users understand the choices they are making.
3. Expand Code Execution Support:
    a. Provide a detailed step-by-step guide on running a program including troubleshooting common issues.
    b. Include links to additional learning resources for Python and PyCharm to support further exploration and learning.

Implementing these recommendations should make the Quick Start Guide more accessible and user-friendly, particularly for those new to programming or those unfamiliar with development environments like PyCharm.