**Discussion Question: Pre-Release Testing**

For this module's discussion board assignment, select three (3) of the following types of tests. Find at least one additional resource for each and compare and contrast the tests in terms of when they might be done, expected results, and tools available to perform the test, if any.

* Black-Box Testing
* White-Box Testing
* Grey-Box Testing
* Load Testing
* Stress Testing
* Performance Testing
* Usability Testing
* Alpha Testing
* Beta Testing

***Before you submit your thread, put your name in the subject line.***

Testing is a fundamental part of the software development process. It helps identify any potential errors in a program and can help mitigate any issues found. There are many types of testing, but the focus for this discussion will be on black-box testing, white-box testing, and beta testing.

Black-box testing means developers do not have inside access to the source code and design when testing. Although black box testing does not have the same amount of information as other testing practices, it still can do a good job of calculating risks through penetration testing since expected results for end users can still be tested as well as looking for common vulnerabilities (Conklin & Shoemaker, 2022, p. 588-589) Black-box testing is typically performed in the final stages of the testing process (Patil, 2021). Expected results of black-box testing are identifying missing functions, errors in the user interface, errors when accessing, errors with launching and stopping functions, and poor performance and other behaviors (Patil, 2021). Some tools I found were QA Wolf, Watir, and Mobot.

White-box testing gives the development team inside access to the source code and design when testing. In this testing phase, developers have full knowledge of the program and its elements, giving them a more thorough look when testing. It also makes it easier to form attacks to check the system since it is better understood. This means it can focus on the structural basis of software (Conklin & Shoemaker, 2022, p. 588). Typically, white-box testing is done early in the software development life cycle. According to Joseph (2024), the expected results from white-box testing are “security gaps and vulnerabilities, expected output, poorly structured or broken paths, and data flow testing”. Available tools for white-box testing include NUnit, Jtest, Path, and csUnit.

Beta Testing is when the software is tested for errors. This occurs when the software is close to release but not officially released. Beta testing provides valuable feedback that can be used to improve software. Some expected results from beta testing are finding issues, bugs, and enhancing functionality (GeeksforGeeks, 2019). There are tools for beta testing, such as Test Fairy, Center Code, Usersnap, and TestFlight (GeeksforGeeks, 2019).

**References**

Conklin, WM. A., & Shoemaker, D. P. (2022). *CSSLP Certified Secure Software Lifecycle Professional: Exam Guide.* McGraw-Hill Education.

GeeksforGeeks. (2019, April 17). *Beta Testing | Software Testing*. GeeksforGeeks. https://www.geeksforgeeks.org/beta-testing-software-testing/

Joseph, T. (2024, October 29). *A Complete Guide to White Box Testing Techniques in 2025*. Medium. https://medium.com/@timothyjosephcw/a-complete-guide-to-white-box-testing-techniques-in-2025-69c44e6e142b

Patil, N. (2021, October 27). *Understanding Black Box Testing - Types, Techniques, and Examples› TESTINGMIND*. TESTINGMIND. https://www.testingmind.com/understanding-black-box-testing-types-techniques-and-examples/

**Assignment Requirements and Grading:**

1. An initial post of approximately 250 words is due by **Thursday, 11:59 p.m., CT**.
2. For the initial post to be considered substantive, it should be at least 250 words in length and fully cover the topics being presented. Single sentence definitions or responses will not be awarded points.
3. Submit your post by clicking on the **Assignment Link** above, then **Create Thread**. You must create a thread in order to view your peers' posts. Tip: Create your post in a Word document and then copy and paste your work into the thread.
4. A minimum of three (3) responses, **to the original threads of other students**, of 100-200 words each are due by **Sunday, 11:59 p.m., CT**.
5. To view the rubric grading criteria, click on the following link: [Discussion Board Grading Rubric](https://content.bellevue.edu/cst/csd/rubricdbv3.pdf).

**(50 points)**

Hi, Samir. You did a nice job of explaining black-box testing, white-box testing, and load testing. I agree with you that black-box testing is typically done towards the final steps in the development life cycle and that white-box testing is done in the early stages. It may seem like black-box testing is less valuable than white-box testing, but it still provides a ton of insight. Even without inside knowledge, there are common vulnerabilities that should be searched for and tested. Load testing is crucial for any site expecting heavy traffic. End users would become very frustrated if an application crashes.

Hello, Lea. I think you did an excellent job on your discussion board. Your explanations of each were spot on, and you did a nice job explaining when each is usually done, the expected results, and the tools available. I like how you included the graphic in your post. It was the perfect addition to your answers. I found it interesting to see the tools you found for each test because you found ones that differed from those I found for white-box testing and black-box testing. If a company could only do white-box, grey-box, or black-box testing, which do you think would be the most valuable?

Hey, Arely! I enjoyed reading your post for this week and think you did a great job. Stress testing is definitely a necessary process when preparing to launch an application. It is expected to run into errors when developing code, so preparing the code to handle this stress improves the end user experience. Stress and performance testing sound like they should almost be done right after each other because stress testing seems like an extension or more intense version of performance testing. I think Alpha, along with Beta testing, aids in finding vulnerabilities that occur during runtime that might otherwise be caught during final release.