**Estimation and Work Breakdown Structure (WBS)**

1. **Test Planning and Preparation (10% of Total Effort)**

- Define testing objectives, scope, and strategy.

- Identify test scenarios and requirements.

- Develop test plan document.

- Prepare test environment and tools.

- Prepare test data.

- Assumption: Clear and detailed project requirements are available.

- Expected Quality: Well-defined testing scope and strategy.

**2. Test Case Design and Development (20% of Total Effort)**

- Create detailed test cases for each scenario.

- Map test cases to requirements.

- Define test data for each test case.

- **Assumption**: Requirement documentation is complete and stable.

- **Expected Quality**: Comprehensive set of test cases that cover various scenarios.

**3. Test Execution (50% of Total Effort)**

- Execute test cases as per the test plan.

- Report defects and communicate with the development team.

- Conduct regression testing after defect fixes.

- Verify fixes for reported defects.

- **Assumption**: Test environment closely simulates the production environment.

- **Expected Quality**: Early identification and resolution of defects, ensuring a stable search engine.

**4. Performance Testing (10% of Total Effort)**

- Perform load and stress testing to assess search engine performance.

- Analyse response times and system behaviour under different loads.

- **Assumption**: Test environment can mimic real-world usage loads.

- **Expected Quality**: Search engine performs efficiently under various load conditions.

**5. Usability and Compatibility Testing (10% of Total Effort)**

- Evaluate user interface for usability and consistency.

- Test the search engine on different browsers and devices.

- **Assumption**: Design and user interface are finalized.

- **Expected Quality**: Intuitive and consistent user experience across devices and platforms.

**Outcomes of Planned Activities**

- A well-defined and documented test plan that outlines the testing scope, strategy, and objectives.

- Comprehensive test cases covering various scenarios, ensuring extensive coverage.

- Early detection and resolution of defects, leading to a more stable search engine.

- Verification of the search engine's performance under different loads and scenarios.

- Confirmation of the search engine's usability and compatibility across different browsers and devices.

**Assumptions**

- Detailed and stable project requirements are available.

- Requirement changes are minimized during the testing phase.

- Test environment closely resembles the production environment.

- Adequate and representative test data is available.

- Collaboration and communication between development and testing teams are effective.

- The search engine's backend and infrastructure are stable.

**Expected Quality Level**

The proposed testing activities aim to achieve a high level of quality for the Google Search Engine. The goal is to ensure that the search engine functions accurately, performs well under various conditions, and provides an excellent user experience. By identifying and addressing defects early in the testing process, the customer can expect a stable and reliable search engine that meets user expectations and functions seamlessly across different platforms.

Please note that these estimates and assumptions are generalized and should be refined based on the actual project context and requirements.