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Verification

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Testing Tool Request

The Project

Our latest project here at The Computer Information Network has been what we call "the automated cameraman". This is a piece of software that will run all the cameras during the filming of a show. They will be able to choose the best camera to make the shot, how much zoom to use, and even adjusting for lighting conditions. This program will allow our network to cut labor expenses, as well as provide the best possible camerawork to go along with our already excellent programming.

The Project Team

The project team will consist of twelve members:

Project Manager - Jim has been selected to lead this project. He has 12 years experience in the field of computer science, and has also been one of our best managers.

Testing Supervisor - Nancy has been chosen as the lead tester for this task. She has headed up all of our recent testing teams for larger projects. She also has much experience with the testing, being in the specialty

for 8 years. Nancy will report to Jim to keep him updated, but will be working with Jim to keep the project moving forward.

Engineers - The remaining ten members of the project team will fall into this category. These members will have varied roles throughout the project. At the beginning of the project there will be seven people assigned to development and three to testing. By the end of the project all ten members will be involved with the testing. The engineers will also be rotated between the two areas on a schedule to be developed by Jim and Nancy. The engineers will be Gary, Richard, Edmund, Gustav, Neal, Ingrid, Lucy, Sean, Elizabeth, and Nigel.

Role and Use of Tool In Testing Process

The tools we are looking into purchasing for this project are test design tools. The tool selected will be used as a jumping off point into the testing process. The program should produce testing plans that are straightforward and useful to the project.

Another necessary attribute of the program will be the ability to track progress of the project, and then be able to produce tests for the next stage of the project (i.e. once unit testing is completed, the tool should design tests for integration testing).

The program should provide a visual environment that will run on one of the platforms that our company supports, which are Sun Servers and Windows NT/95/98 machines. Any additional testing features of the tool are considered as extra, but they may be taken into account for the final decision if they add to our possible use of the tool.

Recommendation

After an extended amount of research, our project team would recommend the Test program offered by McCabe to be our new test design tool. Some of the reasons for this decision are:

- The program satisfies all of the requirements as stated by the project team in the above section.
- Along with test planning, the program also provides test monitoring and measuring the thoroughness of software testing.
- Testing is supported at both the unit and integration levels, plus the tool allows for path coverage, branch coverage, and Boolean coverage.
- Test implements testing standards as established by the National Institute of Standards and Technology.
- This piece of software provides accurate estimates of time and cost expenses for the execution of the test plan.

- McCabe's Test tracks what has been tested and recommends where to focus additional testing, and then the project manager can determine the completeness of the project from that recommendation.
- The program also provides metrics to estimate the completeness of the project, which is useful for generating reports for management.
- Test supports eight different programming languages (Ada, C, C++, COBOL, FORTRAN, Java, Model 204, and Visual Basic). This is useful because our project team has yet to determine the language best suited for the project (McCabe & Associates).
- This software runs on many platforms, including SUN, Windows NT/95/98, AIX, HP, and IRIX (SGI) that gives the department latitude when it comes to upgrading hardware in the future (Marick).

Because of the features and wide compatibilities of this program, there is a high likelihood of this program being used for other future projects as well. This makes McCabe's Test a worthwhile investment.

Other Tools

Our team had researched a couple other test design tools as well; however, we felt that they did not satisfy our needs as well as the Test tool from McCabe does. The first of the other

test design tools was TestMaster from Teradyne. This program satisfied most of our requirements, except that it did not track the progress of testing and was not available for the Windows platform (Marick).

However, TestMaster did do automated test generation, execution and replay, which would be useful in the testing process (Teradyne Software and Systems Test, TestMaster Quick Tour). The test programs that are generated by this program are also platform independent, but there is a black-box focus that may not be the best solution in our circumstance. We also got the impression that this program might be overkill because the company suggests that TestMaster is best for applications with a high cost per defect, such as military, medical, finance, and precision milling (Teradyne Software and Systems Test, TestMaster Overview).

The other test design tool that we examined was Datatect from the Banner Software Company. We quickly found that this tool wasn't terribly useful for test design because its main function was creating test data in flat file and database formats (Banner Software). The other problem with the program is that it only runs on the Windows platform (Marick). We again noticed that this program, along with the TestMaster program, would be more useful in the testing phase than in the test-planning phase.

Summary

For the development of our "automated cameraman", our twelve-person development team would be greatly assisted by the use of a test development tool. They have already researched the possibilities that would work in this situation and have recommended the purchase of McCabe's Test. This program could provide a great benefit to the project, which will in turn provide great benefits to our company.

Works Cited

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