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11/15/2011

iEx6 – Programming environment survey

Software Engineering I

CS 4263

1. Describe three services that a good programming environment should provide.
    a. Readable error logs that communicate errors well.
    b. Word completion that is integrated with libraries.
    c. Debugging package that allows stepping through program.
2. Describe three things you like about the Dracula programming environment
    a. Built in console that allows you to test code on the fly.
    b. Editing code doesn't stop you from being able to test in console the previously compiled code.
    c. Shows where parentheses start and end and turn red if they do not match.
3. Describe three things you dislike about the Dracula programming environment.
    a. Not able to step through code to the state of it at different times.
    b. The time it takes to open the program and open a new file.
    c. The error logs when you make a mistake are very unclear.
4. Suppose you are a software engineer in an organization that has received a contract to design and implement the control software for a new kind of nuclear reactor to be constructed in a densely populated area. You have been assigned the task of choosing the programming environment to be used in the project. Draft a one-page memo that specifies the programming environment and provides a convincing rationale for that choice.

MEMORANDUM

TO: Rex Page

FROM: Kyle Morse

DATE: November 15, 2011

SUBJECT: Programming Environment Choice

I have received a contract to design and implement the control software for a new kind of nuclear reactor to be constructed in a densely populated area. My job is to choose a programming environment to be used and provide a convincing rationale for my choice. The programming environment I chose is Eclipse. My rationale will follow.

The most important advantage to Eclipse is that it is a multi-language software development environment. This means if we need to combine several different programming languages to complete the project then this will be able to include them. I believe that this is an important feature because with a project like this you will want some code that is very reliable and quick that used to do the core functionality of the code. But then you will want to combine a database language to hold all the data you will collect as well as another language for the user interface.

Eclipse also has an extensive debug system that will help engineers diagnose problems in their code. When problems arise it gives errors in readable forms and then will take you to the spot of the error when clicked on. This makes finding where errors are quicker and then once found it will even give possible solutions to the problem.

Another advantage with Eclipse is that it has an extensible plug-in system that will allow management to include software packages that promote teamwork and allow easy communication between different programming groups. And along with plug-ins it also has a UML generator that will allow programmers better communicate how their program works to management.

The final advantage Eclipse provides is that it always builds for you. Every time you save a file, run a program or a tool, or any other action that accesses resources contained in the project, Eclipse complies. This essentially means your code is always compiled. Eclipse also builds incrementally, thus ensuring that most build operations are completed within seconds. This means that less time will be wasted on compiling and more time on the actual act of coding towards a solution to the problem.

In conclusion, Eclipse will be a good choice for a programming environment to design a software for a new kind of nuclear reactor. Eclipse supports a range of programming languages that will allow software engineers to pick and choose which will work best in their situation, a debug system that provides all information needed to fix problems, a plug-in system that promotes teamwork, and increase in productivity due to providing immediate feedback about the code through auto compiling at regular intervals .