Annotated Bibliography

Just as a doctor requires proper medical tools to adequately do their job, Web Developers also require the proper tools to complete theirs. Developers need tools to aid in the process of computer coding. One very important tool is called an IDE, an integrated development environment. There are many popular IDEs available for developers to use for a variety of computer coding languages. *Which popular ID in computer science is better, Visual Studio or Eclipse?* In this annotated bibliography I will provide research I found to support this question. I chose this topic because, as a computer science student, I have learned how to utilize IDEs. I have frequently used Visual Studio and find it to be easy to work with and navigate my way through to create successful coding programs. However, I have little experience with the Eclipse IDE. This topic of research especially interests me because I would like to learn more about the benefits and features of using Eclipse as opposed to Visual Studio.

Source #1:

First, this article explains that lack of accessibility for individuals living with disabilities is a problem many websites have due to lack of development training. Accessible and well-designed websites benefit everyone, with or without disabilities and require less maintenance. The “Web Accessibility Initiative” was established in 1996, to ensure that users with disabilities can access content on web pages like sounds, text, and images. Web pages that lack accessibility, especially government websites, could face lawsuits. Web developers need to keep this in mind when creating a web page and when making alterations to the existing code. Education plays a major role in preparing student developers to create accessible web pages. Students that have studied accessibility courses are better able to understand and connect with users that have disabilities.

This article will help describe the complexity of software development and how much goes into the coding process.

Source #2:

This article simply provides info about the Eclipse foundation. The Eclipse Foundation was created in January of 2004, and it is a non-profit organization. The eclipse foundation offers 4 key services. These include IP Management, Ecosystem Development and marketing, Development Process, and finally IT Infrastructure. The foundation’s focal point is to produce successful open-source projects for open-source development. The eclipse project is used by millions of developers.

This article is useful because it provides background information about how Eclipse started and their goals for the Eclipse IDE.

Source #3:

Eclipse IDE has 180 reviews and a 4.34/5-star rating overall. Microsoft Visual Studio has 2885 reviews and a 4.62/5-star rating overall. Eclipse’s ease-of-use rating is 4/5, while Visual Studio has a 4.5/5 rating. Both IDEs scored 4.5/5-star rating for Value for money. Both also scored 4/5 for customer support. In addition, both IDEs received the same rating for Functionality at 4.5/5 stars. Some listed Pros of Eclipse are as follows. Easy to use GUI (Graphical User Interface), which is basically the interaction between the user and the computer. Another Pro of Eclipse is that it has reliable integration and multiple options for “Plug ins” or extensions to utilize additional features. However, some Cons listed include the following. Upgrading Versions may be difficult, and it is a little outdated. It is also mentioned that if developers are not familiar with using this IDE, it might be difficult to navigate the project explorer. On the other hand, some Pros of Microsoft Visual Studio are as follows. It is easy to use and easy to start/create projects. It has also helped developers improve the quality of software through code analysis. Some Cons of Visual studio are as follows. It may be a boring coding process because it doesn’t have “Plug ins”. Some developers have also complained of Visual Studio lagging, resulting in having to restart the software to resolve.

This article is one of the most important for my research because it is a direct comparison of the user results of the two IDEs being compared in my research question.

Source #4:

Web Augmentations help users work with the application. Meaning they can simultaneously update info and performance of Web apps. This article also explains the set of interactions with tools(tasks) the developer carries out during the execution (running a program). It is important to understand how interactions work to aid development of the tools provided. Mylyn is one of the most well-known tools offered as a Plug in for the Eclipse IDE.

This article may help my research by providing information to understand important features web developers are looking for in an IDE.

Source #5:

Developers make Design Decisions when building their code. Developers need to understand the design decisions they make and how it affects the program they are building. Design Documents can be outdated, but researchers believe it would be beneficial to use these tools. Design Documents aid in organizing code and decision making. It creates a structure to help developers understand their coding process. This article also examines a survey that looks at the tools that web developers have available to them to help with design decisions, the goals of working with design decisions, and what tools help achieve their goals. It also recognizes problems tools have and how to improve those tools to help developers. It is explained that software design is the process of developing a plan to create the desired code output. Design decision is basically an organized and logical outline to the expectations intended in the code. When coding, there are many ways to get the same result. Design decisions help understand how one line of code affects the rest of the program. Sometimes changes/updates are simple and other times when a line of code is updated, it requires multiple other lines of code to be updated as well to execute correctly. Design Rationale looks at the way a developer chooses to develop their code one way instead of a different approach. Design decisions that are documented allow developers to look back at their previous process and decision making. As well as to view different ways of achieving successful code. The article goes on to describe different tools or techniques developers can utilize to structure the plan of the coding process. Without the structure of documented design decisions, developers may have an unorganized process. This may result in confusion and errors in the code. However, for these mentioned processes to work correctly, developers would need to maintain this documentation to refer to for decisions in projects.

This article will help provide understanding of the effects of decision making in the coding process developers endure.

Source #6:

Software development requires extensive knowledge of coding processes. Some websites are available to retrieve advice from fellow developers on how to tackle issues and find solutions to create the code they need. A big obstacle developers face is that technology is persistently being updated and improved. This means that continual education is very important. This article explains how to use search strings solutions to errors and improve code. Curation is the ability to search and sort out relevant information to fix a code error or exception. It would be helpful if websites such as Stack overflow would recognize and link results to search strings to provide helpful results for similar coding errors.

This is relevant because it provides information about debugging, which is a huge part of what IDEs offer developers.

Source #7:

The Eclipse Foundation released Theia 1.0, which compares similarly to Microsoft Visual Studio. Theia allows installation and recycle Visual Studio extensions. It also allows additions to accommodate the continuous changes in technology. Note worthy differentiation of Eclipse Theia and Visual Studio are mentioned as well. Such as, Theia is a better foundation for design and construction. It also permits notably more modifications/ alterations. Theia runs in 2 distinct processes (Frontend and Backend). Those processes transmit messages through a WebSocket. Eclipse Theia also allows for applications other than Visual Studio to utilize the extensions provided.

This article is good for my research because it explains some benefits of Eclipse, which is the point I am trying to accomplish for my research.

Source #8:

Visual Studio is productive, modern, and innovative. Visual Studio now also has the option to code in the cloud, meaning that developers can code anywhere on any device. Like many other IDEs, Visual Studio includes an option to code with IntelliSense(code suggestions). When a developer is coding, the IDE may give suggestions of code based on the previous code in the program. It attempts to understand what you are trying to accomplish. Integrated debugging allows developers to “step through” code, allowing them to examine the output of each statement or line of code. This will help understand where the problem in the code is occurring. Visual Studio also allows “Live Share”, this is a feature that allows teams of developers to view and share code. A variety of tools are included with Visual Studio to help improve the code faster.

This article is useful because it offers information about Visual Studio that I can use to compare this IDE to the Eclipse IDE.

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