Chris DeVisser

2013-05-27

ICS4UE

**Exploring Careers**

For this report, I have chosen to discuss Software Engineering, it being what I want to do in life. Software Engineers are responsible for the development of software. This might seem obvious, but there is more or less a hierarchy of responsibilities involved. Some believe the profession to be synonymous with a Computer Programmer, but there are many other duties.

Beginning Software Engineers *do* often start out programming computers before moving to higher positions. All software development requires programming. However, before that even happens, many aspiring Software Engineers will start out in Quality Assurance. Early tasks require taking other people’s code and testing it to find any problems, which can then be reported. There is little to no opportunity to actually break anything while doing this, so it is an ideal starting position. When starting, the salary is much lower, particularly with students, but can increase if the job is pursued to the point where it can match, or even go above, the salary of a developer. This is usually done in the earlier stages while obtaining a Bachelor’s in Software Engineering or Computer Science.

This degree is offered at universities across the world including the University of Waterloo, which has a world-renowned mandatory co-op program done with the five-year degree, costing about $12 000 per year for tuition and incidental fees (University of Waterloo). The change from high school is not necessarily significant, with students beginning through courses such as Linear Algebra, Calculus, Physics, Programming Principles, and Linear Circuits. With 70% required in the high school versions of some of these courses and the normal admission average being about 90%, the program should not be hard to settle into, but should not be taken lightly as time goes on.

After Quality Assurance, one might expect to move up to actually fixing others’ code, usually trying to squash a bug in the program. Around this stage, small tasks involving writing code might be handed out as well, and that code looked over by more experienced employees for feedback and quality control in a process known as code review. This stage can be reached after becoming familiar with the tools used in the workplace to produce the software.

Finally, what some consider the true definition of a Software Engineer involves leading projects, keeping the code designed for quality future maintenance, representing the client, and delegating tasks to those who write the main code. They often write a significant amount of code as well, share many job similarities with the main programmers, and are typically the ones who oversee the project’s deadlines and make sure everything comes together the way it should.

All in all, the average salary of a Software Engineer in the form of mainly programming or managing is about $90 000. That is pretty good in comparison to a lot of other professions, and companies usually spend a lot more on hiring programmers than they do on testers. Higher end Software Engineers have a possibility of salaries that can range up to a couple hundred thousand dollars a year in companies such as banks and other important, specialized areas. Beginning Software Engineers can see salaries from about $25 000 to $40 000, and this can grow with experience.

As time goes on, there are expected to be even better prospects for Software Engineers. More and more companies are finding that they require software development, usually in the form of web development. To be ready for this, though, one must have a set of skills and habits. These include staying on task, persisting in the face of a problem, using problem solving to solve any problems, being able to communicate with clients about the software specification, and having the ability to be passionate and learn. During the course of developing software, new technologies are going to make their way in and staying up to date on them is crucial. One cannot expect to write code that is without problems, either, and a bug is a lot easier to fix right after the code is written instead of days or months after the fact. Being able to persevere and problem solve is very important in making sure the work is done in a reasonable amount of time and is as bugless as possible.

Personally, I have been honing my skills and work habits in this area for the last couple of years, trying to be prepared for a future job in this industry. I have read an enormous amount of material on what it’s like working as a programmer for bigger and smaller companies, and I hope to find an entry-level job in Quality Assurance or similar this Summer in preparation for university co-op next year. I have been striving to write clear and maintainable code above all, and I am consistently thinking of new programs and projects to work on. I can see myself getting better and better and I am at the point where I know my skills in the area could be of use to someone but me.

**Bibliography**

University of Waterloo. (n.d.). Retrieved from

http://www.findoutmore.uwaterloo.ca/programs/Software Engineering

(n.d.). Retrieved from http://en.wikipedia.org/wiki/Software\_engineer

(n.d.). Retrieved from http://www.indeed.com/salary/Software-Engineer.html

. Retrieved from http://www.skills.edu.gov.on.ca/OSP2Web/EDU/Welcome.xhtml

Samson, T. (, October). Demand for software engineers

keeps climbing -- and so do the salaries.

Retrieved from http://www.infoworld.com/t/it-jobs/demand-software-engineers-keeps-climbing-and-so-do-the-salaries-205254

. Retrieved from <http://chris.aws.jammerx2.net/ICS%204UE/Software%20Engineers/>