# THE IMPACT OF STUDENT INTERNSHIP IN AN IT COMPANY

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*Abstract: This article aims at the process of Internship in an IT company along with its consequences and effects on life and university activity of a computer science student. The experience from real Internship in a Moldovan company is being described and then the main benefits and issues of it are emphasized, moreover, it is presented the way this process influences student's schedule, academic performance, and career opportunities. Also a personal opinion according to the described topic will be presented throughout the work.*

*Key words: Internship, student life, IT, courses, internship program.*

### Introduction

Nowadays, practical experience is something crucial for a professional developer or someone who wants to become a professional developer. Unfortunately, many students do one of the following mistakes: they either focus on the theoretical part of computer science, forgetting about practice, or do the opposite. None of them by themselves will help a student to grow as a specialist with strong knowledge and ability to apply them in solving a problem from the real world. A harmonious learning process includes both practice and theory lectures. Since IT is a very fast-developing field, university programs are not able to keep up with all the last features in this domain, thus a student must learn about them by himself. At this moment, undergraduates have few possible paths of self-development which can be applied simultaneously:

- Learn material by himself or in a small group and do home-projects
- Go to specialized courses or events (such as meetings, hackathons, conferences)
- Find a part-time job
- Apply for an internship program (a practical study program)

Besides others, an internship program is one of the best opportunities, due to many reasons. Despite a job, during the internship, a person is studying and he is not restricted by client requirements, deadlines or project limitations. An internship program is often designed by the company's developers and covers all up-to-date technologies, patterns and best practices, which are used in real projects. Moreover, these programs are guided by professional developers, so students can communicate with them, ask questions to a trusted and experienced source of information and get a good piece of advice related to the best learning materials as well as other useful tips. Most of these benefits are unavailable during self-study and this can significantly reduce the quality and speed of the learning process, or even lead to a wrong path, which will finally result in wasting of time. Along with all benefits above, internship programs give a chance to work with popular technologies and learn how to apply them in practice in the right way.

### Entrance Process

Most internships programs require at least basic knowledge of the given domain. In case of information technologies, a student usually has to be familiar with common algorithms and data structures, has the basic knowledge about one programming paradigm (object-oriented, functional, procedural or other), and sometimes has to know the basic syntax of a programming language which will be used in work. Some additional, but not crucial skills are databases, web technologies, local networks, and other technical skills. In the recent few years, companies also require the students to develop some soft-skills, mostly related to the ability to work in a team, to solve

interpersonal conflicts and know how to act in stressful situations. Besides these requirements, recruiters always expect from candidate passion of chosen profession and CS in general. As a real example, I will consider an internship from Amdaris – an international software development company based in Moldova, UK, and Romania. They prepare .NET developers, so to get a chance to be accepted to this company student need to have the following skills:

- Good knowledge of OOP
- Good algorithmic skills
- Data structures
- Basic knowledge of SQL (advantageous)
- Basic knowledge of Web technologies (advantageous)
- Good technical and interpersonal skills with a passion for software development

Even if the student doesn't fit all requirements he can try to show his strong willingness to learn and, therefore, might interest recruiters and heighten his chances to get involved in a program. Anyway, the most important part of the entrance process is the interview. It will consist both of technical problems and questions focused on determining the personal qualities and motivation of the candidate. Technical questions are based on points listed in the requirements and won't become a difficulty if the candidate is prepared. A more significant role is playing behavior of candidate during the interview, his attitude, responsible approach to future internship and communicational skills. The student will increase his chances to pass the interview if he clearly explains why he has chosen this particular domain, why he decided to do an internship in this particular company, and, what is also important, is, to be honest with the interviews, e.g. candidate should honestly say if he doesn't know something or his free time is limited with university studies or other activities. Of course, it would be a plus to show a real passion for software development and computer technologies, because the initiative is highly valued in such kind of interviews. After the student successfully passes the interview, the most gripping part begins.

**Structure and content of internship**

Such kinds of programs are aimed at 2 main goals: give student basic knowledge about the work process in a company and make from a student a beginner specialist with all necessary skills and cognizance, which are irreplaceable during the development process. In order to fulfill these purposes, companies try to give interns the possibility to communicate more with currently working developers and create an atmosphere that will be cozy, friendly and favorable for study. Study process often consists of 1-2 hours of the theory which is given by the company's developers and all remaining time is dedicated to a practical task related to the prior theoretical lesson. Then, the employee who provided interns with the theoretical background will verify how they manage to solve given problems and will ask additional questions related to his topic. The time which interns must devote to practical tasks is varying from company to company, but in my particular case we have a free schedule, with one condition – we must submit all practical tasks in time. The whole internship program takes from 2 to 5 months and is often divided into a few parts which make it more clear and structured. The internship which I'm taking at the moment is parted into 3 modules. First includes C#, Design Patterns, and Agile Methodologies. The second part is deep-diving into databases and the third focuses on the Frontend part. Also, at the end of internship student had to present a project which he made throughout study process. This project is developed with help of student's mentor and is a demonstrative project made with respecting of all rules and guidelines for a real-world product. It also must include all technologies which were explored during the course, as well as their right usage. Additionally, it should work fast enough (e.g. be optimized), well-structured and user-friendly. Finally, the most important – it must have a killer feature, so student has to implement an idea which will interest others. Such structure and organization are unstrained but interesting and full of different topics and the same time, so as a student I find it a bit challenging, but wholesome.

**Impact on study process**

The next paragraphs represent a comparison between the statistical result from research and my personal feelings and thoughts about the internship. Australian Health Review Survey on Preparedness for an internship [1] gives information on student preparedness before the internship and after they completed their second rotation. Although most felt reasonably well prepared by their university training for many tasks they commonly undertake as interns, this was not the case for all tasks. Some of the tasks related to personal communication with clients or coworkers and some unusual work caused troubles and they felt unconfident in some particular cases. From my personal point of view, I started to understand better subjects that are straightly related to program development due to new technologies and methods of problem-solving I've opened for myself. Also, now I felt more confident in estimating time which I'll need to accomplish a particular task and I've generally improved my skills of time management and prioritizing. On the other side, now there is a huge amount of new information which I'll have to learn, among university programs. I have less time to attend university classes, do homework or spend more time on a complicated task. This lack of free time led to shallow knowledge and a wrong understanding of some complicated topics. I can assume that a full-time internship program will give a student strong knowledge in his domain, but might negatively affect his academic result.

**Impact on professional and personal development**

The most significant topic of this work is personal and professional development during the internship. According to the article "Stress during internship" from Journal from General Internal Medicine [2] students' anger-hostility, tension-anxiety and vigor-activity rates increased, while fatigue-inertia score was lower in comparison to median values. Basically, this means that students, in general, feel stress and anxiety during internship programs. This is mainly connected to new experiences, along with lots of information, new responsibilities and collective. This stress is considered useful and even necessary while experiencing something for the first time. I can say that I have absolutely the same feelings because of new challenges that I have to face and a very filled schedule. Nevertheless, I think this experience will boost my career and will be very useful for me as a personality. The process of studying there is directly affecting me as a developer and I think that during the internship I started to learn faster and get more profound knowledge and understanding of some ideas which I was not able to understand earlier. Also, my ability to explain difficult concepts increased, as well as my skill of working in a team. Generally speaking, this experience was full of benefits for me both as a personality and as a student. It feels like a good possibility to learn from professionals, to meet absolutely different and extraordinary people and find out something new about people's lifestyles. Also, it provides me a possibility to see how the industry works from inside, how a team is organized, and what tools is using a big company and every particular developer to improve his work process. This is a very friendly environment for fast professional growth of a developer of any level, because it gives this crucial experience – practical application of student's knowledge, problems which a developer faces every day and solutions which he founds. That's why I consider that an internship is a very useful challenge for anyone who want to become a professional in a certain domain – actually student see how things are going on before he starts working. This will help him to save a lot of time in the future, when he will be a practitioner and will know how to solve most of common problems.

**Conclusions**

The process of an internship is a part of professional development and self-forming as a personality. It might be intricate, full of difficulties and novelties, very beneficial and life-changing. At the same time, both research and life experience can show that it might be a bit stressful and difficult to manage a lot of tasks in a short amount of time. But finally, it leads to engaging personal growth, lots of possibilities and changes in a person's life. Despite the fact that it can negatively affect student's marks and overall university results, this is a definitely worthy experience which will be really valuable for a person, if he invests enough time and effort into it.

This strong schedule will get the student ready for any abruptness and after this, he will learn to manage his time pretty well, as well as spending spare time with benefit. And all these benefits are besides the main purpose of an internship – to grow a professional developer, tester, designer or any other specialist in the domain, with all required knowledge and enough experience to launch his career. If you have such an opportunity, you'd better not miss this chance.

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