UNIVERSITY OF NAIROBI
COLLEGE OF BIOLOGICAL AND PHYSICAL SCIENCES
SCHOOL OF COMPUTING AND INFORMATICS

INDUSTRIAL ATTACHMENT BRIEFS

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Institution Attached:	Savannah Informatics Ltd
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A. Objectives Fulfillment

1. Exposure to Industrial Work Environments.

Unequivocally speaking, the entire internship period was more of a path-setter to what is deemed of me as a Computer Science profession. This is because unlike the daily classwork routine, I was actually exposed to how professionals in my career path are engaged in their day to day work life, as I have highlighted below.

1.1 Code of Conduct

This appertains to the social ethics within the company. The allowed dressing conduct was an official one. All employees were expected to groom themselves well at all times. The dress code was only casual during the weekends – if we were instructed to avail ourselves. Along these lines, the official language of the company was English, with Swahili being allowed on occasional basis if need be. Moreover, there was downward and upward communication with no administrative boundaries.

1.2 Daily Routines and Work Hours

The normal working hours were from 9:00 AM to 5:30 PM. However, the set reporting time was 8:00 AM, in which case all the employees in the company had 30 minutes to lay down what their tasks for the day were. At 8:30, there was a Stand-Up where each employee communicated to the rest of the team what their goal for the day was. Thus, from 9:00 AM to 5:30 PM all employees were expected to work on their day's set goal, with tea and lunch breaks at 11:00 AM and 1:00 PM respectively.

1.3 Delegation of Duties and Handling of Tasks

Tasks were delegated by the senior developers and supervisors, and then assigned to one's GitHub account, which is the Version Control System which the company uses. Along these lines, it is worth noting that the tasks were delegated as per the experience of an individual. Case in point, we, fresh interns were tasked with minute tasks which would make us have a feel of how things were done in the company. We were then supposed to seek any clarity in handling our tasks if we were stuck.

1.4 Milestone Achievement of Tasks

As pointed out above, we were assigned tasks using a VCS, which means that all the tasks that were assigned were to be realized in tandem with the set milestone so as to meet the needs of our clients. Needless to say, when push came to shove, then we were forced to work till late night or at times the working days would spill over to the weekend so as to meet the deadline. Only after a milestone deliverablewas realized is when one was allowed to continue with the rest of the deliverables.

1.5 Thorough Assessment of My Outcome by My Superiors

Unlike the normal class routine where we are assessed by our lectures who are also our mentors in a "friendly" manner, the actual work environment deemed of us full effort as assessment and analysis was cutting edge. Anything I did for instance was checked for the likes of: simplicity, robustness, completeness, speed and accuracy. This made me appreciate all the class sessions with our lecturers and apply them when working on the rest of my milestones.

1.6 Using Competitive Advantage over Other Companies

Owing to the fact that technology changes every now and then, all the employees were always encouraged to probe for the latest technological changes in programming languages. This also called for the need to seek the latest assortment of technological tools for carrying out our tasks that would make us better than other companies. Case in point, the use of a Heath Information Exchange or Electronic Data Interchange made us better priced than most companies offering the same services as us such as KenyaEMR which is an OpenMRS software in Kenya.

1.7 Interaction with Potential Clients

On occasional basis, we had meetings with potential clients such as Britam and Chase Bank, which entailed active interaction. An example of such an interaction was them telling us what they offer as fiscal institutions (insurance and the likes) and in turn, we would respond in kind and tell them what we had and what we thought would make them offer complete and better services to the clients. It was more of a symbiotic relationship which is witnessed in most companies.

2. Active Participation In Creating Practical Solutions Using Knowledge Learnt.

As pointed above, I was assigned tasks which I was required to get done in milestone steps. Needless to say, all these milestones encompassed all the noted career paths which I had come to realize and accustom myself to with time. Since Savannah Informatics Limited is basically tiered at delivering health informatics solution, I was able to deliver the below based on the experience which I obtained whilst at Savannah.

2.1 Code Cleanup and Maintenance

I was oriented into the company by being assigned so called "*paper cuts*" which are basically micro-projects which are aimed at training the interns to get accustomed to the way applications are developed in the company. Based on my hands-on tutorial by the industrial supervisors and other reference materials, I was able to right the wrongs which had been made in the past appertaining to the coding standards in the company.

2.2 Application Interface Design And Modification

On occasional basis, I was tasked with the designing of an interface which was either pending development by another employee in the company, or I was to design and then implement my design and await the feedback. A good example is where I was asked to design a *fallback page* for the EMR, and implement it. Here I had the chance to apply my UCD, HCI and System Analysis and development skills which I learnt both in class session with my lecturers as well as during my sessions with the industrial supervisors.

2.3 Develop Application Interfaces

With time, about 6 weeks down the line from the beginning of my attachment period, I was able to work on developing fully scalable application interfaces from scratch. This of course encompassed all the design sessions with my industrial supervisors as well as some of the class lessons which I had with my lecturers in the past. A good example of such an interface which I made was the *fallback page* that I had previously designed.

2.4 Application Testing

Having been taken through a number of *unit* and *system* testing sessions, I was able to do functional testing on some of the application units which I was tasked with designing, such as the fallback page. Along these lines, I was also tasked with tasks such as ensuring that over *438 backend* and *766 frontend* tests conform to the company standards and are working as expected.

3. Build Professional Networks With Potential Employers.

Frankly speaking, the move by the School Of Computing and Informatics to expose us to the internship program was a real eye-opener on my end. It made me see the endless possibilities which I have as a Computer Science professional. I had the best of chance interacting with a wide range of professionals in the company and had a chance of not only realizing opportunities in my career, but also potential job opportunities, listed below.

3.1 Design Career Path

At Savannah, there was the design team which was particularly specialized in sketching down what the entire team was to work on in realizing what the clients really needed. This not only supplemented on all my course works such as Human Centered Design and User Centered Design, it also made me have a gist of the endless tools of design out there. This made me add System Design to my list of career paths.

3.2 Backend Application Developer

Personally, I had a prior experience in the Django Framework, and it was here that I fully got to appreciate the endless capabilities which one can realize as a backend developer. Continuous engagement with experts in this field within the company made me have a desire and urge to delve deeper in the field and become more of a Backend developer. This breathtaking exposure undoubtedly made this field of development one of my priorities.

3.3 Frontend Application Developer

One of the things which I got to realize was that the backend of the application needed an impressive front end for use interaction. Frankly speaking, the incredible addition to my previous Angular JS skills made me see the endless possibilities which one can realize with the framework. Moreover, a brief introduction to the upcoming Node JS made me see frontend development worth the shot so as to grasp the endless opportunities.

3.4 Server Configuration And Deployment

Finally, being a server configuration expert made me fully understand how to deploy applications from development, staging and finally production. This basically made me get to comprehend how all the above three mentioned career opportunities play well together with the least friction. Then again, it was more of the right interaction with the best personnel within Savannah and their views on Server Conf. career opportunities.

Conclusively.

Finally, having demonstrated potential skillset and experience in all the above listed career paths which I will definitely pursue, I managed to secure myself an employment opportunity at Savannah after my Fourth year. I appreciate all the efforts made by my lecturers in making me see the world of Computer Science as it is and all the endless opportunities out there.

B. Activities Undertaken

During my time at Savannah informatics, I was engaged in a number of activities. Generally, the activities were classified into three broad categories, namely hands-on guides, task/milestone completion and social activities. I will describe all the categories below in details.

1. Hands-On Guides

These basically entailed what you would refer to as an initiation into some of the programming languages which are used at Savannah Informatics. Most of what we were doing during these sessions entailed the likes of programming language lecture sessions, step-by-step guides and assessment as well as assignments on these tasks. Some of these included:

➢ Introduction to the Python programming language
➢ Introduction to Django and the DJango Rest Framework (DRF) for constructing RESTFul APIs.
➢ Introduction to Angular JS JavaScript Framework.
➢ Introduction to an assortment of testing framework for both Frontend and Backend development. Some of these included the likes of Karma Jasmine, Py.test, Protractor and Selenium.
➢ HTML5, CSS, LESS and Grunt JS Task runners.
➢ Use of User Interface design systems such as Axure.

2. Task or Milestone Completion

Most of my internship period basically entailed engaging in milestone or task completion. This is where I would like to introduce the *ticket* concept which basically means a task which requires you to not only complete, but also learn from. I was assigned a total of 20 tickets at the beginning of my attachment and was expected to complete them on milestone basis, which was normally weekly basis.

Along these lines, it is worth noting the fact that the milestones were also assessed and ascertained to have met the goal of that ticket. This was keenly done by the industrial supervisors and other senior software engineers at the company. It was only on completion of a ticket, and demonstration of full understanding of the concept that I was allowed to move over to the rest of the tickets.

3. Book Clubs and Discussions

On weekly basis, we had assigned book readings. These were aimed at making sure that we have a clear understanding on the likes of EMRs (Electronic Medical Records) which is what we were developing. Then again, we had other books on how to be better designers and pragmatic programmers when it comes to our career. These were coordinated by the

4. Social Activities and Interactions

On occasional basis, the normal work routine was interrupted when we had social engagement with other external partners and firms. A good example being *Britam* and *Chase Bank,* making me as an intern understand the company's partners in details and potentially have ideas on making the partnership even better. Conclusively, on monthly basis, the administration conducted barbecue parties to celebrate the success of the month.

C. Lessons worth Sharing

A number of lessons are unequivocally worth sharing with my fellow students as well as other students. These are:

- Always remember the fact that all the *class lessons which are taught by the lecturers are 100% important* when it comes to the course in real world. This is because the likes of User Centered Design and Human Centered Design play a major part in designing and constructing real world systems.
- Always have *self-drive and goal for making the society a better place* as the real value of a system doesn't come from its cost, rather from the value that the society can obtain from it.
- *Accepting correction* is one of the first and most important steps when it comes to learning. There is no set limit to academics and it is best to tap the knowledge from those who are experienced than you and accept correction. The likes of newer technologies (*Angular JS, Django etc*) and frameworks will only present themselves to those that are willing to learn.
- Remember that Computer Science is an *evolving field and what you know today may be a completely different thing the next day*. This, learning is an experience which should be aimed at making students better at what they are

as professionals with the emphasis on the fact that no matter how good you are, you can never be the better you if you don't learn and put in more effort.

- Finally, Computer Science entails *practicality in the field*. The more personal and toy projects you have on your own then the more experience you will have. Also remember that Computer Science is part of the society, thus the need to learn to communicate with other professionals.