HACETTEPE UNIVERSITY
ENGINEERING FACULTY
DEPARTMENT OF COMPUTER ENGINEERING

BBM425
INTERNSHIP REPORT

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Performed at

BONI GLOBAL

02.08.2021 – 13.09.2021
Duration in Workdays

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1 Introduction

The main idea to do my internship in Boni Global is they are producing their own product which are using IOT. Having global partners, and lots of customers in the Turkey such as Beko, Arcelik, IGA, Airbus etc. Also, they are need a worker which is has skills in ReactJS.

2 Company Information

2.1 About the company

Boni Global was established in 2010 by the founder Sarper Sılaoğlu. Company has two offices in Istanbul and two other offices in Berlin, Germany and Chicago, USA. They leverage the most accurate, state of the art location-based digital transformation solutions to provide the highest standard of safety and operational excellence for your business. They are a digital transformation company that specializes in IoT technologies, specifically industrial IoT applications. There are three main products, and they are:

- Safe Steps: The all-in-one work health and safety IoT platform helps you manage all your safety functions from one intuitive panel.[1]

- Smart Steps: The all-in-one work health and safety IoT platform helps you manage all your safety functions from one intuitive panel.[2]

- Loud Steps: Empower your guests with disabilities by providing them with accessible navigation.[3]

2.2 About your department

My department was Cloud department. I worked as a developer in my department. My main topic was developing the Safe Steps panel admin. I directly work with senior software developer who is Arın Deniz Köklü

2.3 About the hardware and software systems

There was not much kind of hardware except computers. They use lots of developing tools and platforms such as Azure, Figma, Visual Studio and PhpStorm.

2.4 About my supervisor

- *Name – Surname:* Arın Deniz Köklü
- *Address:* Levent, Figen Sk. No:4, 34330 Besiktas/Istanbul/Turkey
- *Telephone Number:* +90 (543) 912 24 72
- *E-mail:* deniz@boniglobal.com
- *Education:* Istanbul Technical University – Computer Engineering '16

3 Work Done

- ### 3.1 The automation program which sends mail daily or weekly.
  There was a request from customer to see, daily and weekly reports from us with the mail, we arrange a html template which includes data such as how many people has been affected by Corona virus, how many people has directly interaction with affected people and etc. That request assigned to me, and I make console application which takes non personalized data from cosmos db and wrapped it from sql which has personalized data and prepare html email and convert it pdf then send a html email with pdf attached.[4]

- ### 3.2 Redesign of companies' products admin panel.
  When I start my internship, there is an admin panel which is written asp.NET and MVC structure, while doing my internship, Designer prepare new style of admin panel, and backend developer prepare endpoints, then I start preparing admin panel using ReactJS. Company was used old technology for admin panel, it has been so challenging for new feature therefore company decide to re-write it with new technologies, and luckily, I was in the company at the right time. That project assigned to me, and I learn to much new things, about ReactJS. It has not been finalized, and they offer me to a full-time job, I will continue to do work for Boni Global.[5]

- ### 3.3 Indoor Map Positioning
  In the company there was two geomatic engineer, which are draw the indoor map of building such as Cevahir Mall, Piazza Mall or Istanbul Airport. While they are need to make survey I went with them and we makes measurement in the building of IGA with our mobile phone, and then we produce the map with the data that we collect, In this project, our main goal was high accuracy, precision, and safety location prediction. For this idea we build, innovative positioning module powered by artificial neural networks, while during this project, I was the member of projects database and web services team

but also has opportunity keep track artificial neural network part, that was my multi-disciplinary job in the company.

4 Performance and Outcomes

4.1 Applying Knowledge and Skills Learned at Hacettepe

The skills that I have learned at Hacettepe and applied during on the internship
- Algorithms
- Research skill which I developed in Hacettepe

Those are the main skills that I learned in Hacettepe and applied during on the internship.

4.2 Solving Engineering Problems

During the internship there was only one engineering problems that I solved. The problem was about time complexity. Before my work on Boni Global the program, which was working for getting data from wristband has unacceptably algorithm, therefore the program working so much slower. For solving that problem, I use one of the algorithms that I learned in Hacettepe. The algorithm that I used was Dijkstra's algorithm. After I used that algorithm, runtime performance increased almost 40%.

4.3 Teamwork

During my internship, I was participated in a team, which was working on cloud platform works. We were five people in the team, Arın Deniz Köklü (Software Developer), Melike Torun (Designer), Ece Yağcı (Analyst), Hakan Yaman (Tester) and I. We were use Agile methodology and planning. We planned every two weeks as sprint, and only do those tasks in sprint. Generally, sprint success was 90%.

4.4 Multi-Disciplinary Work

During my internship I work with geomatic engineers, for getting indoor map of buildings, we make surveys and I observe how they turns data to a map and make predictions about current location of user. It was so challenging and has lots of effort, but I apricated them for that amazing experience.

4.5 Professional and Ethical Issues

During my internship I did not observe any professional or ethical issues. It was a fully remote internship, therefore I did not spend very much time in the office.

4.6 Impact of Engineering Solutions

During my internship, we were focused to Safe-Steps project, which is keep tracing the workers corona virus situation with the wristbands, that is one of the engineering solution in the company has been produce.

4.7 Locating Sources and Self-Learning

I want to list all the thing that I get self-learning.

- ***One Signal***
  I did not hear anything about One Signal before my internship. During my internship there, they need to send notification to the web side clients, therefore they ask me to search One Signal, what is it, is it solve our problem or is it suitable for our projects. I makes some search, and then I said, "It is one of best approach that we need to apply." After all we developed an Azure function and integrated it with One Signal.[6]
- ***ReactJS***
  As a personal interest I was learn ReactJS about 2 years ago, During the internship, we make a admin panel, which is written by ReactJS.

4.8 Using New Tools and Technologies

The new tools and technologies that I encountered during internship.

- ***CosmosDB (8/10)***
  Before my internship, I had not heard anything about CosmosDB. CosmosDB is a NoSQL database which is serviced by Microsoft, the data comes from wristband, saved onto Comos DB without personal information according to kvkk which is Turkeys protect personal information law.
- ***Azure Function (9/10)***
  Before my internship, I had not heard anything about Azure Function. The data comes from wristband is produced by that function for data interpretation, that function triggers when new interaction come.
- ***Azure Building Pipeline and Release Pipeline (10/10)***
  Before my internship, I had not heard anything about Pipeline. During my internship there the project that I develop is deployed to the Azure, and I build a build pipeline and release pipeline which is produce build when a new commit pushed to the development branch and when a build created, release pipeline update the Azure app service with new build files.[7]

5 Conclusions

As a summary I really appreciated that I done my internship in this company. In my internship I learned some Azure services like Azure Function and CosmosDB and Azure Pipelines. The things that I learned at Hacettepe and used during on internship;

- Algorithms from *BBM202*
- Data Structures from *BBM201*
- General knowing from *BBM105*

References

[1] Safe Steps trailer [Accessed; Oct 2, 2021].

[2] Smart Steps trailer [Accessed; Oct 2, 2021].

[3] Loud Steps trailer [Accessed; Oct 2, 2021].

[4] Daily and Weekly email view [Accessed; Oct 2, 2021].

[5] New admin panel screenshots [Accessed; Oct 2, 2021].

[6] One Signal documentation [Accessed;Oct 2, 2021].

[7] Azure Pipeline tutorial [Accessed; Oct 2, 2021].

Appendices