

ATHENS UNIVERSITY OF ECONOMICS AND
BUSINESS

INTERNSHIP REPORT

Comparison of ReactJs and Angular

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List of Abbreviations

Part I

Internship Report

Chapter 1

Introduction

As part of my Bachelor degree, I did an internship for three months in Beat, a company that started as a Greek startup about 5 years ago. From March 18th 2019 until June 18th 2019, I contributed as a Software Developer intern in several projects that was referred to a product named "BeatHotels".

1.1 Company Description

Beat is a company that is developing a mobile application for taxi cab and peer-to-peer-ridesharing. The app is based on the idea of establishing a direct connection between drivers and passengers by offering both sides a modern alternative to conventional booking processes. First known as a greek startup named Taxibeat, the company was founded in 2011 by Nikos Drandakis in collaboration with associates Kostis Sakkas, Nikos Damilakis and Michael Sfictos. Taxibeat was acquired in February 2017 by MyTaxi, a subsidiary of the automotive manufacturer Daimler AG, and renamed to Beat. Nowadays, Beat is part of the FreeNow group and its CEO is Nikos Drandakis. The FreeNow group is the ride hailing joint venture from Daimler and BMW, and consists of the services MyTaxi, Beat, Kapten, Clever and Hive, the e-Scooter service.

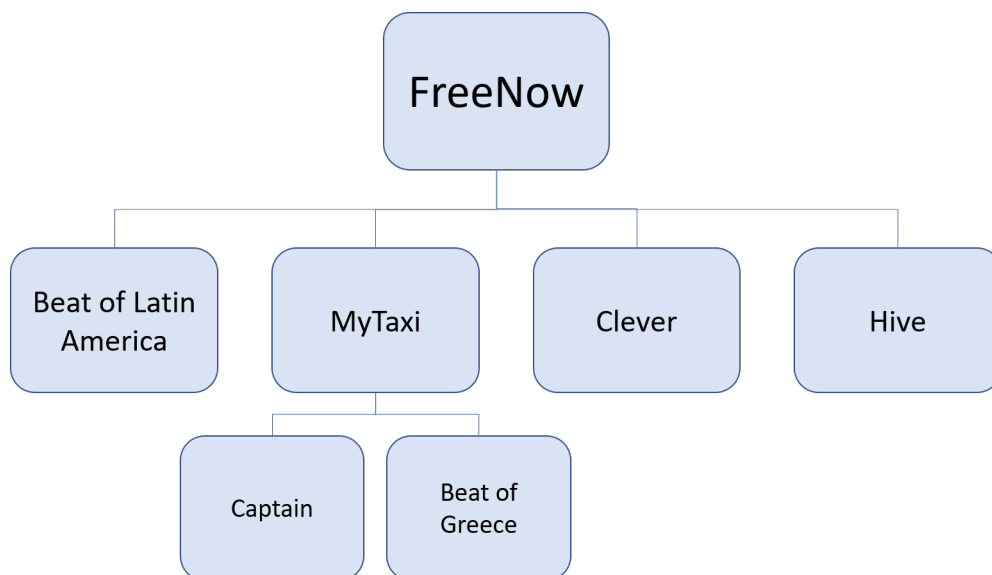


FIGURE 1.1: FreeNow's structure

Beat headquarters in Athens, Greece, while additional development and operation offices are located in Lima, Santiago, Cali, Medellín, Bogotá and Mexico City. It currently has more than 580 employees all over the world, with approximately 400 of them being in Greece. Company's teams work in small, autonomous groups of people following agile methodologies.

As regards Beat's structure, it is slightly different after its buyout. More specifically, the firm is separated in two parts based on its market targets, Beat of Latin America and Beat of Greece. This separation is because Greek market is basically part of MyTaxi group, while Latin America Market is only part of FreeNow, as shown at the diagram above. So, Beat has eight main departments, Business Operations, Finance, Engineering, Greek Market, People Operations, Marketing, Operating Office and Senior Management Team. The last department mentioned is conducted by Nikos Drandakis and his team as picture below reveals.

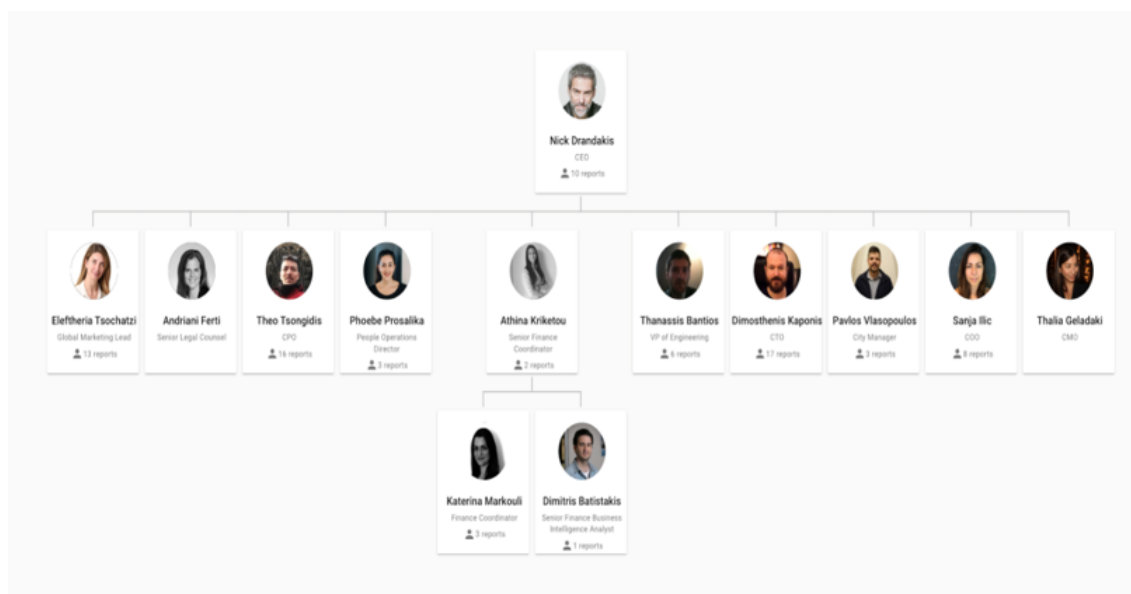


FIGURE 1.2: Beat's SMT Department

Products provided by Beat are mainly three in number. Beat App, with the extended service of peer-to-peer-ridesharing in Latin America Marketplace, Beat Hotels, B2B service only provided in Greece, and Hive, e-scooter services in Greek Market.

1.1.1 Beat App

Beat App is a B2C service provided in both Androids and IOS operating systems. This service is a connection between drivers and candidate passengers.

In other words, someone looking for a cup can find the closest one without any extra costs by using passenger's Beat app. Anyone that has downloaded the app can call a cup from any place, be able to see driver's rating from other Beat passengers, their personal data such as name, plates and more car details or services provided. In addition, before ride starts, an estimated price is given,



FIGURE 1.3: Beat App

list of the closest drivers is shown, and the candidate passenger has the ability to choose one of them based on the details and services provided, and to rate when ride is completed.

On the other hand, driver use another app through which the connection between two-sides is succeed. Available drivers can be located and the closest ones are shown to the candidate passenger. Driver can also accept or reject a ride, see the recommended route and see where passenger is before departure.

1.1.2 Beat Hotels

Beat Hotels is a B2B service that has the same aim with Beat App, the connection between candidate passengers, in this case people staying in a Hotel and request for a taxi, and drivers. The difference between these two services is, except from the aimed passengers, the virtual queues of drivers created in each Hotel.

There is a driver app, different from Beat driver's app, created in React Native and Node.js. This app is used from the driver in order to check the available Hotel queues and how much complete they are, get in a queue and start a ride.

On the other side, Hotel's have a customized dashboard, written in ReactJs and Node.js. Through this dashboard, they can call a taxi for a customer, see where the taxi is any time and get statistics of rides and revenue they have from rides completed.

Finally, a similar dashboard is developed for the agents of Beat with all the informations of each Hotel that Beat's corporate. The agents have the permissions also to change the amount of a ride if it is needed, check all completed rides, or block a driver with inappropriate behavior.

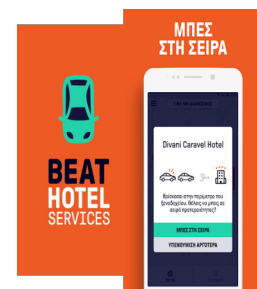


FIGURE 1.4: Beat Hotels

1.1.3 Hive

Hive is an e-scooter sharing system service. Scooters are made available to use for short-term rentals and can be dropped off or picked up from arbitrary locations in the service area. Hive has an app through which a candidate user, can find where e-scooters are in the map, how much battery they have and their cost, scan the barcode of the e-scooter, unlock and rent it.

However, as regards Beat's part in Hive service is limited. Beat only provide customer experience services by receiving e-mails from users and resolving their issues occurred either from e-scooters or the app. Beat also is responsible of placing the e-scooters in the right places and charge them.



FIGURE 1.5: Hive

1.2 Internship Goal

As regards internship's goal, is to gain experience as a Software Developer, learning tools like React, Redux and Node.js, understanding how an application works in production. Learning how to code in Javascript and improving a web site for BeatHotel's agents by completing tasks given, and creating npm packages, were my main responsibilities as an intern.

1.3 Report's Structure

The internship's report is an overview of what I have been interacted with during my internship, analyzing the projects and results, skills that I have gained or used, and my role as an intern in general.

Chapter 2

Basic Characteristics

In the following section I will describe the basic characteristics of my Department's structure and my role as an intern.

2.1 Department

The Department that I am part of is the Greek Market. Greek Market is managing the marketplace of Greece and is also referred as the Beat of Greece as mentioned in the previous chapter.

2.1.1 Role in the Company

The Greek Market is the only department focused on Greece. Its role inside the company is to manage any demands referred to this marketplace. Demands on marketing, finance, business analysis, customer experience and the development of product BeatHotels that is provided only in Greece, are all responsibility of this department.

The Beat App is developed by other departments and any changes required for the greek marketplace are forwarded from the Greek Market to the Engineering Department of Beat.

2.1.2 Department's structure

Greek Market is constituted by five teams, Operations, Customer Experience, the Engineer's of Beat Hotels named as GR Squad team, Marketing and Finance team. The General Manager of this Department is Vasilis Danias and the total number of people working in it is 37.

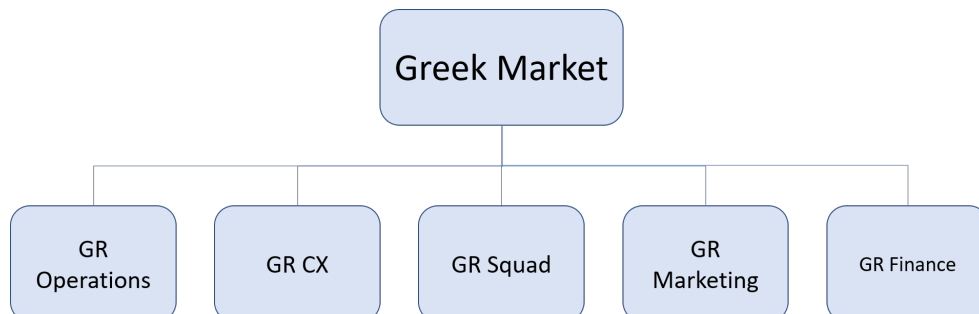


FIGURE 2.1: Greek Market's structure

2.1.3 Basic Procedures

Department's basic procedures are based on the management of three products in the borders of greek market, Hive, Beat App and Beat Hotels.

In more details, each team has different responsibilities. CX team is responsible for training drivers, resolving tickets and detecting any problems regarding these three products. The term tickets is any calls or visits made, or emails sent by either a passenger or driver.

Operations team is responsible for designing and controlling the process of production and redesigning business operations in terms of using as few resources as needed and meeting customer requirements. Marketing is creating, communicating, delivering, and exchanging offerings that have value for both customers and society in total. Competitions, sponsorships, banners, products or videos created for advertisement and social media management are made by this team.

Finance is responsible for beat driver's payments, while GR Squad is the team responsible for developing BeatHotels service.

2.1.4 GR Squad

GR Squad is a newly conducted team which is responsible for the development of BeatHotel. Team is consisted by eight people, three front-end developers, including myself, three back-end, one Product Owner and one Scrum Master following the agile culture as the other Beat teams.

BeatHotel is a service provided only in Greece and started about seven months ago. The technologies that are used for the development of BeatHotel's driver app, dashboards for each Hotel and Agents' dashboard, are React Native, ReactJS, Node.js and for databases Firebase and Redis.

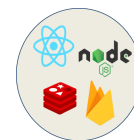


FIGURE 2.2: Technologies Used for BeatHotels

2.2 My Role

As a Software Developer Intern in GR Squad team, my role is releasing code that have immediate impact on BeatHotel service's users.

At the first one and a half month of my internship, I was a full stack developer and had the opportunity to work on both front and back-end elements of BeatHotel system. During this period, I was responsible to deliver npm packages, code in Node.js and ReactJS in order to complete requested projects for Agent's and Hotels' Dashboards, improve and extend tests and code coverage.

After this period of coding in Javascript for both back and front-end, getting familiar with BeatHotel service, my team and the way things flow, I had to choose between front-end and back-end developer. So, as a front-end I started to deliver tasks only referred to client-side development in order to maintain and extend existing web-site dashboards in ReactJS.

2.2.1 Skills Required

The skills required for this internship are enumerated below.

- Ability to produce high quality, maintainable and reusable Javascript code in React and Node.js
- Ability to build a three-layer web application
- Good knowledge of Unix based Systems
- Basic understanding of both Sql and NO-Sql databases
- Ability of problem solving and understanding algorithms complexity
- Familiar with GitHub Usage
- Ability to work in a team, communicate ideas, be an active member and deliver on time

Chapter 3

Projects/Activities

3.1 Introduction

3.2 Project 1

3.3 Project 2

3.4 Project 3

3.5 Project 4

Chapter 4

Results

4.1 Project 1

4.1.1 Description

4.1.2 Best Practices

4.1.3 Schedule

4.1.4 Problems occurred

4.2 Project 2

4.2.1 Description

4.2.2 Best Practices

4.2.3 Schedule

4.2.4 Problems occurred

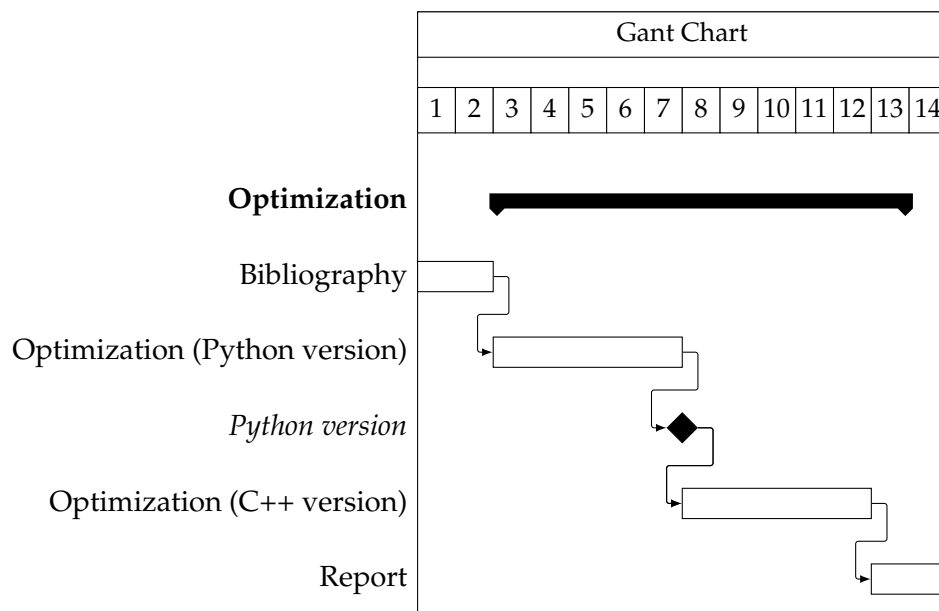
Chapter 5

Updated Time Management

5.1 Time Schedule

Activity	Duration
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5.2 Gantt Chart



Chapter 6

Skills

Skills	Related Methodologies	Examples	Summary
Monday	11C	22C	A clear day with lots of sunshine. However, the strong breeze will bring down the temperatures.
Tuesday	9C	19C	Cloudy with rain, across many northern regions. Clear spells across most of Scotland and Northern Ireland, but rain reaching the far northwest.
Wednesday	10C	21C	Rain will still linger for the morning. Conditions will improve by early afternoon and continue throughout the evening.

Part II

Thesis

Chapter 1

Introduction

1.1 Definition

1.2 Research Goal

1.3 Thesis's Structure

Chapter 2

Background

2.1 Three-layer Architecture

2.1.1 Front-End

2.1.2 Back-End

2.1.3 What is Rest Api?

2.2 How to build a web site?

2.3 What is Rest Api?

Chapter 3

ReactJS

3.1 Definition

3.2 History

3.3 Notable Features

3.3.1 Stateful Components

3.3.2 JSX

3.3.3 Architecture Beyond HTML

3.4 Case Study

Chapter 4

Angular

4.1 Definition

4.2 History

4.3 Typescript

4.4 MVC Architecture

4.4.1 Model

4.4.2 View

4.4.3 Controller

4.5 Case Study

Chapter 5

Conclusion

5.1 Future Work