



Daffodil
International
University

Internship on Backend Software Development by Go Zayaan

Submitted by

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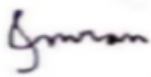
Daffodil International University

This report has been submitted in fulfillment of the requirements for the Degree of Bachelor of Science in Software Engineering.

APPROVAL

This internship titled on “Internship on Backend Software Development by Go Zayaan”, submitted by Md. Moin Khan, ID: 171-35-1905 to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.

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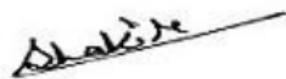
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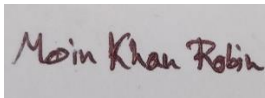
DECLARATION

I do hereby declare that the internship report entitled as “Internship on Backend Software Development by Go Zayaan” has been prepared on the basis of 6 months Internship activities it is an original work done by me under the supervision of “Nusrat Jahan”, Lecturer: Department of Software Engineering.

The report is a unique one which is not submitted anywhere for any academic purpose. The data and information which are mentioned here are also collected and organized by myself. I am solely responsible for any kind of misleading or manipulation of data or information in this report.

Finally, this report is submitted to the Faculty of Science & Information Technology Department of Software Engineering of Daffodil International University for the partial fulfillment of the requirements of the Degree of Bachelor of Science.

Submitted by:



Md. Moin Khan Robin

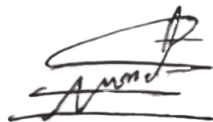
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First of all, I'm very grateful to almighty Allah for giving me the chance to continue my study in this pandemic year.

I would love to pay my deepest respect to Nusrat Jahan, Lecturer (Senior Scale), Department of Software Engineering, Faculty of Science and Information, Daffodil International University. Without her guidance and advice, it would be quite difficult to overcome stages of university life.

At the same time, I would like to pay my gratitude to all of my coworkers at Go Zayaan. Thanks to Go Zayaan for its opportunity in this pandemic. Special thanks to my HOD Tanvir Ahmed Palash who helped me by showing career directions, motivating me to use my knowledge to do tasks and instructions on how to gather more.

Finally, thanks to all the researchers, scholars, software engineers and people of the online community whose work and writing and solutions helped me through the journey.

SUMMARY

This internship report highlights the work carried out by the author in the terms of academic and also software industry perspectives. The scope of this documentation is to describe the analytics carried by the author, the project completed and the experience gained by working in this period as an intern.

My six months Industrial Internship Program work term was with 'Go Zayaan'. Here I was involved in the area of backend software development, all of which will be outlined in this report. This report will cover some background information of the projects that I was involved in, as well as details on how projects were developed, And the experience that I have gained during this period.

This internship report mostly consists of the overview of the work that I have done as an intern. In the first few months I did an API based mini project to learn what is API and how it works and later I developed few APIs for our in-house web application. To me, one of the most important achievements of mine is developing API using Django REST Framework.

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CHAPTER 1: INTRODUCTION

1.1 OVERVIEW

Internship programs are designed to help students by providing experience in a real-world environment. Internship also helps to build a strong resume by giving one work experience which they can use to get started

Although there is no standard time duration for how long an internship period should last, it is typically two to twelve months long. During this time the intern gets the opportunity to get mentored by the seniors, to explore the work field as well as learn how to use the experience from university to the real world

Internship gives students the platform to build solid foundation for their new career, to understand the workplace culture, to gain real life experience, learn and develop relevant skills needed in the job field as well as find permanent employment in the host and also various companies.

Daffodil International University offers undergraduate program in 'BSc. in Software Engineering'. This program requires one to complete an internship period with a reputable company where they will be trained practically with working environment practices and get familiar with the industry. For my internship program, I worked in the Technology dept. at Go Zayaan where I completed six months of internship.

In the internship period, I had to learn how to communicate with co-workers effectively at office or while working from home to develop the system according to the software development life cycle.

This report contains the overview of the company and its activities, my working experience as a backend intern. What have I learned and how it helped me to get better day by day

1.2 ORIGIN OF THE REPORT

This report mostly focuses on the mini project I had to make in earlier days at office in order to learn how the framework works, what is APIs, how to work with them and how to develop them. It also focuses on my contribution to the organization and how it developed my skill sets and how I applied those skills in the development phase as a developer.

1.3 OBJECTIVES OF THE INTERNSHIP

The main objective of these internship report is to analyze the work I've done as an intern and the work on a part of the Software Development Life Cycle. The other objectives are:

- Introduction to the organization and the standards they follow
- Details about the team I worked in
- Details of my responsibilities
- My achievements as an intern
- To get to know about the industry
- To know how to solve problems as a team and as an individual
- To get to know the industry standard coding style and follow them
- Learning how to work in a team
- To go through the software development life cycle

1.4 METHODOLOGY

Information used in this report are collected from both internal and external sources.

1.4.1 PRIMARY DATA SOURCE

- Personal observation and experience
- Via conversation with team members

1.4.2 SECONDARY DATA SOURCE

- Company website
- The internet

1.5 SCOPE

In this report, I've discussed about the company, its products, office environment and the culture. It also covers the way I started my internship, the work I've done during the internship period as well as how I used various tools and technologies in the development life cycle.

1.6 LIMITATION

I cannot disclose various part of the company, services that are sensitive information of the company due to the nature of the contract and the confidential agreement I had to sign when joining Go Zayaan.

CHAPTER 2: COMPANY OVERVIEW

2.1 OVERVIEW OF GO ZAYAAN

Go Zayaan, one of the very first online travel aggregators (OTA) of Bangladesh is leading and revolutionizing this industry.

Go Zayaan was launched on August 2017 with the vision of serving the tech-savvy travelers of Bangladesh by providing one-stop travel solution online.

Launched to revolutionize the travel scenario for Bangladesh, it is the first-ever online travel platform that accepts payment from both local currency cards as well as mobile financial services to make it more convenient for the travelers.

2.2 ORGANIZATION HEIRARCHY FOR SOFTWARE DEVELOPMENT ROLE

- CEO
- CTO
- Project Manager
- Team Leader
- Senior Software Developer
- Software Developer
- Junior Software Developer

Other Roles:

- UI Designer
- Marketing Manager
- Product Manager
- HR

2.3 CLIENTS

Go Zayaan provides services like flight booking, hotel reservation, tour booking via the web app. One can get these services from anywhere of the world if they have internet access. One can book flight ticket to almost any country of the world or make hotel reservation almost anywhere in the world through the web app. I cannot disclose more than that.

2.4 PRODUCTS

- Flight Tickets
- Hotel Reservation
- Bus Ticket Booking
- Visa Processing
- Tour Booking

2.5 CONTACT DETAILS

Company Name: Go Zayaan

Website: <https://www.gozayaan.com>

Address: Level 5, House 1/A Road No. 16/A, Dhaka 1212

2.6 TECHNOLOGY

Go Zayaan has to deal with large number of users every day. So, the system has to be topnotch. And to make a reliable and user-friendly system we use well known and proven technologies to develop the system.

The frameworks that Go Zayaan uses:

- Django
- Djanog REST Framework
- Vue JS

Languages that Go Zayaan uses:

- Python
- JavaSript
- Kotlin

Databases:

- MySQL
- PostgreSQL
- Redis

Other Services:

- DigitalOcean

Version Control:

- Git

2.7 RULES AND REGULATIONS

Employees may violate the polices that are set. Breaking rules disrupts the flow of the work and it hampers the work environment.

2.7.1 FLEXIBILITY

Company follows a semi-rigid structure of rules and regulations and in case breaking rules doesn't affect others it may go unpunished.

2.7.2 SEMI-FORMAL ATTITUDE

Everyone is encouraged to interact with each other in a friendly manner and with respect.

2.7.3 OFFICE SCHEDULE

Office time is flexible enough for the employees. One should reach office within 10.00 AM to 10:30 AM and should at least stay for 8 hours from the arrival time. There are also prayer, lunch breaks.

CHAPTER 3: MY INTERNSHIP AT GO ZAYAAN

3.1 OVERVIEW

Our BSc program's purpose is to teach students and make them prepared for the industry when they graduate. But university cannot provide the real-life experience of working in a industry. That's why internship programs are beneficial. They not only provide a working platform but also teach office culture, industry standard coding. Internships also helps one to work as a team, learning best practices from senior team members, getting used to popular technologies, learning and following timeliness, respect, team building, responsibilities etc.

3.2 INTERNSHIP EXPERIENCE

I was so happy to have the opportunity do join as an intern at Go Zayaan. It gave me a chance to learn, adapt and to gain real-life working experience.

3.3 RECRUITEMENT

I got to know from a friend of mine that Go Zayaan was recruiting interns. So, I dropped my CV. In the interview I was asked casual questions by CTO and HR about my likings, what I did at university, what I've learned so far and my future plans. They also asked few programming related questions to evaluate my skills. After few days they called and informed me about acceptance and asked me to join and start working.

3.4 FACILITES GIVEN TO INTERNS

As I joined Go Zayaan during COVID-19 pandemic, I had both work at office and work from home experience. At office I was given a seat at the table where all of the Tech Team members were alongside me. They also provided me with a computer, internet connection. Coffee and lunch were provided by the office too.

3.5 EVALUATION PROCESS

To give me task and to keep track of my progress and to help overcome problems, a senior software developer was assigned. I was given requirements for the mini project I build on early stage. As I was developing each feature, I was reporting work status. After getting familiar with the technologies and framework they were using, I was instructed to get involved in the Go Zayaan web app and work according to their strict guidelines.

3.6 PERSONAL EXPETATIONS

- Learning how software development life cycle works
- Working as a team
- Learning time management
- Understanding the project properly

3.7 CONCLUSION

During the internship, I've learned to maintain time properly. Learned how it feels like to work as a software developer and how to work in real-life industry. Learned how to work in a team as a team. How to stay synced with the team. Learned about new technologies and how to work with them.

CHAPTER 4: SOFTWARE DEVELOPMENT LIFE CYCLE OVERVIEW

4.1 SOFTWARE DEVELOPMENT LIFE CYCLE

The abbreviation of Software development life cycle is SDLC. It is basically a series of steps that provide a model for development and its life cycle management.

There are few SDLC available to use and different companies use different models according to their products. SDLC models divide the work phase in to different parts. This helps developers to make a proper plan to build any system. SDLC has phases like planning, analyzing which gives enough time to make plan for the whole project. SDLC aims to produce high quality system that meets the requirements. Without following any SDLC method it is really difficult to complete a project.

Agile and Waterfall models are mostly used by big companies. The main difference between these two is that waterfall follows more traditional design with a well throughout plan and defined to set of the requirements. On the other hand agile model begins with less stringent guidelines and then makes adjustments when necessary. This model is known for its ability to make quick adjustments and changes.

There are generally six phases in the Software Development Life Cycle model. They are the followings:

- Requirements gathering and & Planning
- Analysis
- Design
- Implementation
- Testing
- Maintenance

Requirements gathering and Planning: In this phase business requirements are gathered. Here the main focus is collecting the requirements of the project from the stakeholders properly and make plans according to the requirements. Frequent meetings with the managers, stakeholders and relevant parties takes place in this phase. After gathering requirements, the planning starts for the project.

Analysis: In this phase analysis with the requirements is done to see if it is possible to make a system according to the requirements.

Design: System and software design is prepared in this phase according to the requirements. This helps in defining overall system architecture. In this phase UI/UX designers comes up with the guideline and testers come up with the test strategy, where they mention what to test and how to test.

Implementation: In this phase the actual coding starts. Developers start develop the features via coding according to the design and this is the longest phase in the software development lifecycle.

Testing: In this phase the developed code is being tested against the requirements. This phase makes sure that the system is actually solving the problems that it was made for. Unit testing, integration testing, system testing, functional and non-functional requirement all are being tested in this phase.

Maintenance: Once the system is made and users start to using it many problems should arise. Many new errors and new little updates might be needed according to the user feedback. In this phase developers should take care of the system by updating it via patch updates. This is known as maintenance.

4.2 MY WORK AS SOFTWARE DEVELOPER INTERN

4.2.1 INITIATION

I was given a task to make a mini project using Django Framework which will help me to get used to Django. This was in the early stage of my internship period. My senior developers evaluated the project and then I was told to convert that system into API based project using Django REST Framework. That helped me to get used to Django REST Framework as I never worked with DRF. After I got used to these frameworks then I was assigned to develop APIs for the web app.

4.2.2 PROJECT PLANNING

My task at Go Zayaan was to learn and work as backend software developer intern. So I never did anything regarding the frontend. Mostly my work there was developing APIs according to the requirement of the system. For my mini learning project, I developed CRUD operations via APIs and also few features according to the requirement.

4.2.3 TOOLS AND TECHNOLOGIES I USED

Programming language: Python

Framework: Django, Django Rest Framework, PyTest

API Documentation: Swagger

Database: Postgresql

Operating System: Pop OS

IDE: Visual Studio Code

Database browser: Beekeeper Studio

4.3 MY TASK

As an intern, I had to get used to the tools, technologies and standards the team was following. In order to do so, I was assigned to make a mini project and after the completion of that I was moved to the main web app to develop APIs. I also worked on another project which was used to order employees lunch online. The core responsibilities that I contributed are:

- Developing APIs
- Updating existing APIs according to the needs
- Writing unit-tests for APIs

4.3.1 PROJECT DESCRIPTION

The mini project I developed was about assigning points to employees for outstanding performances. Employees register via email or Facebook account. They can complete their profile and they also can see their total gained points. Heads of the department or supervisors are able to add and substrate points of the employees. Employees points belongs to their department. There is a ranking system of departments and employees. The system will keep log of the points and rankings. Though I only developed the backend of the system, these APIs can be used to make web app or mobile app.

4.3.2 CHALLENGES

As I never knew what Django REST Framework is let alone how to work with them, it was really challenging to get to know it. I was new to swagger documentation too. I wasn't much familiar to CLI of GitHub and also postgresDB. I read documentations, watched tutorial videos, searched on stack overflow and asked for help from senior team members time to time. These helped me to overcome my challenges.

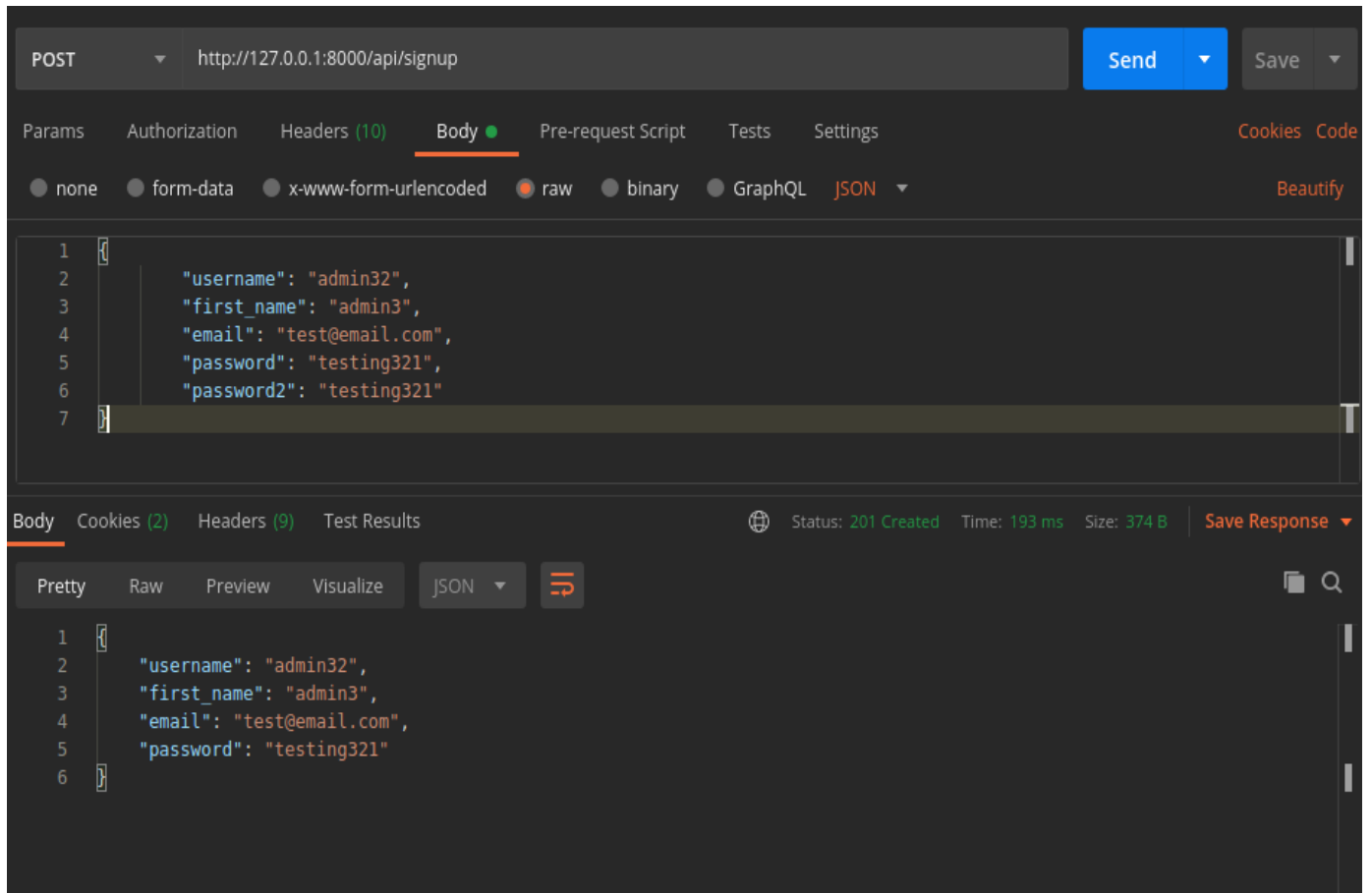
4.3.3 COMPLETETION AND DELIVERY

There wasn't any particular deadline to finish the product but still I wanted to complete it quickly. Sometimes I was going fast and sometimes I was stuck in problems. Took me few weeks to complete the project. I also had to write unit testing code for that project. This unit testing part was also new to me and was the most challenging part of the project.

4.4 APIs

As I joined as backend developer, I haven't done any work related to frontend or UI.

4.4.1 SIGNUP



The screenshot displays a REST client interface for a POST request to `http://127.0.0.1:8000/api/signup`. The request body is a JSON object with the following fields:

```
1 {
2   "username": "admin32",
3   "first_name": "admin3",
4   "email": "test@email.com",
5   "password": "testing321",
6   "password2": "testing321"
7 }
```

The response status is `201 Created`, with a time of `193 ms` and a size of `374 B`. The response body is also shown in a JSON format:

```
1 {
2   "username": "admin32",
3   "first_name": "admin3",
4   "email": "test@email.com",
5   "password": "testing321"
6 }
```

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3   "first_name": "admin3",  
4   "email": "test@email.com",  
5   "password": "testing321",  
6   "password2": "testing321"  
7 }
```

The response status is `400 Bad Request` with a time of `9 ms` and a size of `335 B`. The response body is a JSON array:

```
1 [  
2   "username": [  
3     "A user with that username already exists."  
4   ]  
5 ]
```

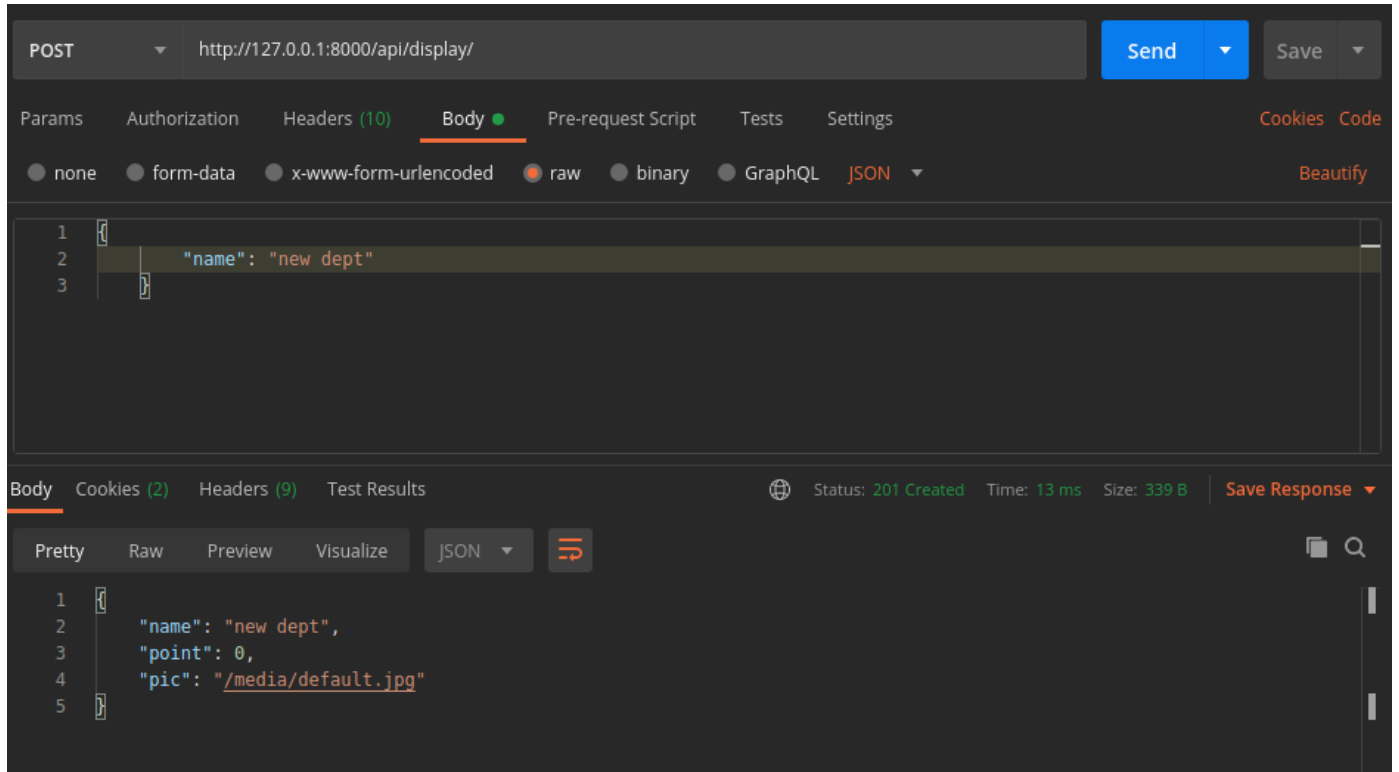
4.4.2 LIST OF HOUSES/DEPARTMENTS

The screenshot shows a REST client interface with a GET request to `http://127.0.0.1:8000/api/display/`. The response is a JSON array of two objects, each representing a house with its name, point value, and profile picture URL.

KEY	VALUE	DESCRIPTION
Key	Value	Description

```
1  [
2    {
3      "name": "Slytherin",
4      "point": 32,
5      "pic": "/media/profile_pics/slytherin_k43GGw0.jpg"
6    },
7    {
8      "name": "Gryffindor",
9      "point": 25,
10     "pic": "/media/profile_pics/gryf_77Gu030.jpg"
11  },
12 ]
```

4.4.3 ADDING NEW HOUSE/DEPARTMENT



4.4.4 ADDING AND VIEWING POINTS

The screenshot displays a REST client interface with a POST request to `http://127.0.0.1:8000/api/api_points/`. The request body is a JSON object:

```
1 {  
2   "employee": 3,  
3   "vaule": 5,  
4   "remark": "test"  
5 }
```

The response status is `400 Bad Request` with a time of `8 ms` and size of `341 B`. The response body is a JSON array:

```
1 [  
2   "employee": [  
3     "Invalid pk \"3\" - object does not exist."  
4   ]  
5 ]
```

POST http://127.0.0.1:8000/api/api_points/ Send Save

Params Authorization Headers (10) **Body** Pre-request Script Tests Settings Cookies Code

● none ● form-data ● x-www-form-urlencoded ● **raw** ● binary ● GraphQL **JSON** Beautify

```
1 {
2   "employee": 4,
3   "value": "50",
4   "remarks": "test"
5 }
```

Body Cookies (2) Headers (9) Test Results Status: 201 Created Time: 29 ms Size: 325 B Save Response

Pretty Raw Preview Visualize **JSON**

```
1 {
2   "employee": 4,
3   "value": 50,
4   "remarks": "test"
5 }
```

GET http://127.0.0.1:8000/api/api_points/ Send Save

Params Authorization Headers (8) **Body** Pre-request Script Tests Settings Cookies Code

none form-data x-www-form-urlencoded raw binary GraphQL

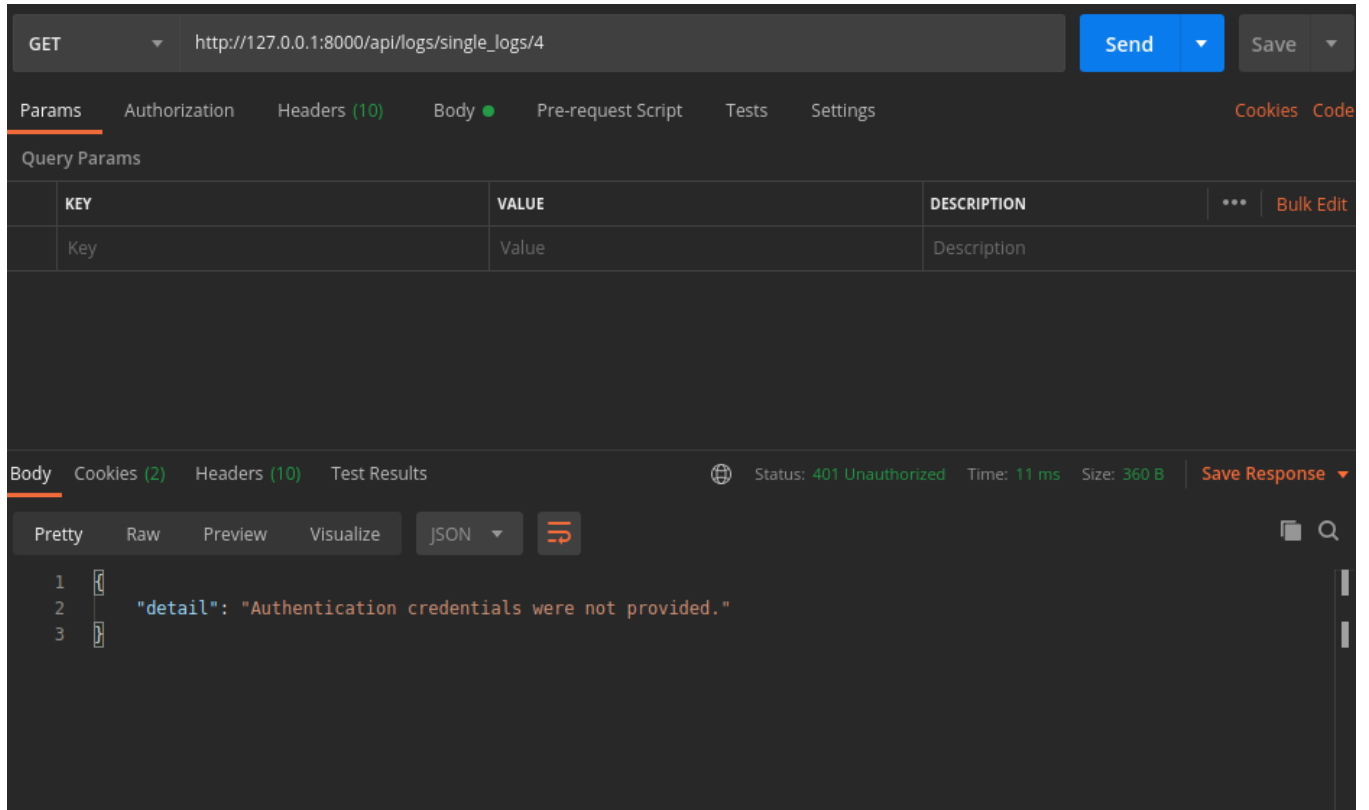
This request does not have a body

Body Cookies (2) Headers (9) Test Results Status: 200 OK Time: 9 ms Size: 380 B Save Response

Pretty Raw Preview Visualize JSON ⌵ ⌵

```
1  [
2  {
3    "employee": 4,
4    "value": 15,
5    "remarks": "added"
6  },
7  {
8    "employee": 5,
9    "value": 10,
10   "remarks": "Good seeker"
11  }
```

4.4.5 FETCHING LOG OF AN EMPLOYEE



The screenshot displays a REST client interface for a GET request to `http://127.0.0.1:8000/api/logs/single_logs/4`. The response status is `401 Unauthorized` with a time of `11 ms` and a size of `360 B`. The response body is shown in JSON format:

```
1 {  
2   "detail": "Authentication credentials were not provided."  
3 }
```

GET http://127.0.0.1:8000/api/logs/single_logs/4 Send Save

Params Authorization Headers (10) Body ● Pre-request Script Tests Settings Cookies Code

Query Params

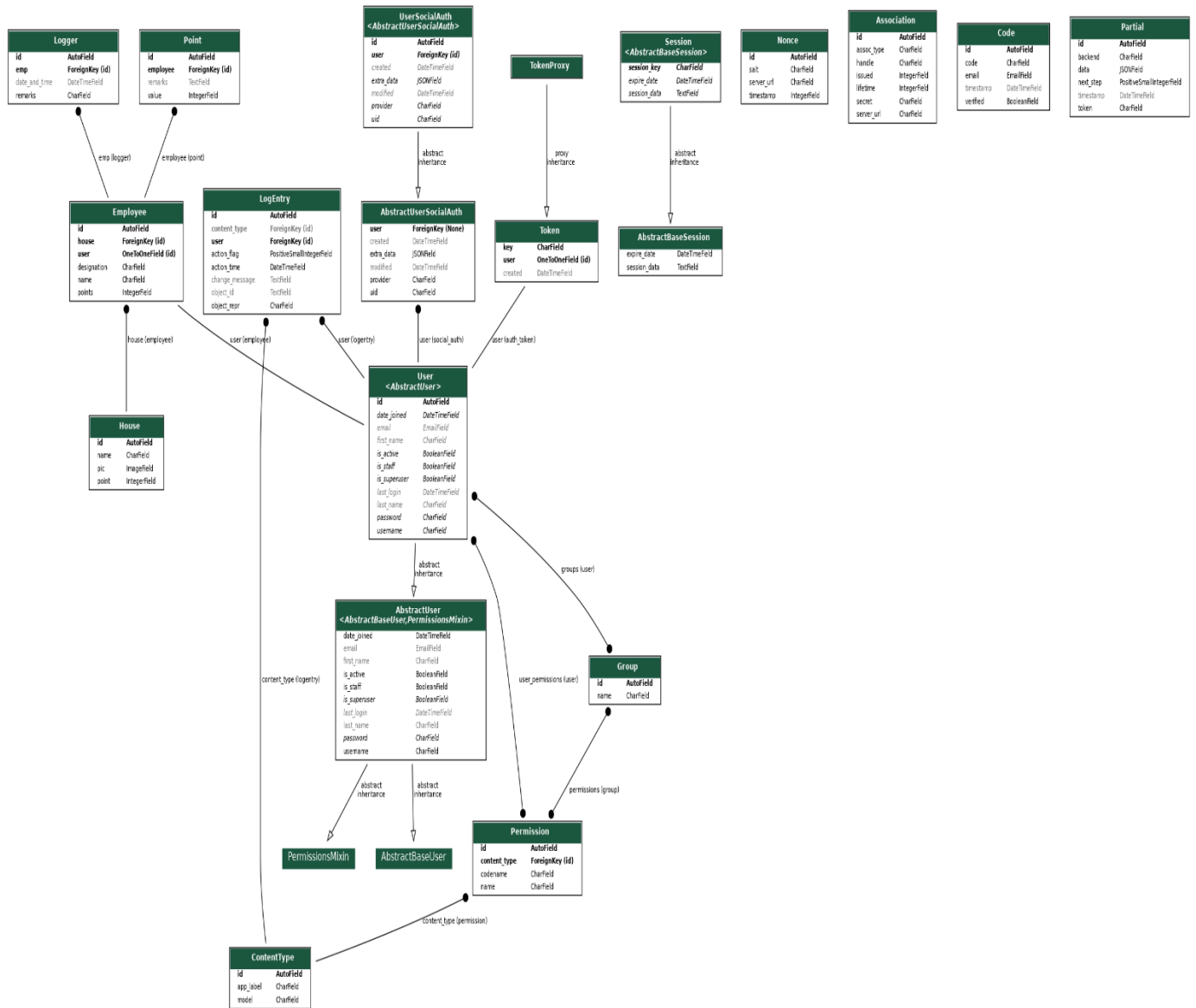
KEY	VALUE	DESCRIPTION	...	Bulk Edit
Key	Value	Description		

Body Cookies (2) Headers (9) Test Results ⊕ Status: 200 OK Time: 10 ms Size: 1.63 KB Save Response

Pretty Raw Preview Visualize JSON ↺

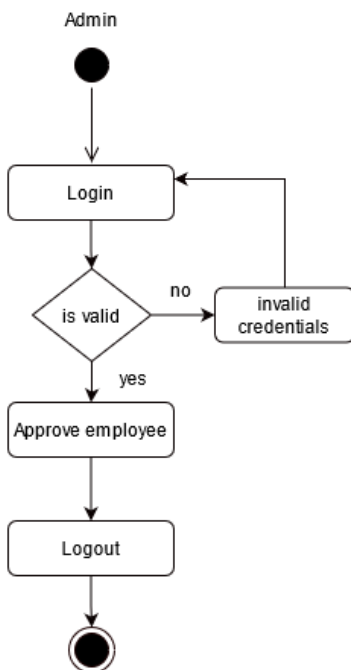
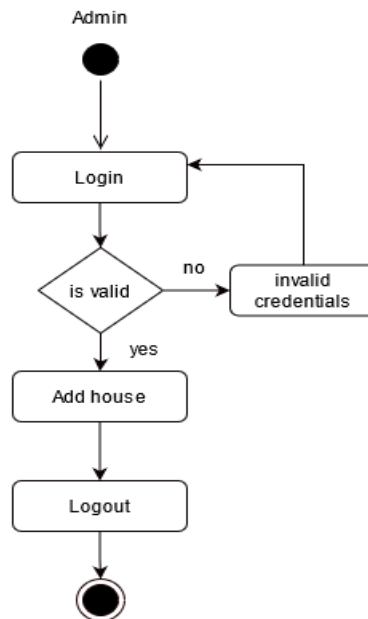
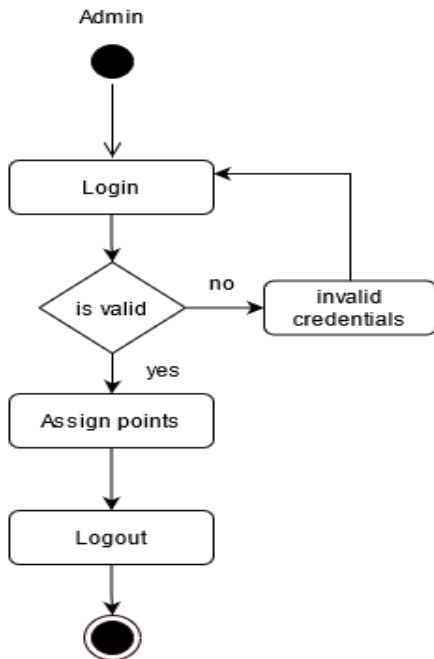
```
1 [
2   {
3     "emp": 4,
4     "remarks": "Point changed: 50 test Before point update house rank was 2, after points update house rank is 2",
5     "date_and_time": "2021-05-23T18:48:51.555113+06:00"
6   },
7   {
8     "emp": 4,
9     "remarks": "Point changed: 0 test Before point update house rank was 2, after points update house rank is 2",
10    "date_and_time": "2021-05-23T18:48:28.073590+06:00"
11  },
12  {
13    "emp": 4,
14    "remarks": "Point changed: 0 test Before point update house rank was 2, after points update house rank is 2",
15    "date_and_time": "2021-05-23T18:48:20.182043+06:00"
16  },
17  {
18    "emp": 4,
```

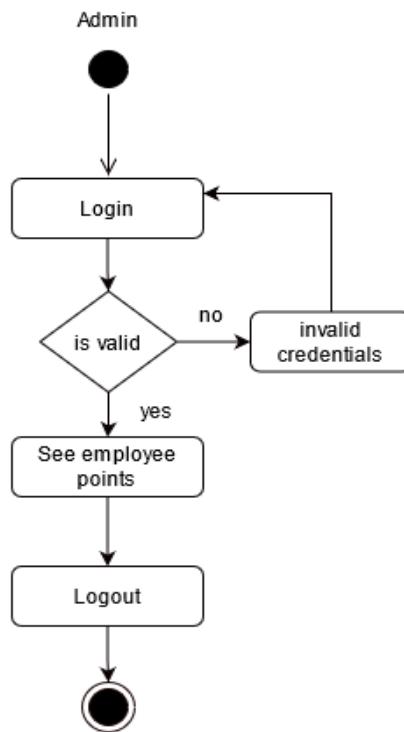
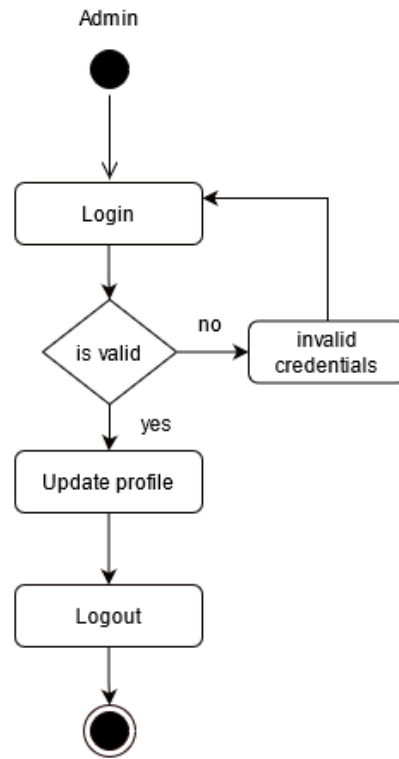
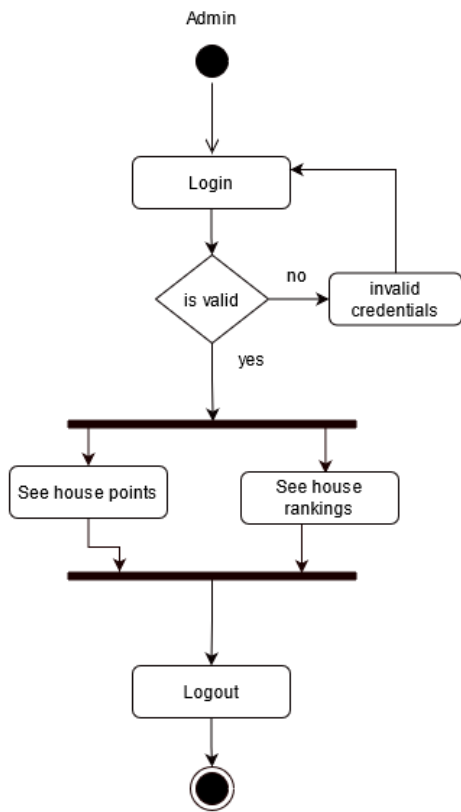
4.5 DATABASE DIAGRAM



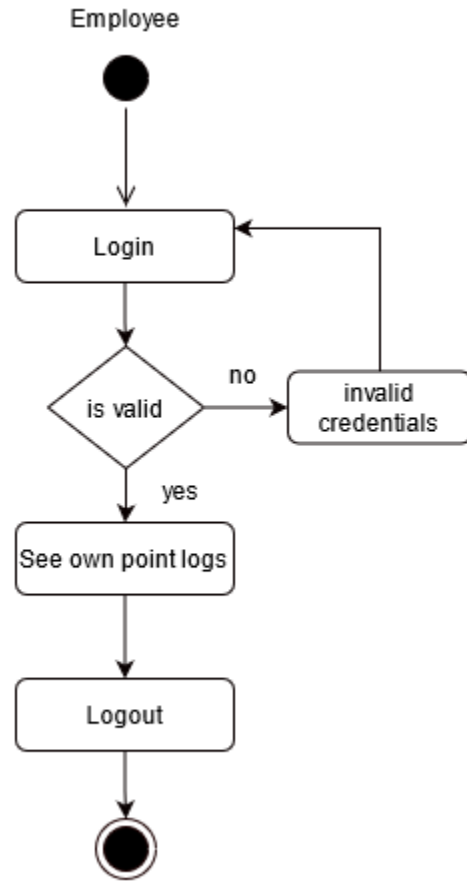
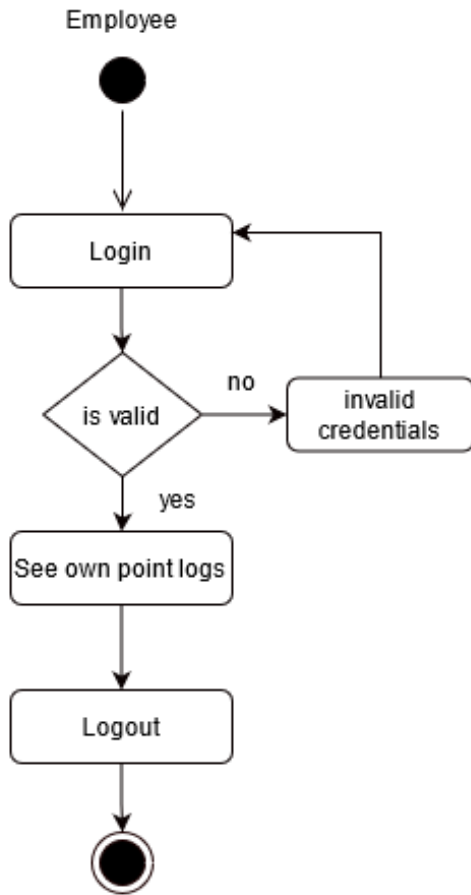
4.6 ACTIVITY DIAGRAM

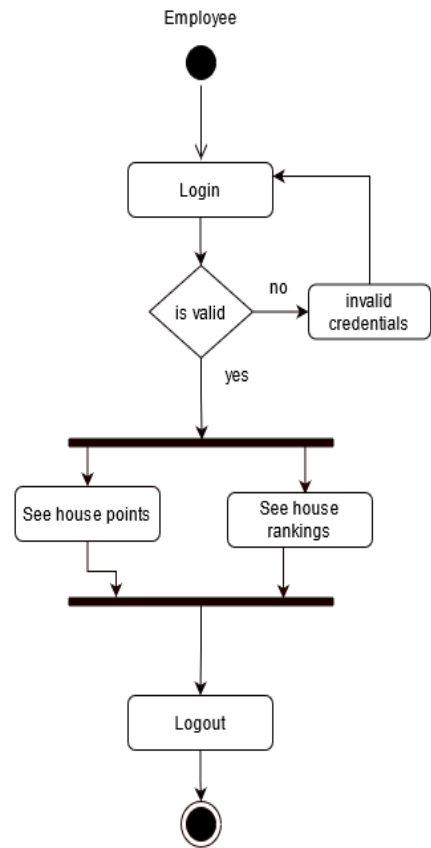
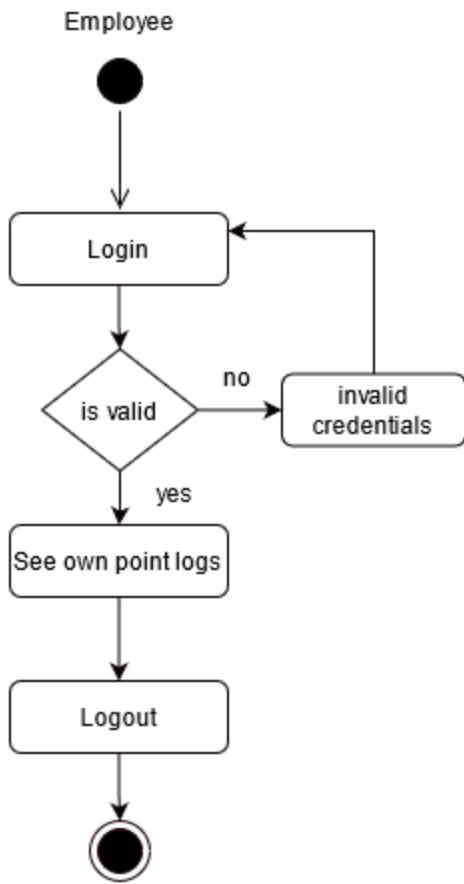
4.6.1 ADMIN ACTIVITY DIAGRAM





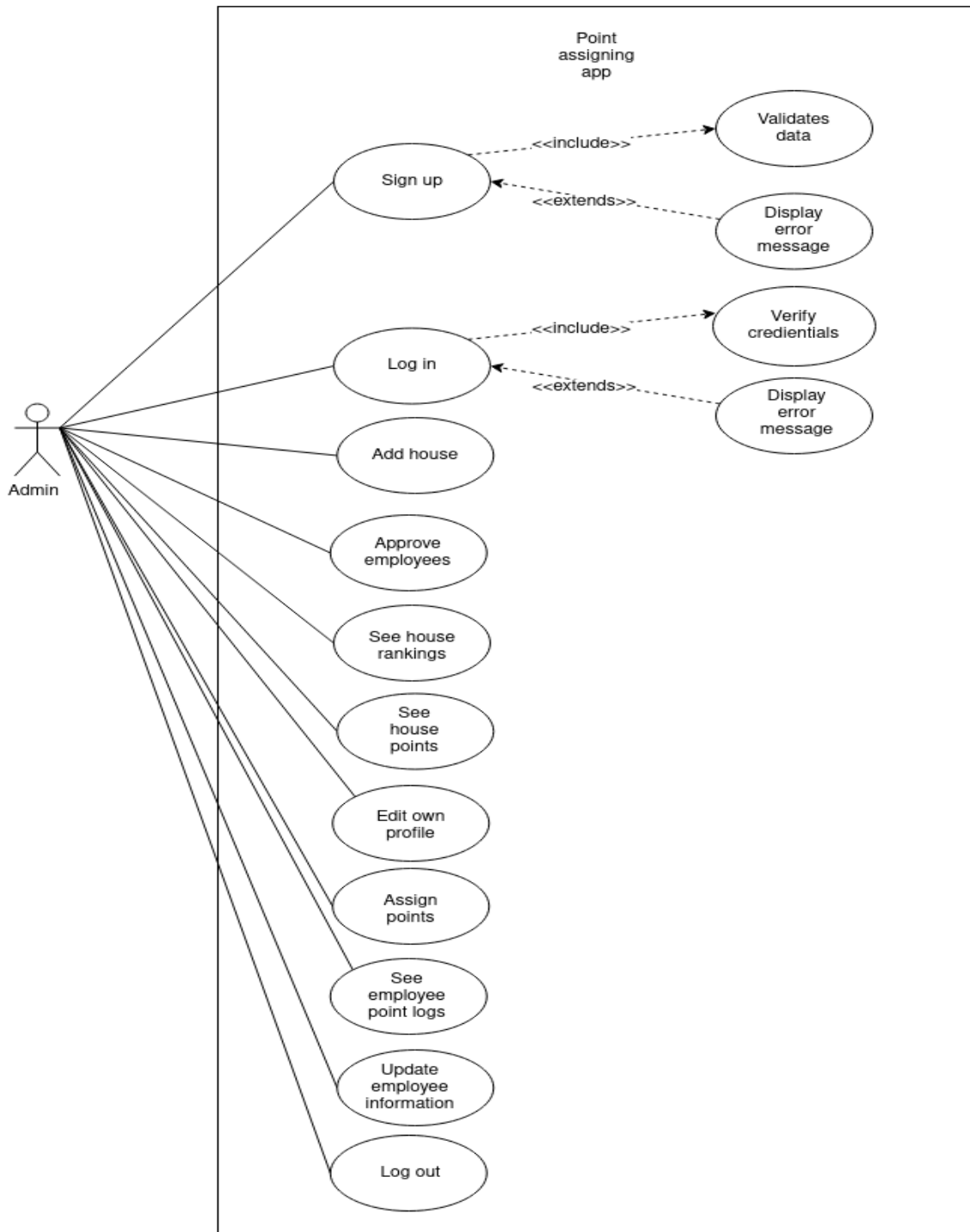
4.6.2 EMPLOYEE ACTIVITY DIAGRAM



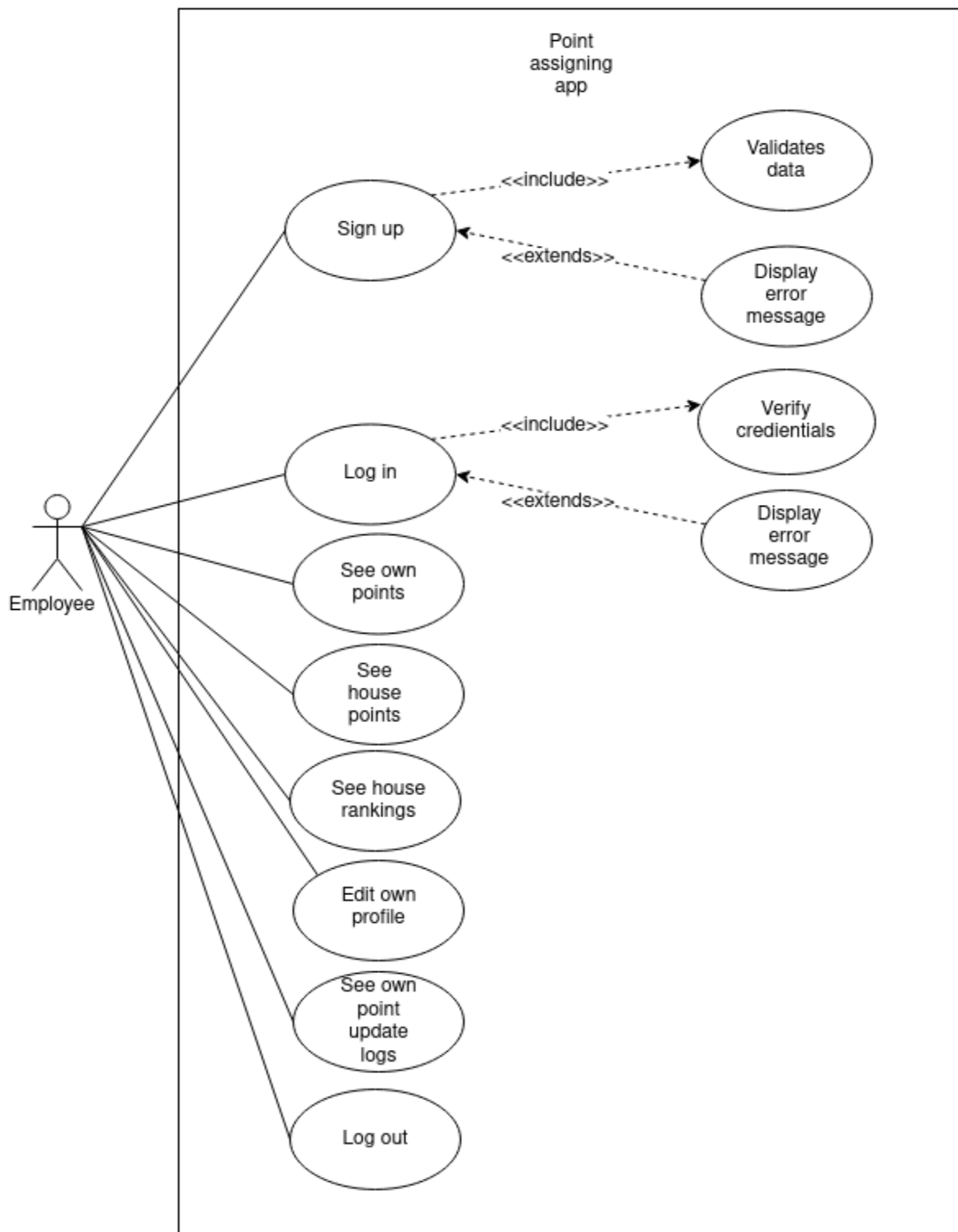


4.7 USE CASE DIAGRAM

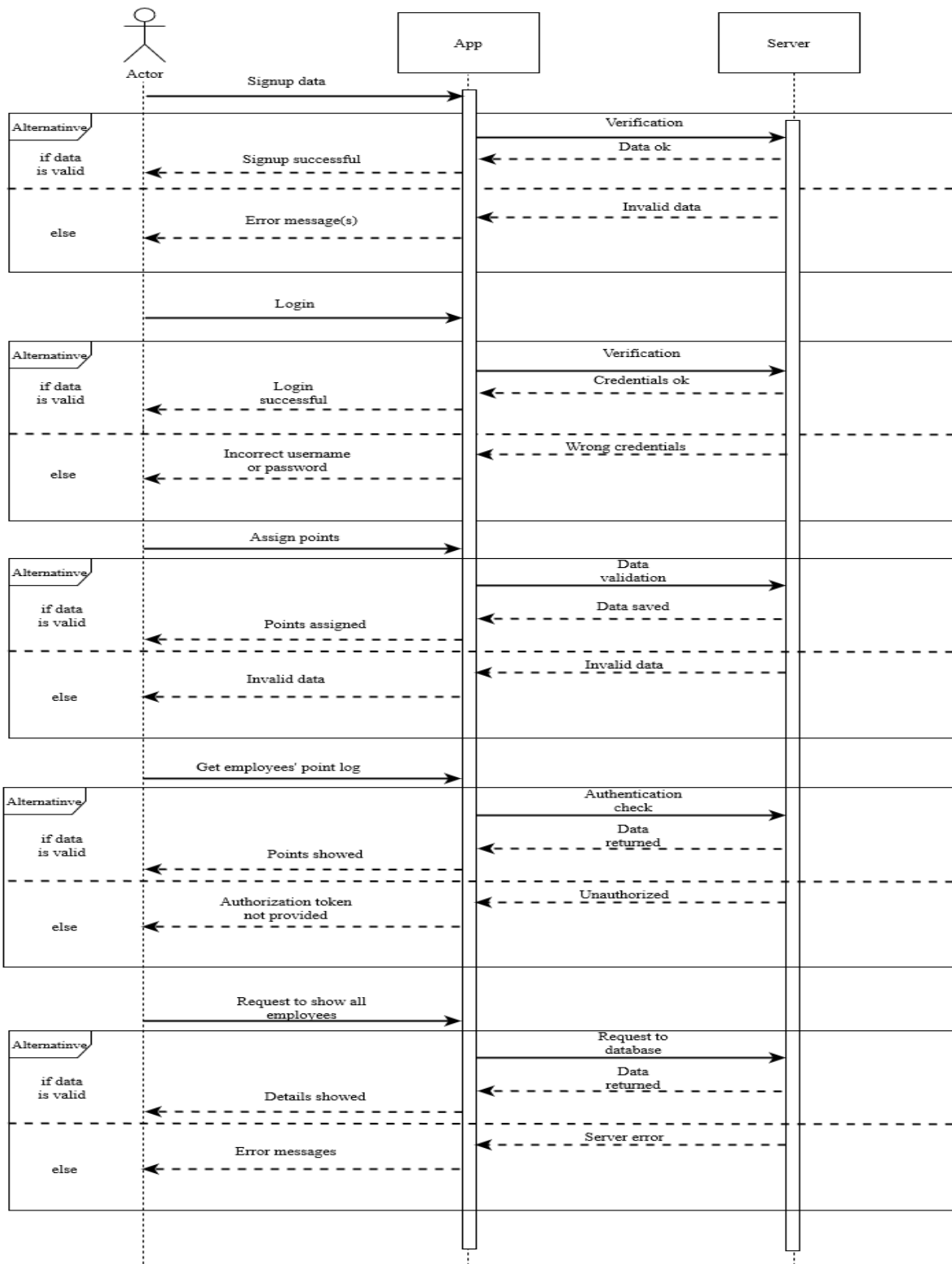
4.7.1 ADMIN USE CASE DIAGRAM



4.7.2 EMPLOYEE USE CASE DIAGRAM



4.8 SEQUENCE DIAGRAM



CHAPTER 5: EXPERIENCE AND ACHIVEMENT

5.1 NOTABLE EXPERIENCES

Go Zayaan is well reputed for its services. Most of the employees here are friendly and helpful. There was no discrimination what so ever. The work environment was so much friendly.

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Although the company follows semi-formal manner, I learned how to talk and how to communicate with co-workers in each position. How to start a discussion with positive yet strong vibe.

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After I was given tasks in the main web app, everyday I had to work as a team. I had to stay synced with the frontend team and also with my backend team members. Here, communication is the key. And this becomes bit difficult during work from periods.

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Career direction is the most valuable thing I got during my internship period. At that time, I worked with many people from different team. This helped me to think and look things from a different perspective. Talking and working with brilliant, intelligent and tech enthusiastic peoples helped me a lot to think more deeply about my career. The tasks that were given to me helped me a lot to learn new things and get used to them.

CHAPTER 6: CONSLUSION

6.1 CONCLUDING STATEMENTS

My experience at Go Zayaan was really good. All the employees are very friendly and my team members were so helpful. They provided me with learning resources and always helped me when I was stuck in a difficult problem and was unable to find solution to. The work environment helped me everyday to push myself more to learn and do more. Working at Go Zayaan helped me to boost my self-confidence. I learned many things including managing time, responsibilities, communication skills, staying positive, working as a team. It wouldn't be possible to me to learn all these things within six months without Go Zayaan.

CHAPTER 7: REFERENCES

7.1 REFERENCES

- <https://www.gozayaan.com/>
- https://en.wikipedia.org/wiki/Systems_development_life_cycle

PLAGIARISM REPORT

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CHAPTER 1: INTRODUCTION 1.1 OVERVIEW Internship programs are designed to help students by providing experience in a real-world environment. Internship also helps to build a strong resume by giving one work experience which they can use to get started Although there is no standard time duration for how long an internship period should last, it is

https://www.turnitin.com/newreport_printview.asp?eq=1&ab=1&esm=10&oid=1610831324&sid=0&n=0&m=2&svr=33&r=51.777857220371295&lang=e... 1/5

typically two to twelve months long. During this time the intern gets the opportunity to get mentored by the seniors, to explore the work filed as well as learn how to use the experience from university to the real world. Internship gives students the platform to build solid foundation for their new career, to understand the workplace culture, to gain real life experience, learn and develop relevant skills needed in the job field as well as find permanent employment in the host and also various companies. Daffodil International University offers undergraduate program in 'BSc. in Software Engineering'. This program requires one to complete an internship period with a reputable company where they will be trained practically with working environment practices and get familiar with the industry. For my internship program, I worked in the Technology dept. at Go Zayaan where I completed six months of internship. In the internship period, I had to learn how to communicate with co-workers effectively at office or while working from home to develop the system according to the software development life cycle. This report contains the overview of the company and its activities, my working experience as a backend intern. What have I learned and how it helped me to get better day by day **1.2 ORIGIN OF THE REPORT** This report mostly focuses on the mini project I had to make in earlier days at office in order to learn how the framework works, what is APIs, how to work with them and how to develop them. It also focuses on my contribution to the organization and how it developed my skill sets and how I applied those skills in the development phase as a developer. **1.3 OBJECTIVES OF THE INTERNSHIP** The main objective of these internship report is to analyze the work I've done as an intern and the work on a part of the Software Development Life Cycle. The other objectives are:

- o Introduction to the organization and the standards they follow
- o Details about the team I worked in
- o Details of my responsibilities
- o My achievements as an intern
- o To get to know about the industry
- o To know how to solve problems as a team and as an individual
- o To get to know the industry standard coding style and follow them
- o Learning how to work in a team
- o To go through the software development life cycle

1.4 METHODOLOGY Information used in this report are collected from both internal and external sources. **1.4.1 PRIMARY DATA SOURCE**

- o Personal observation and experience
- o Via conversation with team members

1.4.2 SECONDARY DATA SOURCE

- o Company website
- o The internet

1.5 SCOPE In this report, I've discussed about the company, its products, office environment and the culture. It also covers the way I started my internship, the work I've done during the internship period as well as how I used various tools and technologies in the development life cycle. **1.6 LIMITATION** I cannot disclose various part of the company, services that are sensitive information of the company due to the nature of the contract and the confidential agreement I had to sign when joining Go Zayaan. **CHAPTER 2: COMPANY OVERVIEW** **2.1 OVERVIEW OF GO ZAYAAN** Go Zayaan, one of the very first online travel aggregators (OTA) of Bangladesh is leading and revolutionizing this industry. Go Zayaan was launched on August 2017 with the vision of serving the tech-savvy travelers of Bangladesh by providing one-stop travel solution online. Launched to revolutionize the travel scenario for Bangladesh, it is the first-ever online travel platform that accepts payment from both local currency cards as well as mobile financial services to make it more convenient for the travelers. **2.2 ORGANIZATION HEIRARCHY FOR SOFTWARE DEVELOPMENT ROLE**

- o CEO
- o CTO
- o Project Manager
- o Team Leader
- o Senior Software Developer
- o Software Developer
- o Junior Software Developer

Other Roles:

- o UI Designer
- o Marketing Manager
- o Product Manager
- o HR

2.3 CLIENTS Go Zayaan provides services like flight booking, hotel reservation, tour booking via the web app. One can get these services from anywhere of the world if they have internet access. One can book flight ticket to almost any country of the world or make hotel reservation almost anywhere in the

world through the web app. I cannot disclose more than that.

2.4 PRODUCTS
 o Flight Tickets
 o Hotel Reservation
 o Bus Ticket Booking
 o Visa Processing
 o Tour Booking

2.5 CONTACT DETAILS
 Company Name: Go Zayaan
 Website: <https://www.gozayaan.com>
 Address: Level 5, House 1/A Road No. 16/A, Dhaka 1212

2.6 TECHNOLOGY
 Go Zayaan has to deal with large number of users every day. So, the system has to be topnotch. And to make a reliable and user-friendly system we use well known and proven technologies to develop the system. The frameworks that Go Zayaan uses:
 o Django
 o Django REST Framework
 o Vue JS
 Languages that Go Zayaan uses:
 o Python
 o JavaScript
 o Kotlin
 Databases:
 o MySQL
 o PostgreSQL
 o Redis
 Other Services:
 o DigitalOcean
 Version Control:
 o Git

2.7 RULES AND REGULATIONS
 Employees may violate the policies that are set. Breaking rules disrupts the flow of the work and it hampers the work environment.

2.7.1 FLEXIBILITY
 Company follows [a semi-rigid structure of rules and regulations](#) and in case breaking rules doesn't affect others it may go unpunished.

2.7.2 SEMI-FORMAL ATTITUDE
 Everyone is encouraged to interact with each other in a friendly manner and with respect.

2.7.3 OFFICE SCHEDULE
 Office time is [flexible enough for the employees](#). One [should reach office within 10.00 AM to 10:30 AM and should at least stay for 8 hours from the arrival time. There are also prayer, lunch breaks](#).

CHAPTER 3: MY INTERNSHIP AT GO ZAYAAN

3.1 OVERVIEW
 Our BSc program's purpose is to teach students and make them prepared for the industry when they graduate. But university cannot provide the real-life experience of working in a industry. That's why internship programs are beneficial. They not only provide a working platform but also teach office culture, industry standard coding. Internships also helps one to work as a team, learning best practices from senior team members, getting used to popular technologies, learning and following timeliness, respect, team building, responsibilities etc.

3.2 INTERNSHIP EXPERIENCE
 I was so happy to have the opportunity to join as an intern at Go Zayaan. It gave me a chance to learn, adapt and to gain real-life working experience.

3.3 RECRUITMENT
 I got to know from a friend of mine that Go Zayaan was recruiting interns. So, I dropped my CV. In the interview I was asked casual questions by CTO and HR about my likings, what I did at university, what I've learned so far and my future plans. They also asked few programming related questions to evaluate my skills. After few days they called and informed me about acceptance and asked me to join and start working.

3.4 FACILITIES GIVEN TO INTERNS
 As I joined Go Zayaan during COVID-19 pandemic, I had both work at office and work from home experience. At office I was given a seat at the table where all of the Tech Team members were alongside me. They also provided me with a computer, internet connection. Coffee and lunch were provided by the office too.

3.5 EVALUATION PROCESS
 To give me task and to keep track of my progress and to help overcome problems, a senior software developer was assigned. I was given requirements for the mini project I build on early stage. As I was developing each feature, I was reporting work status. After getting familiar with the technologies and framework they were using, I was instructed to get involved in the Go Zayaan web app and work according to their strict guidelines.

3.6 PERSONAL EXPECTATIONS
 o Learning how software development life cycle works
 o Working as a team
 o Learning time management
 o Understanding the project properly

3.7 CONCLUSION
 During the internship, I've learned to maintain time properly. Learned how it feels like to work as a software developer and how to work in real-life industry. Learned how to work in a team as a team. How to stay synced with the team. Learned about new technologies and how to work with them.

CHAPTER 4: SOFTWARE DEVELOPMENT LIFE CYCLE OVERVIEW

4.1 SOFTWARE DEVELOPMENT LIFE CYCLE
 The abbreviation of Software development life cycle is SDLC. It [is basically a series of steps that provide a model for development and its life cycle management](#). There are few SDLC available to

use and different companies use different models according to their products. SDLC models divide the work phase in to different parts. This helps developers to make a proper plan to build any system. SDLC has phases like planning, analyzing which gives enough time to make plan for the whole project. SDLC aims to produce high quality system that meets the requirements. Without following any SDLC method it is really difficult to complete a project. Agile and Waterfall models are mostly used by big companies. The main difference between these two is that waterfall follows more traditional design with a well throughout plan and defined to set of the requirements. On the other hand agile model begins with less stringent guidelines and them makes adjustments when necessary. This model is known for its ability to make quick adjustments and changes. There are generally six phases in the Software Development Life Cycle model. They are the followings: o Requirements gathering and & Planning o Analysis o Design o Implementation o Testing o Maintenance Requirements gathering and Planning: In this phase business requirements are gathered. Here the main focus is collecting the requirements of the project from the stakeholders properly and make plans according to the requirements. Frequent meetings with the managers, stakeholders and relevant parties takes place in this phase. After gathering requirements, the planning starts for the project. Analysis: In this phase analysis with the requirements is done to see if it is possible to make a system according to the requirements. Design: System and software design is prepared in this phase according to the requirements. This helps in defining overall system architecture. In this phase UI/UX designers comes up with the guideline and testers come up with the test strategy, where they mention what to test and how to test. Implementation: In this phase the actual coding starts. Developers start develop the features via coding according to the design and this is the longest phase in the software development lifecycle. Testing: In this phase the developed code is being tested against the requirements. This phase makes sure that the system is actually solving the problems that it was made for. Unit testing, integration testing, system testing, functional and non-functional requirement all are being tested in this phase. Maintenance: Once the system is made and users start to using it many problems should arise. Many new errors and new little updates might be needed according to the user feedback. In this phase developers should take care of the system by updating it via patch updates. This is known as maintenance.

4.2 MY WORK AS SOFTWARE DEVELOPER INTERN

4.2.1 INITIATION I was given a task to make a mini project using Django Framework which will help me to get used to Django. This was in the early stage of my internship period. My senior developers evaluated the project and then I was told to convert that system into API based project using Django REST Framework. That helped me to get used to Django REST Framework as I never worked with DRF. After I got used to these frameworks then I was assigned to develop APIs for the web app.

4.2.2 PROJECT PLANNING My task at Go Zayaan was to learn and work as backend software developer intern. So I never did anything regarding the frontend. Mostly my work there was developing APIs according to the requirement of the system. For my mini learning project, I developed CRUD operations via APIs and also few features according to the requirement.

4.2.3 TOOLS AND TECHNOLOGIES I USED Programming language: Python Framework: Django, Django Rest Framework, PyTest API Documentation: Swagger Database: Postgresql Operating System: Pop OS IDE: Visual Studio Code Database browser: Beekeeper Studio

4.3 MY TASK As an intern, I had to get used to the tools, technologies and standards the team was following. In order to do so, I was assigned to make a mini project and after the completion of that I was moved to the main web app to develop APIs. I also worked on another project which was used to order employees lunch online. The core responsibilities that I

contributed are:

- o Developing APIs
- o Updating existing APIs according to the needs
- o Writing unit-tests for APIs

4.3.1 PROJECT DESCRIPTION The mini project I developed was about assigning points to employees for outstanding performances. Employees register via email or Facebook account. They can complete their profile and they also can see their total gained points. Heads of the department or supervisors are able to add and substrate points of the employees. Employees points belongs to their department. There is a ranking system of departments and employees. The system will keep log of the points and rankings. Though I only developed the backend of the system, these APIs can be used to make web app or mobile app.

4.3.2 CHALLENGES As I never knew what Django REST Framework is let alone how to work with them, it was really challenging to get to know it. I was new to swagger documentation too. I wasn't much familiar to CLI of GitHub and also postgresDB. I read documentations, watched tutorial videos, searched on stack overflow and asked for help from senior team members time to time. These helped me to overcome my challenges.

4.3.3 COMPLETETION AND DELIVERY There wasn't any particular deadline to finish the product but still I wanted to complete it quickly. Sometimes I was going fast and sometimes I was stuck in problems. Took me few weeks to complete the project. I also had to write unit testing code for that project. This unit testing part was also new to me and was the most challenging part of the project.

4.4 APIS As I joined as backend developer, I haven't done any work related to frontend or UI.

4.4.1 SIGNUP

4.4.2 LIST OF HOUSES/DEPARTMENTS

4.4.3 ADDING NEW HOUSE/DEPARTMENT

4.4.4 ADDING AND VIEWING POINTS

4.4.5 FETCHING LOG OF AN EMPLOYEE

4.5 DATABASE [DIAGRAM](#)

4.6 ACTIVITY [DIAGRAM](#)

4.6.1 ADMIN ACTIVITY [DIAGRAM](#)

4.6.2 EMPLOYEE ACTIVITY [DIAGRAM](#)

4.7 USE CASE [DIAGRAM](#)

4.7.1 ADMIN [USE CASE \[DIAGRAM\]\(#\)](#)

4.7.2 EMPLOYEE [USE CASE \[DIAGRAM\]\(#\)](#)

4.8 [SEQUENCE \[DIAGRAM\]\(#\)](#)

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