Independent University, Bangladesh

Mobile Application Development of "Administrator App" at

Factorydox ltd

An undergraduate internship report submitted by

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Under the guidance of

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In consideration of the partial fulfilment of the requirement for the degree of

BACHELOR OF SCIENCE in Computer Science & Engineering

Department of Computer Science and Engineering

SPRING 2021

ABSTRACT

This report highlights the activity of the IT department of Factorydox ltd and my contribution to one of their projects. The report is broadly categorized into many chapters. This internship gave me a chance to work with real life software applications. This mobile application for Factorydox ltd aims to provide an admin panel for the administration of the company. Company admins can make changes to orders and do other things. This report mainly has been documented based on my work experience as an intern in this company.

ATTESTATION

I understand the nature of plagiarism, and I am aware of the University's policy on this. I certify that this is an original work by me during. However, following internationally accepted academic guidelines of using others' written work and / or software (in the form of code) in my University project is properly cited if used in any part of this work.

Signature:
Name: ---------

Signature:
Name: ----------

LETTER OF TRANSMITTAL

21st May 2021

Mrs. Sabrina Alam

Lecturer,

Department of Computer Science & Engineering,

School of Engineering & Computer Science,

Independent University, Bangladesh

Subject: Submission of Internship Report for the completion of Graduation.

Dear Madam,

I am hereby submitting my Internship Report, which is a part of the BSc. Program in Computer Science and Engineering curriculum. It is a great achievement to work under your active supervision. This report is based on, "Internship at Factorydox ltd". I have got the opportunity to work at Factorydox ltd for three months, under the supervision of Emdadul Haqu sir, Senior Software Engineer, Factorydox ltd.

This internship has given me both academic and practical exposures. The internship has given me the opportunity to develop a network with the corporate environment. I tried to make this report as much informative as possible with the experience I have gained during my internship period. In order to prepare a well-organized internship report, I have followed the guidelines and described the required fields with enough details. I however, sincerely believe that this report will serve the purpose of my internship program.

I shall be highly obliged if you are kind enough to receive this report and provide your valuable judgment. It would be my immense pleasure if you find this report useful and informative to have an apparent perspective on the issue.

Sincerely Yours,

Raiyan Khalil Shuvo
ID#1511081
Department of Computer Science,
School of Engineering & Computer Science,
Independent University, Bangladesh

ACKNOWLEDGEMENT

I would like to start by thanking **Almighty Allah (SWT)** for giving me the ability to come this far in life.

I would like to express my gratitude towards the **School of Engineering & Computer Science** and **Faculty of Computer Science & Engineering** for giving me an opportunity to study CSE in this wonderful university. This internship has provided me with an entryway to the industry and experience it on a day to day basis and learn a lot of new things and experience how the industry is totally different from what was my perception of it. I would like to extend my heartfelt gratitude to my supervisor **Mrs. Sabrina Alam** who has provided invaluable guidance & helped me with this report and presentation.

I would also like to thank my organization's supervisor **Emdadul Haque** Senior Software Developer of Factorydox ltd, for guiding me during my internship. It was a privilege to be mentored by him. He has taught me the basics of backend development and how to deploy a server and how to integrate a web/mobile application with the server, as my keen interests were in backend development.

I would also like to thank **Emrul Kayes, CEO** of Factorydox ltd for giving me an opportunity to work as an intern in this company and giving his precious time in teaching me how the business side also works.

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INTRODUCTION

Internships play key role in kickstarting careers of students who are transitioning from university to the workforce. It provides an opportunity to work with a company and gain valuable experiences of the corporate world. It also provides students to asses their career goals and objectives, students also have to apply everything they learned in practice. Students also face many challenges which are not taught in university. An internship also provides an opportunity to learn from supervisors and faculty members. I started my Internship at Factorydox ltd on 1st February 2021. With the help of this Internship I have gathered new skills which will be beneficial for me in the long run and has also made me confident on my career choice as Software Engineer.

This chapter gives an outlook about the project (Mobile Application) which was developed by me during my tenure as a Software Engineer at Factorydox ltd along with my other team members and my supervisor Emdadul Haque. As more people are using smart phone mobile applications are playing key role in getting them connected to services they require. For Factorydox ltd having a mobile application mean users can easily access information and make changes accordingly within the app instead of going through the browser which can be slow and tedious. The admin app for Factorydox ltd will helps its business & admin division to monitor, customize, create and delete orders. A new e-commerce version is also on the works, but I was not part of that development team as an intern.

Background

The existing system was heavily dependent on the browser, admins usually had to go through multiple steps to do a certain task such as modifying an order, creating a custom order, changing delivery date, confirming payment etc. This existing system was very unintuitive and slow. As Factorydox ltd business division handles many e-commerce websites it was getting very difficult to keep track of everything and productivity among the staffs was going down.

Having a mobile application with a completely new design and much more intuitive approach solves many of their problems and also increases productivity. The time it took to reach out to clients will reduce from 3-4 days to 1-2 days.

Objective

Project objectives are what we plan to achieve by the end of our project. Objective of a project is specific, measurable and must meet time, budget and most importantly meet the client's requirements. The main objectives of this application are described below:

- Admin will be able to input information for large quantities of customized product order using the Mobile Application.
- Read or View order list and information on the go via mobile application. This will provide the viewer/admin an idea about the status of the order.
- This application will allow the admin to Update and Modify any order status or information anytime and anywhere they want, without any use of the computer.
- A Delete feature, enabling the admin to delete any garbage value or faulty order information using this application.
- Creating a clean User Interface to make operations easier to handle by the admins.
- Using REST API to create connections between the server and mobile application.

Scope of the Project

This mobile application will mainly be for the admin staffs at Factorydox ltd. It will help them be more efficient & productive. They will be able to update information on the go. Admin will be able take advantage of CRUD functionalities on their orders. The system will provide information regarding the customized, large quantity order of products the customer wants to buy from the Company. Admins will be provided with the information of products, which consists of customization attributes, quantities, delivery date and many others. This application will also keep record of orders easily at any moment and provide a better experience by providing important functionalities.

COMPANY PROFILE OF FACTOINTERNSHIP OUTCOME & ISSUE ANALYSIS

FactoryDox ltd

Factorydox Ltd is the parent company of multiple ecommerce platforms. Its software division is an ecommerce solution platform which provides e-commerce solutions to multiple companies such as Wristband House, USCrafts and others. Factorydox develops and maintains the software stack of these companies. The business wing of the company provides B2B solutions from a plethora of factories across china. Factorydox offers mass integration where businesses can find reliable sources who are able to provide your desired products at a lowest price possible through automations.

Vision

To provide B2B e-commerce solutions to various companies.

Mission

Their mission is to introduce new technologies such as Big Data, AI and make the ecommerce experience one of the best in the country.

Values

- Provide effective B2B solution
- Customer Oriented
- Fairness & Transparency
- Continuous Improvement
- Health & Safety

Main Expertise of Factorydox Ltd

- IT services, solutions & consultancy
- Mobile App development
- Market & Business Intelligence

Key Projects of Factorydox Ltd

- https://www.uscraft.com/
- https://www.ozcraftsman.com.au/
- https://www.craftguru.co.uk/
- https://wristbands-house.com/
- https://www.wristbandshouse.sg/

INTERNSHIP EXPERIENCE AND OBSERVATION DETAILS

This internship program is very important when transitioning from university to the workforce. As a student of Computer Science & Engineering I was excited to finally join a place test all of knowledge and skills and acquire new ones. This 12-week Internship experience has helped gain skills not only in my field but also from other fields.

I started working at Factorydox ltd from 1st February 2021 as an intern. My designated role was a Software Engineer. I had a teammate who was also an intern and we both worked under the supervision of Emdadul Haque. Communication is a key in a work environment and this something I had difficulties before but did get over it with this internship. Initially I was assigned to learn the fundamentals of Javascript, python, HTML/CSS. Then I had to get familiar and learn React a javascript library used to build web application. After I got familiar with react, my next objective was to learn React-Native, which is used to develop native applications for both IOS and Android with a single codebase. Developing android application using react-native is much easier than Java, as it is completely written in javascript which is much cleaner and avoids a lot of boiler plate that had to be written if I was using java to make the application. I also had to learn to use Django for backend development as I had to develop a separate backend as well. Experiencing everything from backend to the frontend gave me full stack experience which allowed me to choose where I want to work in the future.

Job Responsibilities

During this internship I had multiple job responsibilities but some of my core responsibilities are listed below:

- Learn core fundamentals of Javascript, HTML/CSS, Python, React/React-Native
- Learn core fundamentals of databases such as Mysql and Sqlite.
- Learn how to work in a linux environment and operate offsite servers being hosted in Digital Ocean and AWS.
- Develop and Deploy backend framework such as Django using Nginx in these servers.

- Develop proper API’s for consumption by the mobile app.
- Connecting servers with domain services.
- Develop a mobile application using React-Native conforming with business requirements.
- Write business requirement, diagrams for the mobile application.
- Provide innovative solutions to problems

SCRUM METHODOLOGY

Scrum is a framework that helps teams work together. Much like a rugby team (where it gets its name) training for the big game, scrum encourages teams to learn through experiences, self-organize while working on a problem, and reflect on their wins and losses to continuously improve.

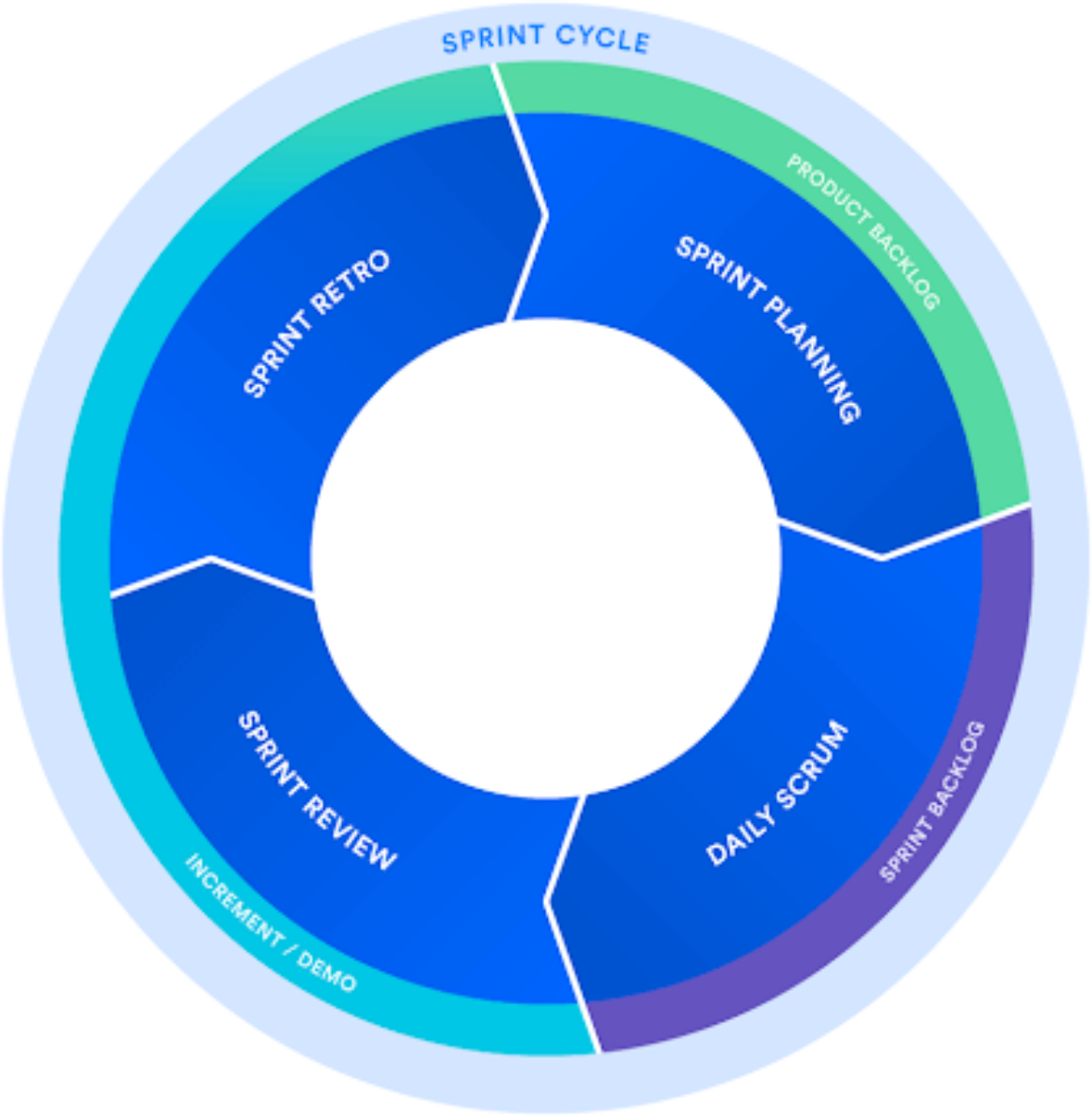

Fig: Scrum Methodology

Scrum Artifacts

Artifacts are something that we make, like a tool to solve a problem. In scrum, these three artifacts are a product backlog, a sprint backlog, and an increment with the definition of "done". They are the three constants in a scrum team that we continue to revisit and invest in overtime.

- **Product Backlog** is the master list of work that needs to get done maintained by the product owner or product manager. This is a dynamic list of features, requirements, enhancements, and fixes that acts as the input for the sprint backlog. It is, essentially, the team's "To Do" list. The product backlog is constantly revisited, re-prioritized and maintained by the Product Owner because, as we learn more or as the market changes, items may no longer be relevant, or problems may get solved in other ways.
- **Sprint Backlog** is the list of items, user stories, or bug fixes, selected by the development team for implementation in the current sprint cycle. Before each sprint, in the sprint planning meeting (which we'll discuss later in the article) the team chooses which items it will work on for the sprint from the product backlog. A sprint backlog may be flexible and can evolve during a sprint. However, the fundamental sprint goal – what the team wants to achieve from the current sprint – cannot be compromised.
- **Increment** (or Sprint Goal) is the usable end-product from a sprint. We usually demonstrate the "increment" during the end-of-sprint demo, where the team shows what was completed in the sprint. We may not hear the word "increment" out in the world, as it's often referred to as the team's definition of "Done", a milestone, the sprint goal, or even a full version or a shipped epic. It just depends on how teams define "Done" and how we define our sprint goals.

Scrum Events

Some of the more well-known components of the scrum framework are the set of sequential events, ceremonies, or meetings that scrum teams perform on a regular basis. The ceremonies are where we see the most variations for teams. Below is a list of all the key ceremonies a scrum team might partake in:

1. **Product Backlog:** Sometimes known as backlog grooming, this event is the responsibility of the product owner. The product owner's main jobs are to drive the product towards its product vision and have a constant pulse on the market and the customer. Therefore, he/she maintains this list using feedback from users and the development team to help prioritize and keep the list clean and ready to be worked on at any given time.
2. **Sprint Planning:** The work to be performed (scope) during the current sprint is planned during this meeting by the entire development team. This meeting is led by the scrum master and is where the team decides on the sprint goal. Specific use stories are then added to the sprint from the product backlog. These stories always align with the goal and are also agreed upon by the scrum team to be feasible to implement during the sprint. At the end of the planning meeting, every scrum member needs to be clear on what can be delivered in the sprint and how the increment can be delivered.
3. **Sprint:** A sprint is the actual time period when the scrum team works together to finish an increment. Two weeks is a pretty typical length for a sprint, though some teams find a week to be easier to scope or a month to be easier to deliver a valuable increment. During this period, the scope can be re-negotiated between the product owner and the development team if necessary.
4. **Daily Scrum:** This is a daily super-short meeting that happens at the same time (usually mornings) and place to keep it simple. Many teams try to complete the meeting in 15 minutes, but that's just a guideline. The standup is the time to voice any concerns you have with meeting the sprint goal or any blockers. A common way to conduct a stand up is for every team member to answers three questions in the context of achieving the sprint goal:
    a. What did I do yesterday?
    b. What do I plan to do today?
    c. Are there any obstacles?
5. **Sprint Review:** At the end of the sprint, the team gets together for an informal session to view a demo of, or inspect, the increment. The development team showcases the backlog items that are now 'Done' to stakeholders and teammates for feedback. The product owner can decide whether to release the increment, although in most cases the increment is released. This review meeting is also when the product owner reworks the product backlog based on the current sprint, which can feed into the next sprint planning session.

6. **Sprint Retrospective:** The retrospective is where the team comes together to document and discuss what worked and what didn't work in a sprint, a project, people or relationships, tools, or even for certain ceremonies. The idea is to create a place where the team can focus on what went well and what needs to be improved for the next time, and less about what went wrong.

Essential Roles of Scrum

Product Owner are the champions for their product. They are focused on understanding business, customer, and market requirements, then prioritizing the work to be done by the engineering team accordingly. Effective product owners:

- Build and manage the product backlog.
- Closely partner with the business and the team to ensure everyone understands the work items in the product backlog.
- Give the team clear guidance on which features to deliver next.
- Decide when to ship the product with a predisposition towards more frequent delivery.

The product owner is not always the product manager. Product owners focus on ensuring the development team delivers the most value to the business. Also, it's important that the product owner be an individual.

Scrum Masters are the champions for scrum within their teams. They coach teams, product owners, and the business on the scrum process, and look for ways to fine-tune their practice of it. An effective scrum master deeply understands the work being done by the team and can help the team optimize their transparency and delivery flow. As the facilitator-in-chief, he/she schedules the needed resources (both human and logistical) for sprint planning, stand-up, sprint review, and the sprint retrospective.

Scrum Development Team are the champions for sustainable development practices. The most effective scrum teams are tight-knit, co-located, and usually five to seven members. Team members have differing skill sets, and cross-train each other so no one person becomes a bottleneck in the delivery of work. Strong scrum teams are self-organizing and approach their projects with a clear 'we' attitude. All members of the team help one another to ensure a successful sprint completion.

SYSTEM ANALYSIS

Existing System

The functionalities required by the admins are already present in the existing system. Admins have to use a desktop computer to access the admin website, using a web browser, to perform their tasks.

Problems of Existing System

The need to develop a Mobile Application to replace an already existing system has emerged due to some barriers and constraints in increasing the productivity and efficiency of the workflow. The main issues which led to the development of a Mobile Application are mentioned below.

- To get the most out of the admin-controlled operations, users had to have access to a computer.
- Third party applications such as Web Browsers are required to access the particular website.
- Mobility and performing tasks on the go is not possible in the existing system.
- Accessing websites using a Mobile phone was not enough to provide a good experience in performing tasks on the go.
- Using a Web Browser in a mobile phone limits the workspace for the user to perform their tasks.
- The Delete Order feature is not available in the existing system. Admins are not able to delete faulty entries using the Admin site.
- Admins also had to shift to the Desktop View, available on the Mobile phone Web Browser, to gain access to all the functionalities.
- Mobile responsive styling for User Interfaces on a mobile phone was more difficult to work on compared to developing a Mobile Application, with a much cleaner User Interface and broad workspace.

Requirement Analysis

User Requirements

The flaws and constraints in the existing system have introduced the need for a new Application. A proper meeting was scheduled with the Users specified to use this Application and the Company's CEO to gather the User Requirements regarding the Mobile Application. The features that need to be implemented in this Application within our course of Internship are mentioned below.

- **Dashboard:** To view the Updated Information regarding certain data as the front page of the Application.
- **View Order List Page:** Admins should be able to view updated information for all the orders being processed currently.
- **Create Order:** New customer orders can be placed using this feature. Admins will input this customer information using this application and stored data into the database.
- **Update Particular Order Information:** If required, admins should be able to update information of already existing Order Data in the database.

  Example: In many cases, the customer does not make full payment until the ordered product is delivered, so the payment status on the database shows" UNPAID". Whenever the customer receives the product and makes the payment, the admin should be able to access that person's order information using the application and update his/her payment status to "PAID".
- **Delete Particular Order Information:** Admins should be able to delete particular order information from the database, if the data is faulty or no longer required.
- **Clean User Interface:** The interface should be easier to understand and interact with.
- **Easy Navigation:** To make Navigation Between different screens simpler.

Functional Requirements

Functional requirements capture the intended behavior of the system. This behavior may be expressed as services, tasks or functions the system is required to perform. Therefore, the proposed system is able to:

Name of the Function: Must be compatible with IOS & Android Devices		
Input: 1. N/A	**Process**: 1. Apps must be developed in a common development environment.	**Output**: 1. This app will be accessible in both Android & IOS devices.
Precondition: User must have an Android or an IOS phone to run the application.		
Post condition: 1. Admins can use this application.		
Alternate Options: N/A		

Name of the Function: Login to the application.		
Input: 1. E-mail ID 2. Password	**Process**: 1. Users will login using their email id and password.	**Output**: 1. Users will enter the application and land on the dashboard.
Precondition: Users must be registered.		
Post condition: 1. Users can access other features of the application.		
Alternate Options: Show alert if email-id or password is wrong.		

Name of the Function: Dashboard		
Input: 1. N/A	**Process**: 1. Admin will land on the dashboard after login.	**Output**: 1. Admins will be able to view new, pending and confirmed orders.
Precondition: User has to be logged in		
Post condition: 1. Admin can check their most recent information		
Alternate Options: View order lists		

Name of the Function: View Order Lists		
Input: 1. N/A	**Process**: 1. Admin will click order list tab	**Output**: 1. Admin will view the orders in a list.
Precondition: Order datas has to exist		
Post condition: 1. View order list, select and view specific order information.		
Alternate Options: Search for specific order from search bar		

<table>
<tr><td colspan="3">Name of the Function: Enter Customer Order information onto database.</td></tr>
<tr><td>Input:
1. Order ID
2. Product Name
3. Product Quantity
4. Pro
5. duct Color
6. Customer Information
7. Payment Information
8. Delivery Date.</td><td>Process:
1. Users will input customer order information onto the database using the application interface.</td><td>Output:
1. Customer order information will be stored on the database.</td></tr>
<tr><td colspan="3">Precondition: All the input fields should be filled.</td></tr>
<tr><td colspan="3">Post condition:
1. This Customer order can be later accessed on the View Order List.
2. Update order information in the database</td></tr>
<tr><td colspan="3">Alternate Options: N/A</td></tr>
</table>

Name of the Function: Update Specific Order Information		
Input: 1. Changes in Information	**Process**: 1. Admin will tap on any Particular order from the Order List page. 2. The admin will be navigated to the Individual Order Information Page. 3. Click on the Update/Edit Order button to navigate to the Update page. 4. Admin will be able to change any pre-stored data in their corresponding fields 5. Press the Save button.	**Output**: 1. Updated information will be stored on the database.
Precondition: Order data has to exist.		
Post condition: 1. This Updated Order information can be later accessed on the View Order List.		
Alternate Options: N/A		

Name of the Function: Delete Specific Order Information		
Input: 1. N/A	**Process**: 1. Admin will tap on any Particular order from the Order List page. 2. The admin will be navigated to the Individual Order Information Page. 3. Click on the Delete Order button.	**Output**: 1. All information for that specific order will be deleted from the database.
Precondition: Order data has to exist		
Post condition: 1. This deleted order information will no longer be visible on the View Order List.		
Alternate Options: N/A		

Non-functional Requirements (NFR)

Non-functional requirements are requirements which specify criteria that can be used to judge the operation of a system, rather than specific behaviors. This is contrasted with functional requirements that specify specific behavior or functions. Systems must exhibit software quality attributes, such as accuracy, performance, cost, security and modifiability plus usability, i.e. easy to use for the intended users. NFRs help to achieve the functional requirement of a system. Thus, the proposed system does the following:

- The system has high performance and reliability levels. The mean time between failures, mean time to repair, and accuracy are very high.
- The system has user-friendly interfaces. This ensures the ease with which the system can be learned or used. The system can allow users to install and operate it with little or no training.
- Handles growing amounts of work in a graceful manner as can be readily enlarged i.e. the ease, with which the system can be modified to handle a large increase in users, workload or transactions.

Rich Picture

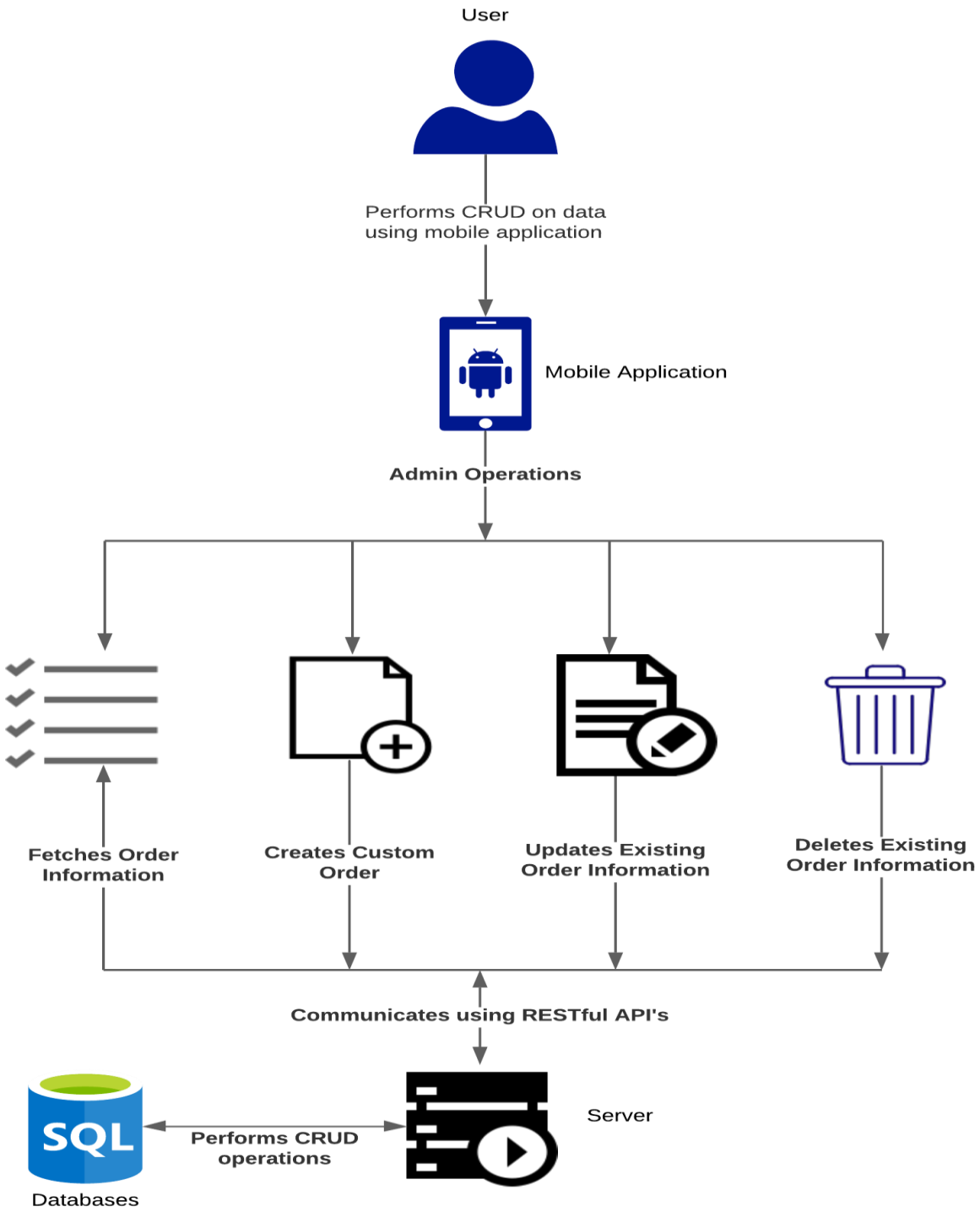

Fig: Rich Picture

Data Flow Diagram

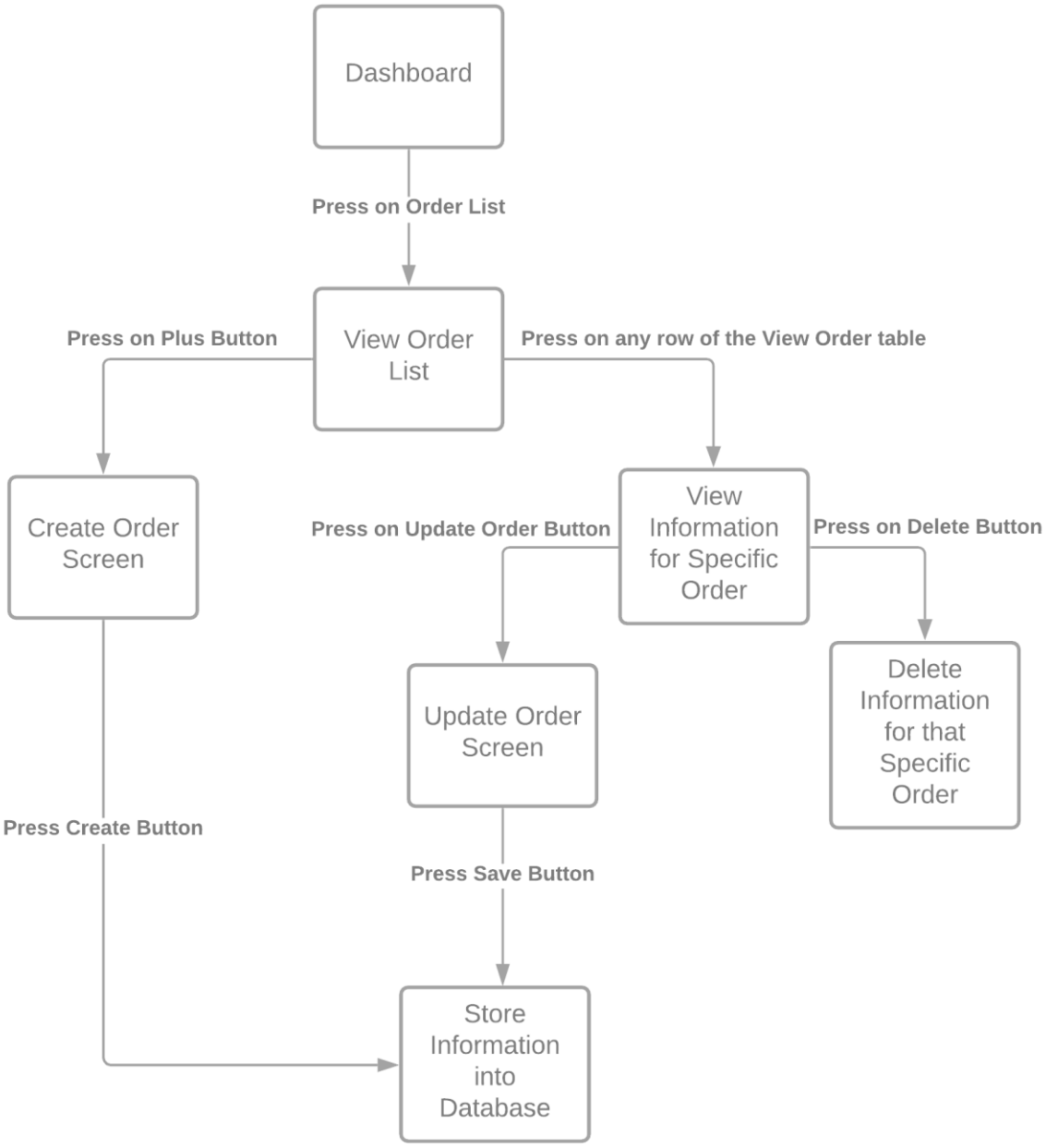

Fig: Data Flow Diagram

Design

During this stage I had to prepare a UI/UX prototype using Adobe XD on how the application will look and what sort functions must be built. I also had to design the backend of the application from which databases that are going to be used to what will be API's and what sort of actions will be performed if those API's are consumed. I also had to decide on what to use between Nginx or Apache to deploy the server. I also worked on the main user interface of the mobile application. These user interfaces were created using react-native-paper framework. The user interfaces are as follows:

1. Dashboard
2. Order List
3. Create Order
4. Specific Order
5. Update Order

Backend

The backend for this project was developed using Django Framework and deployed in an offsite server via AWS. And the database being used with this backend is MySQL. I created the API's for the backend to communicate with mobile app and placed the logics required to store and fetch data from the database when this API's are consumed. I also worked to create an authentication for the backend to make it more secure. The list of APIs are given below:

- GET Method: 'List':'/task-list/',
- GET Method: 'Detail View':'/task-detail/<str:pk>/',
- POST Method: 'Create':'/task-create/',
- POST Method: 'Update':'/task-update/<str:pk>/',
- POST Method: 'Delete':'/task-delete/<str:pk>/',

This API's are being consumed by the mobile app through a react native package called axios. It works a middleware between the server and the mobile application.

TESTING

As per scrum methodology our testing were conducted at the end of the sprint. We used to create test cases at the start of the sprint, implement a feature during that sprint and then test the feature according to the test cases prepared. All the test cases had to be accepted for the feature to given as done according to the scrum methodology. Few of our common test cases are given below:

- **Functional Testing:** The main purpose of this test case is to check the functions for a specific feature. All the functionalities must be working for the test case to be completed. All the functions of the system as originally specified are systematically tested to ensure that nothing has been accidentally omitted or misinterpreted. A positive attempt is made to anticipate errors than an inexperienced user might make, and tests made to check the effect of such errors and ensure that they do not result in incorrect actions or bad data being stored in the database.
- **System Testing:** The main purpose of this test case is to see whether the application meets the requirements and performs as expected. A large relevant dataset is taken to test and ensure no errors are found.
- **Recovery Testing:** This test cases exists to see how the application will perform incase of a major failure during data entry from both server and mobile application side.
- **User Acceptance Testing:** A potential user is given the application to test and find if the application can cope with any unexpected behaviors.
- **Test Data:** The purpose of this test case is to find if data manipulations are working as expected. Tests are done across the server and the mobile application to check the datas integrity.
- **Test Results:** After all, the test cases are completed if the test cases are successful then the feature is given a done status or else, they are moved to the next sprint and must be mitigated with next tasks.

INTERNSHIP OUTCOME & ISSUE ANALYSIS

Problems & Challenges Faced in the Workplace

There were numerous problems & challenges during my 3 months Internship period at Factorydox ltd. Working in a professional environment was completely new for me and keeping up with the pace was something I had difficulty coping with.

- Twelve weeks are enough to get a taste of what the corporate world is like but not enough to get used to it completely.
- Following SCRUM initially was very tough as things got cycled every week and we had to deliver everything weekly or else fall behind on my tasks & deliverables.
- Halfway through the internship we had to move to work from home due to Covid-19 pandemic. A key problem I faced during that time was that I was assigned tasks anytime and there were no office hours so I didn't have any personal life.
- Communication also became slow while I was working from home, my team members preferred to work different hours than me and this reduced our productivity significantly.

Job Analyzing of the Issue(s) Based on Relevant Theory

The following courses were relevant during Internship, they helped me better understand & complete many of my tasks.

- **System Analysis and Design:** System analysis and design deal with planning the development of information systems through understanding and specifying in detail what a system should do and how the components of the system should be implemented and work together. This course helped me prepare various business requirements and diagrams.

- **Software Engineering:** Software engineering is defined as a process of analyzing user requirements and then designing, building, and testing software application which will satisfy those requirements. Knowing Scrum Methodology & how it works made it easier to implement in a work environment.
- **Database Management:** A database management system is a course that makes which is about to organize data in a database. The functions of a DBMS include concurrency, security, backup and recovery, integrity and data descriptions. This course was helpful when I was designing & implementing the database for the application.
- **Web Development:** This is a hands-on course for web development, and we were taught a lot of things from basic HTML/CSS to MERN stack development. This course played crucial part in making me familiar with javascript development and implementing it during my Internship.
- **Mobile App Development:** This is a hands-on course for mobile application development and our main focus was in android development. This course helped get familiar with the fundamentals of native android development. I also learned how to consume an API in this course, which is an absolute must in any development environment.

Recommendation

A few recommendations that I have for the company are as follows:

- Following SCRUM properly to improve work efficiency, even though the followed Scrum it was not properly followed among team members.
- Get regular client feedback keep on reiterating their software.
- Take on fewer projects to improve quality of their products rather than pumping out more projects.
- Having resources to manage their DevOps instead letting their interns handle issues.
- They should recruit more interns and receive fresh ideas from them.

CONCLUSION & IMPLEMENTATION

During my internship I built a Full Stack mobile application using React-Native for the frontend and Django for the backend. The backend is hosted in a server and they communicate through RESTful API. This system allows the admin team of the company to handle their day to day tasks quite easily and also improves their efficiency.

It has been an honor to work for Factorydox ltd who has taught me a lot during m tenure there. This is the first step towards my career and has given me the much-needed experience required to work in the IT sector. This internship has helped my find my passion in backend development and also mobile application development. I also learned how the industry works and how IT companies implement the best practices to get the most out their team and deliver application within budget and time.

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4. The Web framework for perfectionists with deadlines | Django (djangoproject.com)
5. :: Factory Dox ::
6. React Native Paper
7. W3Schools Online Web Tutorials

Appendices

Appendix A

Weekly log

Week	Activity
1	Learn basic HTML and CSS
2	Get familiar with Javascript
3	Learn Python for Backend
4	Learn and experiment with React JS
5	Learn and experiment with React Native
6	Learn the basics of Django Framework
7	Preparing User Requirement and making a UI/UX prototype
8	Worked on Back-End and generated the API to fetch and post data to the database
9	Created Screens for View All Order List and Create New Customer Order
10	Created Screens for View Specific Order Information, Update Specific Order Information and Delete Order functionality
11	Worked on Styling of the Front-End Design
12	Conducted the testing procedures

Appendix B (UI Screenshots)

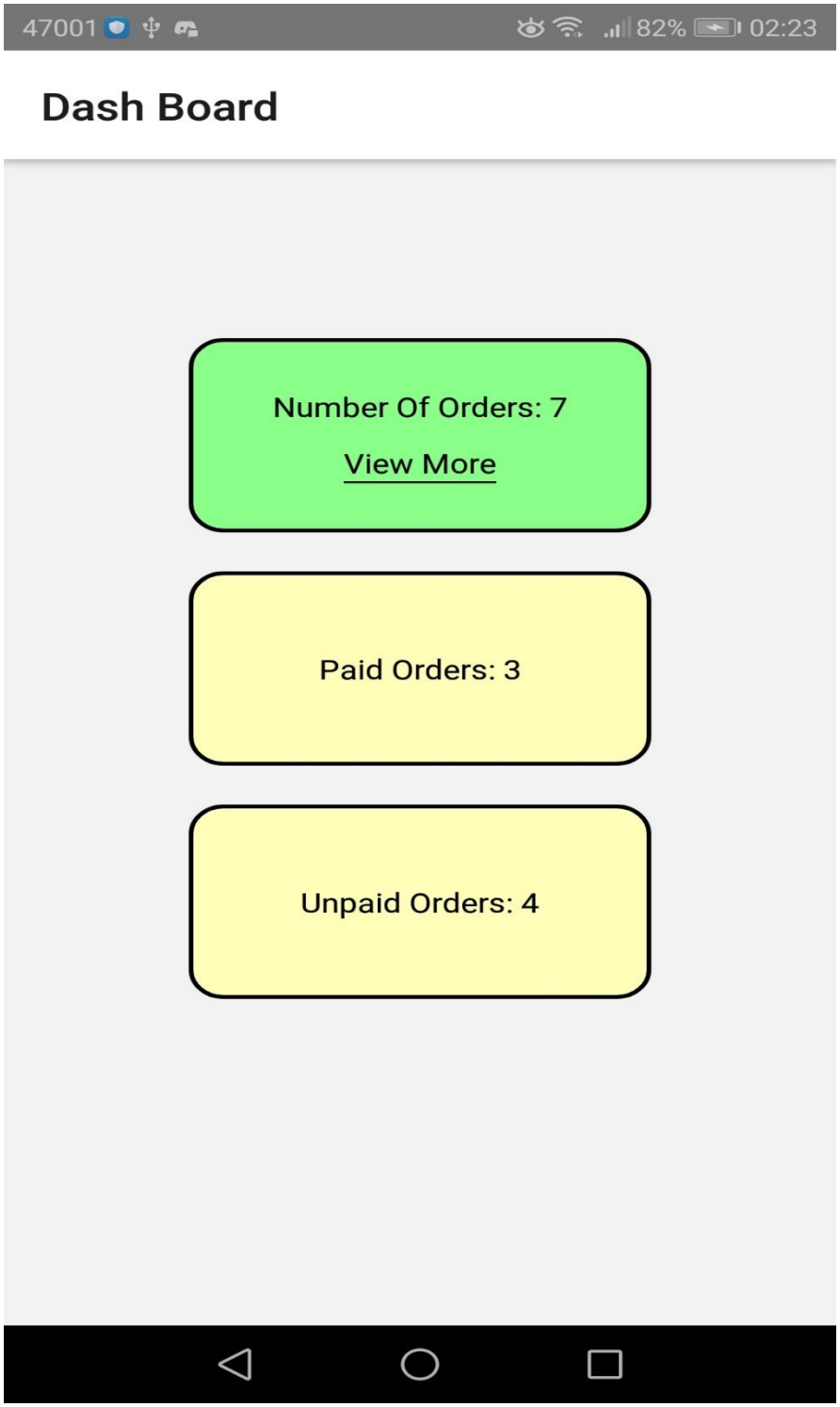

Fig: Dashboard Screen

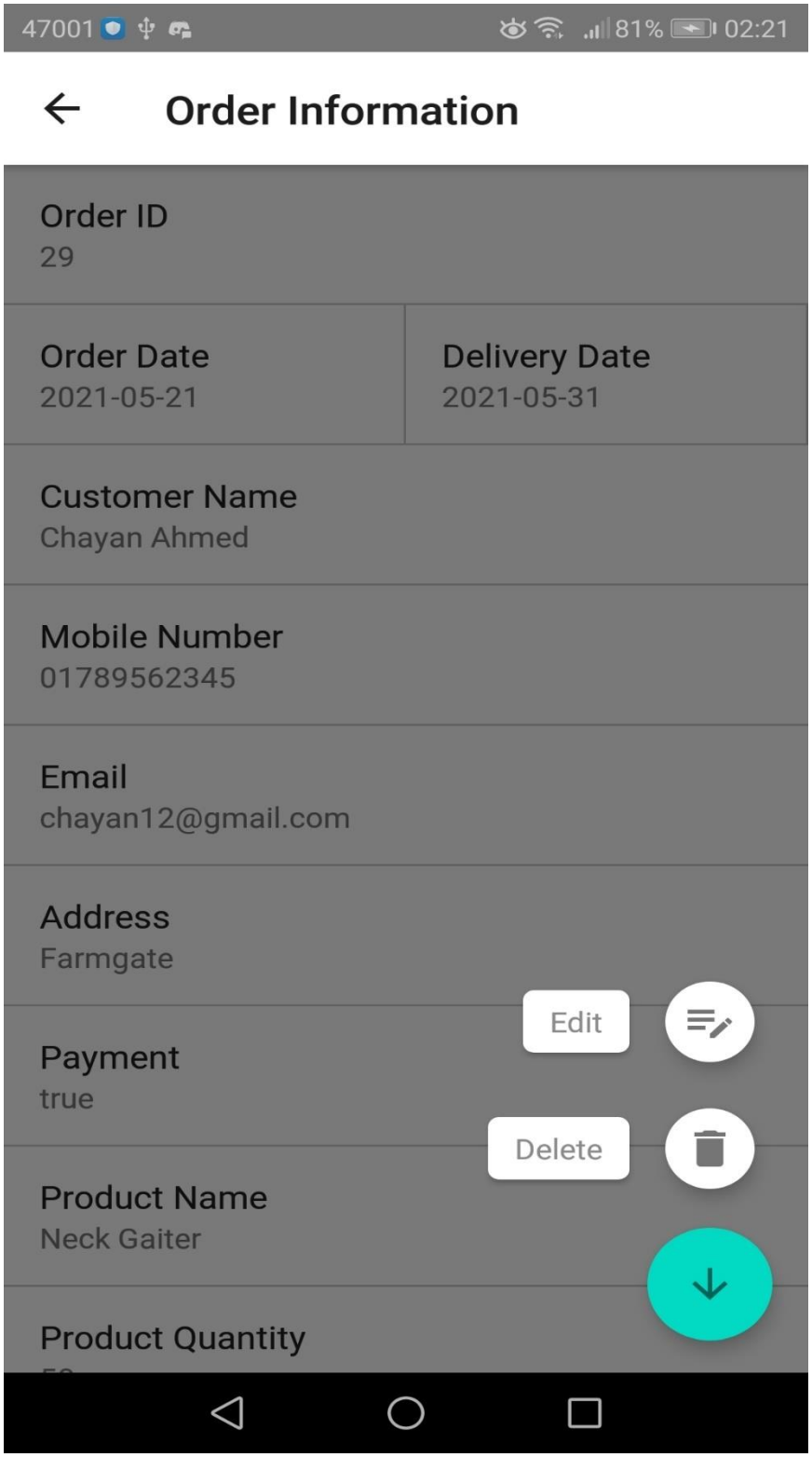

Fig: Delete or Edit Option Screen

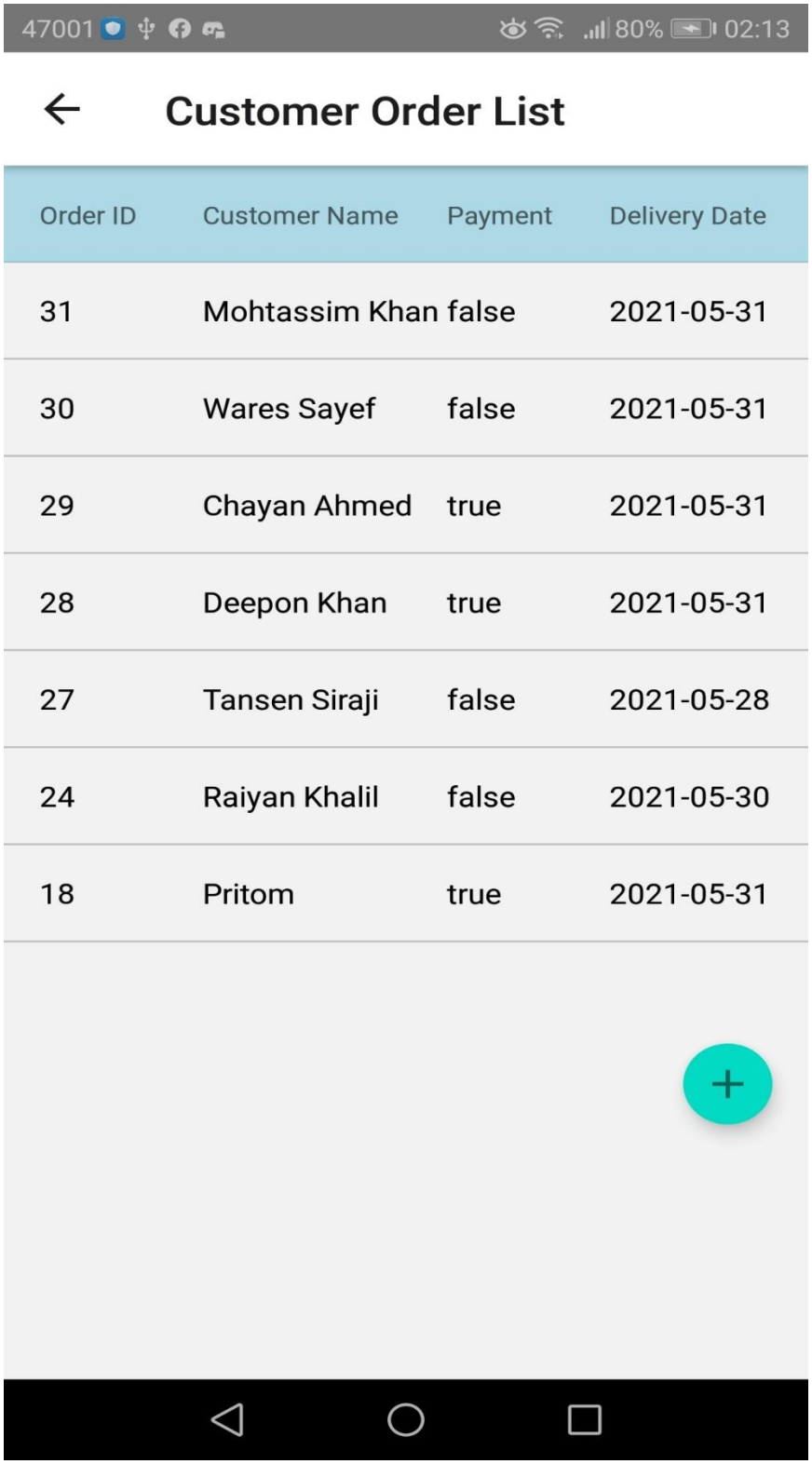

Fig: Order Info List Screen

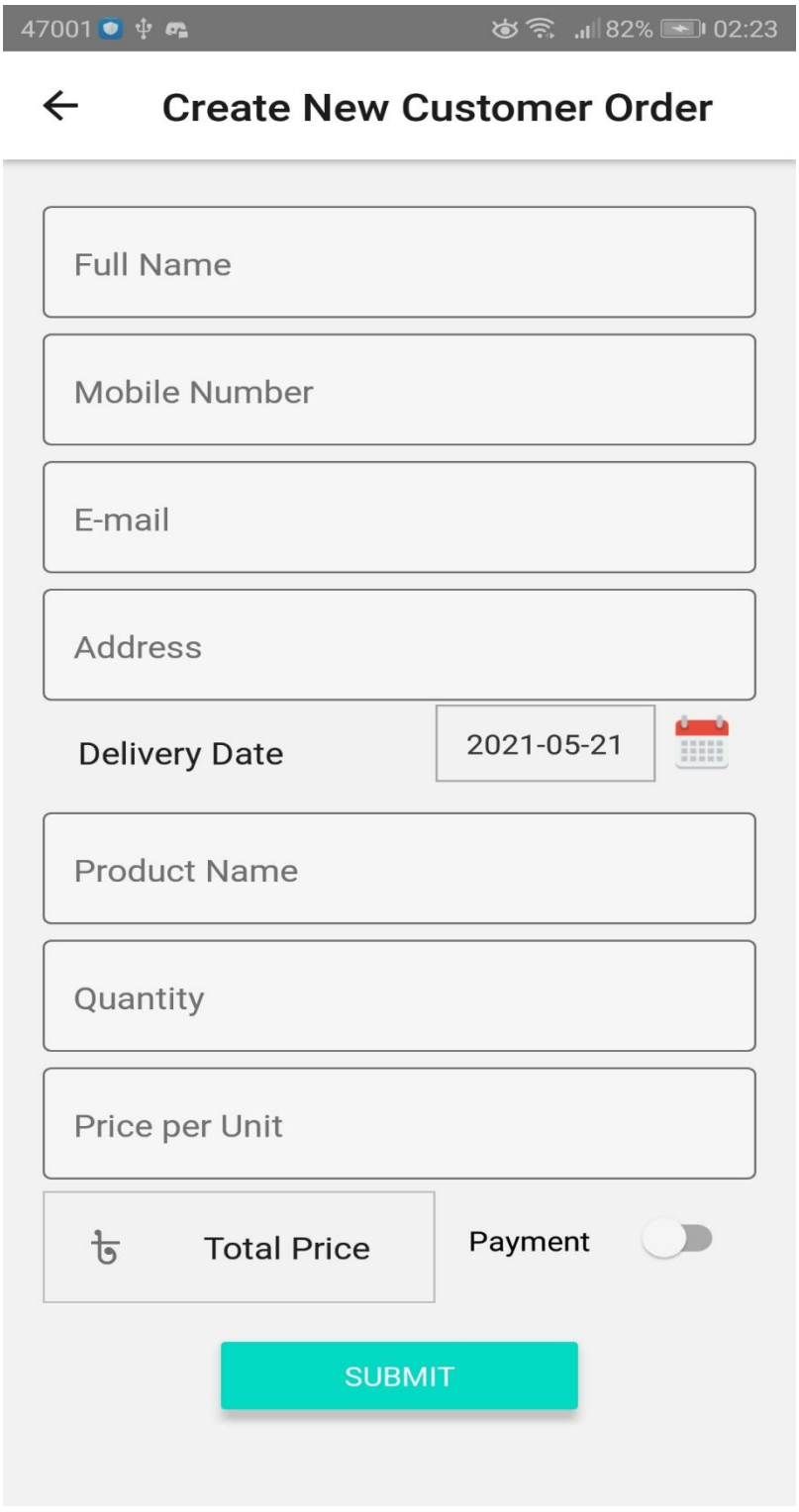

Fig: Create New Customer Order Screen

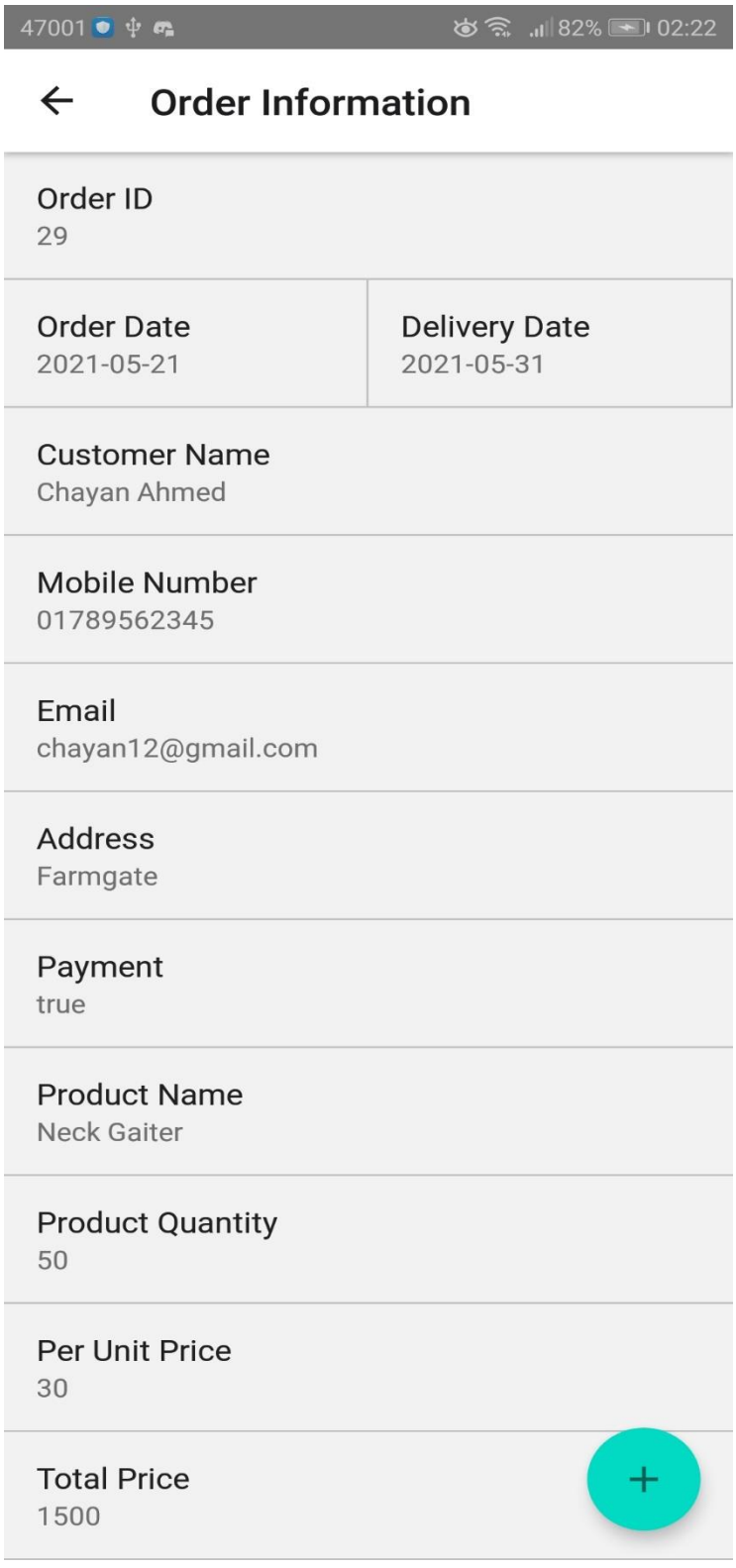

Fig: Order Information Screen

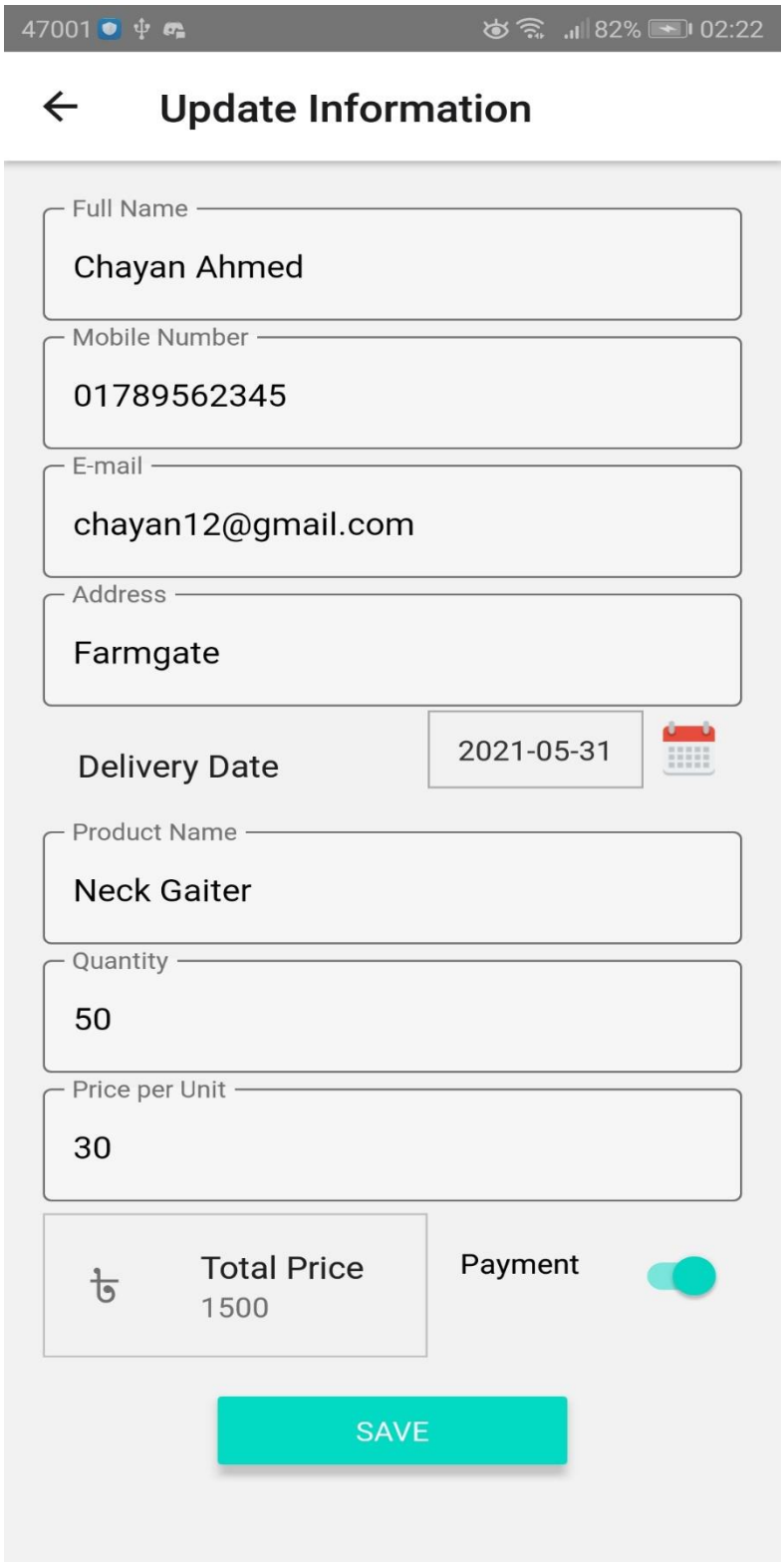

Fig: Update Information Screen