Internship as a Product Manager of Onnow Pte Ltd

by

Rakib Ullah
22341085

An internship report submitted to the
Department of Computer Science and Engineering in partial fulfillment of the
requirements for the degree of B.Sc. in Computer Science

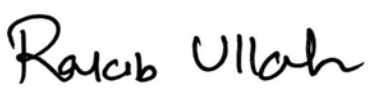
Department of Computer Science and Engineering
Brac University
March 2023

Declaration

It is hereby declared that

1. The internship report submitted is our own original work while completing degree at Brac University.
2. The internship report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The internship report does not contain material that has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I acknowledged all main sources of help.

Student's Full Name & Signature:



Rakib Ullah
22341085

Approval

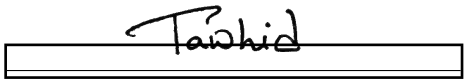
The internship report titled "Internship as a Product Manager of Onnow Pte Ltd" submitted by

1. Rakib Ullah (22341085)

Of Spring, 2023 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of B.Sc. in Computer Science on March 25, 2023.

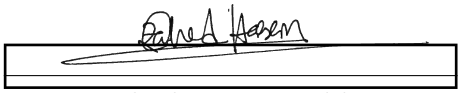
Examining Committee:

Supervisor:
(Member)



Md. Tawhid Anwar
Lecturer
Department of Computer Science and Engineering
Brac University

Co-Supervisor:
(Member)



Zahed Hasan Rabbi
VP of Technology
Onnow Pte Ltd

Program Coordinator:
(Member)

Md. Golam Rabiul Alam, PhD
Professor
Department of Computer Science and Engineering
Brac University

Head of Department:
(Chair)

Dr. Sadia Hamid Kazi
Chairperson and Associate Professor
Department of Computer Science and Engineering
Brac University

Dedication

I dedicate this internship to my parents for their constant guidance and support which has been pivotal towards the completion of my internship. They motivated me, and I am able to finish my internship efficiently.

Acknowledgement

I would like to express our sincere appreciation to Md. Tawhid Anwar, my Supervisor, for providing me with direction, support, and encouragement while conducting research and preparing for my internship. His invaluable observations and years of experience have significantly influenced the development of this work. In addition, I would like to extend my gratitude to the esteemed faculty members and individuals of BRAC University for the support and assistance they provided in all facets of this endeavor. In conclusion, I would like to express my gratitude to my family and friends for their unflinching support and unmatched level of understanding during the entirety of this internship.

Table of Contents

List of Figures

Chapter 1

Introduction

1.1 About Internship

Internships enable students and recent graduates to adjust to real-world working procedures and use their expertise. During the course of their studies, students will be able to gain practical experience in their field of study. This eases the transition of the student from the academic to the professional world. Also, organizations will have a better understanding of their new interns and will be able to put them based on their requirements and where they are best suited. With all of this in mind, an internship also provides a student with real-world experience, which raises the value of their resume and their chances of landing a job.

Although it is becoming more popular, some students pick internships to finish their academics. Students at Brac University must finish either an internship or a thesis paper. Although fewer students at Brac University participate in internships, those who do are urged to gain as much knowledge and hands-on experience as possible from their employers. Students can pick an internship concentration as long as it is relevant to their degree.

Internships must last at least six months and be with a reputable institution. To be qualified, students must have earned more than 72-course credits.

As a Brac University student, I preferred to finish an internship rather than a thesis paper. I choose Onnow Pte Ltd for my internship. Onnow Pte Ltd is an internet restaurant business. In addition, they will soon provide a platform for users to order food straight from them. It is a Singaporean firm that has activities in Bangladesh. I want to learn everything I can so that it will help me academically and professionally in the future.

1.2 About this report

As part of my undergraduate degree requirements, I am bound by a paper on which Brac University would evaluate me. In this study, I look at the atmosphere and culture of my work. I've also written about what I've learned and my time at Onnow on my blog. This is going to have an in-depth description of my internship and the project on which I worked.

1.3 Objective

The following material is provided to readers as part of the objective of this report.

1.3.1 Intend

My professional skills and understanding are highlighted in this report.

1.3.2 Specific goals

This paper has specific objectives

- Provide a thorough overview of the organization profile
- Summarize the working atmosphere
- Presenting all the services Onnow Pte Ltd offers
- Give an overview of the work Onnow Pte Ltd does
- To show what I've experienced throughout the internships
- Describe in detail everything I've done on the project

1.4 Methodology

My report primarily focuses on my work experience and the things I learned throughout my internship at Onnow. The majority of something like the figures and evidence given is based on my personal experience. In addition, knowledge was gathered from various websites and a founders' meeting.

The majority of the data was taken from the following sources:

1.4.1 Primary Data

- This employment allows me to gain practical experience
- Insights gained from discussions with coworkers and senior management
- Consultations and workshops

1.4.2 Secondary data

- Onnow Pte Ltd's official website
- Internet
- News media

Chapter 2

Company Profile

2.1 Overview

Onnow is a food startup that aims to provide consumers with a hassle-free, delicious, and healthy meal option. The company offers a vast menu of proprietary food items that cater to all palates and lifestyles. These menus are designed and vetted by expert culinary chefs to ensure that every dish is not only tasty but also nutritious.

Onnow's focus on quality doesn't just stop at its menu items. The company takes pride in sourcing the freshest and highest quality ingredients for every dish they prepare. All meals are made fresh from a nearby kitchen and are delivered instantly to the customer's doorstep. The company's delivery system ensures that the taste of the food is consistent in every single order, giving customers a delightful culinary experience every time.

Onnow's mission is to make healthy and delicious meals accessible to everyone. Whether you need a quick breakfast before work or a hearty dinner after a long day, Onnow has got you covered. So why not try out their menu today and experience the taste of nutritious food made from fresh, quality ingredients?

2.2 Mission & Vision

Onnow's mission is to support over 600,000 SME restaurants in emerging markets, empowering them to thrive.
Onnow's vision is to provide convenient access to freshly prepared food for more than 165 million people.

2.3 How would Onnow Pte Ltd operate?

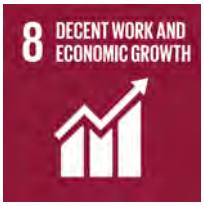
A good structure is required for a firm to be able to develop and deliver the best results. The principles that follow will outline how Onnow Pte Ltd operates as a result of the talent and dedication of the team's growth, business development, and engineers.

2.4 Partners and Investor

They are thrilled to update their identity with a focus on establishing a globally-recognized platform for the introduction of future technologies. Our dedication and mission to assisting SMB restaurants in emerging regions to compete with larger chains remain intact. Onnow is backed by global venture capital firms like GoAhead Ventures, TheVentures, Techne Infiniti Ventures, and Blue Aura Ventures.

2.5 Impact

The goal of this organization is to address global issues and accelerate positive change on a global scale. Their ultimate vision is to create a restaurant industry that is both digitized and sustainable, while also prioritizing safety.



Our priority is to create meaningful employment opportunities that contribute positively to society while ensuring that our operations do not have adverse effects on the environment. We are committed to upholding labor rights and promoting awareness across our industry to eradicate the scourge of child labor.

Onnow is committed to preparing for future challenges by improving the infrastructure of the traditional restaurant industry in emerging markets. We advocate for the adoption of innovative and sustainable technologies, and we strive to provide universal access to information, ensuring fairness and equality for all.

Onnow leverages IoT-driven technology to enhance the effectiveness of food systems through cost reduction in production and better management of food waste.

2.6 Robust Technology Platform

Introducing a groundbreaking restaurant management platform that provides a comprehensive solution to streamline your restaurant's operations. The platform is completely free of charge and equipped with powerful tools that will enable you to take control of your restaurant's supply chain, online ordering, and kitchen management, empowering you to succeed with the latest technology [1].

- Supply Chain Management Automation
- Live Stock Control
- Order Management System in Real Time
- Expense Management
- Kitchen Management Software
- Ordering System D2C
- Wastage Control Module with IoT Capability
- Integration of Digital Payments

2.7 Agile Product Development process

Agile product development is a methodology that incorporates the principles and values of the Agile Manifesto to guide the strategies and procedures involved in product development. The teams working in this approach follow a process of developing products in short, iterative cycles, which facilitates continuous feedback and enables swift enhancements to the product.

2.7.1 Features analysis

In a platform of services, there must be more features, but all of the features won't be needed for efficiency. To make the platform minimal and easy to access, we reduced the mismatched features that will be removed from the product.

2.7.2 Business feasibility

Every feature will be created based on the business needs, otherwise, features will not be monetized or not give us efficiency.

2.7.3 Technological feasibility

All of the features are subject to constraints and limitations imposed by the technology development process. Whenever we select any features, it should be with clearance from the technology team. Otherwise, development time will increase, and as a result, productivity will decrease.

2.8 Technology development process

The approach to software development utilizes a framework that breaks down the development process into stages, encompassing various activities to streamline planning and management. This framework, also referred to as the software development life cycle, may entail the achievement of unique objectives by the project team to build or maintain an application. Onnow Pte Ltd adopts a similar development process while delivering their software programs, and they adhere to the agile framework to ensure all project requirements are met. Below are the steps involved in establishing Onnow Pte Ltd.

2.8.1 Requirement Engineering

As Onnow Pte Ltd functions as an online eatery and d2c food procurement platform, its business team frequently seeks new ideas, advancements, and services. Upon receiving such requests, the development team identifies the necessities and preferences of the business team. They assess the business requirements, suggest resolutions, and scrutinize potential consequences and challenges. Once all the data has been collected and recorded, diverse teams will proceed to furnish the business requirements of Onnow Pte Ltd.

2.8.2 Context and Process Capturing

Prior to commencing the development phase, several criteria are evaluated, with some aspects requiring further scrutiny. Consequently, a product manager is designated to investigate and compile a report on the suitability of the product in the business context, the resources to be utilized in the process, the software's intended functionality and target users, the product's competitors, and the ultimate objective of the project. Once all this information is gathered, the manager and software architects can devise a plan for how to proceed, determine which methodologies to employ, and establish the criteria for a successful end product that meets the requirements of the business team.

2.8.3 Proof of Concept (POC)

Veteran members of the development team are granted access to an external team and the preliminary versions of applications. The complete team unearths innovative techniques to satisfy customer requirements through thorough investigation and advancement.

2.8.4 Future Releases

As Onnow Pte Ltd implements an agile approach to software development, they obtain initial releases from the development, beta, and product phases promptly upon commencing the work. Subsequently, the product is subjected to extensive testing using the latest and most advanced equipment, followed by the creation of an abstract and a report.

2.9 Methodology of Recruitment

Prospective applicants are required to submit their resumes and cover letter to the Human Resources department. Upon approval, a preliminary on-call interview is conducted to establish initial rapport, after which, an in-person interview is arranged. However, due to the ongoing pandemic situation, I underwent an online interview process instead of a physical one. The senior vice president personally interviewed me. The interviews at Onnow are unique in that they focus on the applicant's potential rather than merely filling a position. They asked me several questions about my interests before putting me in a group. They believe I would be most productive in the quality assurance department. They were interested in my leisure activities and personality as well as my academic and professional background. It was an interesting read.

2.10 Technology and Framework

- Front-end: Next.JS, Tailwind CSS, TypeScript, Redux toolkit, RTK Query
- Back-end: Python, Django REST Framework
- Database: PostgreSQL
- API Documentation: OpenAPI-Swagger
- Runtime broker: Celery
- OTP gateway: Alpha SMS
- SMTP gateway: SendPlus
- Production server: AWS (RDS, ELB)

Chapter 3

Training and Task Phase

3.1 Overview

Undertaking an internship at a company is a noteworthy accomplishment both academically and professionally. In the present highly competitive job market, the capability to acquire work experience is an advantageous resource. Additionally, it aids students in their transition into the workforce upon completion of their academic pursuits. The achievement of applying theoretical knowledge in practical settings is also significant. Moreover, it is vital to be cognizant of the different industry protocols as they can differ.

I have been selected to work in the technology product management department as an intern at Onnow Pte Ltd, which is a necessary component of my graduation from Brac University. This internship is an excellent opportunity for me to acquire new skills and gain valuable work experience. When I began my employment, I had very little understanding of how workplaces operate during a pandemic.

However, my Onnow supervisor was supportive and guided me through every step, making the process much more manageable. Even though the interns were immediately assigned to Onnow Pte Ltd without any formal training, my supervisor assisted me in navigating various aspects of my internship. While I have included several screenshots in my report, I am unable to reveal some of the panels I worked on due to confidentiality concerns.

3.2 Learning to Know the Product Management Environment

I am the first product manager of Onnow Pte Ltd, which is why there is no one to give product management-related advice to, but the CEO and VP of Tech help me a lot with clear and understandable approaches on what type of product they want to build and how to revamp the old product development approach. Then I learned by myself through the help of the Google Project Management course and other online resources.

3.2.1 Learning more about the beta platform

The VP of technology introduced me to the beta version of the DTC food ordering software. I examined the product throughout the process for five working days. Then I gave a report to the CEO, as I was required to pursue my tech and top management to create from scratch, as beta apps would not be able to scale in the future days.
After all the testing with the QA and tech teams, I reported that this product is not scalable and that a new product must be developed from scratch.

3.2.2 Setting up a team for the D2C food ordering platform

I proposed the team structure for building efficiency for one project. We follow the pod approach for every different project. I was lucky to join them, otherwise, I could not manage the whole mix team for a specific product. This team is responsible for the D2C product. Top management approved my team layout and we started working based on the hierarchy.

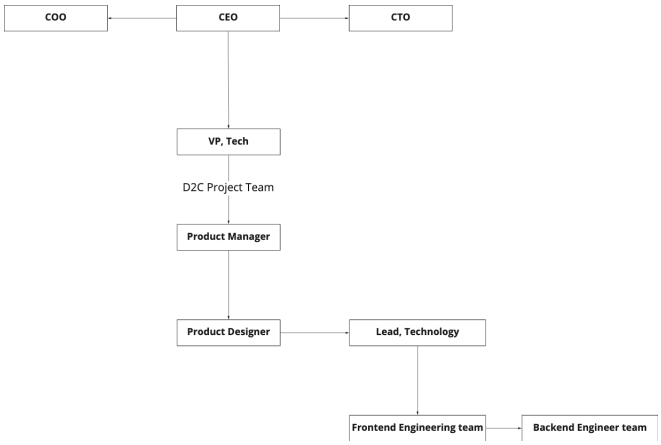


Figure 3.1: Team structure

3.2.3 Decided to design the product architecture

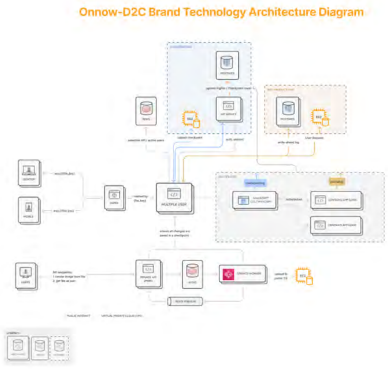


Figure 3.2: System architecture

We extensively examined the product characteristics and analyzed the business needs. Then, we all come together to construct the product's architecture.

3.2.4 Product Modules and Packaging

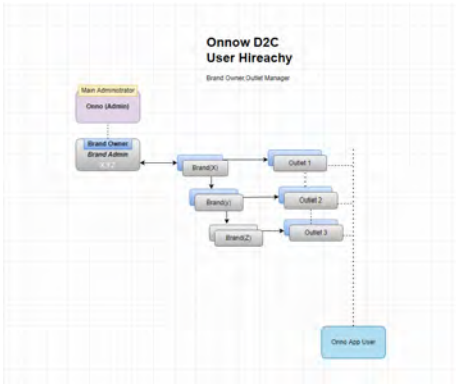


Figure 3.3: Module layering

According to the business application needs, the application is divided into three core modules:

1. Admin dashboard app (front-end)
2. Customer app (front-end)
3. The Central API server (back-end)

There are two ways to package the entire product:

1. Using the virtual environment (back-end) and npm (front-end)
2. Dockerizing the application

We kept the API server in a monolithic architecture because microservices would be expensive and difficult to maintain at this stage.

3.2.5 User Experience Design

Based on the architecture we decide on the design of the user experience.

Figure 3.4: Onnow user experience

3.2.6 User Interface Design

Based on the user experience and journey we decide on the design of the user interface.

Figure 3.5: Dashboard interface (This is the admin app where you can open a shop, which customers can see from their mobile.)

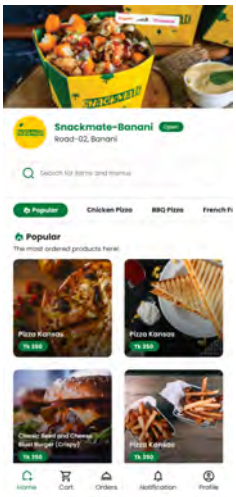


Figure 3.6: User end interface(User can see this view and order from this.)

3.2.7 Tools for team collaboration and tracking

As a remote team, we post all tasks to the notion workspace and do scrum meetings in the morning and evening. Therefore, we merge Google meet with the concept. Everyone was present during the meeting.

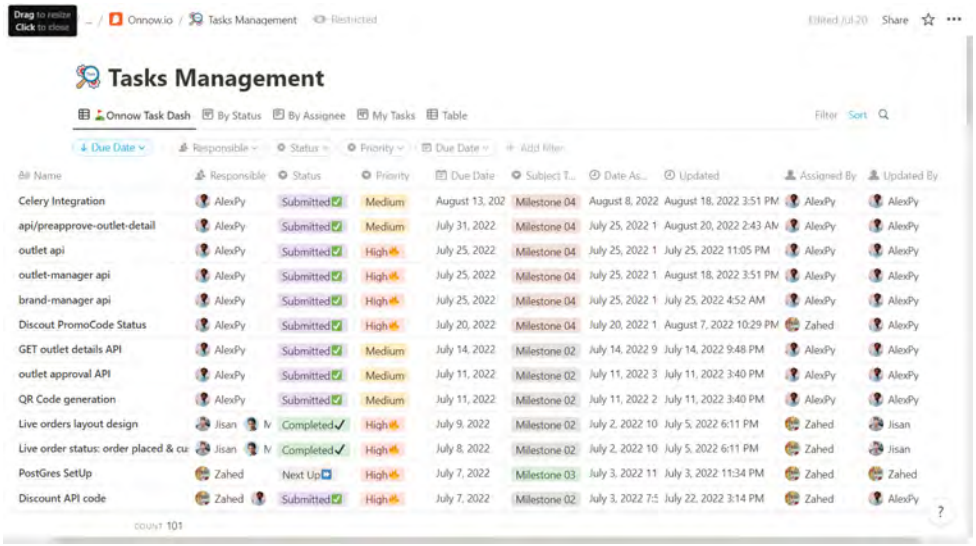


Figure 3.7: Team management system

Chapter 4

Iteration Phase

4.1 Overview

We must consider an iterative strategy in digital product management in software development because iteration is one of the most important components of the Software Development Life Cycle (SDLC). As a result, before applying the iterative model in the software development life cycle, it is vital to understand its benefits (SDLC). The most significant advantage of this model is that it is deployed early in the software development process, allowing developers and testers to identify functional or design faults as early as feasible, allowing them to take corrective measures within a limited budget [2]. Additional advantages or benefits of this model include:

- Certain functionalities can be created early in the software development life cycle (SDLC)
- It is easily adjustable to the project's and client's ever-changing needs
- It works best in agile companies
- With the Iterative model, changing the scope or needs is more cost-effective
- Parallel development is feasible
- It is simple to test and debug during lesser iterations
- During iteration, risks are recognized and resolved, and each iteration is readily controlled
- Less effort is spent documenting and more time is spent designing the iterative model
- When showing sketches and blueprints of the product to users for feedback, one can obtain accurate user feedback

4.2 Our action

When it comes to our time to iterate, we first hand over the product to the quality assurance (QA) engineer to check whether the function is properly working or not.

After the initial inspection, they send a report to the development team to fix the problem. In the next step, the development team again solved the problem, then they shifted to the QA engineer for a second inspection. When the QA engineer gives the initial approval, I have to inspect the product with the checklist of features and design. Then, after product manager approval, this will be shifted to the DevOps team for deployment to the cloud.

Chapter 5

Deployment Phase

5.1 Overview

One of the most critical components of the software development process is deployment. Deployment is the process by which developers deploy applications, modules, updates, and patches to users. The methods used by developers to create, test, and release new code have an impact on how quickly a product can respond to changes in user preferences or requirements, as well as the quality of each change.

5.2 Our Action

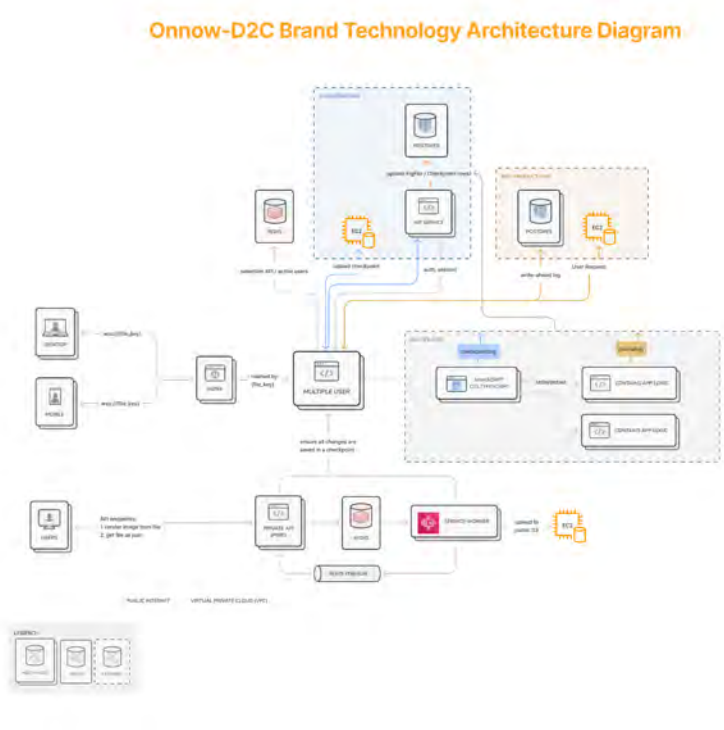


Figure 5.1: Deployment architecture

In this deployment architecture design, we are concerned about our user traffic and user load balance through the EC2 and elastic load balance and manage user request asynchronously with NGINX reverse proxy. Our initial user target is ten thousand so if we use NGINX it might be able to 15000 static files according to being able to serve 50 requests in one second. Our Django app might need 20 ms to respond to the request. In the same scenario, Nginx might take 0.06 ms to proxy a request to the Django app. So the total time for Nginx takes 20.06ms. Hence, we use ec2(Elastic compute cloud) as a web service that provides resizable compute capacity in the cloud, in this system our application manages user admin to Customer-Customer to admin request (HTTPS request) Asnychoronusly with help of ASGI which is managed by USGI Gateway service to commonly run Django Application smoothly. In our Application, there are some security protocols like OTP, Mail verification so there was an issue like late OTP receiving in this procedure we use celery and Redis for message brokers to send OTP as a queue method for first data transferring. For all of the processes, we maintain a single thread-like WORA-based write-anywhere run the where the help of the DOCKER virtualizations. We used a PostgreSQL database to store and manipulate the user data securely. All over the process, we use python manager which is associated with aaPanel for restarting and mapping our Django app

Chapter 6

Conclusion

In the first two months of my internship, I learned a significant amount of product management fundamentals. Before beginning with actual project management, it is essential to organize everything in advance, and it is advisable to document all you do. It is quite easy to overlook even the most basic and obvious issues if you haste, so patience is essential. I've learned that it's necessary to consider a concept from multiple angles so that I can more easily evaluate things from diverse perspectives. Even if a feature functions as expected, it may still have problems. As a result, I learned never to stop testing after the first successful attempt, even if it worked as planned. I need to run more test cases and look for ways to break them. If anything is breakable, it can and must be improved.

In the first portion of my internship, I have been introduced to extremely simple scenarios, which are essential to comprehend before moving on to the more complicated components and features of product management. In the months that followed, I was introduced to increasingly complicated difficulties and participated in sessions with the technical, business, and product teams to describe the problem and generate potential solutions.

After four months, I had completely experienced the new challenges, which are iteration, deployment, and beta testing.

This internship began on June 1, 2022. This contract is for six months and will expire on November 1, 2022. This paper covers six months of my internship because it is part of my pre-thesis 1 and 2.

Bibliography

[1] *Onnow - direct-to-consumer (d2c) food startup*, https://www.onnow.io/, (Accessed on 04/05/2023).

[2] *Sdlc - overview*, https://www.tutorialspoint.com/sdlc/sdlc_overview.htm, (Accessed on 04/05/2023).