



American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

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Section: E

Software Quality Assurance and Testing

CODE LAB (Ed-Tech Website)

A Report submitted By

SN	Student Name	Student ID
1	TAHMID AL RAFID SIDDIQUE	20-42086-1
2	KAMIL AHMED	20-42058-1
3	MD. MORSHEDUL ISLAM	20-42645-1

Under the supervision of

Abhijit Bhowmik

Associate Professor

Department of Computer Science

Faculty of Science & Technology

American International University-Bangladesh (AIUB)

Software Test Plan

for

<CODE LAB>

Version 1.04 approved

Prepared by <TAHMID AL RAFID SIDDIQUE,
KAMIL AHMED, MD. MORSHEDUL ISLAM>

< American International University-Bangladesh >

<12 August, 2023>

Checked By Industry Personnel

Name: Sabina Yasmin

Designation: QA Engineer

Company: Graphic People

Sign:

Date:

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Revision History

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0.2	2023.08.12	Md. Morshedul Islam	Second Draft: Version 1.02
0.3	2023.08.15	Sabina Yasmin	UI/UX design mistakes needs to be solved.
0.4	2023.08.16	Tahmid Al Rafid Siddique	Final Draft: Version 1.03

1. TEST PLAN IDENTIFIER: [Code Lab-CL1.0](#)

2. REFERENCES

- Software Requirement Specification (SRS) Document.
- Software Testing and Quality Assurance – Theory and Practice - Kshirasagar Naik & Priyadarshi Tripathy.
- Software Quality Engineering: Testing, Quality Assurance and Quantifiable Improvement - Jeff Tian.

3. INTRODUCTION

Background to the Problem

In today's rapidly evolving world, the convergence of technology, automation, and data-driven processes is ushering in the era of the 4th Industrial Revolution. This wave of innovation is redefining industries, reshaping job roles, and creating a demand for an entirely new skillset. As a result, there is an urgent need to bridge the gap between traditional education and the demands of this technologically advanced landscape.

In response to this challenge, a group of enthusiastic undergraduate students from the field of Computer Science and Engineering have embarked on a mission to create an innovative educational platform named "Code Lab." The primary objective of Code Lab is to empower individuals from all walks of life with the necessary knowledge and skills to secure meaningful employment opportunities in the fast-paced and dynamic industries of the 4th Industrial Revolution.

Code Lab envisions itself as a pioneering solution that democratizes access to cutting-edge technology education. The project aims to provide a comprehensive and adaptable learning experience that not only imparts technical expertise but also cultivates critical thinking, problem-solving abilities, and adaptability – all essential traits for success in the 4th Industrial Revolution.

The educational landscape is undergoing a seismic shift, and traditional learning models struggle to keep pace with the rapid advancements in fields like artificial intelligence, blockchain, data science, Internet of Things (IoT), and more. Code Lab is designed to serve as a dynamic and up-to-date knowledge hub that anticipates industry trends and offers courses, tutorials, and practical projects that align with the latest technological developments.

As the project transitions from the prototype stage to a comprehensive educational platform, the development team is dedicated to ensuring the highest quality of content, user experience, and functionality. This entails the formulation of a robust software test plan that will thoroughly assess the platform's performance, security, usability, and compatibility across various devices and browsers.

The Code Lab project aspires to bridge the gap between traditional education and the demands of the 4th Industrial Revolution, providing a transformative learning experience that equips individuals with the skills they need to thrive in a rapidly changing technological landscape. Through the collaborative efforts of the project team, educators, industry experts, and enthusiastic learners, Code Lab aims to be a beacon of empowerment, preparing individuals to seize the opportunities presented by the exciting and challenging world of the 4th Industrial Revolution.

Root Cause Analysis and Significance of the Problem:

The root cause of the problem addressed by the Code Lab project lies in the traditional education system's inability to keep pace with the rapid advancements in technology and industry demands. There are several factors contributing to this issue:

- 1. Lack of Agility in Education Systems:** Traditional educational institutions often follow rigid curricula that take time to update. Given the rapid pace of technological advancements, this rigidity results in a significant time lag between the introduction of new technologies and their inclusion in academic programs.
- 2. Limited Access to Quality Education:** Many individuals, especially those in underserved communities or remote areas, lack access to quality education. The 4th Industrial Revolution's demands are global, but the resources to learn these skills are not always evenly distributed.
- 3. Technological Obsolescence:** The half-life of certain technical skills is decreasing due to the rapid emergence of new technologies. Individuals who do not regularly update their skills risk becoming outdated and less relevant in the job market.
- 4. Job Market Mismatch:** The job market increasingly requires skills in emerging technologies like AI, machine learning, blockchain, and IoT. However, the supply of individuals with expertise in these fields is often insufficient, leading to a mismatch between job opportunities and available talent.
- 5. Cost and Time Constraints:** Traditional education, especially at the higher education level, can be expensive and time-consuming. Many individuals cannot afford to take years off to pursue formal education, especially if they need to quickly adapt to changing industry requirements.

The importance of addressing this problem cannot be overstated:

- 1. Economic Growth and Innovation:** The 4th Industrial Revolution is reshaping industries, driving innovation, and creating new economic opportunities. By equipping individuals with relevant skills, Code Lab contributes to a skilled workforce that fuels economic growth and technological advancements.
- 2. Inclusivity and Access:** Code Lab's focus on accessibility and online learning makes education available to a broader audience, including those who may have been excluded from traditional education due to geographic, financial, or other barriers.
- 3. Reducing Unemployment:** The project directly addresses the issue of unemployment by empowering individuals with in-demand skills, enabling them to secure meaningful jobs in the tech industry and related sectors.
- 4. Filling Skill Gaps:** Code Lab's offerings directly align with the skill demands of the 4th Industrial Revolution. This helps bridge the skill gap between what traditional education

provides and what the industry requires, making individuals more relevant and valuable in the job market.

5. Lifelong Learning: The project encourages the concept of lifelong learning, where individuals continuously update their skills to remain competitive in their careers. This approach is essential in an era where technology evolves rapidly.

6. Global Competitiveness: Equipping a diverse range of individuals with cutting-edge skills enhances a country's competitiveness on the global stage. It allows nations to participate actively in emerging technological sectors, fostering innovation and growth.

In essence, the Code Lab project addresses a critical need in education and industry by creating a platform that adapts to the rapid pace of technological change, democratizes access to education, and empowers individuals to succeed in the 4th Industrial Revolution. By doing so, the project not only addresses the root causes of the problem but also contributes to the positive transformation of education, the workforce, and the economy.

Solution to the Problem

Proposed Solutions and Rationale:

To effectively address the challenges presented by the gap between traditional education and the demands of the 4th Industrial Revolution, the Code Lab project proposes the following solutions:

1. Agile Curriculum Development:

Solution: Implement an agile curriculum development approach that allows for rapid integration of new technologies and industry trends into the learning content.

Rationale: By adopting an agile approach, Code Lab can swiftly respond to emerging technologies and adjust course content accordingly. This ensures that learners are exposed to the latest developments, enhancing their employability.

2. Online and On-Demand Learning:

Solution: Offer online and on-demand learning options that provide flexibility in terms of pace and schedule.

Rationale: Online learning removes geographic barriers and allows learners to balance their education with other commitments. On-demand access caters to individuals who want to upskill while working or pursuing other educational opportunities.

3. Practical Application and Projects:

Solution: Integrate practical projects and real-world applications into the curriculum.

Rationale: Hands-on experience enhances understanding and retention of complex concepts. Practical projects simulate industry challenges, preparing learners for real job scenarios.

4. Expert-Led Instruction:

Solution: Collaborate with industry experts and experienced instructors to deliver high-quality content.

Rationale: Expert-led instruction ensures that learners receive accurate and relevant information. Industry professionals provide insights into current industry practices and trends.

5. Community Engagement:

Solution: Foster a vibrant online community where learners can collaborate, share experiences, and learn from each other.

Rationale: Community engagement enhances the learning experience by providing opportunities for peer learning, networking, and support.

6. Adaptive Learning Algorithms:

Solution: Implement adaptive algorithms that personalize learning paths based on learners' progress and interests.

Rationale: Personalization tailors the learning experience to individual needs, maximizing engagement and knowledge retention.

Feasibility and Business Objectives:

The proposed solutions align closely with the business objectives of Code Lab and are feasible for several reasons:

1. Technological Advancements: The availability of online platforms, cloud infrastructure, and digital tools makes it feasible to deliver dynamic content, conduct interactive labs, and maintain a collaborative online community.

2. Access to Expertise: The digital age allows for remote collaboration, enabling Code Lab to tap into a global network of industry experts and educators.

3. Scalability: Online platforms are inherently scalable, allowing Code Lab to accommodate a large number of learners without significant increases in operational complexity.

4. Cost Efficiency: Online education often requires lower overhead costs compared to traditional brick-and-mortar institutions, making it a cost-effective solution for both the project team and learners.

5. Data-Driven Insights: Online platforms can collect data on learner engagement, progress, and preferences, enabling iterative improvements to the curriculum and learning experience.

6. Global Reach: Online education transcends geographic boundaries, enabling Code Lab to cater to an international audience and contribute to a diverse learning community.

Overall, the proposed solutions leverage the capabilities of modern technology and online learning to effectively bridge the gap between traditional education and the requirements of the 4th Industrial Revolution. This approach aligns with Code Lab's mission, enhances accessibility, and equips learners with the skills they need to succeed in a rapidly changing technological landscape.

Software Description: Code Lab Educational Platform

The Code Lab Educational Platform is an innovative online learning environment designed to bridge the gap between traditional education and the evolving demands of the 4th Industrial Revolution. Its primary purpose is to empower individuals with cutting-edge technology education and skills, enabling them to secure relevant jobs and excel in industries driven by technological advancements.

Key Benefits:

- 1. Access to Cutting-Edge Education:** Code Lab offers courses, tutorials, and practical projects that cover emerging technologies such as AI, machine learning, blockchain, IoT, and more, providing learners with skills in high demand by industries.
- 2. Flexibility and Convenience:** Learners can access the platform anytime, anywhere, allowing them to fit education into their busy schedules and personal commitments.
- 3. Practical Learning:** The platform emphasizes hands-on experience through real-world projects and interactive labs, preparing learners for the challenges encountered in actual industry scenarios.
- 4. Expert Guidance:** Courses are developed and led by industry professionals and experienced educators, ensuring the content is accurate, relevant, and aligned with industry standards.
- 5. Personalized Learning:** Adaptive learning algorithms tailor learning paths to individual learners' progress, enhancing engagement and knowledge retention.
- 6. Community Interaction:** Code Lab fosters a vibrant online community where learners can collaborate, share insights, and learn from each other's experiences, creating a supportive ecosystem.

Objectives and Goals:

1.Educational Excellence: Provide high-quality, up-to-date learning content that equips learners with the skills needed to thrive in the 4th Industrial Revolution.

2. Accessibility: Democratize education by offering an accessible online platform that transcends geographic and socioeconomic barriers.

3. Industry Alignment: Ensure that the curriculum reflects current industry trends and demands, preparing learners for real-world challenges.

4. Engagement and Retention: Foster an engaging learning experience that motivates learners to continue their education and complete courses successfully.

5.Skill Transferability: Equip learners with skills that are transferable across industries and adaptable to a rapidly evolving technological landscape.

6. Networking and Collaboration: Cultivate a dynamic community where learners can interact, share experiences, and collaborate on projects, enhancing their overall learning journey.

The Code Lab Educational Platform's purpose is to empower individuals to take control of their learning, stay relevant in a technologically advanced world, and unlock new opportunities in the job market. By focusing on accessibility, practicality, expert guidance, and community engagement, the platform aims to bridge the gap between education and industry, contributing to the success of learners in the 4th Industrial Revolution and beyond.

Existing Studies and Software Solutions in the Problem Area:

The gap between traditional education and the demands of the 4th Industrial Revolution has been a topic of concern for researchers, educators, and policymakers. Several studies have explored this issue and proposed various solutions to address it. Additionally, several software solutions and online learning platforms have emerged to bridge this gap. Here are some examples:

Existing Studies:

1."The Future of Jobs" - World Economic Forum: This report highlights the skills and job roles that are expected to be in demand in the coming years due to technological advancements. It emphasizes the need for upskilling and reskilling to meet the changing requirements of the job market.

2. "Skills for the Future" - OECD: The Organization for Economic Co-operation and Development (OECD) has conducted research on the skills required for the future workforce. The report underscores the importance of adaptability, critical thinking, and technological literacy.

3. "Rethinking Education" - UNESCO: UNESCO has explored the need for a paradigm shift in education to ensure that learners acquire the skills and competencies needed for the 21st century. The report calls for a learner-centered approach and integration of technology.

Existing Software Solutions:

1. Coursera: Coursera is a well-known online learning platform that offers courses on a wide range of topics, including technology, business, and data science. It partners with universities and institutions to provide high-quality content.

2. edX: Similar to Coursera, edX offers online courses from universities and institutions worldwide. It covers subjects like computer science, AI, and engineering, providing learners with access to up-to-date content.

3. Udacity: Udacity focuses on tech-related courses and nanodegree programs that are designed in collaboration with industry partners. The platform offers projects and practical exercises to enhance real-world skills.

4. LinkedIn Learning (formerly Lynda.com): This platform offers video-based courses on a wide range of subjects, including technology. It's particularly useful for professionals looking to upskill or learn specific tools and software.

5. Khan Academy: While initially focused on K-12 education, Khan Academy has expanded its offerings to include programming, computer science, and other technology-related subjects. It's known for its user-friendly interface and accessibility.

These existing software solutions provide valuable resources for learners seeking to bridge the gap between traditional education and the skills required for the 4th Industrial Revolution. However, each platform has its own approach and focus areas. The Code Lab project aims to differentiate itself by offering a comprehensive platform that combines practical learning, community engagement, expert guidance, and adaptability to emerging technologies, all while targeting a diverse audience of learners looking to thrive in the changing landscape of technology and industry.

4. REQUIREMENT SPECIFICATION

4.1 System Features

4.1.1 System Sign up/registration

Functional Requirements:

- The software shall allow new users to register with their username and password
- There will be an extra feature of confirm password to make sure that user password input is correct.
- Then the user can update their general information such as first name, last name, date of birth, email, password, address etc.

Priority Level: High

Precondition: user must input the password and confirm password right.

4.1.2 System Login

Functional Requirements:

- The software shall allow users to login with their given username and password
- If the username and/or password has been inserted wrong the log in will be invalid.

Priority Level: High

Precondition: user have valid user id and password.

4.1.3 Home page search bar

Functional Requirements:

- The first thing that will be noticed by the users of any random visitor of the web site is our Home Page. Which will showcase the available courses, about us and contact us feature.
- The visitors can search for their desired course in the search bar.
- About us section will show the general information, goals and intention of our website.
- The course list will consist of all the available course to purchase as an advertise.
- The contact list consists of the email and contact number to give us feedback. User can also use the get in touch feature to give instant feedback.

Priority Level: Medium

Precondition: user must have stable internet connection in order to surf the home page and must enter the right spelling of the course.

4.1.4 Feedback/Get in Touch

Functional Requirements:

- User/Visitor can give their valuable feedback via “get in touch” section where they can share their name, mail id, phone number and feedback in the feedback section and directly send it to the admin panel.

Priority Level: low

Precondition: user must have stable internet connection in order to surf the page.

4.1.5 Student profile update

Functional Requirements:

- Students/registered users can Update their profile.
- They can change the name, user name, email, password and profile picture.

Priority Level: Medium

Precondition: user must have stable internet connection in order to surf the page and must provide right password in order to change/update the profile.

4.1.6 Student course enrollment

Functional Requirements:

- Students/registered users can purchase courses by making payment.
- After purchasing the course, the user could be able to watch video lecture, comment on that lecture to ask question to the teacher.

Priority Level: High

Precondition: user must have a mobile banking/online banking account in order to purchase any course.

4.1.7 Payment gateway

Functional Requirements:

- To purchase the course the student will be redirected to the payment gateway.
- A payment receipt will be issued under the name of that user.
- After a valid payment the course will be added to the student profile.

Priority Level: High

Precondition: user must have a valid mobile banking/online banking account in order to purchase any course.

4.1.8 Dark mode/Light mode switch

Functional Requirements:

- In order to give user a better experience, they can switch between light and dark mode as their preference.
- After a valid payment the course will be added to the student profile.

Priority Level: Low

Precondition: None

4.1.9 Save and download course

Functional Requirements:

- Many students can be from rural area with bandwidth shortage and bad internet connection they can save their purchased course.
- A saved/downloaded course can be watched without internet connection.
- The videos will be downloaded in only app to avoid piracy.

Priority Level: High

Precondition: user must purchase the course in order to download it.

4.1.10 Teacher course materials upload

Functional Requirements:

- Teacher/Course instructor can upload pdf, video, code and feedback to students in the comment section.
- They can create, delete and upload video.

Priority Level: Medium

Precondition: Course instructor must be verified by admin in order to upload any materials.

4.1.11 Chat Box

Functional Requirements:

- Teacher/Course instructor and students can communicate with each other via chat box.
- They can share pdf, code, photo and video in that chat box.

Priority Level: Medium

Precondition: Only registered member can access chat box.

4.1.12 Student profile page

Functional Requirements:

- After log in students will be directed to this page.
- They can update their information.
- Search and buy courses.
- Communicate with the instructors.
- Save/ download videos.
- Give assessment test.
- Receive grades and certificates issued in their name.

Priority Level: High

Precondition: Students must register first with valid email and password.

4.1.13 Instructor/Teacher profile page

Functional Requirements:

- After log in instructors will be directed to this page.
- They can update their information.
- Communicate with the students.
- Upload videos.
- Assign assessment test.

Priority Level: High

Precondition: Instructors must be appointed by admin.

4.1.14 Admin Panel

Functional Requirements:

- After log in Admin/moderators will be directed to this page.
- They can add or delete student/teachers manually.
- Communicate with the teachers.
- Receive feedback from the users.
- Assign Instructor to a particular course.

Priority Level: High

Precondition: Admins will be appointed by the HR of the company and will get customized access to the website.

4.2 System Quality Attributes

Here are some quality attributes that describe how well the Code Lab platform should perform:

1. Usability: Learners should be able to navigate the platform intuitively. For instance, a new user should be able to complete the registration process within five minutes, and an experienced user should be able to access their course material within two clicks from the dashboard.
2. Performance: The platform should load pages and content swiftly. For example, course videos should start playing within two seconds of clicking on them, and page load times should be under three seconds for optimal user experience.
3. Scalability: The platform should handle a growing number of users without significant degradation in performance. It should be able to accommodate a 20% increase in concurrent users without affecting response times.
4. Reliability: The platform should be available 99.9% of the time. In case of downtime, users should be notified through an automated system, and the platform should be restored within 30 minutes.
5. Security: User data should be encrypted during transmission and storage. The platform should undergo regular security audits to identify and address potential vulnerabilities.
6. Accessibility: The platform should conform to WCAG 2.1 guidelines, ensuring that it is usable by individuals with disabilities. For instance, all course videos should have accurate closed captions and transcripts.
7. Adaptability: The platform should adapt to different screen sizes and devices. It should provide an optimal user experience on desktops, tablets, and smartphones.
8. Personalization: The platform should utilize adaptive learning algorithms to recommend relevant courses and content based on a user's progress and interests. Recommendations should be accurate at least 80% of the time.
9. Community Engagement: The platform should facilitate interaction among learners through discussion forums, group projects, and peer-to-peer feedback. Users should receive responses to their forum posts within 24 hours.
10. Content Quality: Courses should be reviewed periodically to ensure that the content is accurate, up-to-date, and aligned with industry trends. User feedback should be collected to identify areas for improvement.

11. Data Privacy: The platform should comply with data protection regulations such as GDPR. User data should be stored securely, and learners should have the ability to delete their accounts and data.

12. Integration: The platform should integrate seamlessly with third-party tools like learning management systems (LMS), video conferencing software, and payment gateways.

These quality attributes guide the design, development, and testing of the Code Lab educational platform, ensuring that it meets the expectations and needs of its users while providing a reliable and efficient learning experience.

4.3 System Interface

Home Page:

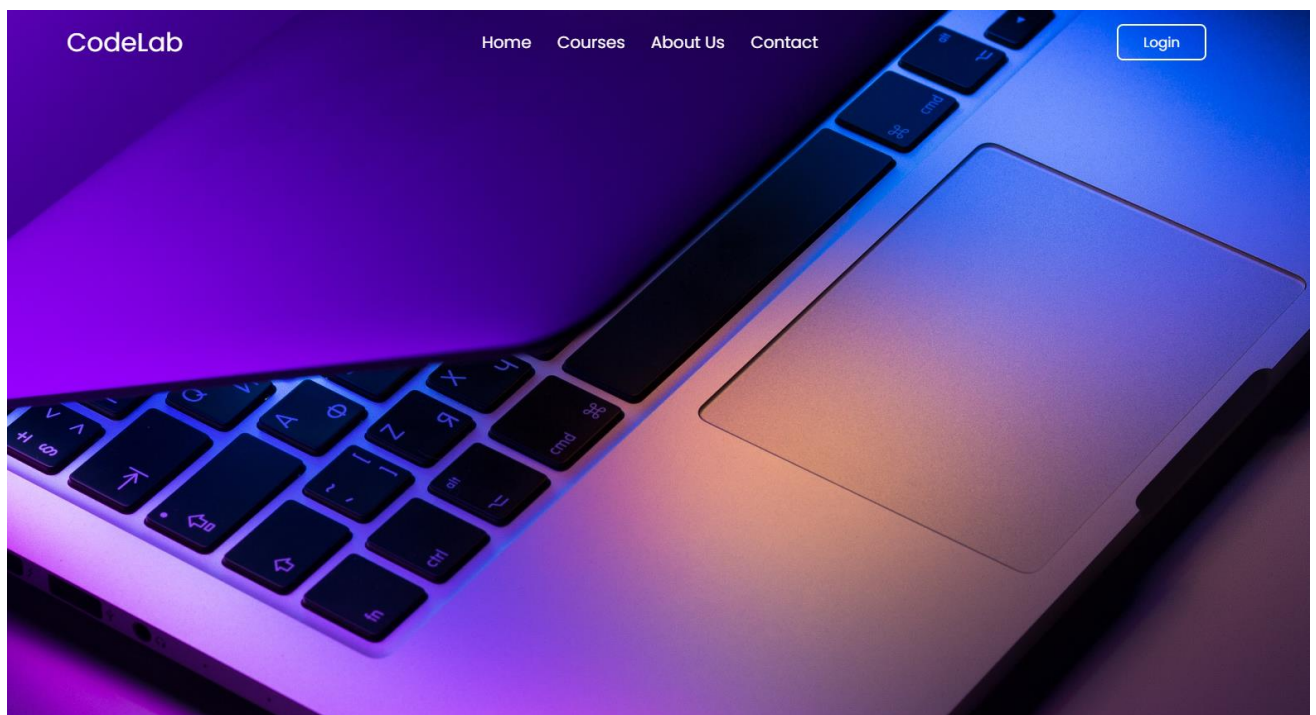


Figure 4.3.1: Home Page (System Interface)

Courses:

CodeLab

search courses...

Our Courses










 complete HTML tutorial View Playlist	 complete CSS tutorial View Playlist	 complete JS tutorial View Playlist
 complete Bootstrap tutorial View Playlist	 complete JQuery tutorial View Playlist	 complete SASS tutorial View Playlist
 complete PHP tutorial View Playlist	 complete MySQL tutorial View Playlist	 complete react tutorial View Playlist

Figure 4.3.2: Courses Section (System Interface)

About US:

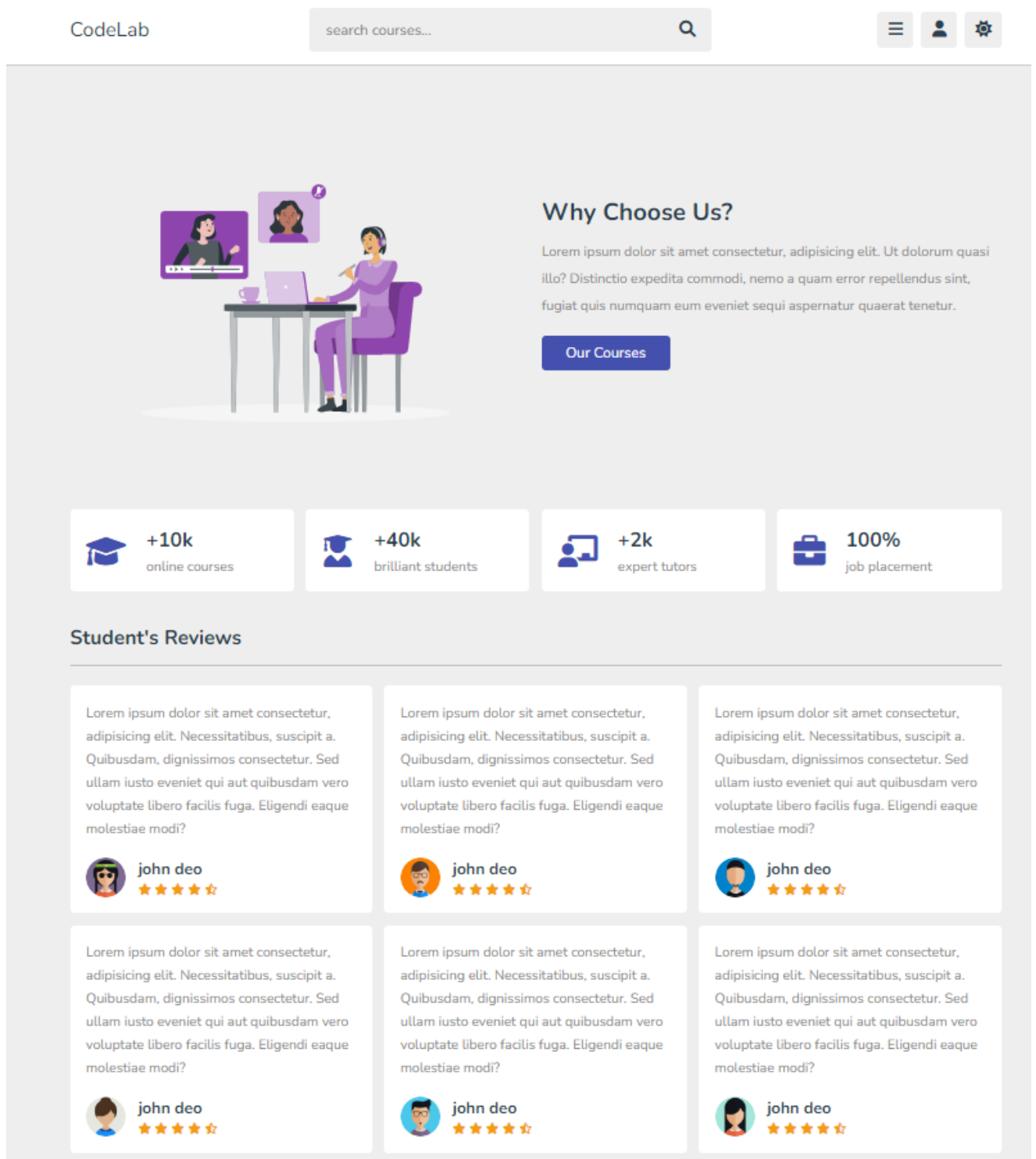


Figure 4.3.3: About Us Section (System Interface)

Contact Us:

CodeLab


search courses...

Q

≡

👤

⚙️



Get In Touch


enter your name

enter your email

enter your number


enter your message

Send Message




phone number

123-456-7890
111-222-3333



email address

shaikhanas@gmail.com
anasbhai@gmail.com

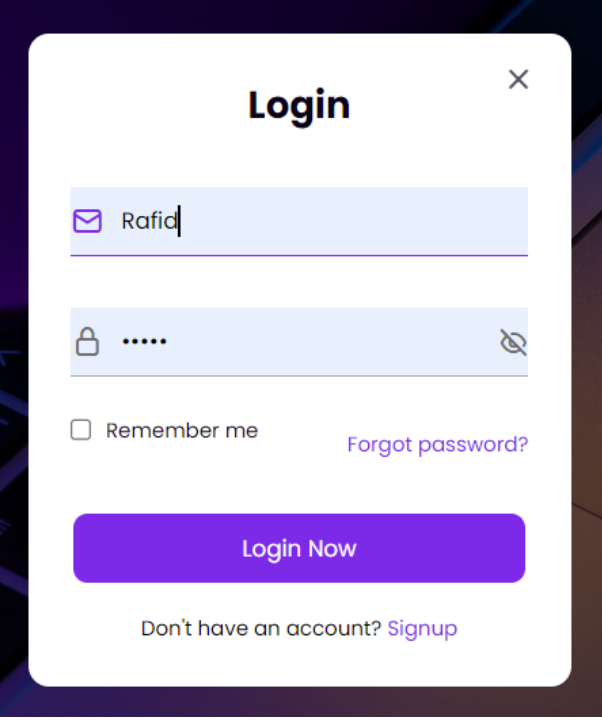


office address

flat no. 1, a-1 building, jogeshwari,
mumbai, india - 400104

Figure 4.3.4: Contact Us (System Interface)

Log In:

A login form titled "Login" with a close button (X) in the top right corner. It features two input fields: the first for email, containing "Rafid", and the second for password, containing five dots. Below the password field is a checkbox labeled "Remember me" and a link "Forgot password?". A large purple button labeled "Login Now" is positioned below the inputs. At the bottom, there is a link "Don't have an account? Signup".

Login

✕

✉ Rafid

🔒 🔒

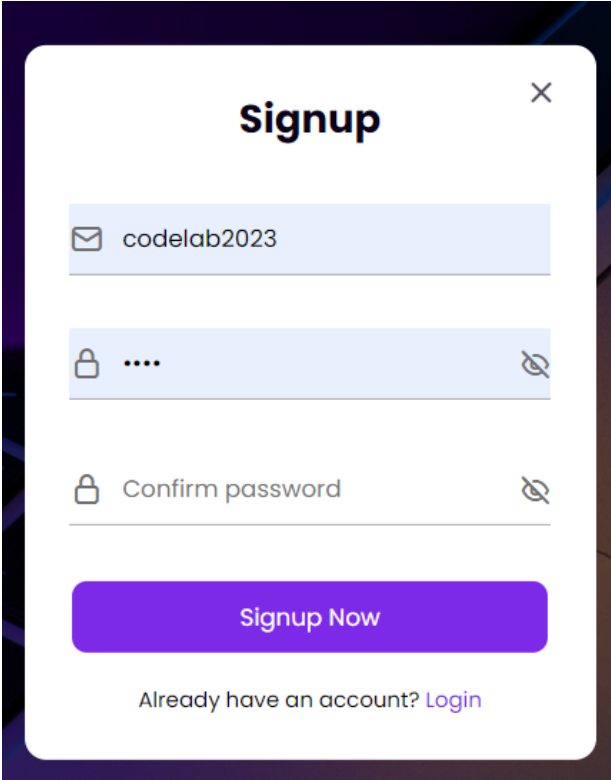
☐ Remember me [Forgot password?](#)

Login Now

Don't have an account? [Signup](#)

Figure 4.3.5: Login Section (System Interface)

Sign up:

A signup form titled "Signup" with a close button (X) in the top right corner. It features three input fields: the first for email, containing "codelab2023"; the second for password, containing four dots; and the third for confirming the password, also containing four dots. A large purple button labeled "Signup Now" is positioned below the inputs. At the bottom, there is a link "Already have an account? Login".

Signup

✕

✉ codelab2023

🔒 🔒

🔒 Confirm password 🔒

Signup Now

Already have an account? [Login](#)

Figure 4.3.6: Sign up Section (System Interface)

Student Homepage:

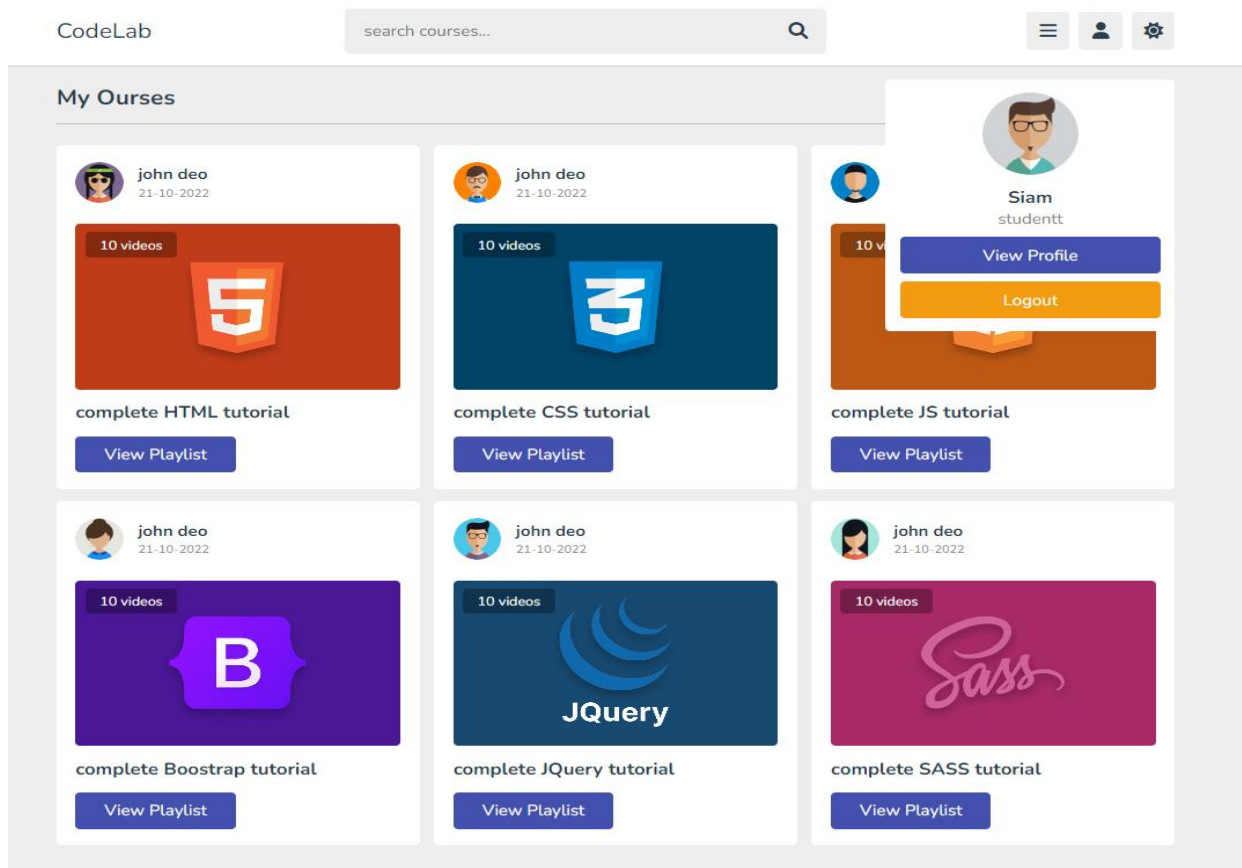


Figure 4.3.7: Student Homepage Section (System Interface)

Student Profile:

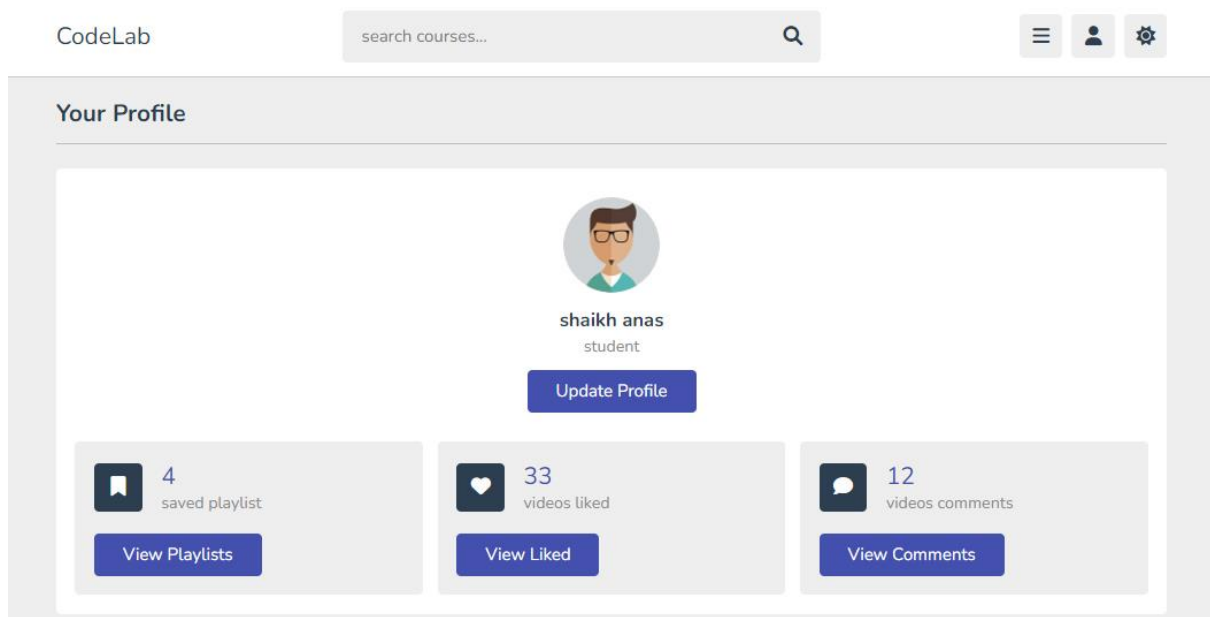


Figure 4.3.7: Student Profile Section (System Interface)

Update Profile (Student):

Update Profile

Update Name

Enter Name

Username

Enter a new username

Update E-mail

Enter a new e-mail

Old Password

enter your new password

New Password

enter your new password

Confirm PSassword

confirm your new password

Update Picture

Choose File

No file chosen

Update Profile

Figure 4.3.8: Student Update Profile Section (System Interface)

View Playlist (Student):

CodeLab

search courses...

Q

≡


👤


⚙️

Playlist Details

🔖 save playlist

10 videos





john deo

21-10-2022


Complete HTML Tutorial

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Illum minus reiciendis, error sunt veritatis exercitationem deserunt velit doloribus itaque voluptate.

View Profile


Playlist Videos

#01




complete HTML tutorial (part 01)

#02




complete HTML tutorial (part 02)

#03




complete HTML tutorial (part 03)

#04




complete HTML tutorial (part 04)

#05



complete HTML tutorial (part 05)

#06



complete HTML tutorial (part 06)

Figure 4.3.9: View Playlist Section (System Interface)

Watch Course Video (Student):

CodeLab

search courses...

Q

≡


👤

⚙️



complete HTML tutorial (part 01)

📅 22-10-2022 ❤️ 44 likes



Rafid
developer

View Playlist

👍 like


Lorem ipsum dolor, sit amet consectetur adipisicing elit. Itaque labore ratione, hic exercitationem mollitia obcaecati culpa dolor placeat provident porro. Lorem, ipsum dolor sit amet consectetur adipisicing elit. Aliquid iure autem non fugit sint. A, sequi rerum architecto dolor fugiat illo, iure velit nihil laboriosam cupiditate voluptatum facere cumque nemo!




5 Comments

add comments


Figure 4.3.10: Watch Video Section (System Interface)

Teachers Profile:

CodeLab 

Profile Details



Aman Ullah
Developer

total playlists : 4


total videos : 18

total likes : 1208

total comments : 52

Our Courses


10 videos



complete HTML tutorial

[View Playlist](#)


10 videos



complete CSS tutorial

[View Playlist](#)


10 videos



complete javascript tutorial

[View Playlist](#)

10 videos



complete Bootstrap tutorial

[View Playlist](#)

Figure 4.3.11: Teacher Profile Section (System Interface)

Admin Profile:

The screenshot shows the 'Admin Profile' section of the CodeLab system interface. At the top, there is a header bar with the 'CodeLab' logo, a search bar labeled 'search courses...', and icons for a menu, user profile, and settings. Below the header, the 'Profile Details' section features a circular profile picture of a man with glasses, the name 'Siam', and the role 'Administration'. Underneath, the 'Admin Panel' section contains two main cards: 'Teacher Management' with a 'Manage Teacher' button, and 'Student Management' with a 'Manage Student' button. Each card has a corresponding illustration: a teacher standing next to a stack of books for the teacher management card, and students climbing a large yellow arrow for the student management card.

Figure 4.3.12: Admin Profile Section (System Interface)

Manage Student (Admin):

The screenshot displays the 'Manage Student' section of the system interface. It features a blue 'Add Student' button at the top left. Below this is a table titled 'Student Information' with the following data:

Serial Number	First Name	Last Name	Username	Gender	Phone Number	Address	Password	Actions
4	Morshed	Siam	Siam03	Male	01954456543	Dhaka, Jatrabari	123456	Update Delete

Figure 4.3.13: Manage Student Profile Section (System Interface)

Register New Teacher (Admin):


Register New Teacher

First name *

Last name *

User name *

Date of birth *



Gender *

☐ Male ☐ Female

E-mail *

Phone *

Address *

Password *

Confirm password *

select profile *

No file chosen

Register Now

Cancel

Figure 4.3.13: Register New Teacher Section (System Interface)

Manage Teacher (Admin):

Teachers Information

Add New Teacher

Serial Number	First Name	Last Name	Username	Gender	Phone Number	Address	Password	Actions
1	Akbar	Ali	Akbar03	Male	01954456543	Dhaka	12345	Update Delete

Figure 4.3.14: Manage Teacher Section (System Interface)

4.4 Project Requirements

- The source code must be in PHP framework
- For software database, shall use MySQL database server, but another database is also acceptable.
- For testing, shall use Selenium Automation.
- For development time and budget COCOMO model has been followed.

Let's, assume our project is an organic project, where $a=2.4$, $b=1.05$, $c=2.5$, $d=0.38$ according to the COCOMO model

The estimated size of the software product in Kilo Lines of Code is 7.5

Estimation of Development Effort, $E = a \times (\text{KLOC})^b$

$$= 2.4 \times (7.5)^{1.05}$$

$$= 19.9079054 \text{ PM}$$

$$= 14333.70 \text{ Person-Hours}$$

Estimation of Development Time, $D = c \times (E)^d$

$$= 2.5 \times (19.9079054)^{0.38}$$

$$= 7.80 \text{ Months}$$

Required number of people = PM/DM

$$= 19.9079054 / 7.80 = 3$$

Let's assume the average salary of each employee in our company is TK 25,000 and they work 8 hours each day

Therefore, Rate of per hour = $25,000 \div (3 \times 8)$

$$= \text{TK } 1041.67 \text{ per hour}$$

Cost = Effort \times Rate = $14333.70 \text{ Person-Hours} \times \text{TK } 1041.67 \text{ per hour}$

$$= 1,49,30,985.28 \text{ Taka}$$

5. FEATURES NOT TO BE TESTED

The following is a list of the areas that will not be specifically addressed. All testing in these areas will be indirect as a result of other testing efforts.

- **Hardware compatibility:** Although it won't be formally addressed, testing the software on various hardware setups will be done indirectly through functional testing.
- **Performance under high load:** Performance testing will be used to stress test indirectly rather than directly.
- **Security testing that goes beyond the basics:** The system won't undergo in-depth security testing that goes beyond the basics. Only the most fundamental security controls will be checked on the system.
- **External Software Integration:** Testing of third-party software or services integrated into the Code Lab platform, such as external payment gateways, is outside the scope of this project. The responsibility for testing these integrations lies with the maintainers/developers of those external systems.
- **End-User Hardware Compatibility:** While efforts will be made to ensure broad compatibility, the project will not specifically address testing on various end-user hardware setups (computers, mobile devices, browsers). Testing across different user configurations will be indirect, relying on broader testing efforts and user feedback.
- **Local Network and Firewall Configurations:** Testing the platform's behavior within specific local network setups or behind firewalls is not within the scope of this project. Users' local network and firewall configurations can influence platform access and performance.
- **Browser Extensions or Plug-ins:** Testing how various browser extensions or plug-ins interact with the Code Lab platform will not be specifically addressed. Compatibility with such third-party extensions is indirect and reliant on the platform's general functionality.
- **Mobile Application Testing:** The project is focused on the web-based educational platform and will not address specific testing of mobile applications that might be developed as companion tools. Testing of mobile applications would be the responsibility of their respective development teams.
- **Data Extraction for Third-Party Analysis Tools:** The project will provide necessary data format information to allow customers to extract data for analysis using third-party tools. However, testing the functionality and accuracy of those external analysis applications is not part of this project's scope.

It's important to note that while these areas will not be specifically addressed, the Code Lab project aims to ensure a robust and high-quality platform. Indirect testing or user feedback may still identify issues in these areas that can be addressed as part of ongoing improvements.

6. TESTING APPROACH

6.1 Testing Levels

The testing approach for the Code Lab encompasses a comprehensive strategy that ensures the system's reliability, functionality, and usability across all development phases. The approach involves multiple testing levels, starting with

- **Unit Testing:** In this initial level individual components are rigorously tested in isolation to verify their correctness and efficiency. The developer will carry out testing and receive validation from the team leader overseeing development. The programmer must furnish evidence of unit testing, including a list of test cases, example outputs, data printouts, and details of any identified defects, to the team leader before the approval of unit testing. Only after this documentation is presented and unit testing is endorsed by the team leader will it proceed to the testing personnel. Furthermore, all data associated with unit testing will also be shared with the testing personnel.
- **Integration Testing:** It follows, where the interaction between various modules is examined to ensure seamless communication and data flow. Integration Testing is a crucial phase in software development where the interactions between different components are tested. Its main goal is to ensure that these parts work together seamlessly to provide the intended functionality. This testing level identifies issues like data flow problems and communication failures between components. By addressing these concerns early on, the software's overall reliability and performance can be improved before moving on to more extensive testing stages.
- **System Testing:** This takes place to validate the entire platform's behavior against specified requirements, covering end-to-end scenarios, user interactions, and performance benchmarks. This phase includes load testing to assess the system's response under varying user loads.
- **Acceptance Testing:** This level is conducted to confirm that the platform meets the stakeholders' expectations and business goals. This involves real-world usage scenarios, where users evaluate the platform's usability, functionality, and adherence to requirements. Throughout these testing levels, automation tools will be employed to streamline the process, increase efficiency, and facilitate continuous integration and delivery.

6.2 Test Tools

In our project, we leverage **Selenium IDE** as a powerful testing tool tailored for web applications. It offers an intuitive, browser-based interface that enables both our testers and developers to create and run automated test scripts without extensive coding expertise. With Selenium IDE, we record user interactions on our website, such as clicks and inputs, and then play back these actions to verify the correct functionality of our platform. This tool streamlines the creation and maintenance of automated tests, providing us with rapid feedback on software

changes and enhancements. While particularly suited for simpler testing scenarios, Selenium IDE is an integral component of our project, aiding us in efficiently identifying and addressing issues to ensure the quality and reliability of our website.

6.3 Meetings

The test team has meet once every week to evaluate progress to date and to identify error trends and problems as early as possible. The test team leader had to meet with development and the project manager once every two weeks as well. These two meetings have been scheduled for different weeks. Additional meetings had been called as required for emergencies.

7. TEST CASES/TEST ITEMS

Project Name: Code Lab		Test Designed by: Kamil Ahmed		
Test Case ID: CL_1		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Kamil Ahmed		
Module Name: Student Login Session		Test Execution date:18/07/2023		
Test Title: verify login with valid username and password				
Description: Test website login page				
Precondition (If any): User must have valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now	Username: kamil67 Password: 1234	User should login into the application	As expected,	Pass
Post Condition: User is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: Code Lab		Test Designed by: Kamil Ahmed		
Test Case ID: CL_2		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): High		Test Executed by: Kamil Ahmed		
Module Name: Sign up Session		Test Execution date:18/07/2023		
Test Title: Fill sign up form with valid username and password				
Description: Test website Sign up page				
Precondition (If any): User must have unique username and strong password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Click Sign up 4. Enter username 5. Enter password 6. Enter Confirm Password 7. Click Sign Up Now	Username: kamil67 Password:1234 Confirm Password: 1234	User should Sign up into the application	As expected,	Pass
Post Condition: User is validated in database and can successfully login to account. The account session details are logged in the database.				

Project Name: Code Lab		Test Designed by: Kamil Ahmed		
Test Case ID: CL_3		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Kamil Ahmed		
Module Name: Forget Password Session		Test Execution date:18/07/2023		
Test Title: Change password by sending password reset link to verified email				
Description: Test forget password page				
Precondition (If any): User must have verified email in Code Lab database				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click Login 3. Click Forget Password 4. Enter Email 5. Click Send Instructions 6. Go to email inbox 7. Click reset link 8. Enter new password 9. Enter confirm password 10. Click Submit	New Password: 4567 Confirm Password:4567	User should change password into the application	As expected,	Pass
Post Condition: User’s new password has been saved successfully in database. User can login now with new password.				

Project Name: Code Lab		Test Designed by: Kamil Ahmed		
Test Case ID: CL_4		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): High		Test Executed by: Kamil Ahmed		
Module Name: Purchase course via online payment		Test Execution date:18/07/2023		
Test Title: Purchase new courses by online payment method				
Description: Test online payment method working or not				
Precondition (If any): User must have verified account in the website				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click Course Details 7. Click Pay Now 8. Enter Payment Information 9. Click Confirm Payment	Username: kamil67 Password: 1234 Card Number: 543452109878 Pin: 7656	User should login into the application and purchase new courses via online payment.	As expected,	Pass
Post Condition: User is able to see purchased course videos and get access into course materials.				

Project Name: Code Lab		Test Designed by: Kamil Ahmed		
Test Case ID: CL_5		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Low		Test Executed by: Kamil Ahmed		
Module Name: Dark mode/ Light mode switch		Test Execution date:18/07/2023		
Test Title: Change website theme				
Description: Test dark mode and light mode activation				
Precondition (If any): User must have logged into their account				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click Login 3. Click Forget Password 4. Enter Email 5. Click Send Instructions 6. Click dark symbol 7. Click light symbol	Username: kamil67 Password:1234	User should login and change webpage theme	As expected,	Pass
Post Condition: User can change the webpage theme (Light/Dark) according to their will.				

Project Name: Code Lab		Test Designed by: Kamil Ahmed		
Test Case ID: CL_6		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Kamil Ahmed		
Module Name: View Playlist		Test Execution date:18/07/2023		
Test Title: Check course materials and video playlist				
Description: Test website playlist page				
Precondition (If any): User must have valid Code Lab account				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Enter View Playlist	Username: kamil67 Password: 1234	User should login into the application and play or watch purchased video and other course materials	As expected,	Pass
Post Condition: User can check course contents and videos.				

Project Name: Code Lab			Test Designed by: Kamil Ahmed	
Test Case ID: CL_7			Test Designed date:17/07/2023	
Test Priority (Low, Medium, High): High			Test Executed by: Kamil Ahmed	
Module Name: Watch videos			Test Execution date:18/07/2023	
Test Title: Test videos are properly working or not				
Description: Test website Watch Videos page				
Precondition (If any): User must have valid Code Lab account and course must be purchased				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click Course Details 7. Click Pay Now 8. Enter Payment Information 9. Click Confirm Payment 10. Click on a video	Username: kamil67 Password: 1234 Card Number: 543452109878 Pin: 7656	User should login into the application and purchase new courses via online payment to watch the course contents and videos	As expected,	Pass
Post Condition: User can play purchased course videos.				

Project Name: Code Lab			Test Designed by: Morshed Siam	
Test Case ID: CL_8			Test Designed date:17/07/2023	
Test Priority (Low, Medium, High): Low			Test Executed by: Morshed Siam	
Module Name: Student View Profile Session			Test Execution date:18/07/2023	
Test Title: Check the student profile by accessing with valid username and password				
Description: Test website Student Profile page				
Precondition (If any): User must have valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click User Profile Symbol 7. Click View Profile	Username: kamil67 Password: 1234	User should login into the application and view profile	As expected,	Pass
Post Condition: User can view their registered information on Student Profile page				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_9		Test Designed date:1/07/2023		
Test Priority (Low, Medium, High): High		Test Executed by: Morshed Siam		
Module Name: Update Student Profile Session		Test Execution date: 18/07/2023		
Test Title: Update user information in Code Lab database				
Description: Test website update student profile page				
Precondition (If any): User must have valid Code Lab account				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click View Profile 7. Click Update Profile 8. Enter first name 9. Enter last name 10. Enter username 11. Enter email 12. Enter gender 13. Enter address 14. Enter phone number 15. Enter Password 16. Confirm Password 17. Click Update Now	Username: kamil67 Password: 1234 First-Name: Kamil Last-Name: Ahmed Username: kamil6 Email: nailahmedtalukder6272@gmail.com Gender: Male Address: Mohammadpur, Dhaka Phone Number:01907435967 Password:1234 Confirm Password: 1234	User should login into the application and update information	As expected,	Pass
Post Condition: User is validated with updated information in Code Lab database.				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_10		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Low		Test Executed by: Morshed Siam		
Module Name: View teachers list		Test Execution date:18/07/2023		
Test Title: Check all the teacher list with teacher profile information				
Description: Test website View Teachers List page				
Precondition (If any): User must have valid Code Lab account				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click Teacher Symbol 7. Click Teachers View Profile	Username: kamil67 Password: 1234	User should login into the application and view teachers list and profile	As expected,	Pass
Post Condition: User can view teachers list and check their information				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_11		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Morshed Siam		
Module Name: Send Feedback		Test Execution date:18/07/2023		
Test Title: Test send and receive user feedback				
Description: Test website Contact Us page				
Precondition (If any): None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click Contact Us 3. Enter name 4. Enter email 5. Enter phone number 6. Enter feedback message 7. Click Send Message	Name: Morshed Siam Email: siam34@gmail.com Phone Number: 019544565 Feedback Message: This is a good webpage	User should send feedback to admin panel	As expected,	Pass
Post Condition: User can send feedback to admin panel				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_12		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): High		Test Executed by: Morshed Siam		
Module Name: Log in as a teacher (High)		Test Execution date:18/07/2023		
Test Title: verify login with valid username and password				
Description: Test website login page				
Precondition (If any): User must have valid username and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now	Username: aman67 Password: 4567	Teacher should login into the application	As expected,	Pass
Post Condition: Teacher is validated with database and successfully login to account. The account session details are logged in the database.				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_13		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Morshed Siam		
Module Name: Add new courses		Test Execution date:18/07/2023		
Test Title: Test adding new course into Code Lab database				
Description: Test website add course page				
Precondition (If any): User must have teacher account in Code Lab database				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click My Courses 7. Click Add Course 8. Enter Course Title 9. Enter Course Disruption 10. Upload Course Video 11. Click up	Username: aman67 Password: 4567 Course Title: Html Fundamentals Course Description: This is a Html basic course Upload Video: Html-01.mp4	Teacher should login into the application and upload video of new course.	As expected,	Pass
Post Condition: Teacher is validated with database and successfully login to account and upload new course for students in database.				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_14		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Morshed Siam		
Module Name: Upload course materials		Test Execution date:18/07/2023		
Test Title: Test adding course materials into Code Lab database				
Description: Test website add course page				
Precondition (If any): User must have teacher account in Code Lab database and uploaded course				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click My Courses 7. Click Add Course 8. Enter material Title 9. Upload file 10. Click Upload	Username: aman67 Password: 4567 File Name: Html Fundamental book File: Fundamentals of Html.pdf	Teacher should login into the application and upload material file of new course.	As expected,	Pass
Post Condition: Teacher is validated with database and successfully login to account and upload new course material for students in database.				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_15		Test Designed date:17/07/2023		
Test Priority (Low, Medium, High): Medium		Test Executed by: Morshed Siam		
Module Name: Take Assessment		Test Execution date:18/07/2023		
Test Title: Test adding assessment into Code Lab database				
Description: Test website take assessment page				
Precondition (If any): User must have teacher account in Code Lab database uploaded course				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Click login 3. Enter username 4. Enter password 5. Click Login Now 6. Click My Courses 7. Click Assessment 8. Enter Assessment Title 9. Set Start time 10. Set Due Time 11. Upload file 12. Click Upload	Username: aman67 Password: 4567 Assessment Name: Final Assesment01 Start Date and Time: 10/06/2023, 8:00 AM Due Date and Time: 17/06/2023, 11:59 PM File: Assessment.pdf	Teacher should login into the application and take Assessment of course student.	As expected,	Pass
Post Condition: Teacher is validated with database and successfully login to account and upload assessment for evaluating students.				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL_16		Test Designed date: 02/07/23		
Test Priority (Low, Medium, High): High		Test Executed by: Tahmid Al Rafid Siddique		
Module Name: Login Session as an admin		Test Execution date:13/07/23		
Test Title: Verify login with valid Admin ID and password				
Description: Test website login page				
The precondition (If any): Admin must have a valid admin ID and password				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Enter admin ID 3. Enter password 4. Click submit	Username: Codelab_2023 Password: 34567	Admin should log in to the application	As expected,	Pass
Post Condition: Admin is validated with database and successfully log in to account. The account session details are logged in the database.				

Project Name: Code Lab		Test Designed by: Morshed Siam		
Test Case ID: CL-17		Test Designed date: 03/07/23		
Test Priority (Low, Medium, High): High		Test Executed by: Tahmid Al Rafid Siddique		
Module Name: Track payment history		Test Execution date:14/07/23		
Test Title: Payment history tracking page				
Description: Payment done by students will be shown on this page, which will be monitored by Admins.				
The precondition (If any): Admin must have a valid username of the student				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Log in to the admin account 3. Go to the payment history page 4. Enter a student user name 5. Watch student’s payment/purchase history.	Student- User Name: Rafid2000	Admin should be able to see student’s payment history	As expected,	Pass
Post Condition: Admin can track payment-related issues (If any are reported).				

Project Name: Code Lab		Test Designed by: Tahmid Al Rafid Siddique		
Test Case ID: CL-18		Test Designed date: 04/07/23		
Test Priority (Low, Medium, High): High		Test Executed by: Tahmid Al Rafid Siddique		
Module Name: Pay teacher’s salary		Test Execution date: 15/07/23		
Test Title: Teacher’s salary window				
Description: Admin will be able to see the salary statement of teachers and can clear any due.				
Precondition (If any): Admin must have valid username of the teacher				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Login as an admin 3. Go to teachers’ salary window 4. Search Teacher’s info by user name 5. Clear the due.	Teacher’s User Name: Kamil2345	Admin should be able to watch teacher’s salary statement and clear due.	As expected,	Pass
Post Condition: Admin is validated with database and successfully login to account. The session details are logged in the database				

Project Name: Code Lab			Test Designed by: Tahmid Al Rafid Siddique	
Test Case ID: CL-19			Test Designed date: 05/07/23	
Test Priority (Low, Medium, High): Medium			Test Executed by: Tahmid Al Rafid Siddique	
Module Name: Add new teacher			Test Execution date:16/07/23	
Test Title: Add new teacher to the system.				
Description: Admin will be able to add new teacher directly to the system.				
Precondition (If any): None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Log into the portal 3. Enter Name 4. Enter Email 5. Enter Phone number 6. Click submit	Name : Hasan Mahmud Email: Hasan@gmail.com Phone: 017xxxxxx	Teachers info will be added to the system.	As expected,	Pass
Post Condition: Admin is validated with database and successfully login to account. The session details are logged in the database				

Project Name: Code Lab		Test Designed by: Tahmid Al Rafid Siddique		
Test Case ID: CL-20		Test Designed date: 07/07/23		
Test Priority (Low, Medium, High): Medium		Test Executed by: Tahmid Al Rafid Siddique		
Module Name: Update teacher’s profile		Test Execution date:18/07/23		
Test Title: Teacher’s profile update				
Description: Admin will able to update teacher's information if needed.				
The precondition (If any): None				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Log in 3. Go to manage teachers 4. Fill up the form with valid information 5. Click Update	Name: Asif Azad Email: Azad@gamil.com Phone:017XXXX Gender: Male Address: Dhaka	Teachers Information will be added to the database.	As expected,	Pass
Post Condition: Admin is validated with database and successfully login to account. The session details are logged in the database				

Project Name: Code Lab		Test Designed by: Tahmid Al Rafid Siddique		
Test Case ID: CL-21		Test Designed date: 08/07/23		
Test Priority (Low, Medium, High): Medium		Test Executed by: Tahmid Al Rafid Siddique		
Module Name: Add student		Test Execution date: 19/07/23		
Test Title: Add a new student to the system.				
Description: Admin will be able to add new students directly to the system.				
The precondition (If any): None.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Log into the portal 3. Enter Name 4. Enter Email 5. Enter Phone number 6. Click submit	Name: Farhan Mahmud Email: Farhan@gmail.com Phone: 017xxxxxx	Students' info will be added to the system.	As expected,	Pass
Post Condition: Admin is validated with database and successfully login to account. The session details are logged in the database.				

Project Name: Code Lab			Test Designed by: Tahmid Al Rafid Siddique	
Test Case ID: CL-22			Test Designed date: 09/07/23	
Test Priority (Low, Medium, High): Medium			Test Executed by: Tahmid Al Rafid Siddique	
Module Name: Delete student profile			Test Execution date:20/07/23	
Test Title: Delete student's info				
Description: The admin will be able to delete any student’s info directly from the database				
The precondition (If any): The admin must have a valid students’ username.				
Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/Fail)
1. Go to the website 2. Enter the students’ username 3. Click delete button	Username: Farhan Hossain	Teachers' info will be deleted from the database.	As expected,	Pass
Post Condition: Admin is validated with database and successfully login to account. The session details are logged in the database.				

8. ITEM PASS/FAIL CRITERIA

Here are some pass-fail criteria for testing the Code Lab project based on the provided context:

Pass Criteria:

- 1. Data Consistency and Balance:** The reassigned sales data received from the initial set of distributors should be validated for consistency and accuracy. The new EDI data and the old ZIP/FAX data should match and balance correctly during parallel processing.
- 2. Successful Data Submission:** The initial set of distributors should be able to successfully submit reassigned sales data through the platform for a continuous period of one month.
- 3. System Stability:** The platform should remain stable and responsive throughout the testing period, without experiencing frequent crashes or slowdowns.
- 4. User Feedback:** Feedback from the sales administration staff and users should reflect a high level of satisfaction with the accuracy and correctness of the data being processed.

Fail Criteria:

- 1. Data Discrepancies:** Significant discrepancies between the new EDI data and the old ZIP/FAX data that cannot be reconciled would be considered a failure. This could indicate data integration or transformation issues.
- 2. Submission Failures:** If a substantial number of distributors experience difficulties submitting reassigned sales data, indicating a usability issue or technical glitch, it would be considered a failure.
- 3. System Instability:** Frequent crashes, errors, or significant performance issues that hinder the ability to process data accurately and efficiently would be deemed a failure.
- 4. Negative User Feedback:** If sales administration staff or users consistently express dissatisfaction with the accuracy or usability of the platform, it would be considered a failure.
- 5. Missed Deadline:** If the initial set of distributors cannot successfully send reassigned sales data for the required one-month period, it would be a failure in terms of meeting the testing timeline.
- 6. Data Inconsistencies after Activation:** If data inconsistencies arise after the initial set of distributors is set to active and parallel processing is stopped, indicating a flaw in data processing or integration, it would be considered a failure.

These pass-fail criteria provide a clear framework for evaluating the success and readiness of the testing process within the Code Lab project.

9. TEST DELIVERABLES

Acceptance Test Plan: Having recently finalized the Acceptance Test Plan, we have meticulously detailed the criteria that will ensure our Code Lab platform is ready for deployment and meets the expectations of stakeholders.

System/Integration Test Plan: Our latest achievement involves crafting a comprehensive System/Integration Test Plan, outlining our meticulous approach to seamlessly integrating different platform components. This ensures a cohesive functionality that aligns perfectly with our project objectives.

Unit Test Plans/Turnover Documentation: With utmost precision, we've developed Unit Test Plans and accompanying Turnover Documentation. These documents encapsulate our recent efforts in testing individual modules and facilitating the efficient transition of components into the testing phase.

Screen Prototypes: Recent endeavors have produced vivid Screen Prototypes that grant stakeholders a tangible preview of the user interface and layout of the Code Lab platform before the development phase.

Report Mock-ups: In a recent stride, we've artfully designed Report Mock-ups, shedding light on the forthcoming format and content of the platform's generated reports, enhancing clarity and anticipation.

Defect/Incident Reports and Summaries: Our diligent work is reflected in the detailed Defect/Incident Reports and their corresponding summaries. These recent documents comprehensively document and analyze any issues encountered, showcasing our dedication to quality assurance.

Test Logs and Turnover Reports: Our recent focus on thorough testing is manifested in the meticulously maintained Test Logs and Turnover Reports. These documents vividly capture our recent testing activities, providing valuable insights into execution, outcomes, and component transition.

10. STAFFING AND TRAINING NEEDS

For the successful execution of the Code Lab project, a well-rounded team is essential to cover various aspects of development and testing. Here's an overview of the types of staff needed and their roles:

1. Project Manager/Test Manager: Oversee the entire project, manage resources, and ensure project goals are met. Effective project management ensures timely execution, coordination among team members, and adherence to quality standards.

2. Developers: Responsible for designing, coding, and implementing different components of the Code Lab platform. Skilled developers are crucial for translating project requirements into functional software, ensuring the platform's core functionality.

3. Tester: Conduct various testing phases, including unit, integration, system, and acceptance testing, to ensure the platform's reliability and functionality.

Dedicated testers ensure the platform meets quality standards and is free from defects, providing a seamless user experience.

4. Operations Staff: Handle the operational aspects of the EDI interface and communications process once the system is live. Operations staff are essential to maintaining and managing the live platform, ensuring smooth EDI communications, and resolving operational issues.

5. Sales Administration Staff:

Users of the platform who interact with the new screens and reports for managing sales administration tasks. Proper training for sales administration staff ensures they effectively use the new features, leading to successful adoption and streamlined processes.

Training Needs:

1. **EDI Interface Training:** Developers, tester(s), and operations staff.

Having a proper understanding of the EDI interface is crucial to ensure data exchange processes are well-implemented and managed.

2. **Screen and Report Training:** Sales administration staff.

Familiarity with new screens and reports enables efficient use of the platform for sales administration tasks, improving productivity.

By having skilled developers, dedicated testers, knowledgeable operations staff, and well-trained users, the project can achieve its goals efficiently, ensuring the Code Lab platform is not only technically robust but also user-friendly and operationally sound. Effective collaboration among these team members, supported by proper training, will be key to the project's success.

11. RESPONSIBILITIES

	TM	PM	Dev Team	Test Team	Client
Acceptance test Documentation & Execution	X	X		X	X
System/Integration test Document & Exec.	X	X		X	
Unit test documentation and execution	X	X		X	
System Design and Reviews		X	X		X
Detail design and Reviews		X	X		X
Test Procedures and rules	X			X	
Screen & Report prototype reviews		X	X		X
Change Control and regression testing	X		X	X	

12. TESTING SCHEDULE

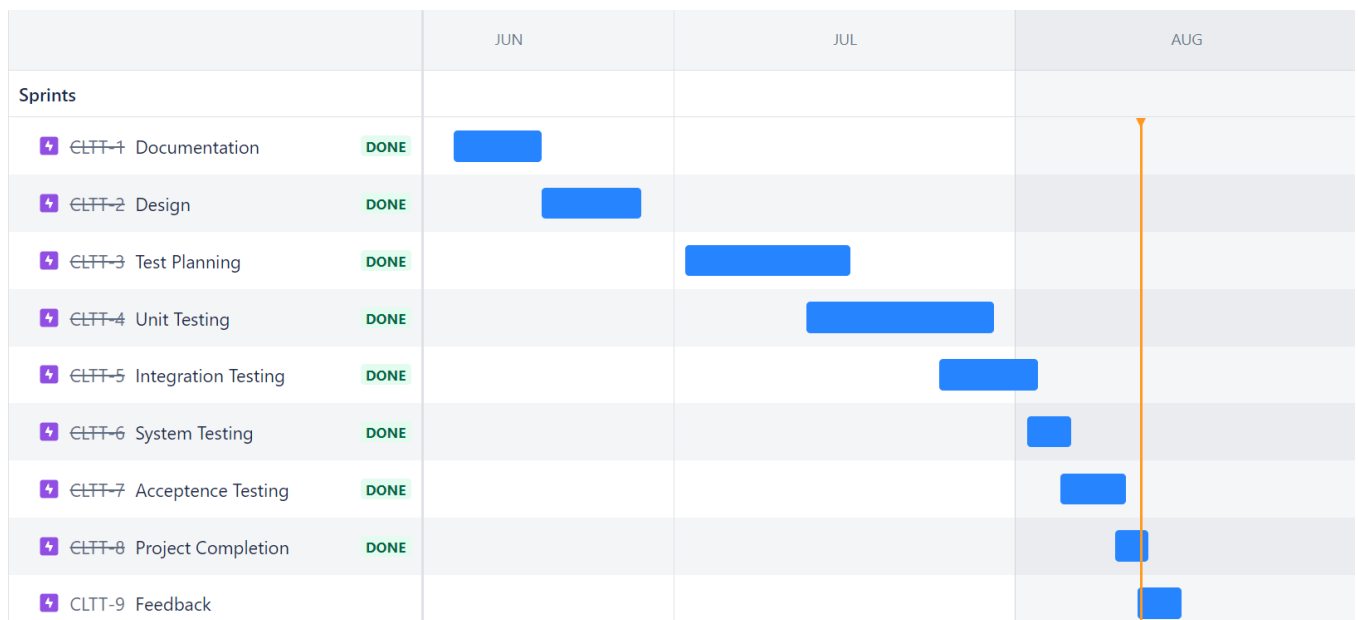


Figure 12.1: Testing Schedule (JIRA)

13. PLANNING RISKS AND CONTINGENCIES

- 1. Limited Developer Resources:** If developer availability is constrained, workload will be redistributed, and timelines adjusted to maintain quality and prioritize critical tasks.
- 2. Inadequate Training Resources:** Comprehensive training materials will be prepared in advance; external experts considered if needed.
- 3. Third-Party Integrations Delays:** Regular communication with vendors and alternative solutions will mitigate potential delays.
- 4. Insufficient User Feedback:** Proactive user outreach, incentives, and focused usability testing will ensure valuable feedback collection.
- 5. Unforeseen Technical Challenges:** Skilled developers on standby, parallel testing, and mitigation strategies will address emergent issues.
- 6. User Acceptance Test Delays:** Flexible testing windows, clear communication, and rescheduling options will accommodate stakeholder availability.
- 7. Resource Attrition:** Documentation, knowledge transfer, and a flexible resource pool will mitigate sudden resource losses.
- 8. Change in Regulatory Landscape:** Monitoring regulatory updates and maintaining an adaptable approach will address unexpected regulatory changes.

Through these contingency plans, the Code Lab project aims to navigate potential obstacles while upholding quality and project timelines.

14. APPROVALS

Project Sponsor -	N/A
Development Management -	Graphic People.
EDI Project Manager -	Md. Morshedul Islam
RS Test Manager -	Kamil Ahmed
RS Development Team Manager -	Md. Morshedul Islam
Resigned Sales -	Tahmid Al Rafid Siddique
Order Entry EDI Team Manager -	Tahmid Al Rafid Siddique