

American International University-Bangladesh (AIUB)  
**Department of Computer Science  
Faculty of Science &Technology (FST)**

**Section: I  
Group No: 1**

**PROJECT TITLE**

**National ID Card Registration System**

A software Engineering project submitted

By

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| S/N | Student Name | Student ID | Contribution (%) | Individual Marks |
| 1 | Najib Mahfuj | 22-48248-2 | Design the System Interface (UI/UX design) |  |
| 2 | Tasmia Kabir Zerin | 22-47669-2 | Prepare Test cases and Test plan |  |
| 3 | Kazi Mahfuzur Rahman | 22-47384-2 | Prepare Project Schedule with Effort estimation |  |
| 4 | Maliha Mehjabin Mahi | 22-47424-2 | Identify potential risks and prepare a risk management plan |  |
|  |  |  |  |  |

The project will be Evaluated for the following Course Outcomes

|  |  |  |
| --- | --- | --- |
| Your Project will be Evaluated based on the following marking criteria | | Marks: 20 |
|  |
| Design the System Interface (UI/UX design) | [5Marks] |  |
| Prepare Test cases and Test plan | [5Marks] |  |
| Prepare Project Schedule with Effort estimation | [5Marks] |  |
| Identify potential risks and prepare a risk management plan | [5Marks] |  |

Submission Date: 25/9/2024

SYSTEM DESIGN SPECIFICATION

## **1.1 UI/UX Design**

**Login Page :**

A screenshot of a mobile application

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A screenshot of a phone

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**Registration Page:**

A screenshot of a phone

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A screenshot of a phone

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**Notification Page:**

A screenshot of a document

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**Information Page:**

A close-up of a card

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**Home Page:**

A screenshot of a phone

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**Account Settings Page:**

A white square with black text and red button

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**Notification Page:**

A screenshot of a phone

Description automatically generated

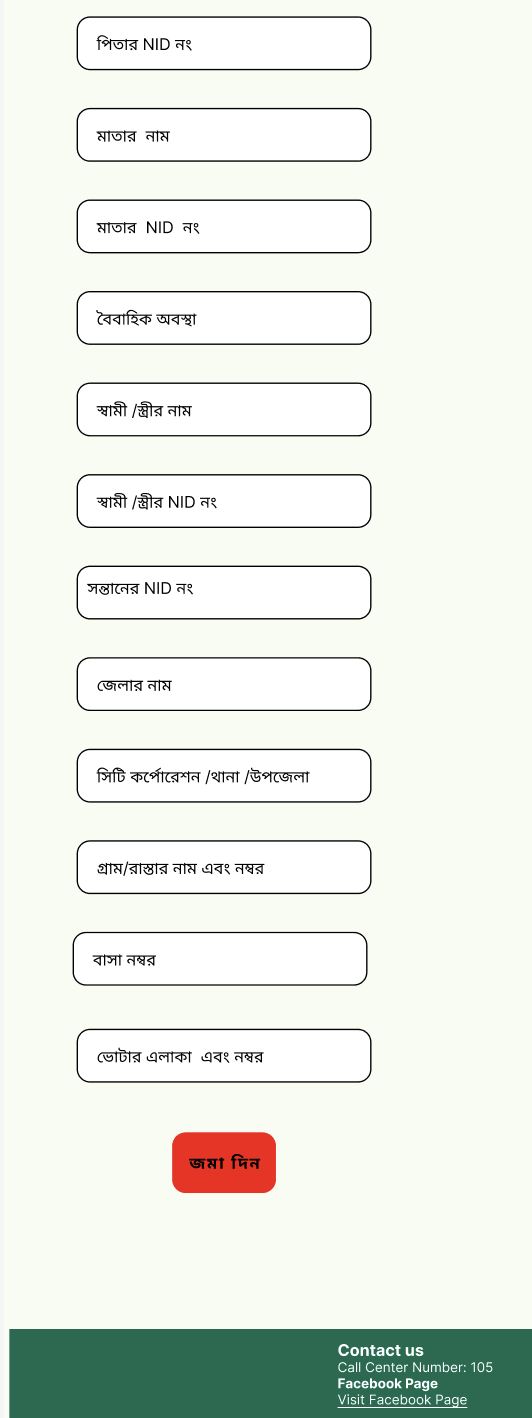
**Lost NID Page:**

A screenshot of a phone

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**Notification Page:**

A screenshot of a phone

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**Data Correction Page:**

A screenshot of a phone

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**Notification Page:**

A screenshot of a phone

Description automatically generated

**Information Page:**

A screenshot of a document

Description automatically generated]

**Information Page:**

A white surface with green and black dots

Description automatically generated with medium confidence

**Information Page:**

A white surface with green and black dots

Description automatically generated with medium confidence

**Information Page:**

**1.2.SYSTEM TEST PLAN**

**Test case ID**  : 001

**Test case description:** Test the working functionality in NID application (Version 1.1)

**Created By**: Group 01

**Tester Name**: Group 01

**Date tested :** 15-sept-2024

**Test case(Pass/fail/not executed): Pass**

|  |  |
| --- | --- |
| 1 | Access to Google Play Store |
| 2 | Android/I0s powered device |
| 3 | Internet connectivity |
| 4 | Acceptance of Permission |
| 5 | Sufficient Storage Device |
| 6 | Hardware Requirement |
| 7 | Update Mechanism |

**Test Data:**

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**Test Result:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Step Details** | **Operation** | **Expected Result** | **Actual Result** | **Pass/Fail** |
| এনআইডি নাম্বার ও পাসওয়ার্ড | Take NID no and password | If password and number is correct Log in successful , otherwise try again | As expected | pass |
| লগইন | Take user to Home page | Home page should show up |  |  |
| রেজিসট্রেশন | Take user to তথ্য নিবন্ধনকরণ page | Registration page should show up | As expected | pass |
| Face scan | Take picture of applicant | Correct picture should be aproved | As expected | pass |
| আবেদনকারীর নাম | Take name of applicant | Verified name character should be approved | As expected | pass |
| জন্ম নিবন্ধন নং | Take picture of applicant | Verified 17 digit NID should be approved | As expected | pass |
| জন্ম তারিখ | select Birth date of applicant | Verified birth date (17+ years) should be approved | As expected | pass |
| লিঙ্গ | Select gender of applicant | Verified gender should be approved | As expected | pass |
| রক্তের গ্রুপ | Select Blood group of applicant | Verified blood group will be approved | As expected | pass |
| মোবাইল নং | Take mobile number of applicant | Verified 11 digit mobile number should be approved | As expected | pass |
| পিতার নাম | Take father’s name of applicant | Verified name character should be approved | As expected | pass |
| পিতার NID নং | Take father’s NID no of applicant | Verified 11 digit NID should be approved | As expected | pass |
| মাতার নাম | Take mother’s name of applicant | Verified name character should be approved | As expected | pass |
| মাতার NID নং | Take mother’s NID no of applicant | Verified 11 digit NID should be approved | As expected | pass |
| বৈবাহিক অবস্থা | Select marital status of applicant | Verified status should be approved | As expected | pass |
| স্বামী/স্ত্রীর নাম | Take husband/wife’s name of applicant | Verified name character should be approved | As expected | pass |
| স্বামী/স্ত্রীর NID নং | Take husband/wife’s NID no of applicant | Verified 11 digit NID should be approved | As expected | pass |
| স্বামী/স্ত্রীর NID নং | Take husband/wife’s NID no of applicant | Verified 11 digit NID should be approved | As expected | pass |
| সন্তানের NID নং | Take Child’s NID no of applicant | Verified 11 digit NID should be approved | As expected | pass |
| জেলার নাম | Select district name of applicant | Verified district name should be approved | As expected | pass |
| সিটি কর্পোরেশন/থানা/উপজেলা | Select city corporation/thana /upazila of applicant | Verified city corporation/thana /upazila should be approved | As expected | pass |
| গ্রাম/রাস্তার নাম এবং নম্বর | Select Village/street name and number of applicant | Verified Village/street name and number should be approved | As expected | pass |
| বাসা নম্বর | Take House Number of applicant | Verified House Number should be approved | As expected | pass |
| ভোটার এলাকা এবং নম্বর | Select constituency of applicant | Verified constituency should be approved | As expected | pass |
| জমা দিন | Take user to Notification page | Verify the information and approve it | As expected | pass |
| ঠিক আছে | Take user to Log In page | Log in page should show up | As expected | pass |
| হারানো NID আবেদন | Take user to lost NID application page | Lost NID application should show up | As expected | pass |

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| --- | --- | --- | --- | --- |
| NID তথ্য সংশোধন | Take user to NID correction page | NID correction page should show up | As expected | pass |
| অজানা তথ্য | Take user Help desk page | Information desk should show up | As expected | pass |
| জিডি নং | Take GD number of applicant | Verified GD Number should be approved | As expected | pass |
| জাতীয় পরিচয় পত্র নং | Take NID number of applicant | Verified NID Number should be approved | As expected | pass |
| একাউন্ট সেটিংস | Take user to settings page | Will take information for changing password | As expected | pass |
| নতুন পাসওয়ার্ড | Take new password correctly | Will check the entered password is following the rules then accept | As expected | pass |
| পূর্ববর্তী পাসওয়ার্ড | Take the previous password | Will check the password | As expected | pass |
| নোটিফিকেশন পেইজ | Take user to notification page | notification page should showed up | As expected | pass |

# **1.3 PROJECT MANAGEMENT PLAN**

A diagram of a company

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WBS (Work Breakdown Structure) for NID Management System

Level 1: Project Name

National Identification (NID) Card Management System

Level 2: Major Phases or Deliverables

* Planning
* Design
* Development
* Testing
* Deployment
* Maintenance

Level 3: Sub-tasks

1. Planning

* Requirement Analysis
  + Identify all features needed (Registration, Correction, Verification)
  + Analyze existing NID process issues and user pain points
* Feasibility Study
  + Assess technical requirements for managing large-scale data
  + Consider legal and security implications
* Technology Selection
  + Choose backend, frontend, database, and security technologies
* Project Timeline & Resource Allocation
  + Create a timeline with milestones and assign team roles

2. Design

* User Interface (UI/UX) Design
  + Design user-friendly forms for registration, updates, and corrections
  + Create intuitive navigation for users to check and verify their NID status
* Database Design
  + Design the database schema for storing citizen data securely (NID number, personal info, biometrics, photos)
  + Optimize for scalability and data accuracy
* API Design
  + Design REST APIs for registration, update, and verification processes
* Security Design
  + Plan encryption for personal data
  + Design multi-factor authentication (MFA) for user access

3. Development

* Frontend Development
* Create NID Registration Form (New applicants)
* Create Information Update Form (Existing NID holders)
* Build User Dashboard (To view status and history)
* Build Admin Dashboard (For approval and review)
* Backend Development
  + Implement Registration Functionality
  + Implement Update/Correction Functionality
  + Implement Verification API for third-party services
* Integration
  + Integration with Biometrics (Photos, fingerprints)
  + Integration with SMS/Email Notification System
  + Payment Gateway Integration (for fees if applicable)

4. Testing

* Unit Testing
  + Test individual modules (registration, update, verification)
* Integration Testing
  + Ensure smooth interaction between frontend, backend, and third-party services (e.g., biometrics)
* Security Testing
  + Test encryption, authentication, and authorization mechanisms
* Performance Testing
  + Simulate high user loads to ensure system stability
  + Test data processing speed for large-scale operations

5. Deployment

* Server Setup
  + Set up cloud servers for data storage and processing
  + Ensure data backup and disaster recovery planning
* Application Deployment
  + Deploy frontend, backend, and database in production environment
  + Domain Setup & SSL Certification
  + Secure the application with HTTPS and SSL
  + Ensure the application is accessible via an official domain
  + User Training & Documentation
  + Provide training to admin users and NID officers

Prepare user guides and help documents for citizens

6.Maintenance

* Monitoring & Bug Fixes
  + Monitor system performance and fix issues that arise
  + Feature Updates
  + Add new features based on feedback or changing government regulations
* Security Updates
  + Apply regular security patches and updates to ensure compliance

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Work | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week  9 | Week 10 | Week  11 | Week  12 |
| Requirement Gathering |  |  |  |  |  |  |  |  |  |  |  |  |
| Requirement Analysis |  |  |  |  |  |  |  |  |  |  |  |  |
| System  Design |  |  |  |  |  |  |  |  |  |  |  |  |
| UI/UX  Design |  |  |  |  |  |  |  |  |  |  |  |  |
| Code Implementation |  |  |  |  |  |  |  |  |  |  |  |  |
| Integration |  |  |  |  |  |  |  |  |  |  |  |  |
| Testing |  |  |  |  |  |  |  |  |  |  |  |  |
| Deployment |  |  |  |  |  |  |  |  |  |  |  |  |
| Maintenance |  |  |  |  |  |  |  |  |  |  |  |  |

**Project Scheduling:**

**Requirement Gathering (Weeks 1-3):** The first two weeks are focused on collecting and documenting the requirements from stakeholders and work with clients and users to identify the key features and functionalities needed for the NID Management System.

**Requirement Analysis (Weeks 4):** In Weeks 2 and 3, the gathered requirements are analyzed to identify technical feasibility, constraints, and any other potential challenges. By the end of Week 3, you should have a clear understanding of what the system needs to do.

**System Design (Weeks 5):** These two weeks are dedicated to designing the architecture of the system. This includes determining how the system will be structured, creating databases, deciding on the technology stack, and outlining how different components will interact with each other.

**UI/UX Design (Weeks 5):** During Weeks 5 and 6, the focus shifts to designing the user interface and user experience. This involves creating wireframes, mockups, and prototypes that align with the functional and non-functional requirements of the system. User flows are finalized to ensure the system is intuitive and user-friendly.

**Code Implementation (Weeks 6-7):** Actual coding of the system begins in Week 6 and continues through Week 8. During this phase, developers will work on implementing the functionalities of the NID management system based on the designs and requirements finalized earlier.

**Integration (Weeks 8):** During these two weeks, the different modules and components of the system that have been developed separately are integrated into a cohesive system. Developers ensure that all parts work together as intended.

**Testing (Weeks 9):** Once the system is integrated, testing starts. This phase involves identifying and fixing any bugs or issues in the system. Functional, performance, and security testing will be performed to ensure the NID Management System is ready for deployment.

**Deployment (Weeks 11):** After testing, the system is deployed to the production environment. This includes setting up servers, databases, and ensuring the system is accessible to users.

**Maintenance (Weeks 12 and beyond):** The final phase involves ongoing maintenance of the system, addressing any issues that arise after deployment, and implementing updates or improvements as needed.

## **1.4 Risk Analysis**

|  |  |  |
| --- | --- | --- |
| Risk Description | Impact | Risk mitigation strategy |
| Unwanted requirements or changes in Requirements | High(unwanted requirements may lead the project to fail or more complex) | Conduct detailed and specified requirement workshops with project team and users. |
| **Data Privacy and Security Concerns** | High(As this software will reserve the data of citizen so maintaining security and privacy is a big challenge) | Ensure compliance with local data protection laws (e.g., GDPR or equivalent). Implement encryption and strong access controls. |
| Integration with Other Systems | High(As this project will integrate with other system like -Birth certificate website, contact number ) | Define clear documentation and protocols for integration early in the requirement phase. |
| Technological Feasibility | Medium(as the technology required for certain features (e.g., biometric recognition) may not be mature enough.) | Conduct a feasibility study on key technologies during the requirement gathering phase. |
| Project team Misalignment | High(Different opinion,priorities,new job offers for employees may lead project team into conflict) | Regular team meetings to ensure alignment and communication. |
| Budget and Time Overrun | Medium( The project may exceed its budget or time constraints due to unwanted conditions.) | Use an agile or iterative approach to development, allowing for regular reassessment of scope and budget. |
| Backup failures | High( Risks of data loss if backups are not performed correctly.) | Establish automated backup processes or reserve data safely and regular testing. |
| System downtime | High( Unplanned outages affecting service availability.) | Implement monitoring and failover solutions |
| User verification issues | High | Use multiple verification methods properly (e.g., biometrics, face scan, documents, OTP). |
| User adoption challenges | Medium | Implement user friendly UI/UX design, marketing strategies and user education programs. |
| Inadequate testing | High( Insufficient testing may lead to undetected bugs and issues in production.) | Implement a comprehensive testing strategy, including unit, integration, and user acceptance testing. |