
RFID Monitoring System

User Manual

Version 1.0

06/19/2023

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1. Introduction

This User Manual (UM) provides the information necessary for Administrators and Technical Staff to effectively use the RFID Monitoring System (RMS). The RMS manual is the first release of the documentation, marked with version 1.0.

It offers thorough instructions and details on the setup, configuration, use, and troubleshooting of the RFID Monitoring System. The features and scope of the project include Access Control, Attendance Tracking, Real-time Monitoring.

The administrators and technical employees who will be utilizing, configuring, or maintaining the RFID Monitoring System are the primary users for the User Manual. It assumes that the user is computer literate and has a basic understanding of RFID technology.

The User Manual is subject to modification with new releases and updates of the RFID Monitoring System. The manual will be revised and updated as new features, enhancements, or revisions are implemented. By considering user feedback, ongoing system improvements, and advancements in RFID technology, the manual will be kept relevant and helpful.

The RMS User Manual emphasizes the significance of security and privacy concerns. The guideline places a strong emphasis on the requirement that users handle sensitive information responsibly and in accordance with applicable privacy laws. It offers instructions for securing the system, including how to create strict access rules, use encryption methods, and frequently carry out system audits. Users are urged to abide by organizational rules and policies to safeguard the confidentiality and integrity of data. By following the security and privacy guidelines provided in the manual, users can reduce the risks connected with unauthorized access, data breaches, and non-compliance with privacy laws, fostering a secure and privacy-conscious environment for using the RFID Monitoring System.

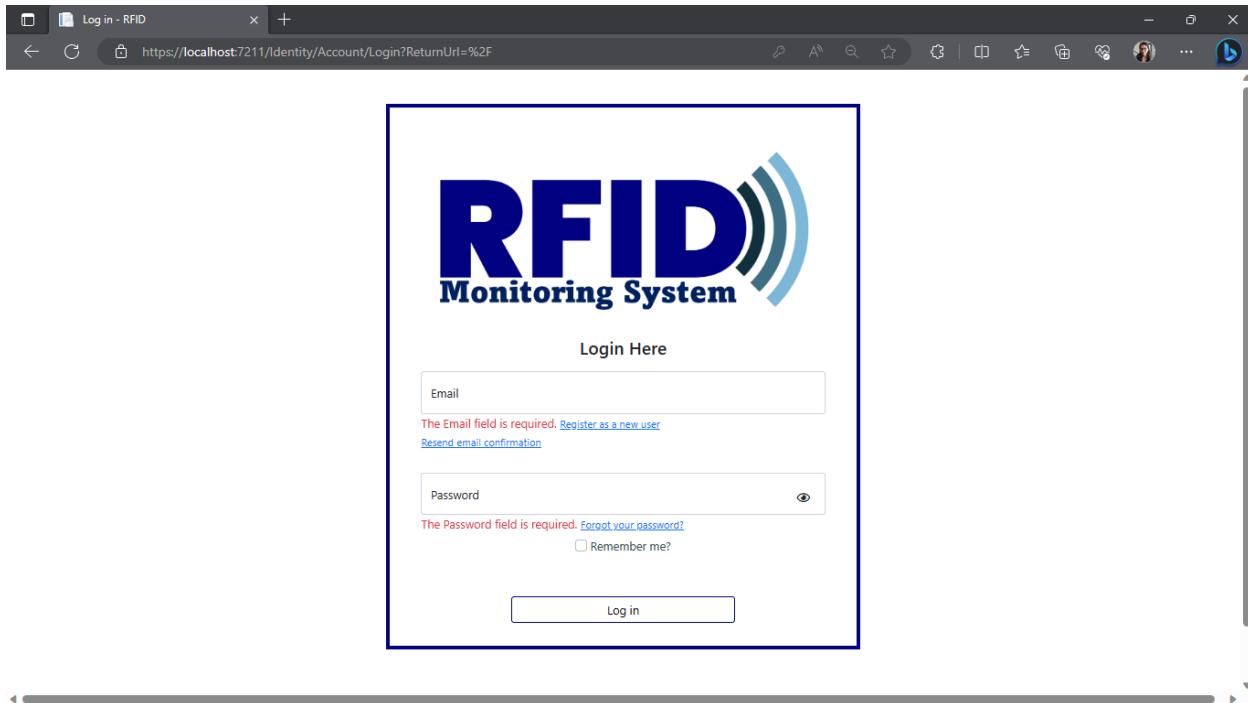
1.1 Overview

The RFID Monitoring System is a user-friendly system, designed to monitor the time in and time out of the students, faculty, and visitors inside the building. Below are the key features of the RMS:

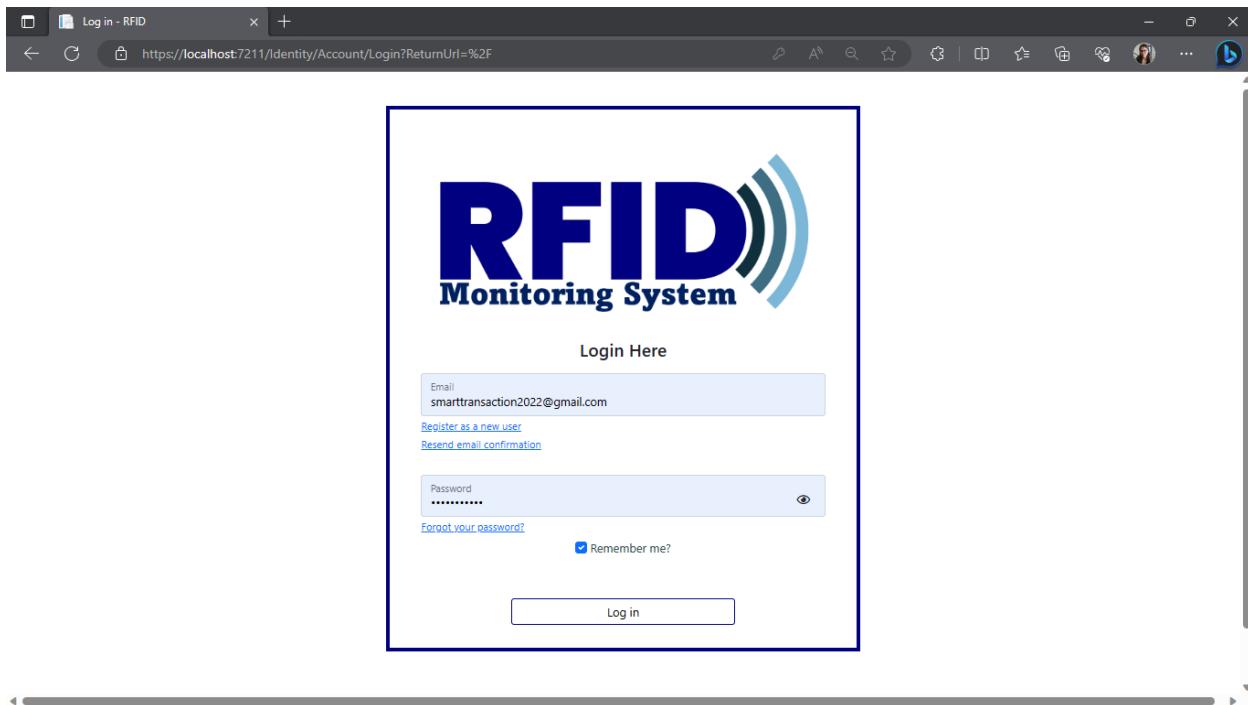
1. Access Control: The system comprises an RFID-based access control mechanism to regulate entry and limit access to various buildings on campus. By utilizing RFID technology, it enhances security measures and ensures that only authorized individuals are admitted to certain locations.
 2. Attendance Tracking: By incorporating RFID technology into the RMS's existing attendance monitoring system, it helps to track student, faculty, and visitors' attendance accurately and automatically. Individuals are given RFID tags, and by tapping the card into the scanner, one can immediately register their attendance. This eliminates human error by automating the procedures involved in maintaining attendance.
 3. Real-time Monitoring: The system makes use of a real-time monitoring capability to provide instant visibility of students, faculty, and visitors entering and exiting the facility. Updates in real time allow for quick responses to any potential mishaps or emergencies.
- Overall, the RMS provides a cutting-edge solution for real-time monitoring, attendance tracking, and access control, providing a secure and effective environment on campus.

2. Getting Started

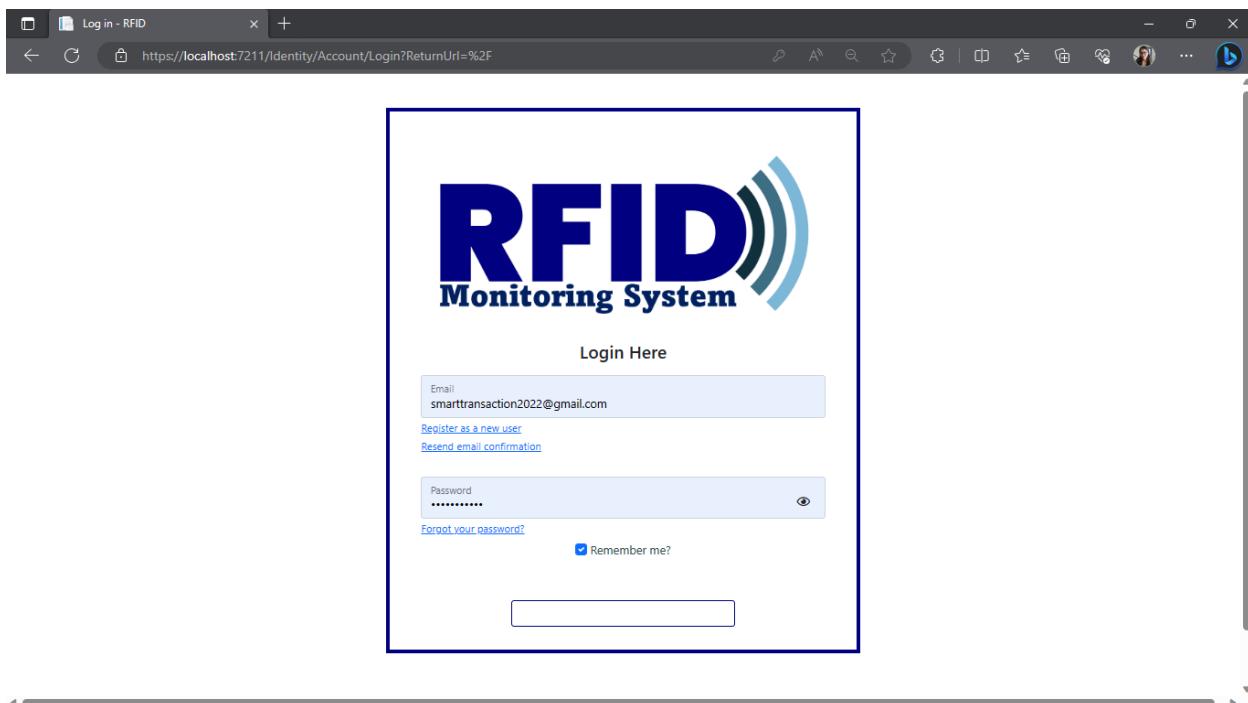
Start by launching the system in a web browser. A login page will appear.



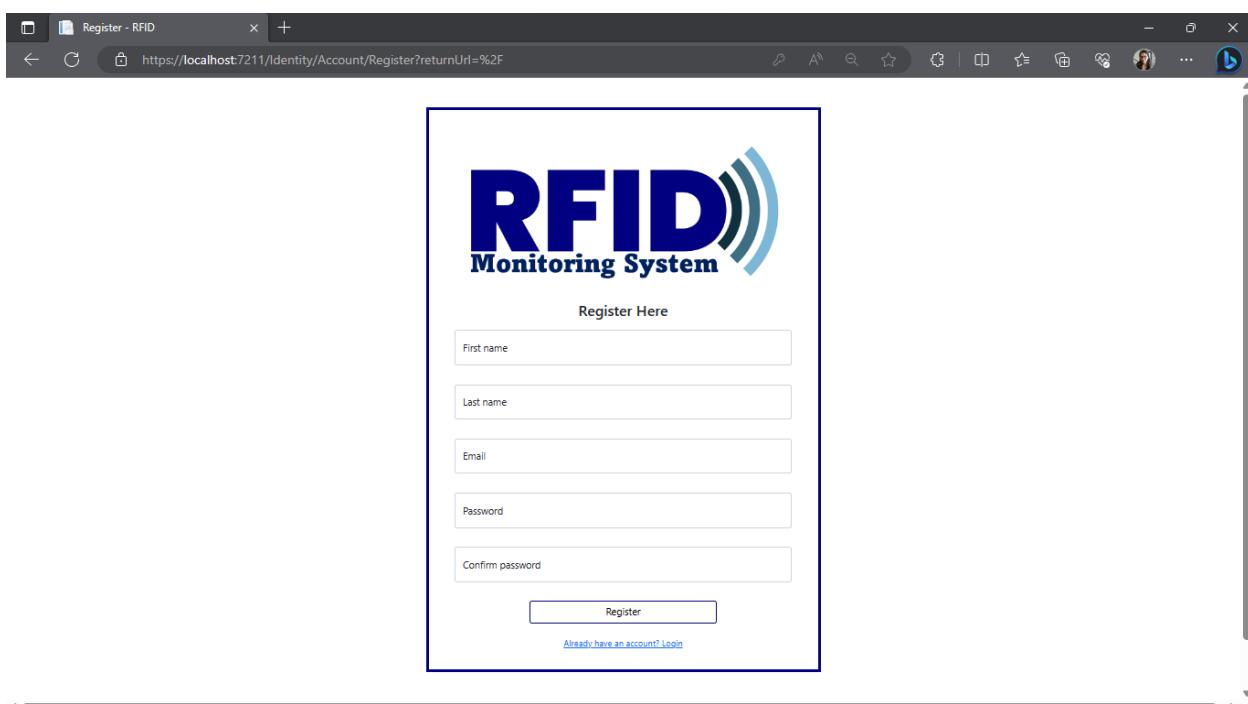
In the space provided, enter your registered email address and password.



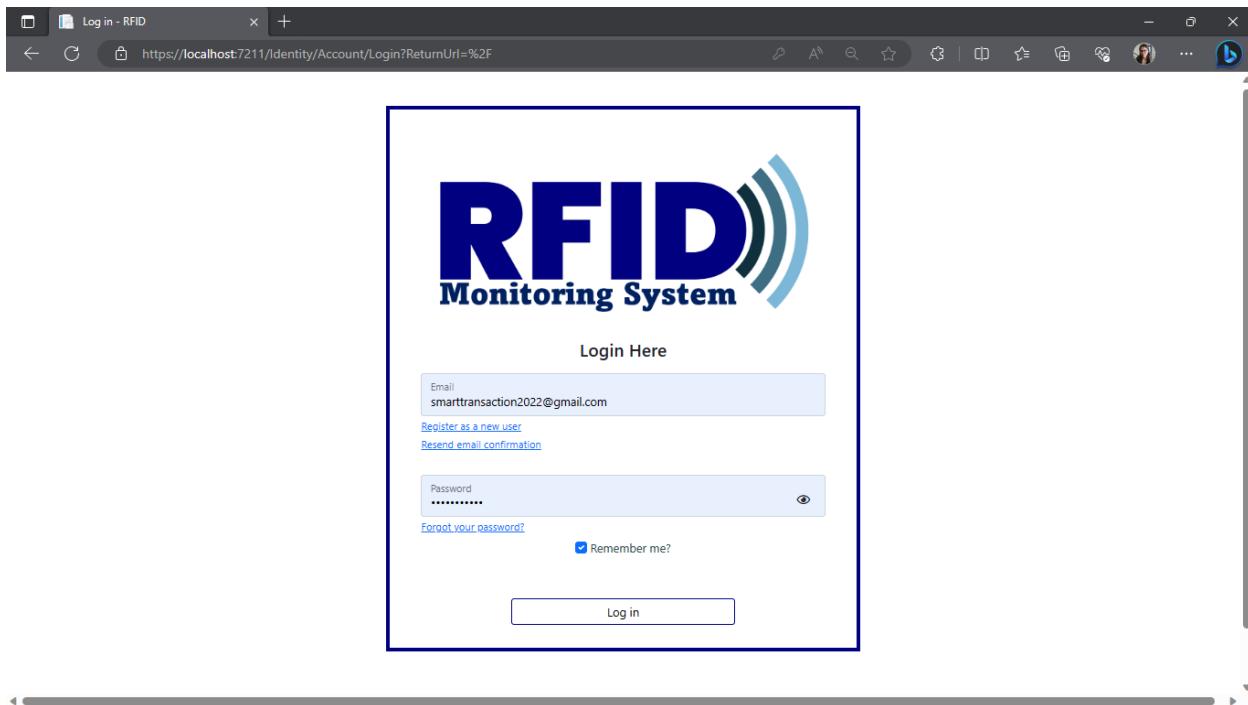
Click the login button to access the system.



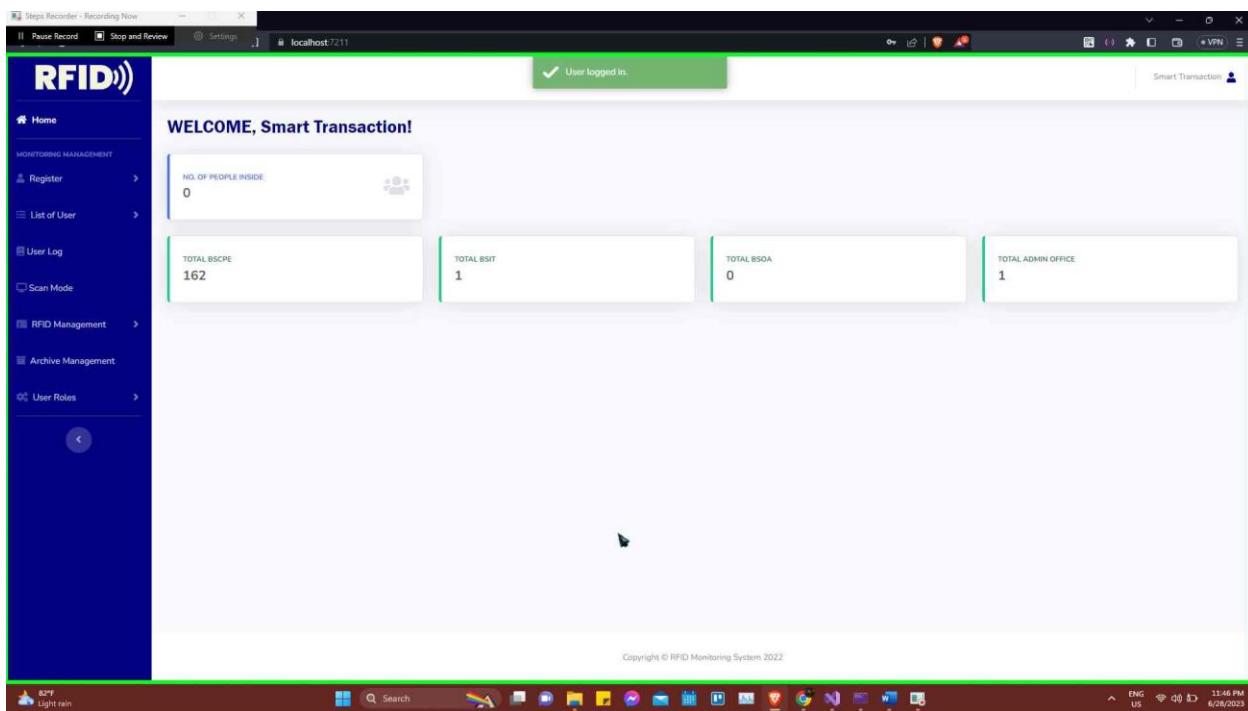
Create an account or register if you are a new admin user.



Click the register button and the login screen will appear. Enter your registered email and password. Click the login button to access the system.



After logging in, you will be directed to the main dashboard. The dashboard provides the number of people inside the building.



To register a new student or staff, you must register the RFID card first. Go to RFID Management and select Register RFID Card.

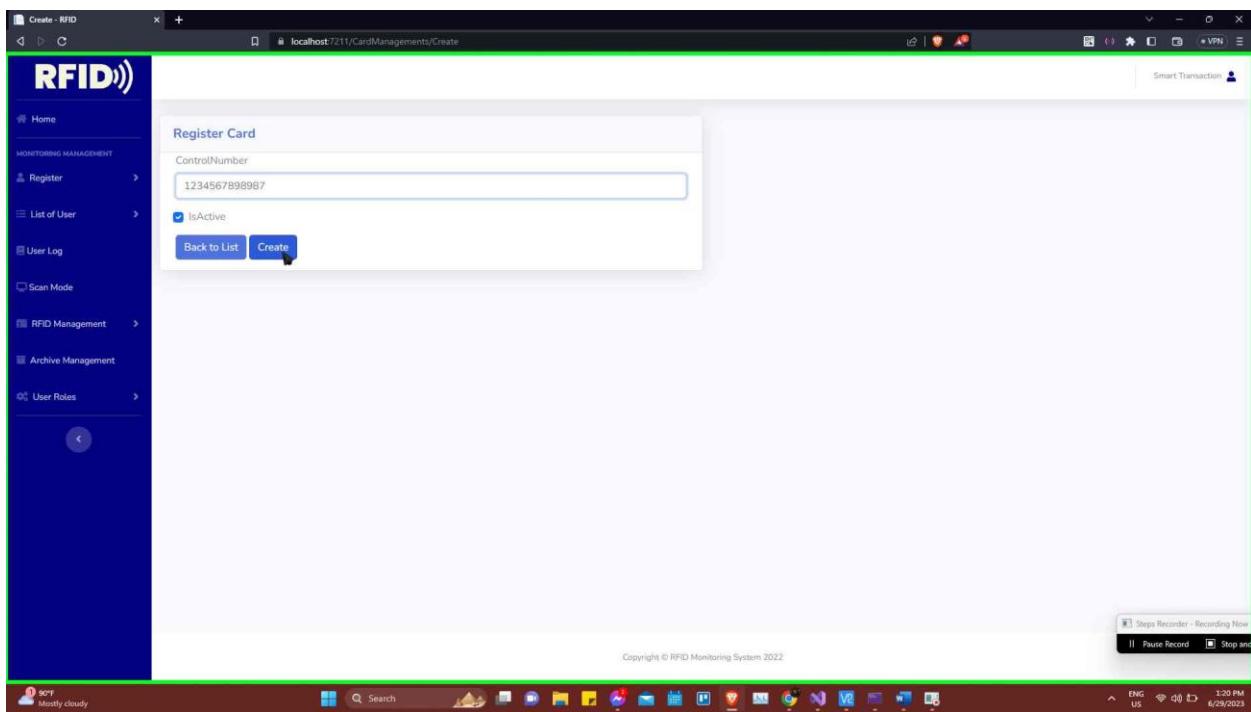
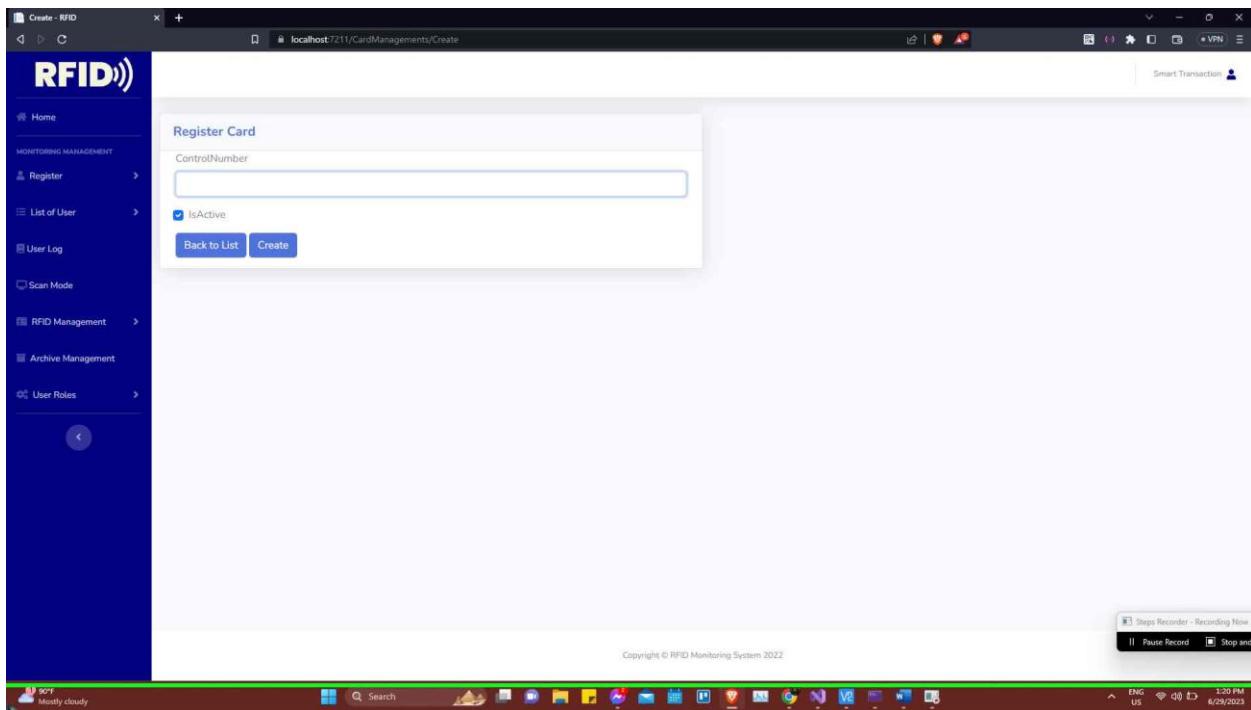
The image displays two screenshots of the RFID Monitoring System interface. Both screenshots show a top navigation bar with 'Smart Transaction' and a bottom status bar indicating 'Steps Recorder - Recording Now', 'Pause Record', 'Stop and Reset', 'ENG US', and the date '6/29/2023'.

Screenshot 1: Register RFID Card

This screenshot shows the 'WELCOME, Smart Transaction!' page. On the left, a sidebar menu under 'RFID Management' has 'Register RFID Card' highlighted with a mouse cursor. The main area displays statistics: 'NO. OF PEOPLE INSIDE' (0), 'TOTAL BSCE' (163), 'TOTAL BSIT' (1), 'TOTAL BSOA' (0), and 'TOTAL ADMIN OFFICE' (2). The status bar at the bottom right shows '1:19 PM'.

Screenshot 2: List of Register Card

This screenshot shows the 'List of Register Card' page. The 'Add Card' button is highlighted with a mouse cursor. The table lists 161 entries, each with columns for 'ControlNumber', 'IsActive', 'Name', and 'IsUsed'. Each row includes 'Edit | Delete' links. The status bar at the bottom right shows '1:20 PM'.



After registering the RFID Cards, go to Register section and select between Register Student or Register Staff.

Under the List of User section are all the registered students and staff together with their complete name, control number, student ID number, course, year, and section, created date and time, and a details button.

AdminPageId	Name	Middle Name	Last Name	Control no.	Student Id No.	Course	YearAndSection	CreatedDateTime	Action
62	JABIGAIL	ILAGAN	ABELLA	0008914125	2022-00067-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
63	KIM BERLIE	CASTRO	AGULTO	0008757593	2022-00199-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
64	JIRO	VIAGEDOR	ALAYU	0008871776	2022-00068-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
65	CHELY JOYCE ANNE	SANCHEZ	ALEJO	0008778959	2022-00069-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
66	CLARIES MAE	PALADA	AVELLANA	0008743210	2022-	BSCPE	1-1	23/03/2023	<button>Details</button>

The User Log section displays all the time in and time out of the student or staff. On the top right corner is the search box and can be used to filter students or staff.

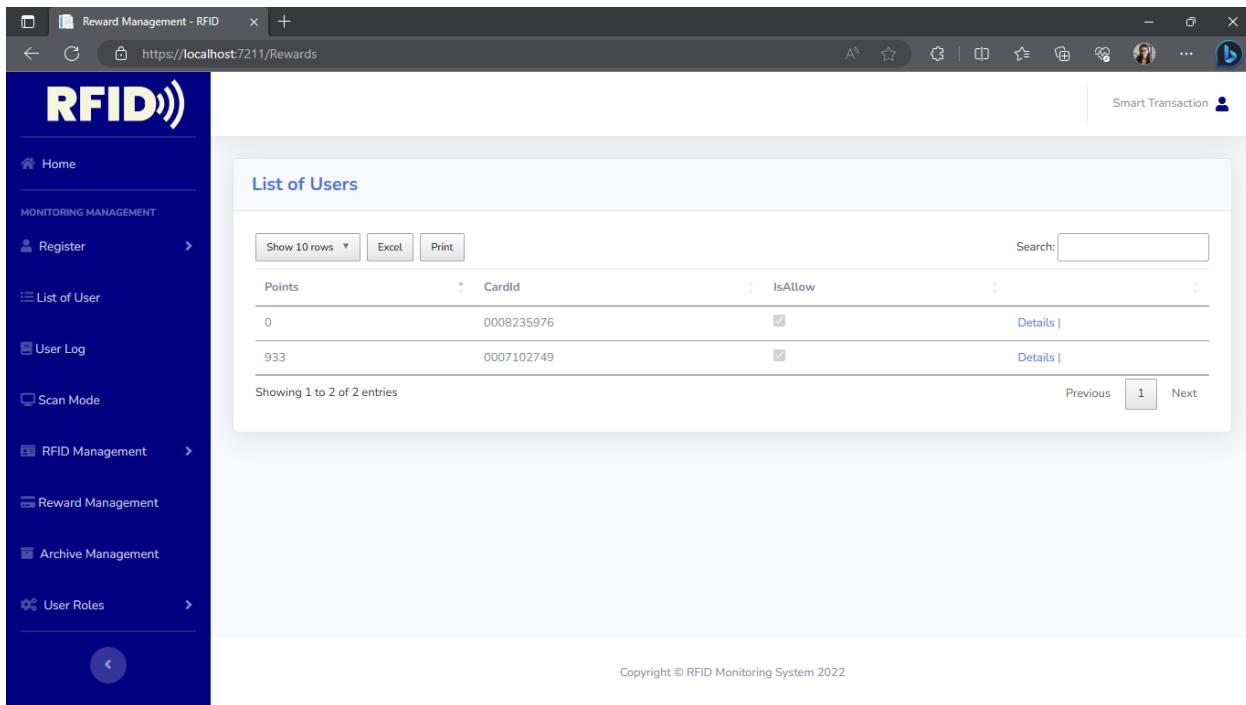
The screenshot shows a web browser window titled "List of Users - RFID" with the URL "https://localhost:7211/AdminPages/StudentLogList". The left sidebar has a dark blue theme with white text and icons. It includes sections for MONITORING MANAGEMENT (Register, List of User, User Log, Scan Mode), RFID Management, Reward Management, Archive Management, and User Roles. The "User Log" section is currently selected. The main content area is titled "User Logs" and contains a table with columns: StudentIdLog, LogState, Card Id No., Name, and CreatedDateTime. There are 8 rows of data. Each row has "Details" and "Delete" buttons. The data is as follows:

StudentIdLog	LogState	Card Id No.	Name	CreatedDateTime	Details	Delete
101	Time In	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:26:38 pm	Details	Delete
102	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:03 pm	Details	Delete
103	Time In	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:18 pm	Details	Delete
104	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:19 pm	Details	Delete
105	Time Out	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:28:36 am	Details	Delete
106	Time In	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:28:41 am	Details	Delete
107	Time Out	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:29:18 am	Details	Delete
108	Time In	0007102749	LA SUERTE, PATRICK LAZARO	15/06/2023 9:29:20 am	Details	Delete

The RFID Management section is divided into three parts, register RFID card (1), add course (2), and add register staff role (3).

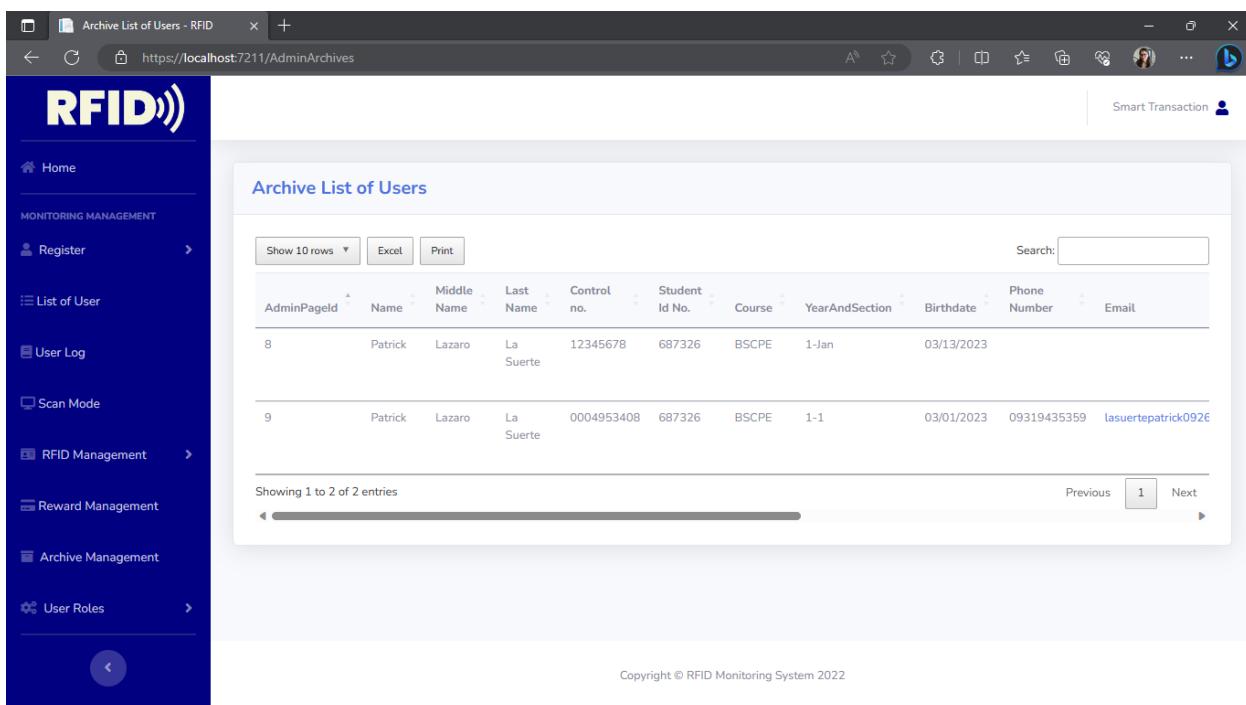
The screenshot shows a web browser window titled "General Page - RFID" with the URL "https://localhost:7211". The left sidebar has a dark blue theme with white text and icons. It includes sections for MONITORING MANAGEMENT (Register, List of User, User Log, Scan Mode), RFID Management, Reward Management, and User Roles. The "RFID Management" section is currently selected. The main content area has a title "WELCOME, Smart Transaction!". Below it are three boxes: "NO. OF PEOPLE INSIDE" (4), "TOTAL BSCPE" (4), and "TOTAL BSIT" (0). The bottom of the sidebar has a "RFID MANAGEMENT:" section with links: Register RFID Card, Courses, Staff Role, and a "Reward Management" section.

The Reward Management section is a section for giving points to a specific student such as incentives for attending events related to school.



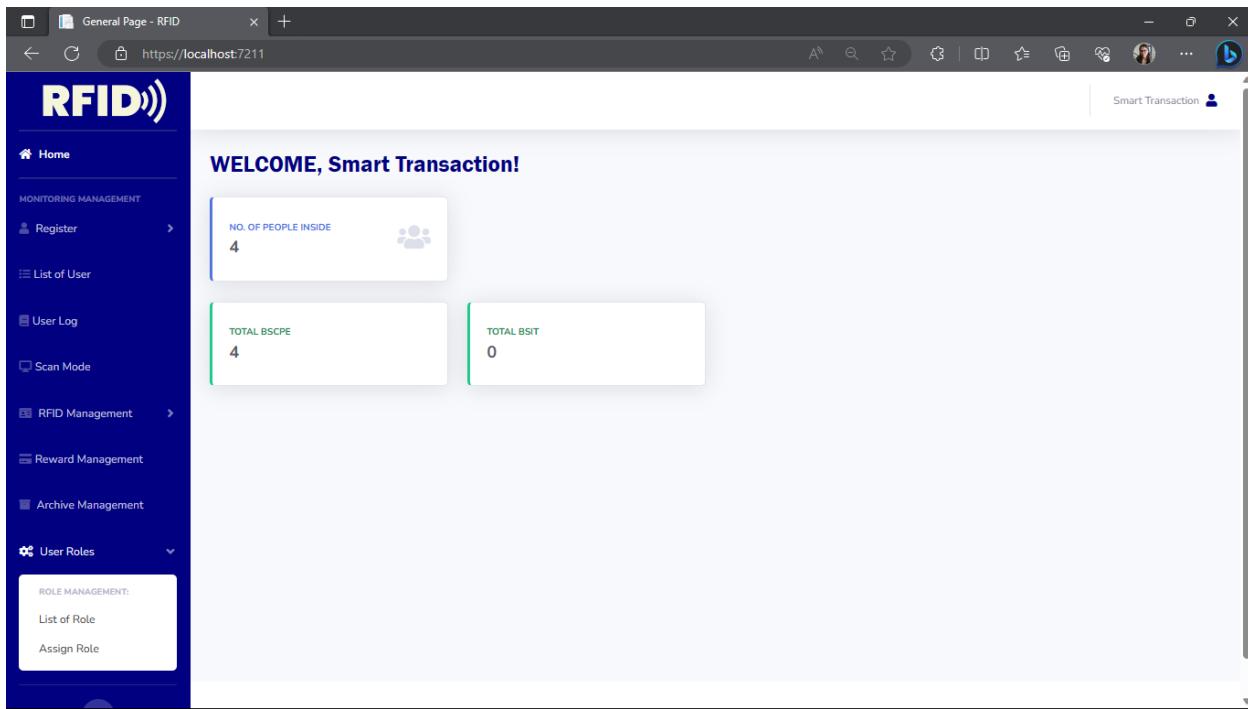
The screenshot shows a web browser window titled "Reward Management - RFID" with the URL "https://localhost:7211/Rewards". The left sidebar has a dark blue theme with the "RFID" logo at the top. Under "MONITORING MANAGEMENT", the "Reward Management" option is selected and highlighted in blue. The main content area is titled "List of Users". It includes a toolbar with "Show 10 rows", "Excel", "Print", and a search bar. A table lists two users: one with 0 points and another with 933 points. Both users have their "IsAllow" field checked. Below the table, it says "Showing 1 to 2 of 2 entries". At the bottom right, there are "Previous", "1", and "Next" buttons. The footer of the page reads "Copyright © RFID Monitoring System 2022".

The Archive Management section is like a recycle bin where you can see the deleted accounts of students and staff.

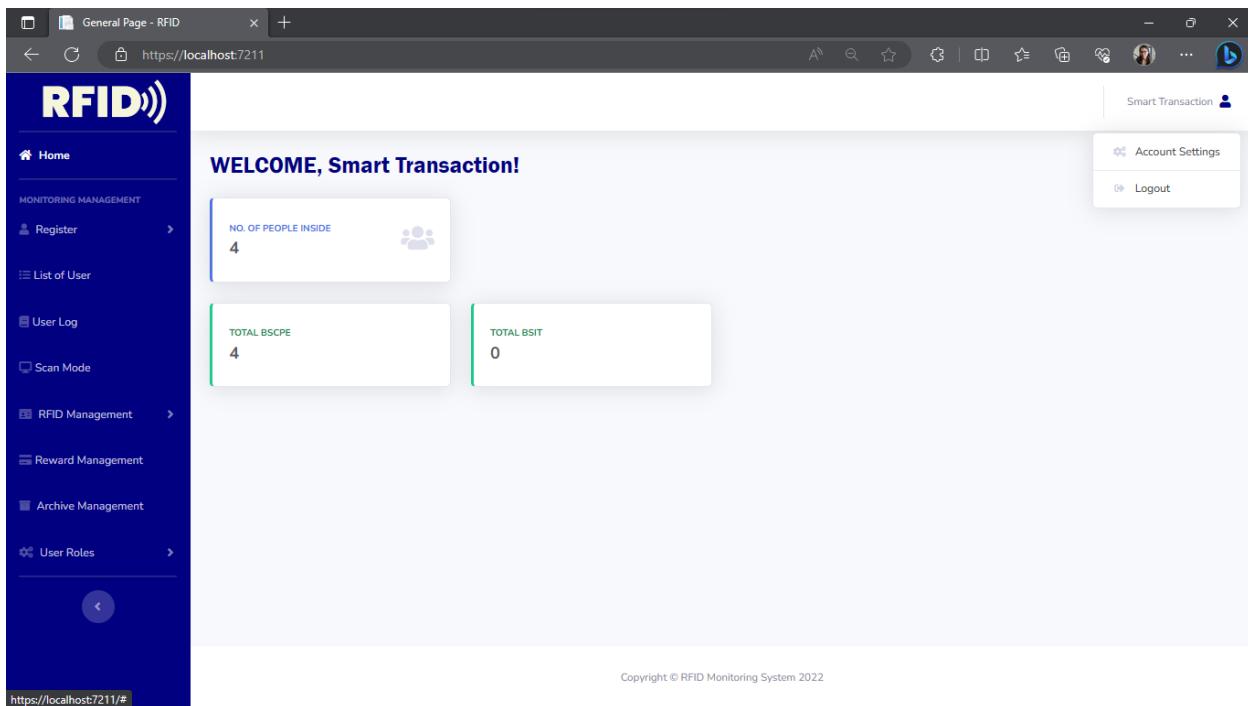


The screenshot shows a web browser window titled "Archive List of Users - RFID" with the URL "https://localhost:7211/AdminArchives". The left sidebar has a dark blue theme with the "RFID" logo at the top. Under "MONITORING MANAGEMENT", the "Archive Management" option is selected and highlighted in blue. The main content area is titled "Archive List of Users". It includes a toolbar with "Show 10 rows", "Excel", "Print", and a search bar. A table lists two deleted user records. Record 8 is for "Patrick Lazaro La Suerte" with ID 687326, course BSCPE, and birthdate 03/13/2023. Record 9 is for the same person with ID 687326, course BSCPE, and birthdate 03/01/2023. The footer of the page reads "Copyright © RFID Monitoring System 2022".

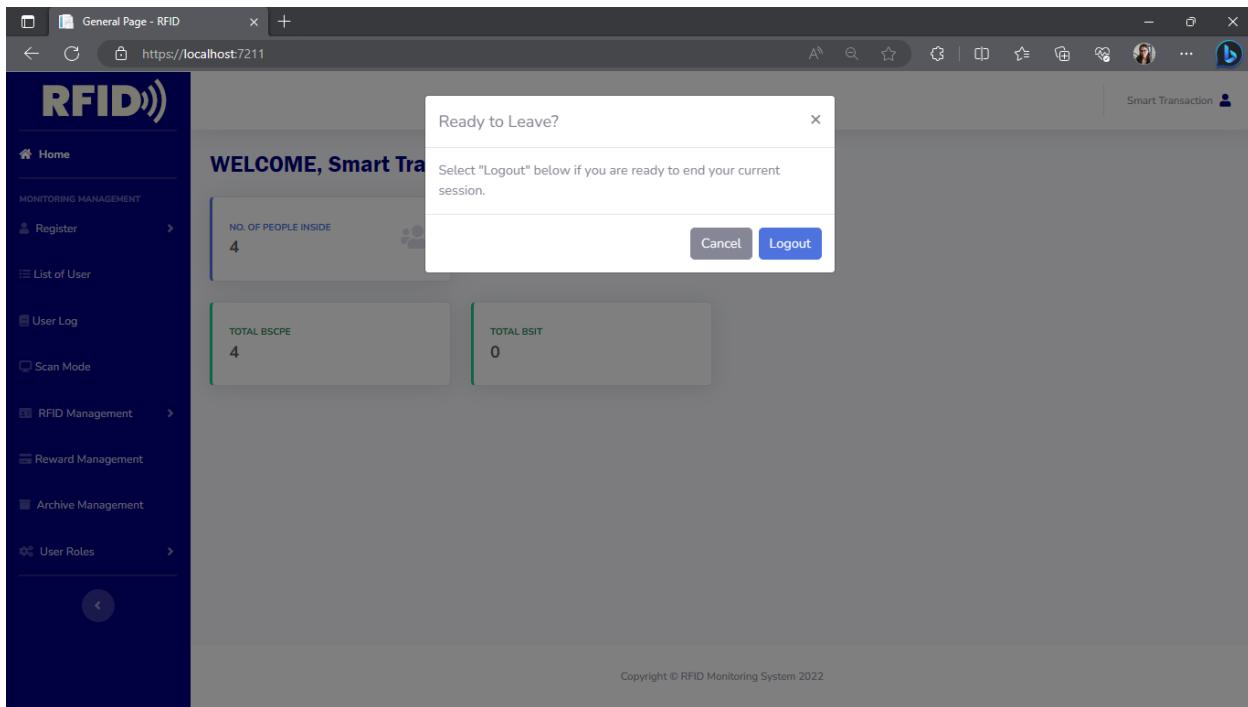
The User Roles section, where you can view the list of roles and the Assign role where you can assign a specific role to what kind of users.



On the top right, click the profile icon to see the account settings and logout button.



Lastly, to logout of your account, click the logout button and a confirmation prompt will appear to ensure that you want to logout.



2.1 Cautions & Warnings

The RFID monitoring system should only be accessed and used by authorized employees, which are the admin users. For administrators, follow privacy laws and handle acquired data carefully. Misuse of the system can result in penalties or consequences.

Unauthorized Access: Users are prohibited from trying to enter the system or interfere with it without the necessary authorization. Unauthorized access can result in security lapses and jeopardize the system's integrity.

Privacy Considerations: Users should understand that the RFID monitoring system collects data about the movements and activities of individuals. The privacy consequences must be considered, and all applicable privacy rules and regulations must be followed. It is essential to handle obtained data with care and to secure it.

Prohibited Actions: Any specific rules or regulations within the monitored facility should be followed by users. This includes abiding by rules governing the usage of RFID tags or any restrictions on activities.

Penalties for Misuse: Users should be aware that using the system improperly or in an illegal manner may result in fines or other consequences. Depending on the seriousness of the conduct, this can entail disciplinary measures or legal repercussions.

2.2 Set-up Considerations

Equipment:

- a. **RFID Tags:** These are small electronic devices that contain a unique identifier and its in a form of card.
- b. **RFID Readers:** These devices are responsible for reading the information stored on the RFID card. They use radio waves to communicate with the cards and capture their unique identifiers.
- c. **Computer:** A computer is required to process and manage the data collected by the RFID readers. It typically consists of a desktop or laptop computer, along with the necessary software for data analysis and visualization.
- d. **Router:** A router is a device that connects multiple devices within a network and enables communication between them. It acts as a central hub, allowing data to flow between the computer system, and other network-connected devices.
- e. **Keyboard:** A keyboard is a common input device that allows users to enter alphanumeric data into the computer system
- f. **Mouse:** A mouse is another input device that enables users to interact with the computer system. In the context of an RFID monitoring system, the mouse can be used to navigate through the system's user interface, select options, click on buttons, or perform various actions.
- g. **Monitor:** Display monitor to present the collected data in a user-friendly format.

Communications:

RFID systems use wireless communication to exchange data between the RFID tags and readers. The readers emit radio waves that power the tags and receive the unique identifier stored on them. This information is then transferred to the computer system using wired.

Network Configuration:

The RFID monitoring system is connected to a computer network, allowing multiple readers and computers to share and access the RFID data. The network can be wired, using Ethernet cables, or wireless, utilizing Wi-Fi technology. This network configuration enables real-time data sharing, centralized management, and remote access to the RFID system.

2.3 User Access Considerations

In the RFID monitoring system, there are 2 users: an admin user and an end user. Users with administrative privileges have more access rights and duties. They have the power to control and set up different system settings, frequently including user access, data management, and system maintenance. For control and security, approved Admin users are often the only ones who have access to administrative features. On the other hand, the end users are regular users who interact with the system to perform specific tasks or access certain functionalities, their access is limited, such as they can interact with the system by tapping their registered RFID cards into the scanner.

2.4 Accessing the System

To access the system, open the system in a web browser and a login screen will appear. Enter your registered email address and password in the provided field. If you're a new user, register or create an account before logging in. On the login screen, there is a directory that will bring you to the register screen, resend email confirmation screen, forgot your password, and remember me. The resend email confirmation screen is where the user will enter his/her email address and will receive an email confirmation confirming that they're the owner of the email address. To reset the password, go to the login screen and simply click the forgot password button. On the reset password screen, enter your email address and you will receive instructions on how to reset your password in your email account.

2.5 System Organization & Navigation

The system menu is divided into 10 sections and each section contains features.

1st Section: Home – this is where you will be directed after logging in, this serves as the main dashboard of the system, and this is where you can view the total number of students and staff inside a building.

2nd Section: Register User – this is where you register a student or staff member.

- a. Register Student: To register a student, you must provide the First Name, Middle Name (optional), Last Name (and Suffix if there is), RFID Card number, Student ID number, Course, Year and Section, Birthdate, Contact Number, Email, Address, Profile Picture (PNG/JPEG/JPG only), Contact Person, and Emergency Contact Number
- b. Register Staff: To register a staff member, you must provide the First Name, Middle Name (optional), Last Name (and Suffix if there is), RFID Card number, Employee Role, ID number, Faculty Personnel, Birthdate, Contact Number, Email, Address, Profile Picture (PNG/JPEG/JPG only), Contact Person, and Emergency Contact Number

3rd Section: List of User – all the registered students and staff together with their complete name, control number, student ID number, course, year, and section, created date and time, and a details button.

4th Section: User Log – displays all the time in and time out of the student or staff. On the top right corner is the search box and can be used to filter students or staff.

5th Section: Scan Mode – displays the screen for end-users' information whenever they tap their RFID Card into the scanner.

6th Section: RFID Management – is where you can register the RFID Card, Courses, and Staff Roles

- a. Register RFID Card: To register the RFID Card, simply tap the card into the scanner and it will automatically detect the ID number. Additionally, the admin can manually input the number of the RFID Card to register it.
- b. Register Courses: To register for new courses, simply enter the courses you want to add. To confirm, you can check it on the home page or in the List of Users to see if there's any new courses added.
- c. Register Staff Role: To register staff role, simply click the add staff role and input the role. To confirm, you can check it on the home page.

7th Section: Reward Management: is a section for giving points to a specific student such as incentives for attending events related to school.

8th Section: Archive Management – is like a recycle bin where you can see the deleted accounts of students and staff.

9th Section: User Role: where you can view the list of roles and the Assign role where you can assign a specific role to what kind of users.

10th Section: Profile – the profile icon is where the account settings and logout button.

- a. Account Settings: Divided into 5 categories, profile (1), email (2), password (3), two-factor authentication (4), personal data (5).
- b. Logout: To logout of your account, click the logout button and a confirmation prompt will appear to ensure that you want to logout.

2.6 Exiting the System

To properly exit the system, follow these actions:

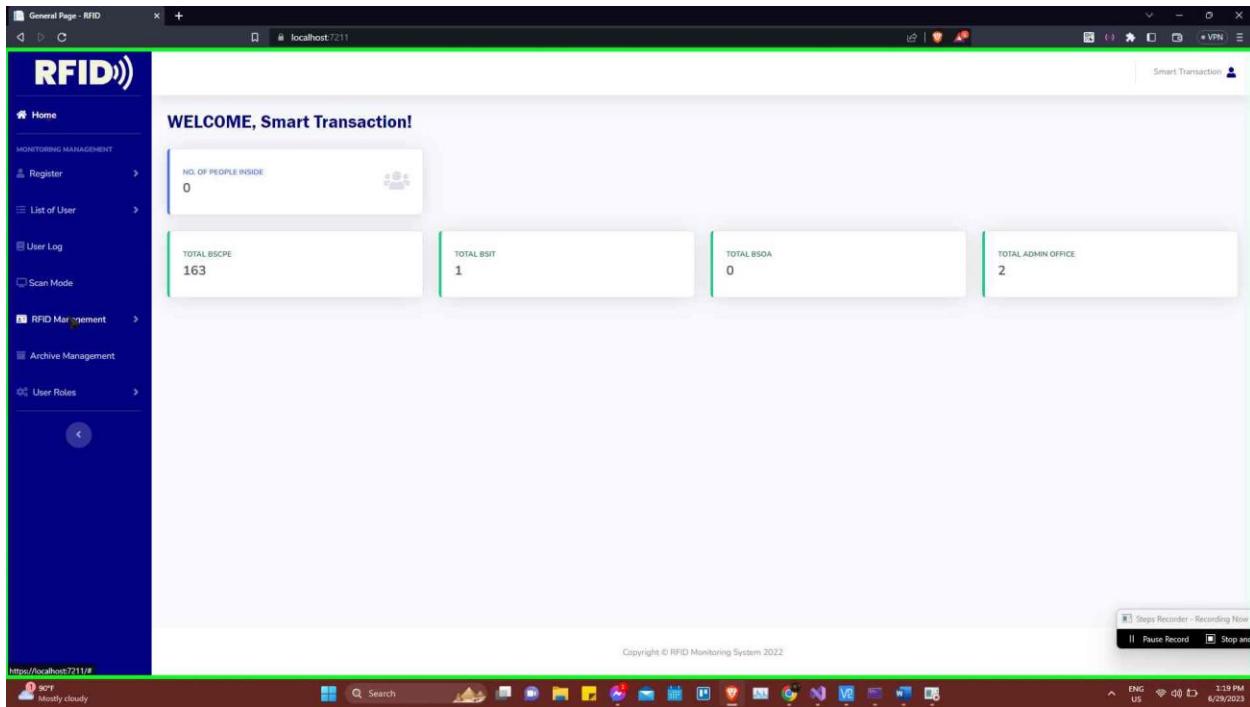
On top right corner, click the profile icon and it will initiate the logout process. A confirmation prompt will appear to ensure that you want to log out. Read the prompt carefully to make sure you're performing the correct action. Click the Logout button if you want to logout and cancel if not.

3. Using the System

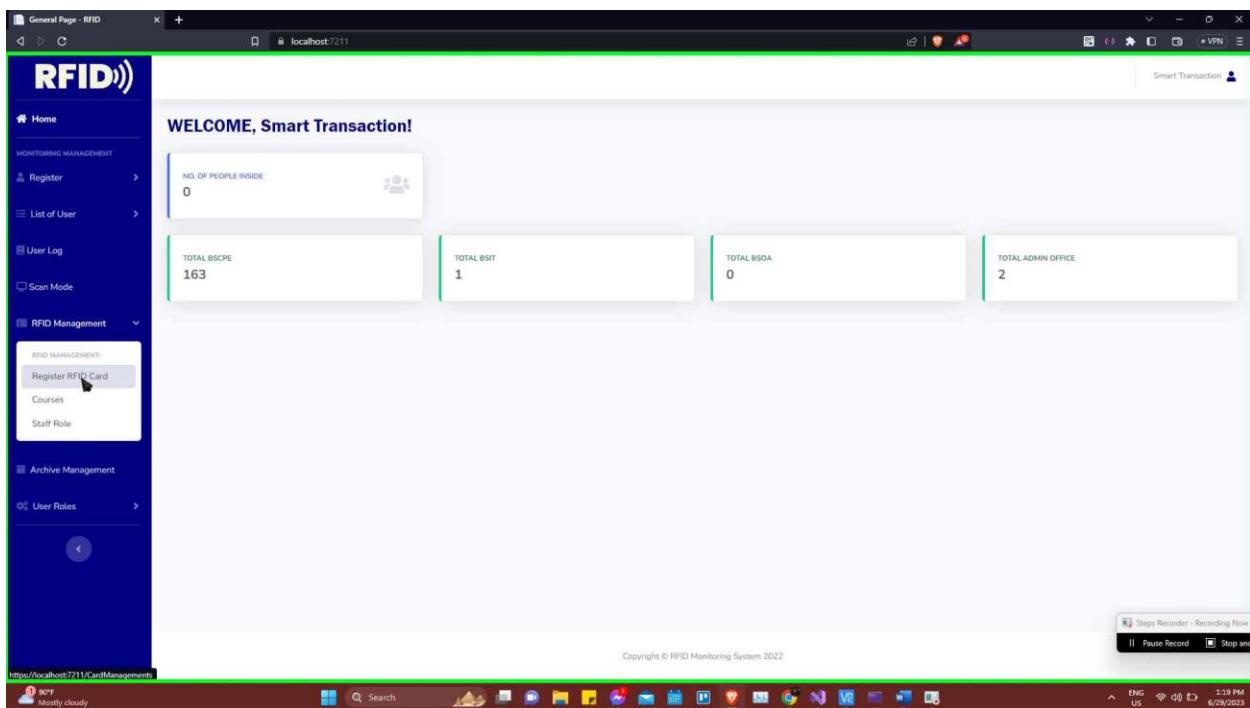
The following sub-sections provide detailed, step-by-step instructions on how to use the various functions or features of the RFID Monitoring System.

3.1 RFID Management – Register RFID Card

1. Go to RFID Management section.



2. Click Register RFID Card



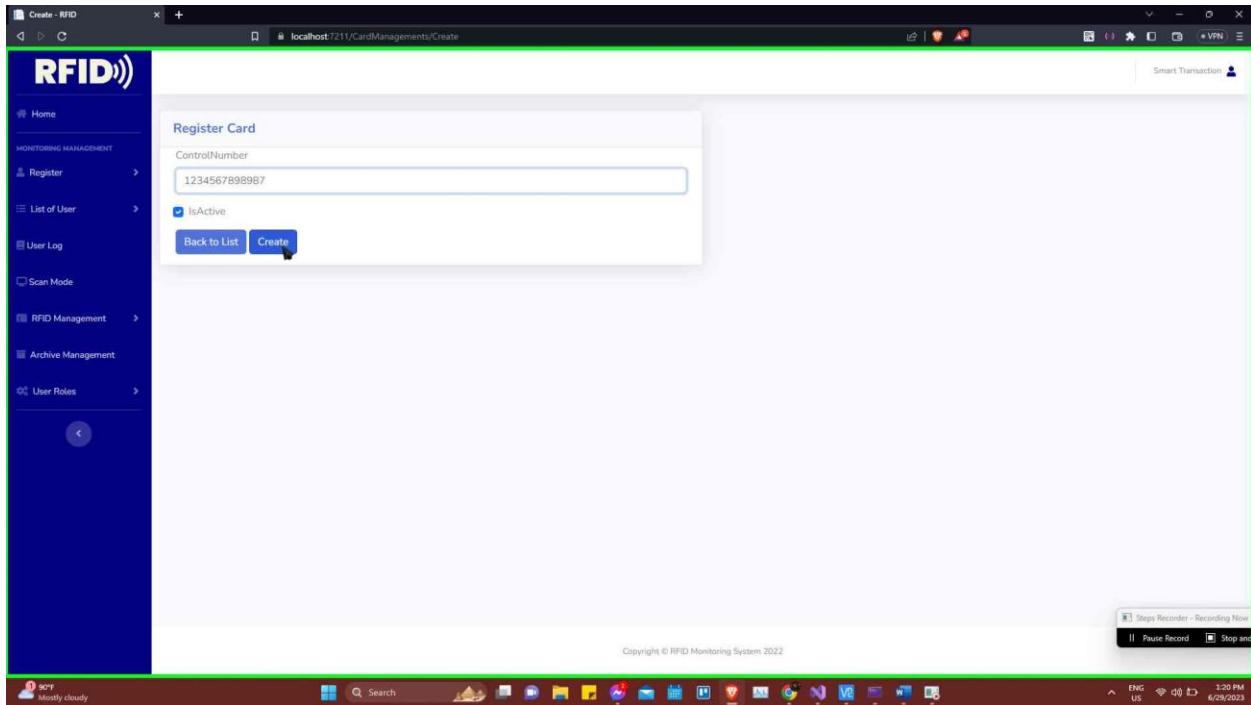
3. Click Add Card

The screenshot shows a web-based application interface for an RFID Monitoring System. On the left, a sidebar menu includes 'Home', 'MONITORING MANAGEMENT' (with 'Register', 'List of User', 'User Log', 'Scan Mode', 'RFID Management', 'Archive Management', and 'User Roles'), and a circular navigation button. The main content area is titled 'List of Register Card'. It features a table with columns: 'ControlNumber', 'IsActive', 'Name', and 'IsUsed'. The table contains 161 rows of data. At the top left of the table, there is a blue rectangular button labeled 'Add Card'. Below the table, a message says 'Showing 1 to 10 of 161 entries'. The bottom right corner of the table has a 'Previous' button followed by a page number '1' and a 'Next' button. The status bar at the bottom shows the URL 'https://localhost:7211/CardManagements/Create', the system's copyright notice 'Copyright © RFID Monitoring System 2022', and a system status bar with icons for battery, signal, and date/time.

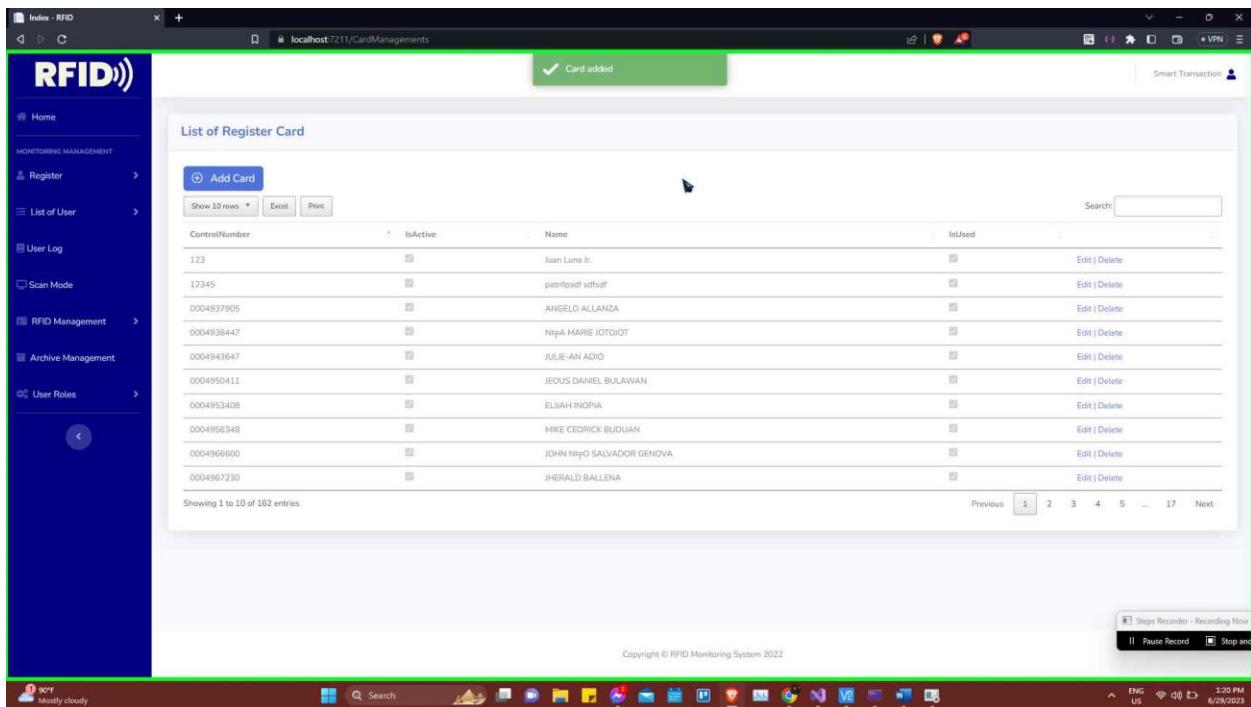
4. Click the empty field and input the RFID Card number or simply tap the RFID Card into the scanner.

This screenshot shows the 'Create - RFID' page of the system. The left sidebar is identical to the previous screenshot. The main area is titled 'Register Card' and contains a form with two fields: 'ControlNumber' and 'IsActive'. The 'ControlNumber' field is currently selected, indicated by a red border around its input box. Below the form are two buttons: 'Back to List' and 'Create'. The status bar at the bottom shows the URL 'https://localhost:7211/CardManagements/Create', the system's copyright notice 'Copyright © RFID Monitoring System 2022', and a system status bar with icons for battery, signal, and date/time.

5. After inputting the card number, click create.

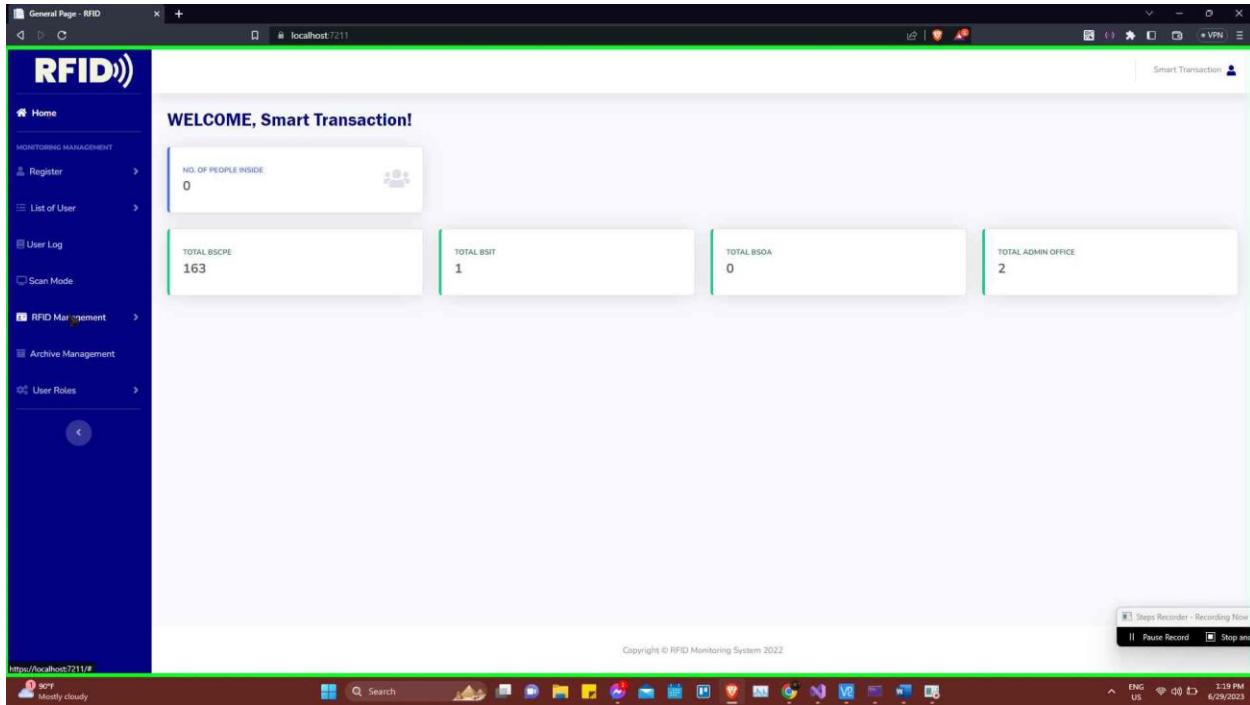


6. After clicking the create button, a pop-up notification will appear saying “card added”.

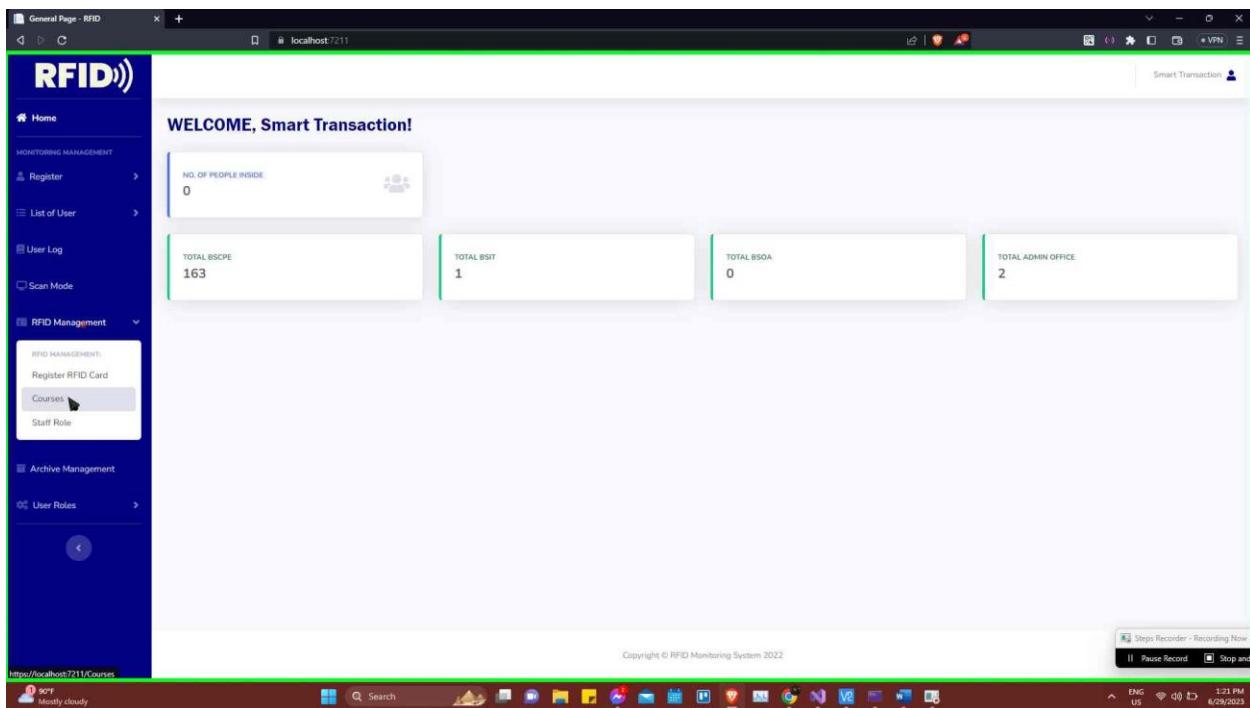


3.1.1 RFID Management – Register Courses

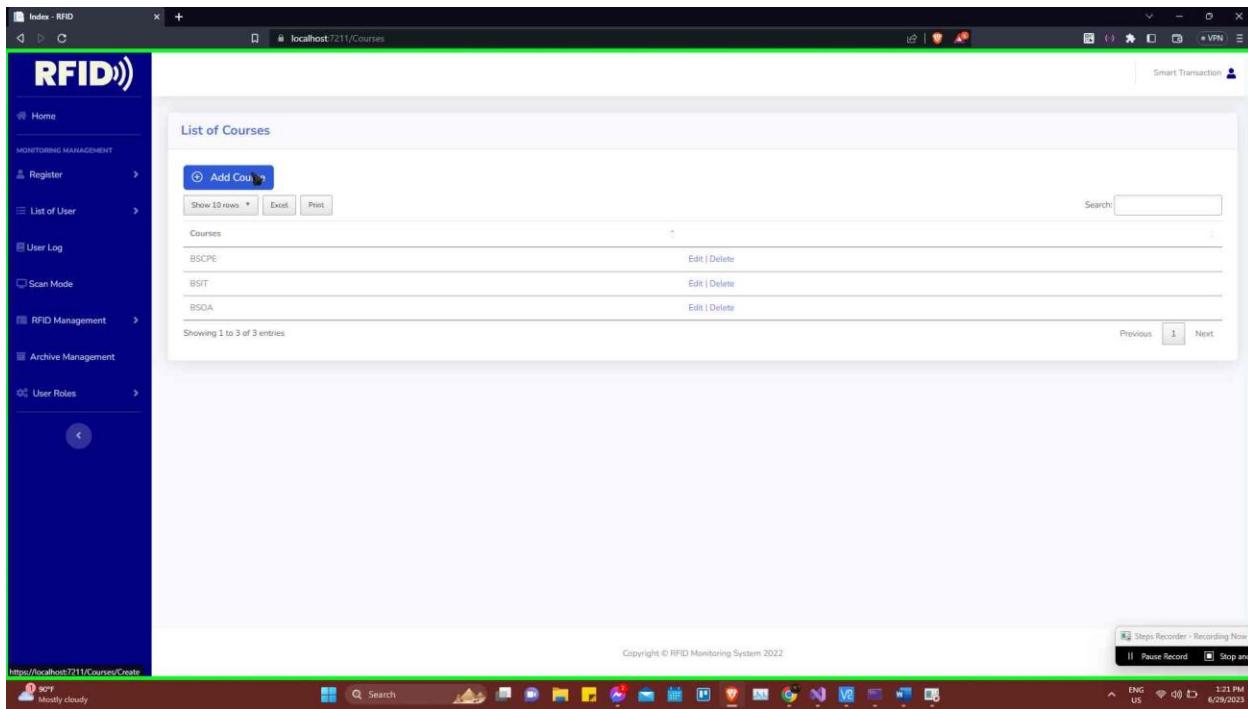
1. Go to RFID Management



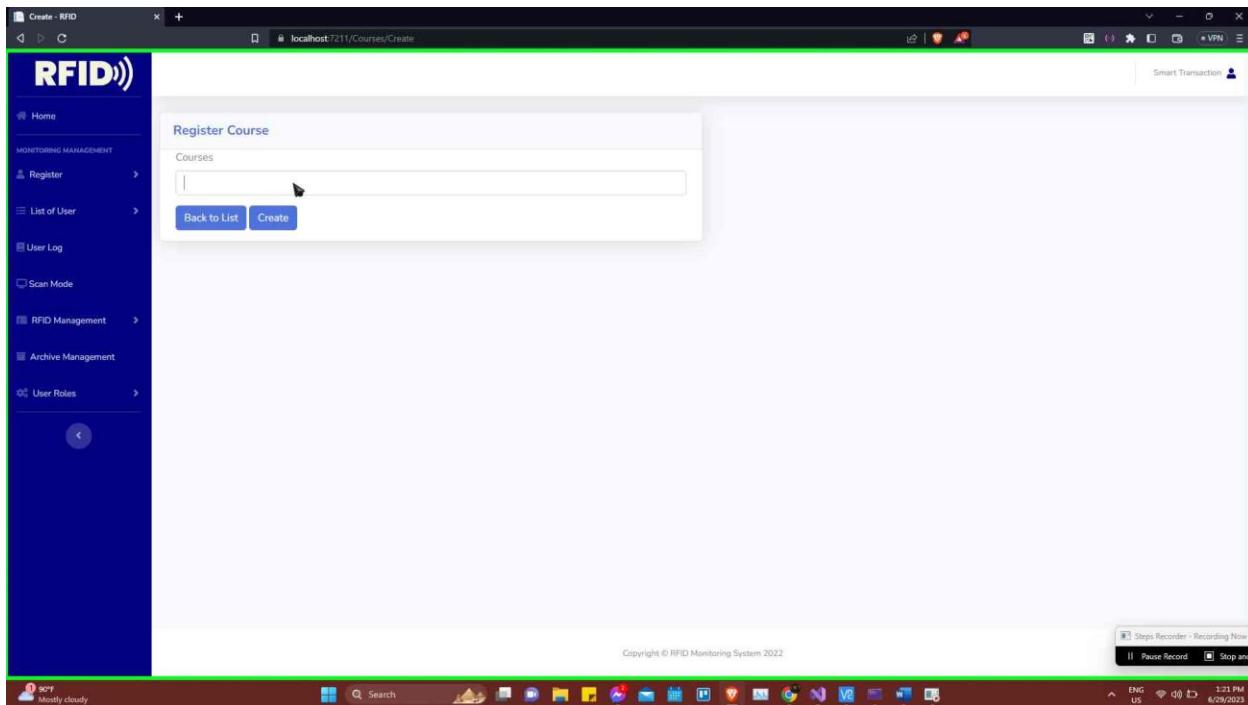
2. Click Courses



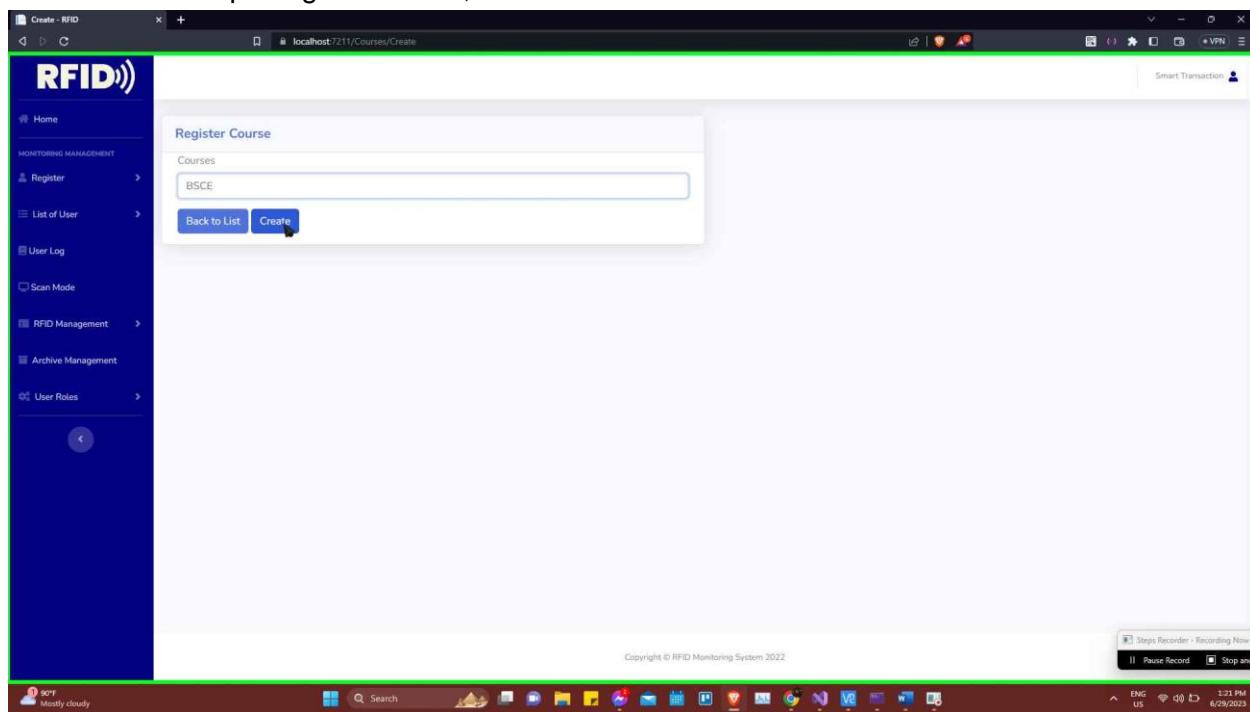
3. Click Add Course



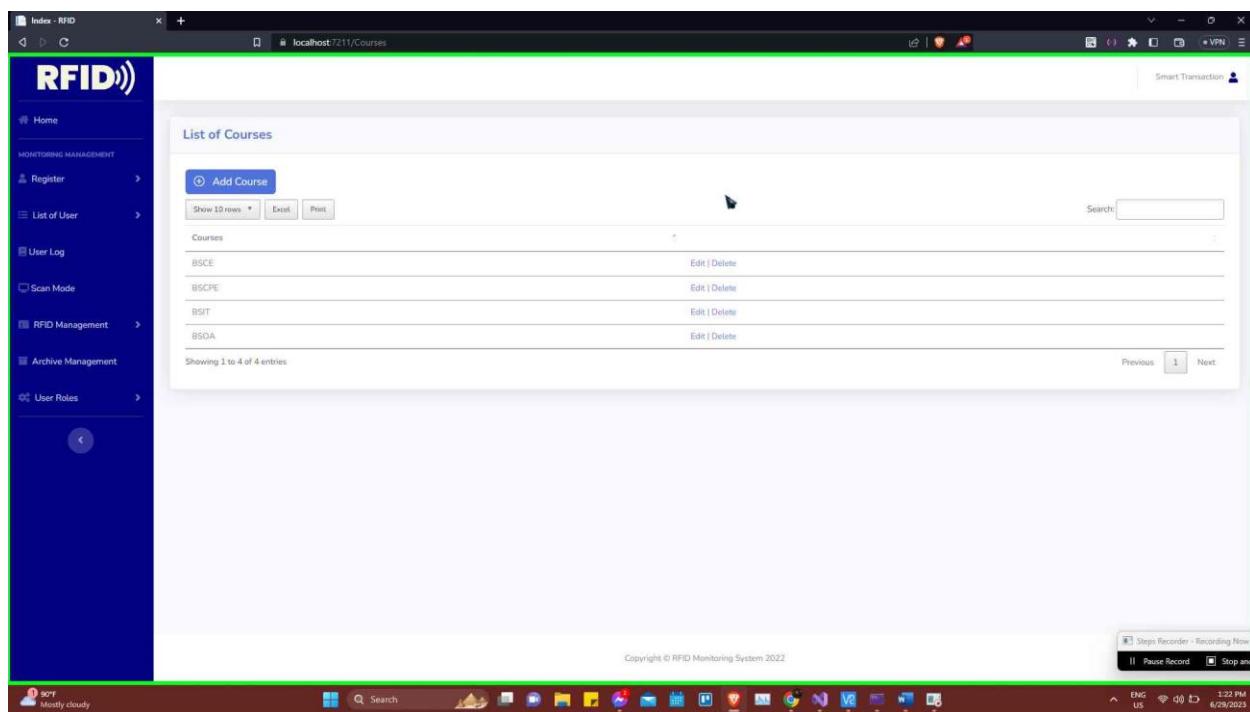
4. Input new Course in the provided field



5. After inputting the course, click the create button.

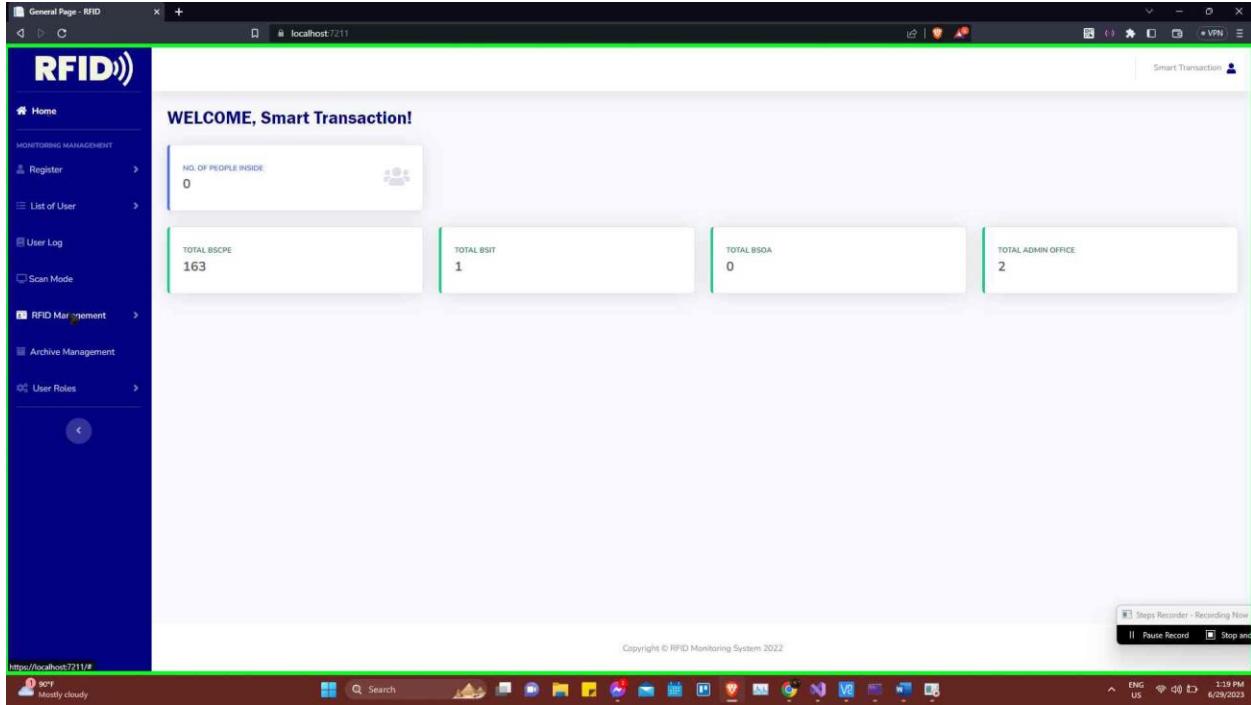


6. After clicking the create button, you will be directed to List of Courses and as you can see the newly added course was already on the list.

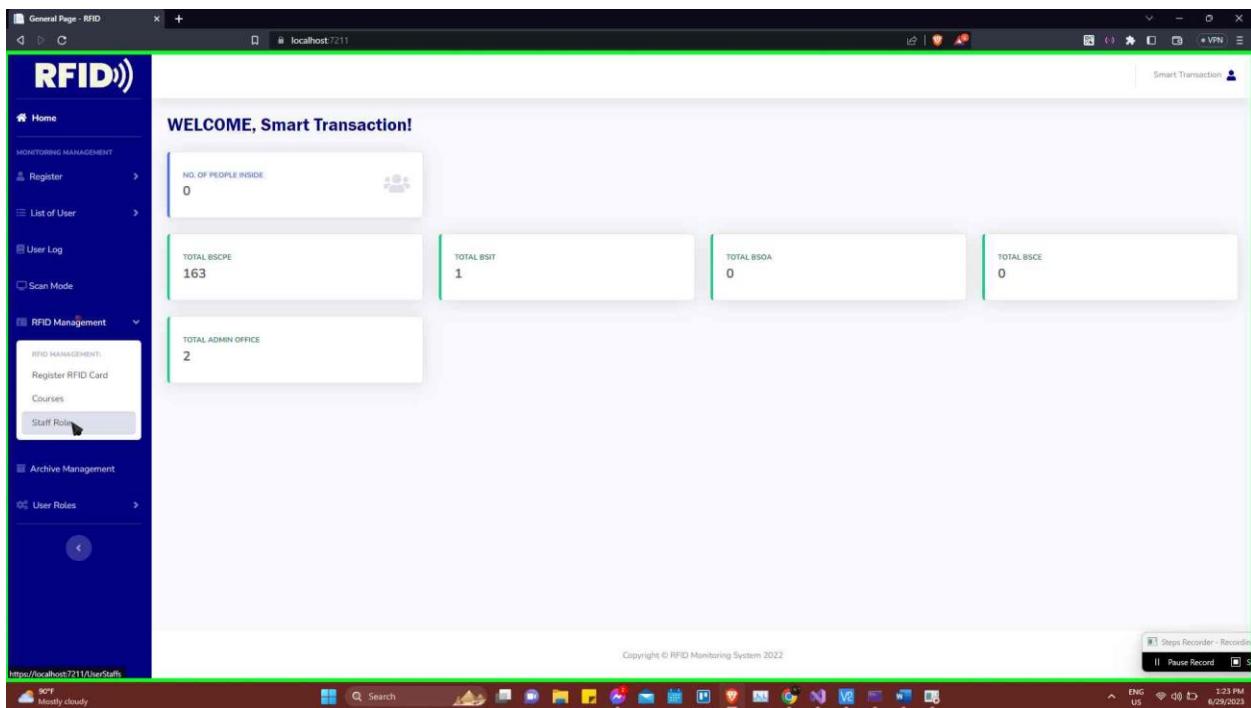


3.1.2 RFID Management – Register Staff Role

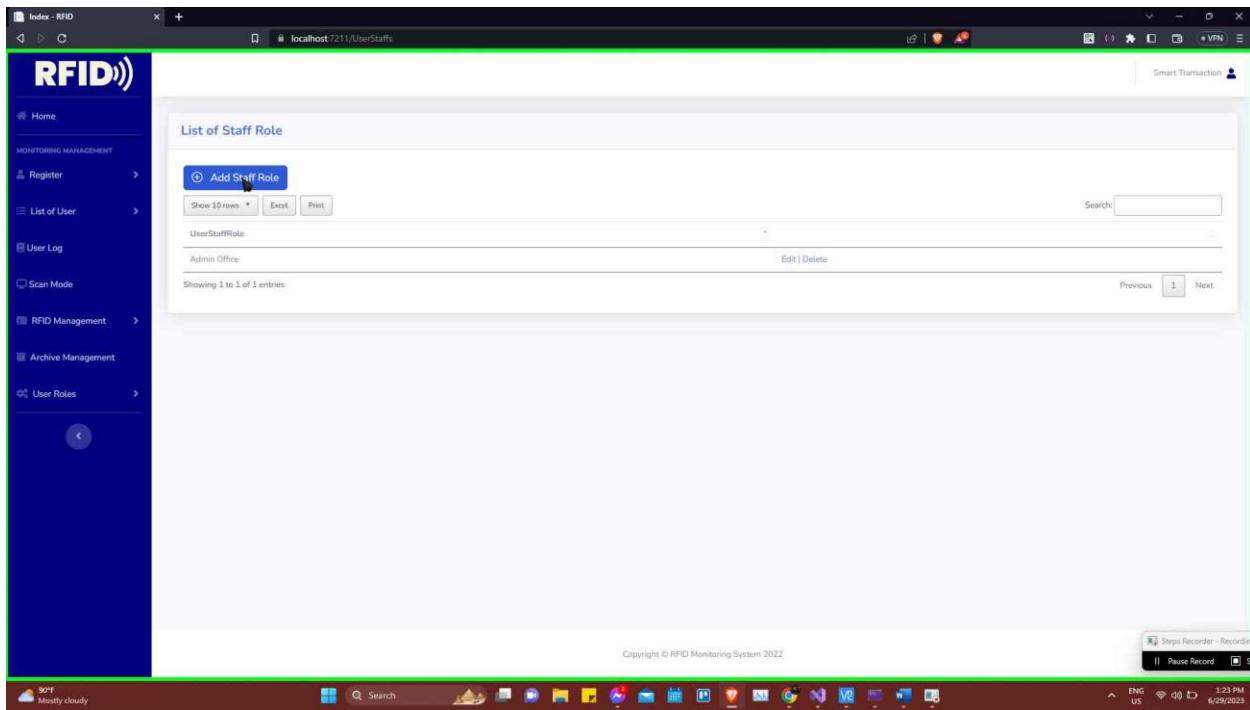
1. Go to RFID Management



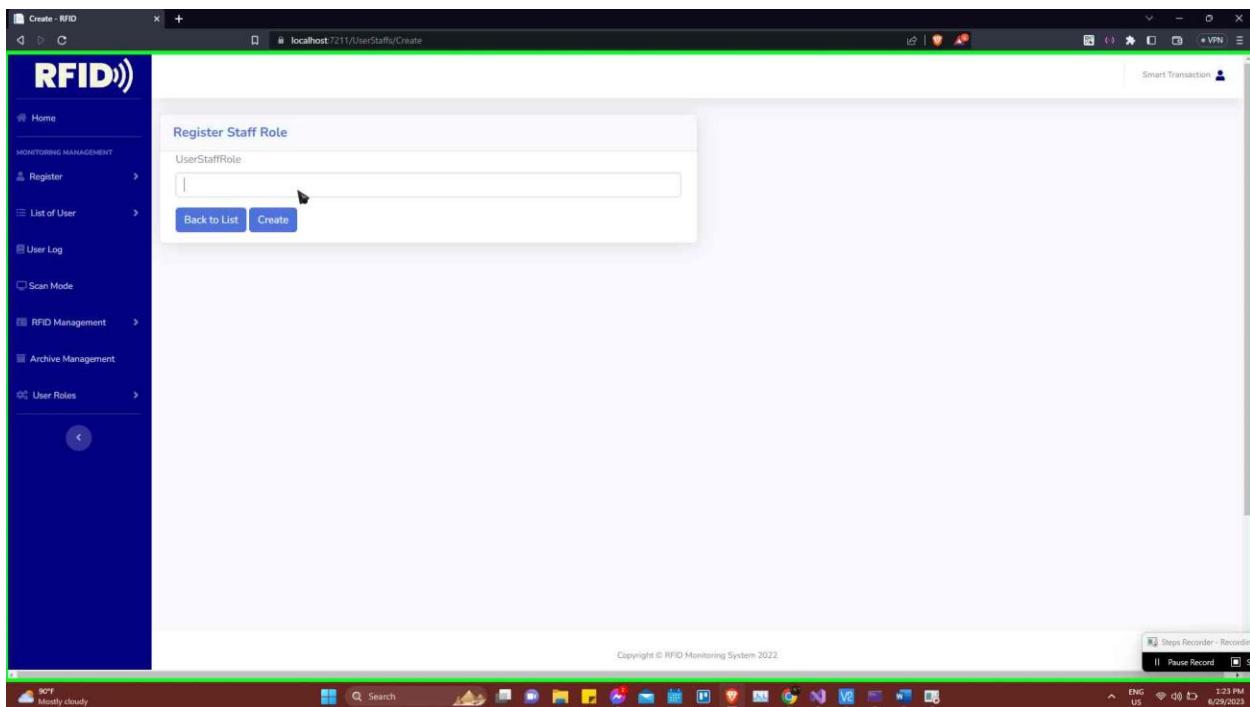
2. Click Staff Role



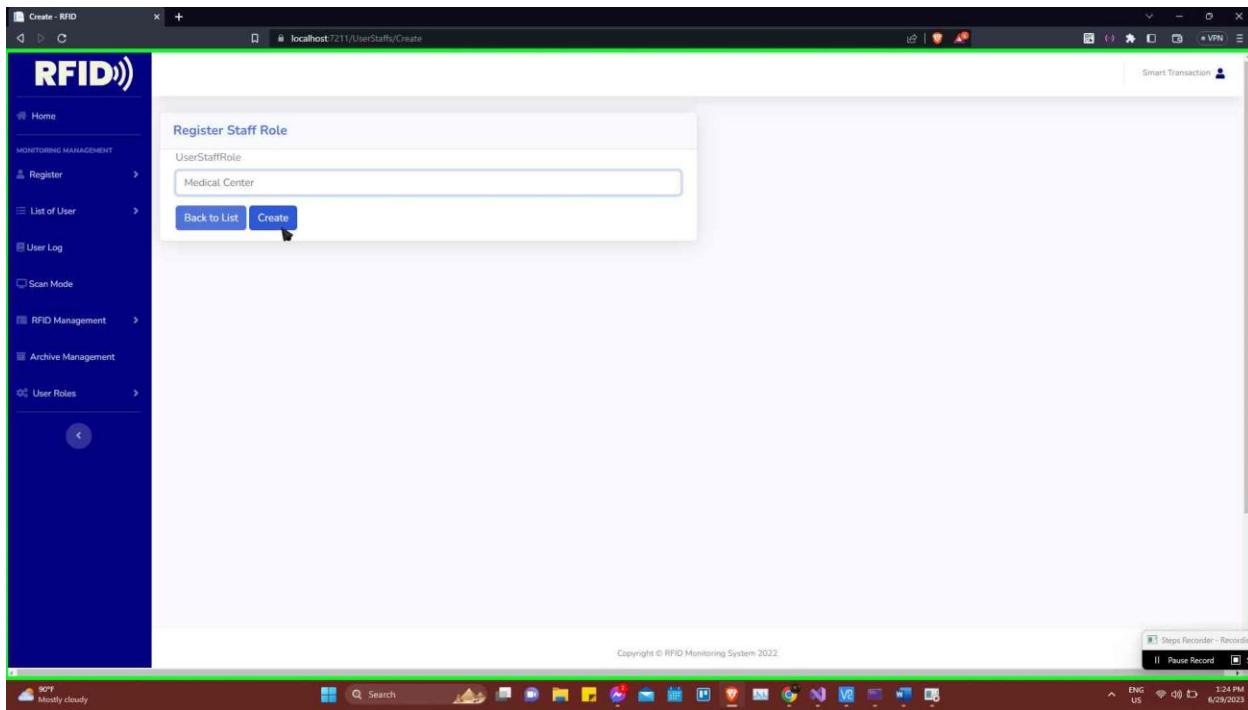
3. Click Add Staff Role



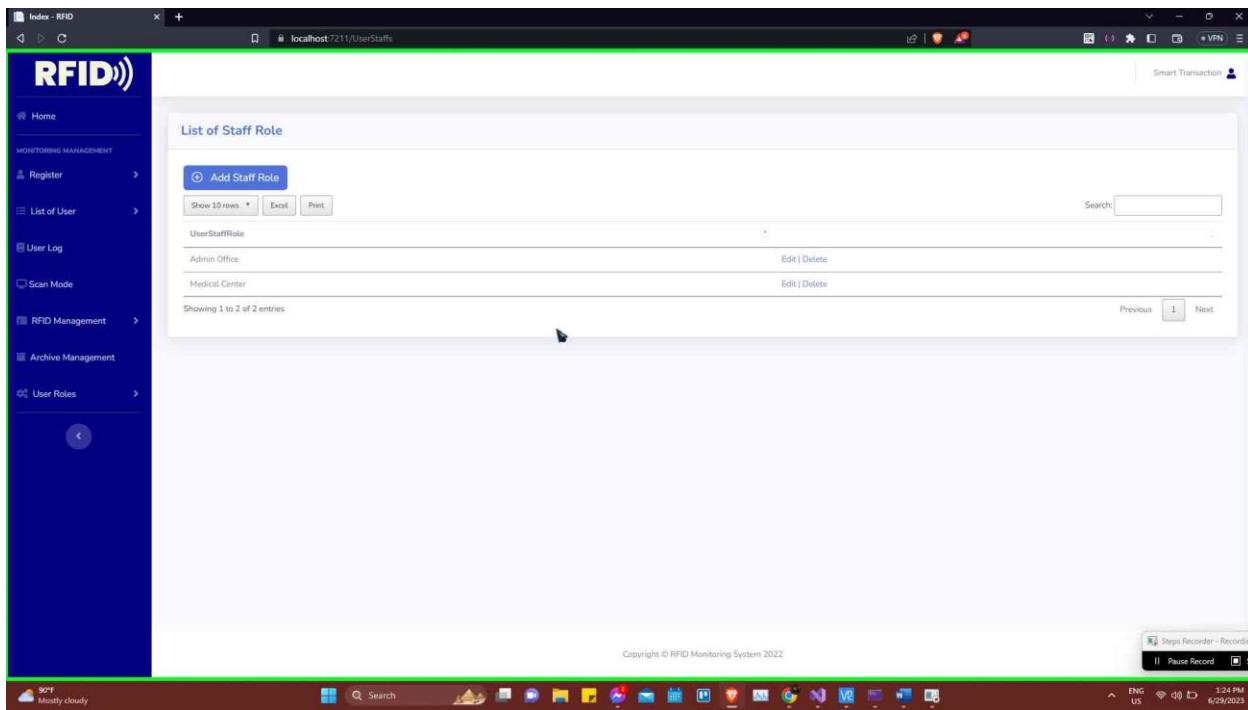
4. Input new staff role in the provided field



5. After inputting the staff role, click the create button.



6. After clicking the create button, you will be directed to List of Staff Role and as you can see the newly added staff role was already on the list.



3.2 Register – Register Student

1. Go to the Register Section.

The screenshot shows the main dashboard of the RFID Monitoring System. At the top, it says "WELCOME, Smart Transaction!". Below this, there are three boxes: "NO. OF PEOPLE INSIDE" (4), "TOTAL BSCPE" (160), and "TOTAL BSIT" (0). On the left side, there is a sidebar with the following menu items:

- Home
- MONITORING MANAGEMENT**
- Register** (selected)
- REGISTER USER
 - Register Student
 - Register Staff
- List of User
- User Log
- Scan Mode
- RFID Management
- Archive Management
- User Roles

At the bottom right of the page, it says "Copyright © RFID Monitoring System 2022".

2. Click Register Student.

The screenshot shows the "Register user" form. The form fields are as follows:

Name*	Middle Name	Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)	
Card ID No.*	Student ID No.*	Course*	Year and Section*
Birthdate*	Contact No.*	Email*	
dd/mm/yyyy			
Address*		Upload Profile Picture* <input type="button" value="Choose File"/> No file chosen	
Contact Person*		Emergency Contact No.*	
<input type="button" value="Back to List"/>		<input type="button" value="Save"/>	

At the bottom right of the page, it says "Copyright © RFID Monitoring System 2022".

3. Input First Name on the provided field.

RFID Monitoring System

Smart Transaction

Register user

Name* Bruno Middle Name Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)

Card ID No.* Student ID No.* Course* Year and Section*

Birthdate* mm/dd/yyyy Contact No.* Email*

Address* Upload Profile Picture* Choose File No file chosen

Contact Person* Emergency Contact No.*

Back to List Save

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4. Input Middle Name (optional).

RFID Monitoring System

Smart Transaction

Register user

Name* Bruno Middle Name Rojas Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)

Card ID No.* Student ID No.* Course* Year and Section*

Birthdate* mm/dd/yyyy Contact No.* Email*

Address* Upload Profile Picture* Choose File No file chosen

Contact Person* Emergency Contact No.*

Back to List Save

Copyright © RFID Monitoring System 2022

5. Input Last Name (include the suffix if there is one, if there is not, disregard it).

RFID Monitoring System

Smart Transaction

Register user

Name* Bruno Middle Name Rojas Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)

Card ID No.* 1234567890987 Student ID No.* Course* Year and Section*

Birthdate* mm/dd/yyyy Contact No.* Email*

Address* Upload Profile Picture* Choose File No file chosen

Contact Person* Emergency Contact No.*

Back to List Save

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6. Input Card ID number, you can select from the available RFID card from the dropdown menu.

RFID Monitoring System

Smart Transaction

Register user

Name* Bruno Middle Name Rojas Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)

Card ID No.* 1234567890987 Student ID No.* Course* Year and Section*

Birthdate* mm/dd/yyyy Contact No.* Email*

Address* Upload Profile Picture* Choose File No file chosen

Contact Person* Emergency Contact No.*

Back to List Save

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<https://localhost:7211>

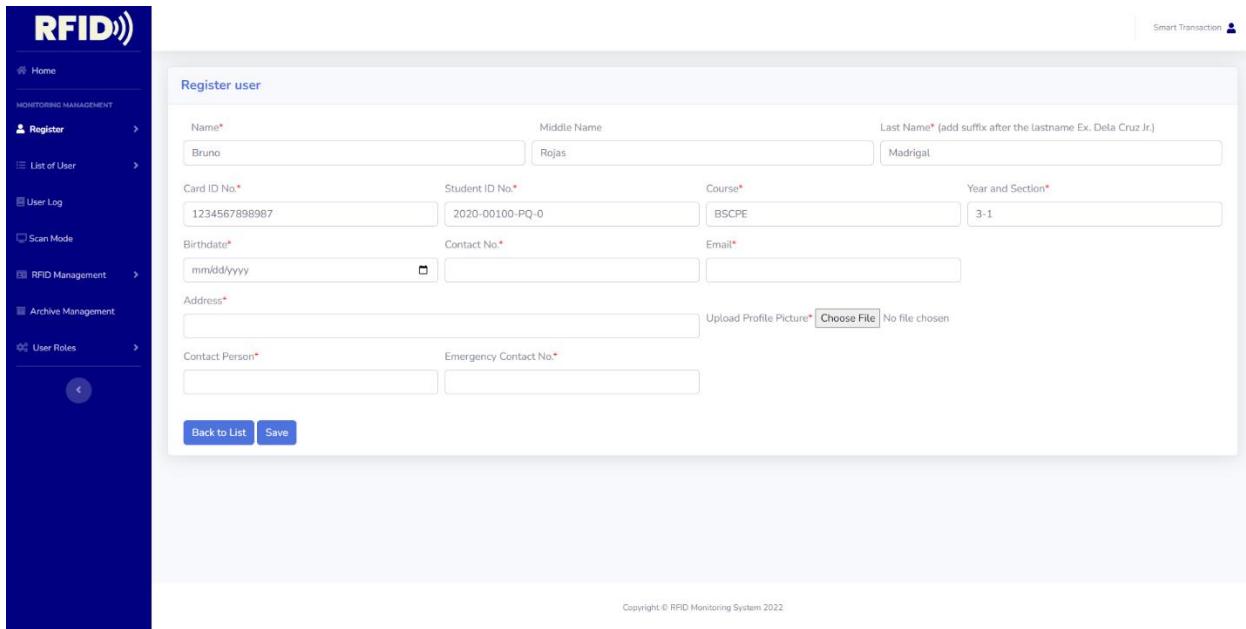
7. Input Student ID Number, the field is validated. If the number inputted does not match the required Student ID, it will show a validation.

The screenshot shows the 'Register user' form. The 'Name*' field contains 'Bruno' and the 'Middle Name' field contains 'Rojas'. The 'Last Name*' field has the placeholder '(add suffix after the lastname Ex. Dela Cruz Jr.)' and contains 'Madrigal'. The 'Card ID No.*' field contains '1234567898987' and the 'Student ID No.*' field contains '2020-00100-PQ-0'. The 'Birthdate*' field is empty, and the 'Contact No.*' and 'Email*' fields are also empty. The 'Address*' field is empty. There is a 'Choose File' button for 'Upload Profile Picture*' which shows 'No file chosen'. The 'Contact Person*' and 'Emergency Contact No.*' fields are empty. At the bottom are 'Back to List' and 'Save' buttons.

8. Input Course of the student.

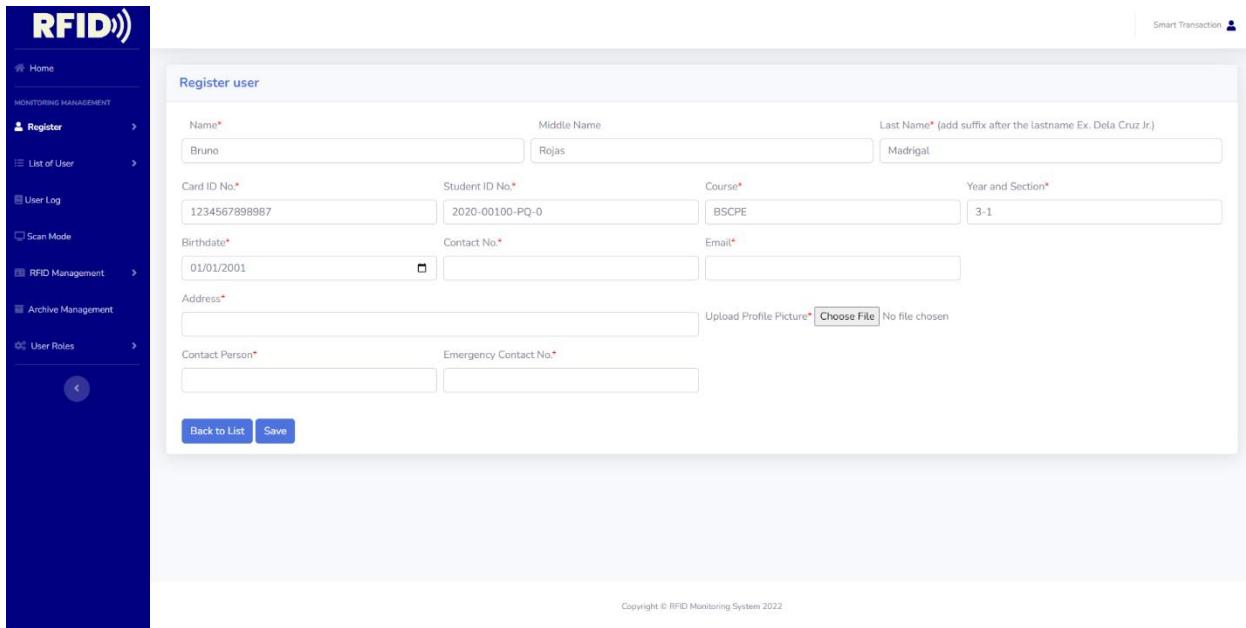
This screenshot is identical to the one above, except the 'Course*' field now contains 'BSCPE'. All other fields remain the same: 'Name*' is 'Bruno', 'Middle Name' is 'Rojas', 'Last Name*' is 'Madrigal', 'Card ID No.*' is '1234567898987', 'Student ID No.*' is '2020-00100-PQ-0', 'Birthdate*' is empty, 'Contact No.*' and 'Email*' are empty, 'Address*' is empty, and 'Contact Person*' and 'Emergency Contact No.*' are empty. The 'Choose File' button for profile picture is still 'No file chosen'. The 'Back to List' and 'Save' buttons are at the bottom.

9. Input Year and Section, you can choose from the dropdown menu.



The screenshot shows the 'Register user' form. The 'Year and Section*' field is highlighted with a red border, indicating it is the current step in the process. Other fields visible include Name*, Middle Name, Last Name*, Card ID No., Student ID No., Course*, Birthdate*, Contact No., Email*, Address*, Upload Profile Picture, Contact Person*, Emergency Contact No., and Back to List/Save buttons.

10. Input Birthdate.



The screenshot shows the 'Register user' form. The 'Birthdate*' field is highlighted with a red border, indicating it is the current step in the process. Other fields visible include Name*, Middle Name, Last Name*, Card ID No., Student ID No., Course*, Year and Section*, Contact No., Email*, Address*, Upload Profile Picture, Contact Person*, Emergency Contact No., and Back to List/Save buttons.

11. Input Contact Number, only the Philippine country code is accepted.

The screenshot shows the 'Register user' form. The 'Name*' field contains 'Bruno' and 'Middle Name' contains 'Rojas'. The 'Last Name*' field has the placeholder '(add suffix after the lastname Ex. Dela Cruz Jr.)' and contains 'Madrigal'. The 'Card ID No.*' field contains '1234567898987'. The 'Student ID No.*' field contains '2020-00100-PQ-0'. The 'Course*' field contains 'BSCPE'. The 'Year and Section*' field contains '3-1'. The 'Birthdate*' field contains '01/01/2001'. The 'Contact No.*' field contains '09924702555'. The 'Email*' field is empty. The 'Address*' field is empty. There is a file input field for 'Upload Profile Picture*' with the placeholder 'Choose File' and 'No file chosen'. Below the form are 'Contact Person*' and 'Emergency Contact No.' fields, both empty. At the bottom are 'Back to List' and 'Save' buttons. A copyright notice 'Copyright © RFID Monitoring System 2022' is at the bottom right.

12. Input Email Address, only with correct email address format will be accepted.

This screenshot is identical to the one above, except the 'Email*' field now contains a valid email address: 'wedonttalkaboutbruno@gmail.com'. All other fields and the overall layout remain the same.

13. Input Address

RFID Monitoring System

Smart Transaction

Register user

Name* Bruno Middle Name Rojas Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.) Madrigal

Card ID No.* 123456789987 Student ID No.* 2020-00100-PQ-0 Course* BSCE Year and Section* 3-1

Birthdate* 01/01/2001 Contact No.* 09924702555 Email* wedonttalkaboutbruno@gmail.com

Address* 313 Street, Barangay Encanto, Parañaque Upload Profile Picture Choose File No file chosen

Contact Person* Emergency Contact No.*

Back to List Save

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14. Upload Profile Picture, only file type with PNG/JPEG/JPG is accepted.

RFID Monitoring System

Smart Transaction

Register user

Name* Bruno Middle Name Rojas Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.) Madrigal

Card ID No.* 123456789987 Student ID No.* 2020-00100-PQ-0 Course* BSCE Year and Section* 3-1

Birthdate* 01/01/2001 Contact No.* 09924702555 Email* wedonttalkaboutbruno@gmail.com

Address* 313 Street, Barangay Encanto, Parañaque Upload Profile Picture Choose File desktop-wallpaper-madrigal.jpg

Contact Person* Emergency Contact No.*

Back to List Save

15. Input the complete name of the Contact Person.

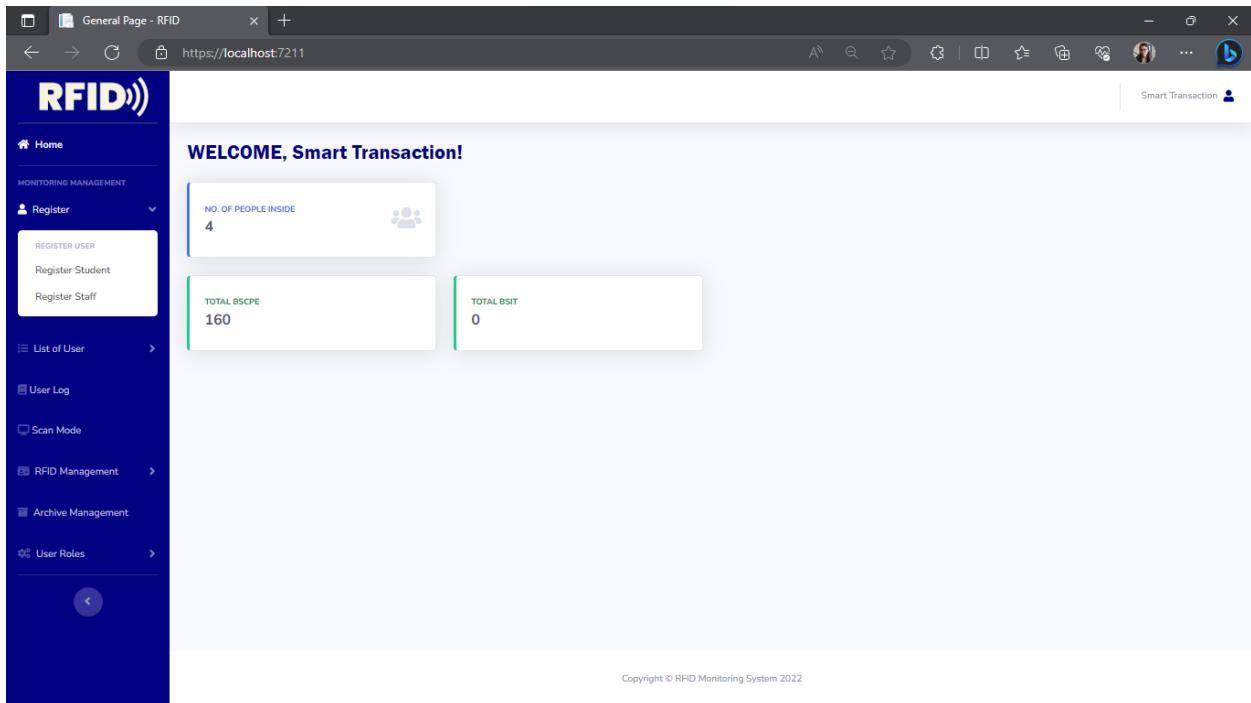
16. Input Emergency Contact Number.

17. Click the Save button.

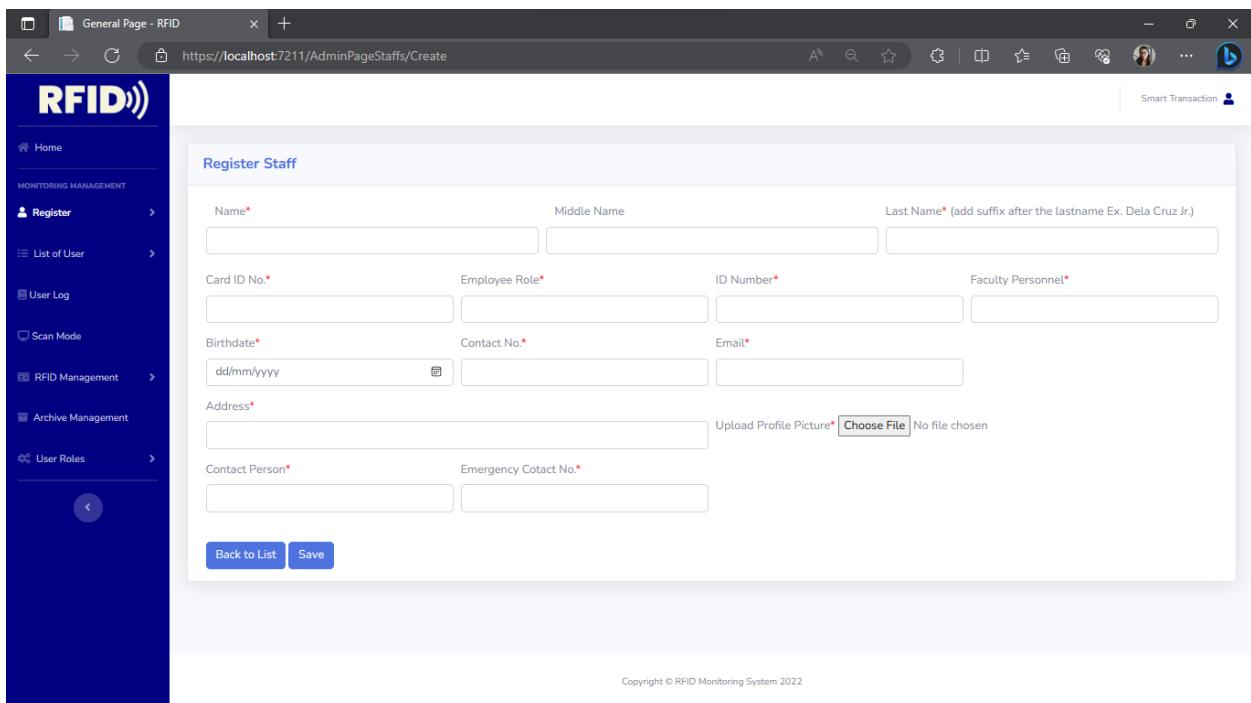
Note: All fields with asterisks are required. Do not leave the fields empty, or you will not be able to save the registration.

3.2.1 Register – Register Staff

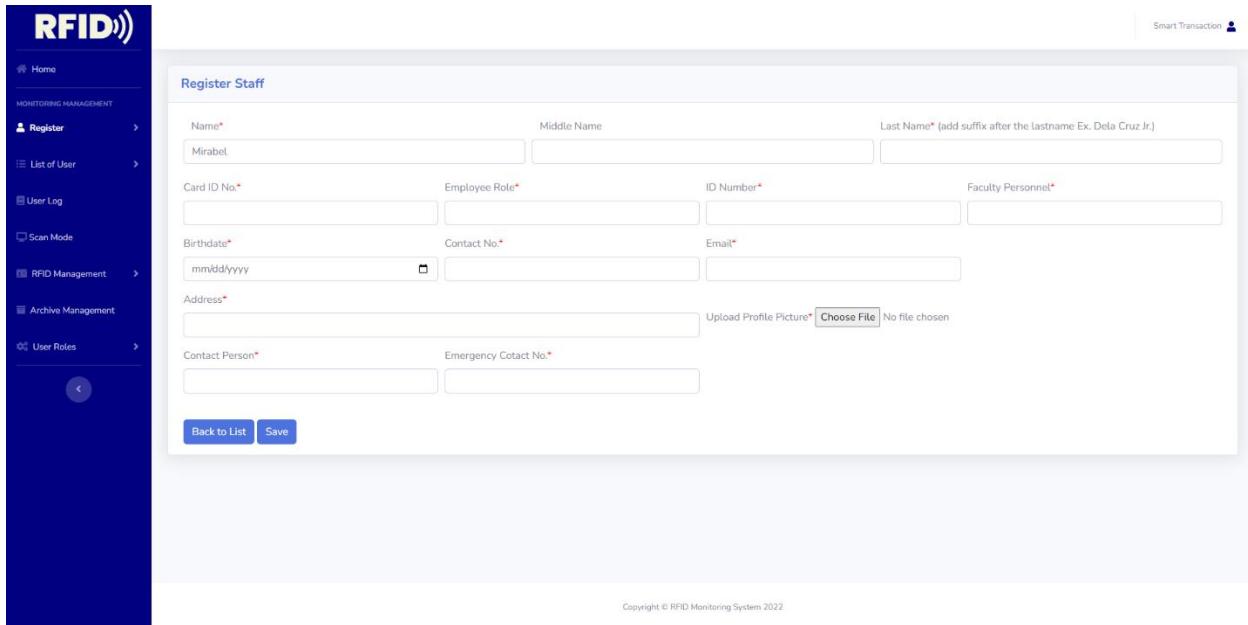
1. Go to the Register Section.



2. Click Register Staff.

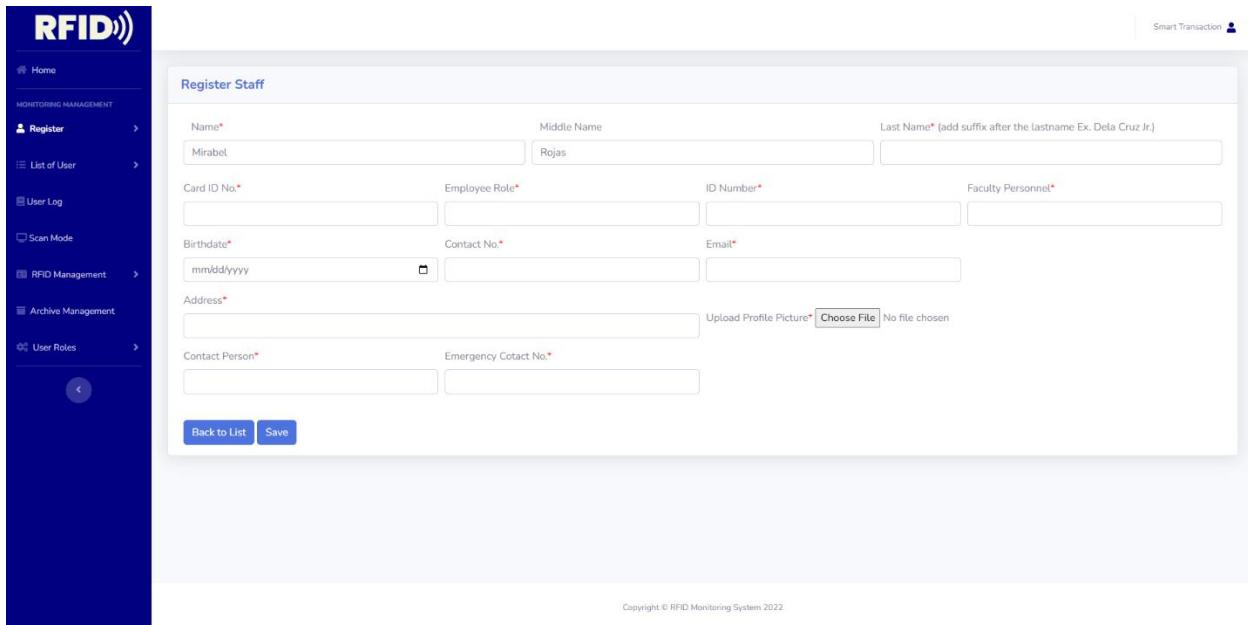


3. Input First Name on the provided field.



The screenshot shows the 'Register Staff' form. The 'Name*' field contains 'Mirabel'. Other fields like 'Middle Name', 'Last Name*', 'Card ID No.*', 'Employee Role*', 'ID Number*', 'Faculty Personnel*', 'Birthdate*', 'Contact No.*', 'Email*', 'Address*', 'Contact Person*', and 'Emergency Contact No.*' are empty or have placeholder text. There are 'Back to List' and 'Save' buttons at the bottom.

4. Input Middle Name (optional).



The screenshot shows the 'Register Staff' form. The 'Name*' field contains 'Mirabel' and the 'Middle Name' field contains 'Rojas'. All other fields are empty or have placeholder text. There are 'Back to List' and 'Save' buttons at the bottom.

5. Input Last Name (include the suffix if there is one, if there is not, disregard it).

RFID Monitoring System

Smart Transaction

Register Staff

Name* Middle Name Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)

Card ID No.* Employee Role* ID Number* Faculty Personnel*

Birthdate* Contact No.* Email*

mm/dd/yyyy

Address* Upload Profile Picture* Choose File No file chosen

Contact Person* Emergency Cotent No.*

[Back to List](#) [Save](#)

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6. Input Card ID number, you can select from the available RFID card from the dropdown menu.

RFID Monitoring System

Smart Transaction

Register Staff

Name* Middle Name Last Name* (add suffix after the lastname Ex. Dela Cruz Jr.)

Card ID No.* Employee Role* ID Number* Faculty Personnel*

Birthdate* Contact No.* Email*

mm/dd/yyyy

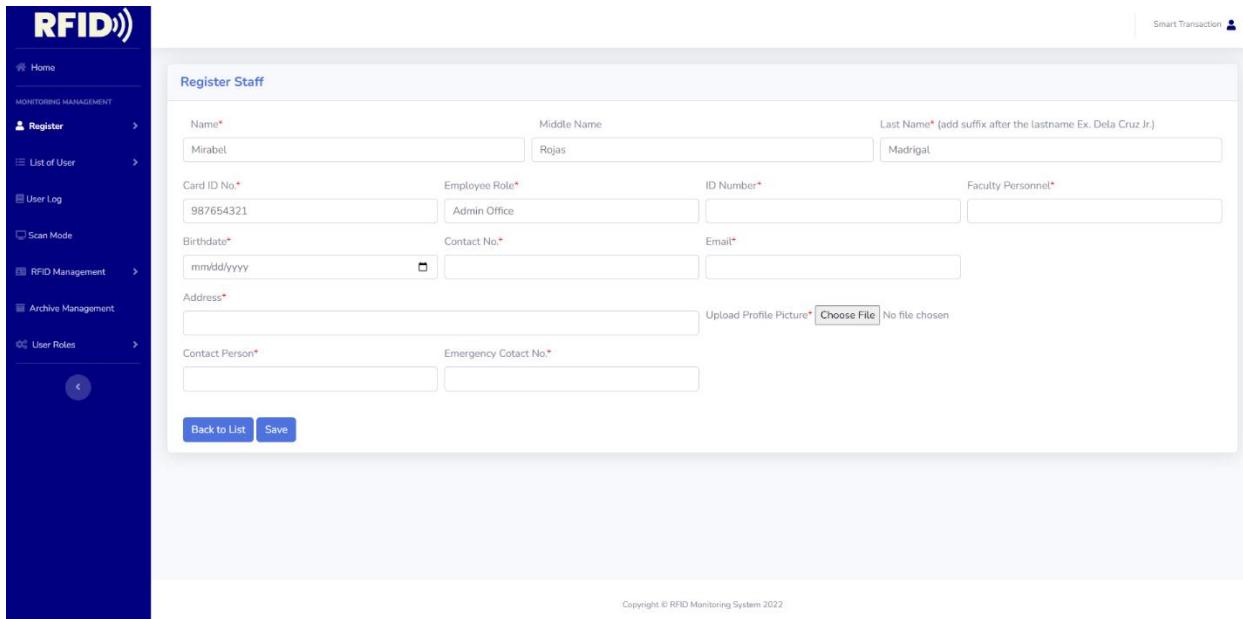
Address* Upload Profile Picture* Choose File No file chosen

Contact Person* Emergency Cotent No.*

[Back to List](#) [Save](#)

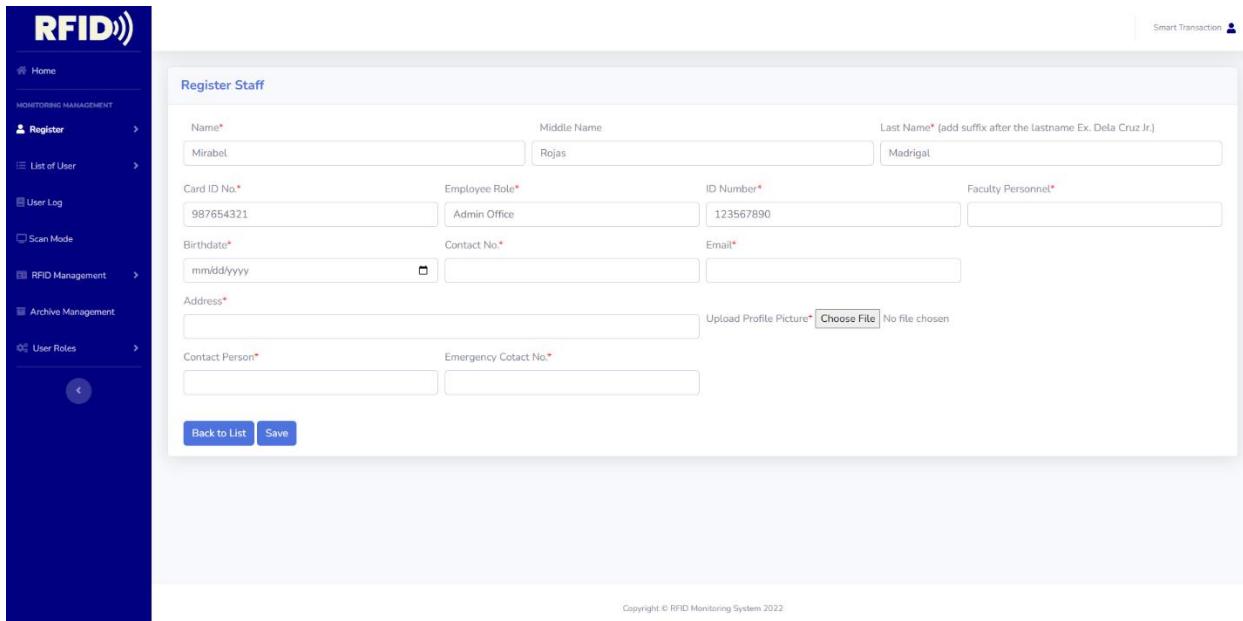
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7. Input Employee Role, you can select from the dropdown menu.



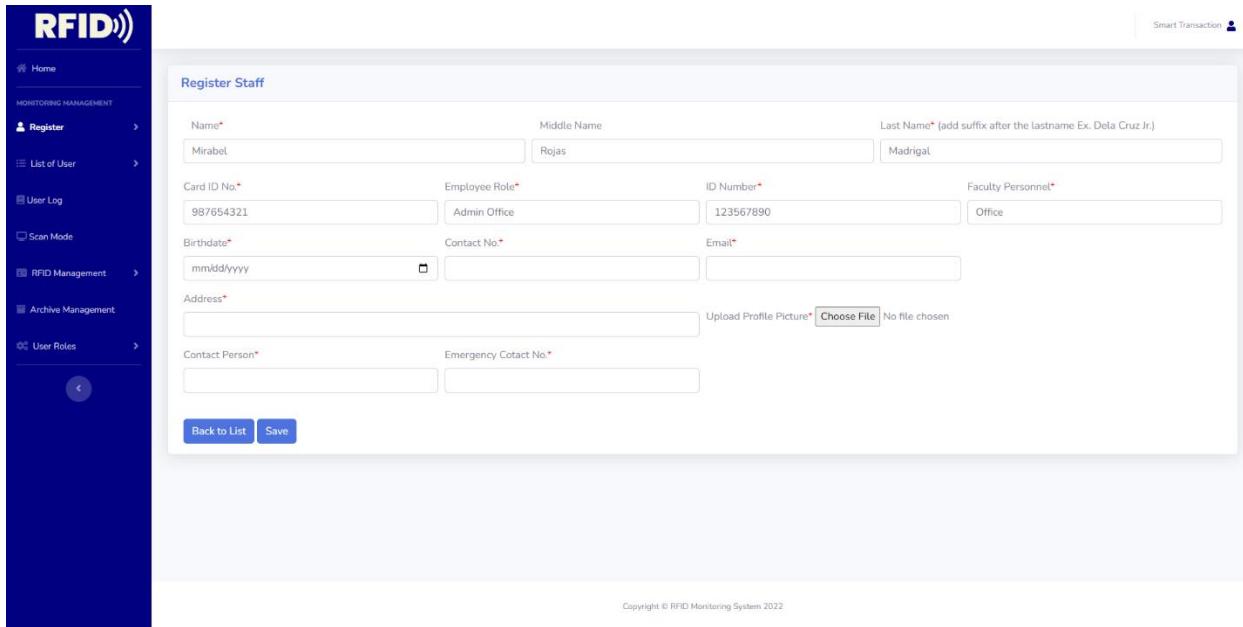
The screenshot shows the 'Register Staff' form. The 'Employee Role' field contains the value 'Admin Office'. Other fields like Name, Middle Name, Card ID No., Birthdate, Address, Contact Person, and Emergency Contact No. are also visible.

8. Input ID number.



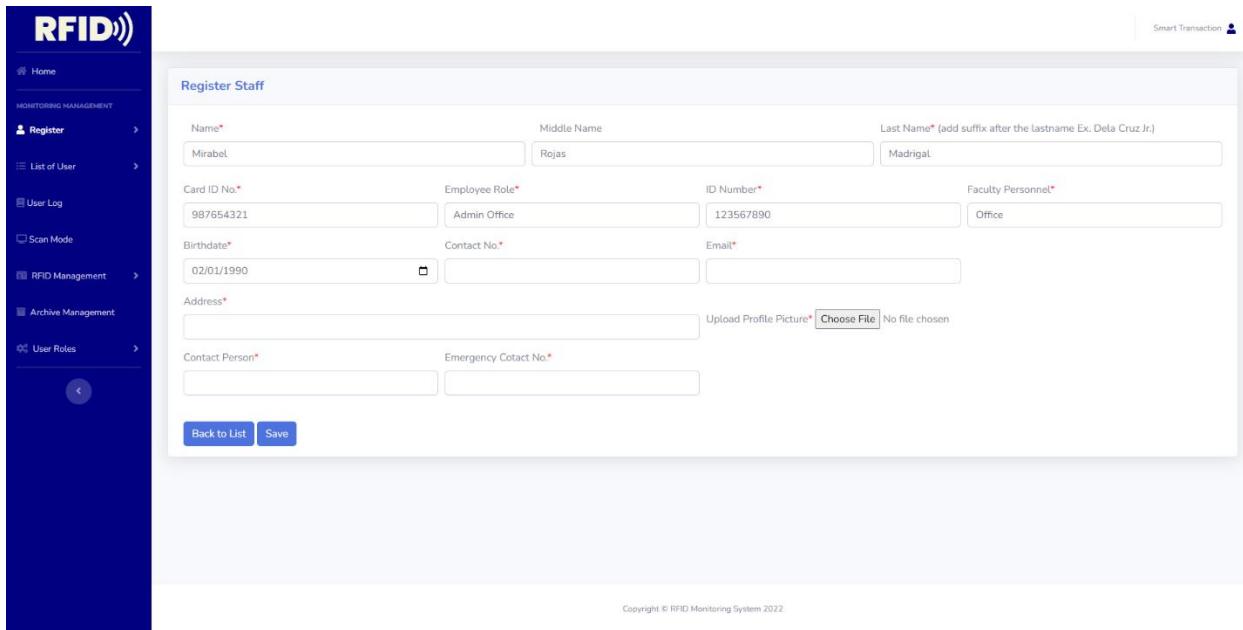
The screenshot shows the 'Register Staff' form. The 'ID Number' field contains the value '123567890'. The rest of the form fields are identical to the previous screenshot.

9. Input what office of faculty personnel you are.



The screenshot shows the 'Register Staff' form. The 'Faculty Personnel' field has a dropdown menu open, listing 'Office', 'Lab', 'Library', 'Canteen', 'Admin Office', and 'Other'. Other fields filled include Name (Mirabel), Middle Name (Rojas), Card ID No. (987654321), Employee Role (Admin Office), ID Number (123567890), and Faculty Personnel (Office). The 'Birthdate' field contains 'mm/dd/yyyy' placeholder text.

10. Input Birthdate.



The screenshot shows the 'Register Staff' form with the 'Birthdate' field now populated with '02/01/1990'. All other fields remain the same as in the previous screenshot.

11. Input Contact Number, only the Philippine country code is accepted.

Smart Transaction

Copyright © RFID Monitoring System 2022

<https://localhost:7211>

12. Input Email Address, only with correct email address format will be accepted.

Smart Transaction

Copyright © RFID Monitoring System 2022

<https://localhost:7211>

13. Input Address.

RFID Monitoring System

Smart Transaction

Register Staff

Name* Mirabel Rojas Madrigal

Card ID No.* 987654321 Employee Role* Admin Office

ID Number* 123567890 Faculty Personnel*

Birthdate* 02/01/1990 Contact No.* 09924708770

Email* mirabelmadrigal@gmail.com

Address* 062 Fatima Street, Barangay Encanto Paranaque

Contact Person* Emergency Contact No.*

Upload Profile Picture* Choose File No file chosen

Back to List Save

Copyright © RFID Monitoring System 2022

14. Upload Profile Picture, only file type with PNG/JPEG/JPG is accepted.

RFID Monitoring System

Smart Transaction

Register Staff

Name* Mirabel Rojas Madrigal

Card ID No.* 987654321 Employee Role* Admin Office

ID Number* 123567890 Faculty Personnel*

Birthdate* 02/01/1990 Contact No.* 09924708770

Email* mirabelmadrigal@gmail.com

Address* 062 Fatima Street, Barangay Encanto Paranaque

Contact Person* Emergency Contact No.*

Upload Profile Picture* Choose File 94e42c4b3dc...652v2_uhq.jpg

Back to List Save

15. Input the complete name of the Contact Person.

The screenshot shows the 'Register Staff' page of the RFID software. The contact person field contains 'Juliet Madrigal'. A profile picture of a character from Encanto is displayed.

16. Input Emergency Contact Number.

The screenshot shows the 'Register Staff' page of the RFID software. The emergency contact number field contains '09924709443'. A profile picture of a character from Encanto is displayed.

17. Click the Save button.

Note: All fields with asterisks are required. Do not leave the fields empty, or you will not be able to save the registration.

3.3 List of User – Student List

1. Go to the List of User section.

The screenshot shows the 'General Page - RFID' window. On the left, a sidebar menu includes 'Home', 'MONITORING MANAGEMENT' (with 'Register' and 'List of User' options), 'User Log', 'Scan Mode', 'RFID Management', 'Archive Management', and 'User Roles'. The main area displays a 'WELCOME, Smart Transaction!' message and four summary boxes: 'NO. OF PEOPLE INSIDE' (0), 'TOTAL BSCPE' (163), 'TOTAL BSIT' (1), and 'TOTAL BSOA' (0). A status bar at the bottom indicates 'Copyright © RFID Monitoring System 2022' and shows system information like 'Steps Recorder - Recor' and 'Pause Record'.

2. Click the Student List and you will be directed to the List of Students.

The screenshot shows the 'List of Users - RFID' page. The sidebar menu is identical to the previous screenshot. The main content area is titled 'List of Users' and contains a table with columns: AdminPageId, Name, Middle Name, Last Name, Control no., Student Id No., Course, YearAndSection, CreatedDateTime, and Action. The table lists six student records. Each record has a blue 'Details' button in the Action column.

AdminPageId	Name	Middle Name	Last Name	Control no.	Student Id No.	Course	YearAndSection	CreatedDateTime	Action
62	JABIGAIL	ILAGAN	ABELLA	0008914125	2022-00067-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
63	KIM BERLIE	CASTRO	AGULTO	0008757593	2022-00199-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
64	JIRO	VIAGEDOR	ALAYU	0008871776	2022-00068-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
65	CHELY JOYCE ANNE	SANCHEZ	ALEJO	0008778959	2022-00069-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
66	CLARIES MAE	PALADA	AVELLANA	0008743210	2022-	BSCPE	1-1	23/03/2023	<button>Details</button>

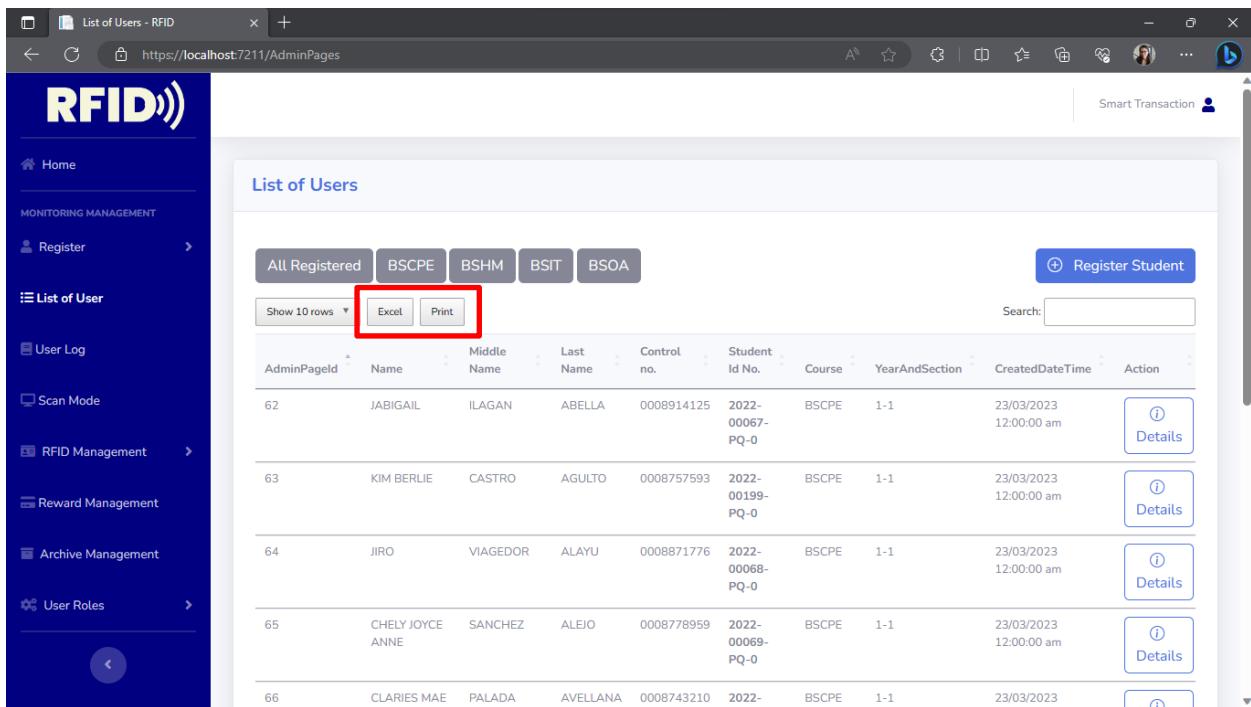
3. In this page, you can also register a student without going to the RFID Management section but you must have an available registered RFID card.

The screenshot shows a web browser window titled 'List of Users - RFID'. The URL is <https://localhost:7211/AdminPages>. On the left, there is a dark sidebar with various menu items like Home, Register, List of User, User Log, Scan Mode, RFID Management, Reward Management, Archive Management, and User Roles. The main content area is titled 'List of Users' and contains a table of student records. At the top of the table header, there are several buttons: 'All Registered', 'BSCPE', 'BSHM', 'BSIT', and 'BSOA'. To the right of these buttons is a blue button labeled '+ Register Student' with a white plus sign icon. A thick red arrow points from the left towards this button, indicating it as the target for the next step. The table below lists student details such as AdminPageld, Name, Middle Name, Last Name, Control no., Student Id No., Course, YearAndSection, CreatedDateTime, and Action. Each row has a 'Details' button in the Action column.

4. Students can be filtered by courses.

This screenshot is similar to the previous one, showing the 'List of Users - RFID' page. The main difference is that the 'BSCPE' button in the course filter row is highlighted with a red box. The rest of the interface, including the sidebar menu, the table of student records, and the '+ Register Student' button, appears identical to the first screenshot.

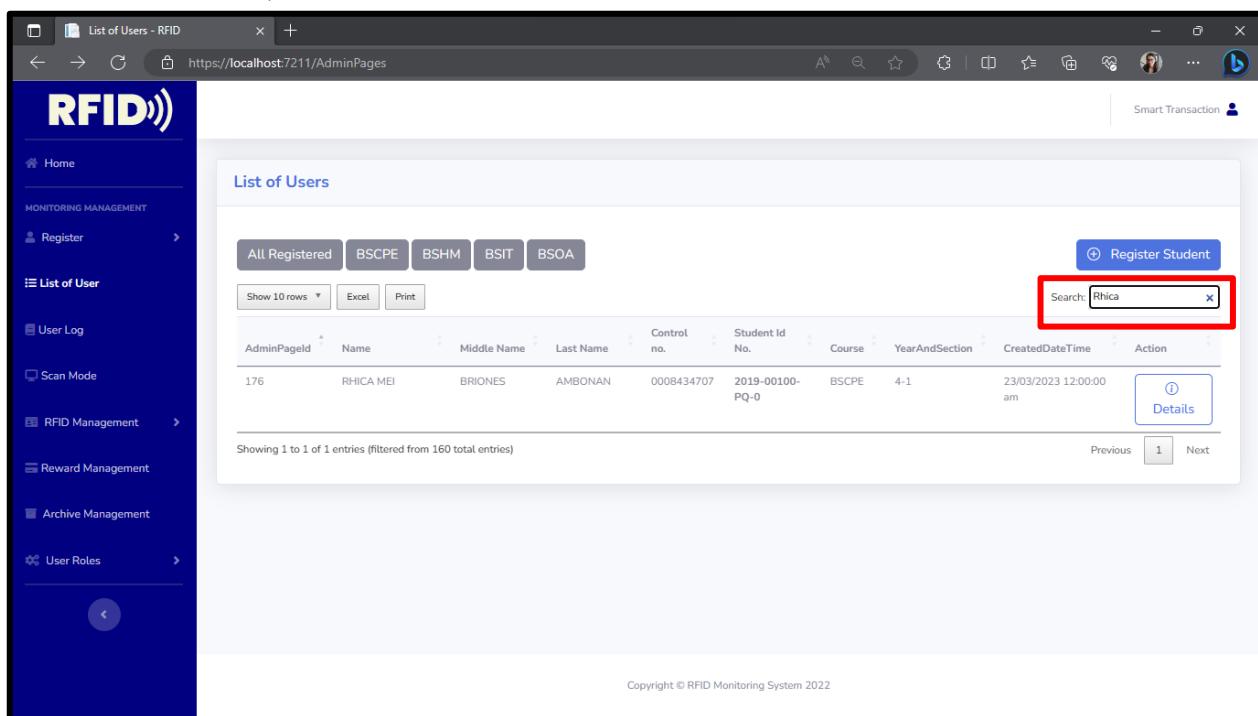
5. Data can be exported and printed.



The screenshot shows the 'List of Users' page of the RFID Monitoring System. On the left is a dark sidebar with various management links. The main area has a title 'List of Users' and a table of student data. At the top of the table are buttons for 'All Registered', 'BSCPE', 'BSHM', 'BSIT', and 'BSOA'. Below these are buttons for 'Show 10 rows', 'Excel' (which is highlighted with a red box), and 'Print'. To the right of the table is a search bar labeled 'Search:' followed by a clear button 'X'. The table itself has columns for AdminPageId, Name, Middle Name, Last Name, Control no., Student Id No., Course, YearAndSection, CreatedDateTime, and Action. Each row contains a blue 'Details' button. The data in the table is as follows:

AdminPageId	Name	Middle Name	Last Name	Control no.	Student Id No.	Course	YearAndSection	CreatedDateTime	Action
62	JABIGAIL	ILAGAN	ABELLA	0008914125	2022-00067-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
63	KIM BERLIE	CASTRO	AGULTO	0008757593	2022-00199-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
64	JIRO	VIAGEDOR	ALAYU	0008871776	2022-00068-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
65	CHELY JOYCE ANNE	SANCHEZ	ALEJO	0008778959	2022-00069-PQ-0	BSCPE	1-1	23/03/2023 12:00:00 am	<button>Details</button>
66	CLARIES MAE	PALADA	AVELLANA	0008743210	2022-	BSCPE	1-1	23/03/2023	<button>Details</button>

6. If you're looking for a specific student, you can search it's name, RFID number, Student ID number in the search box.



This screenshot shows the same 'List of Users' page after a search. The search bar at the top right now contains the text 'Rhica' and has a red box around it. The table below shows one result matching the search term:

AdminPageId	Name	Middle Name	Last Name	Control no.	Student Id No.	Course	YearAndSection	CreatedDateTime	Action
176	RHICA MEI	BRIONES	AMBONAN	0008434707	2019-00100-PQ-0	BSCPE	4-1	23/03/2023 12:00:00 am	<button>Details</button>

Below the table, a message says 'Showing 1 to 1 of 1 entries (filtered from 160 total entries)'. At the bottom of the page, there are navigation buttons for 'Previous', '1', and 'Next', and a copyright notice: 'Copyright © RFID Monitoring System 2022'.

7. By clicking the details button, you will be directed to the student's profile information.

AdminPagId	Name	Middle Name	Last Name	Control no.	Student Id No.	Course	YearAndSection	CreatedDateTime	Action
172	GIANE DAVE	TIQUE	PO	0007790452	2019-00044-PQ-0	BSCPE	3-1	23/03/2023 12:00:00 am	<button>Details</button>
173	JOHN CHRISTOPHER	ROLDAN	SALVID	0008320250	2020-00150-PQ-0	BSCPE	3-1	23/03/2023 12:00:00 am	<button>Details</button>
174	CAMIL	CONDE	SOLLEZA	0007980492	2020-00155-PQ-0	BSCPE	3-1	23/03/2023 12:00:00 am	<button>Details</button>
175	JULIE-AN	AUQUICO	ADIO	0004943647	2019-00022-PQ-0	BSCPE	4-1	23/03/2023 12:00:00 am	<button>Details</button>
176	RHICA MEI	BRIONES	AMBONAN	0008434707	2019-00100-PQ-0	BSCPE	4-1	23/03/2023 12:00:00 am	<button>Details</button>
177	ANNA	DIAZ	AyONUEVO	0008327218	2018-00067-	BSCPE	4-1	23/03/2023 12:00:00	<button>Details</button>

8. In the details screen, you can edit and delete the student's profile information.

Name	RHICA MEI
Middle Name	BRIONES
Last Name	AMBONAN
Control no.	0008434707
Course	BSCPE
YearAndSection	4-1
Birthdate	23/03/2000
Phone Number	9924702533
Address	N/A
ContactPerson	N/A
EmergencyContactNo	9924702533
CreatedDateTime	23/03/2023 12:00:00

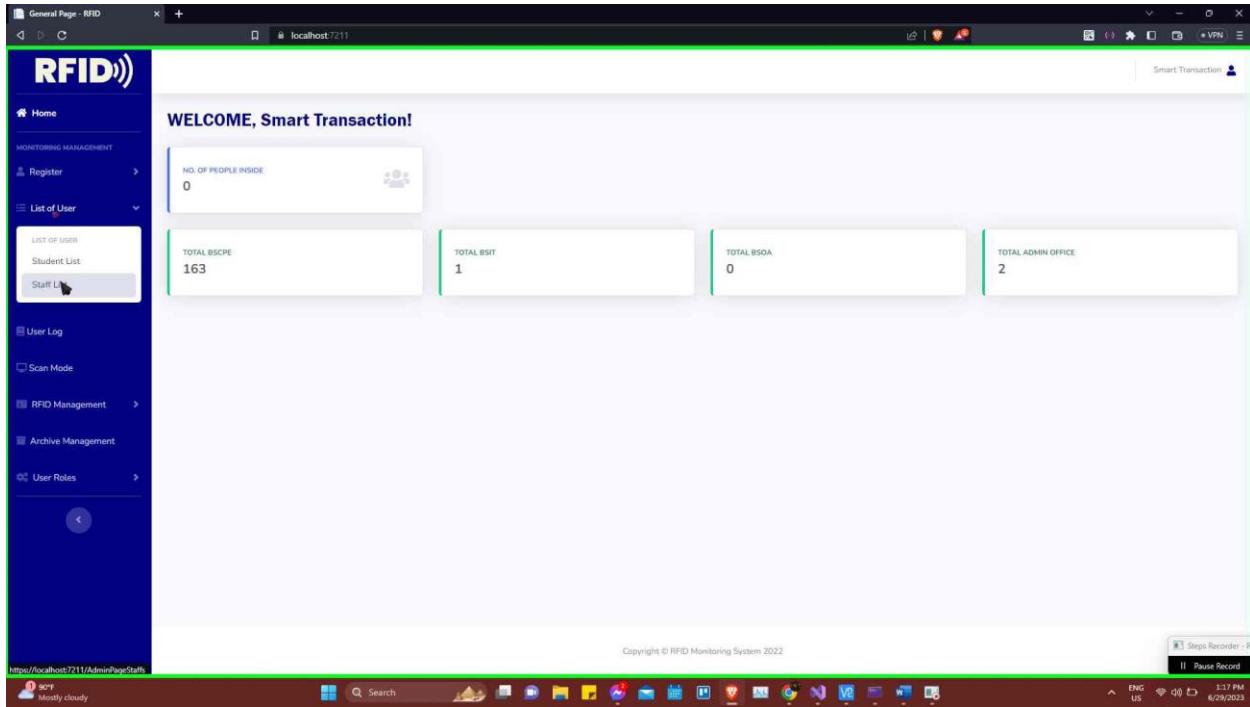
[Back to List](#) [Edit](#) [Delete](#)

AMBONAN, RHICA MEI BRIONES

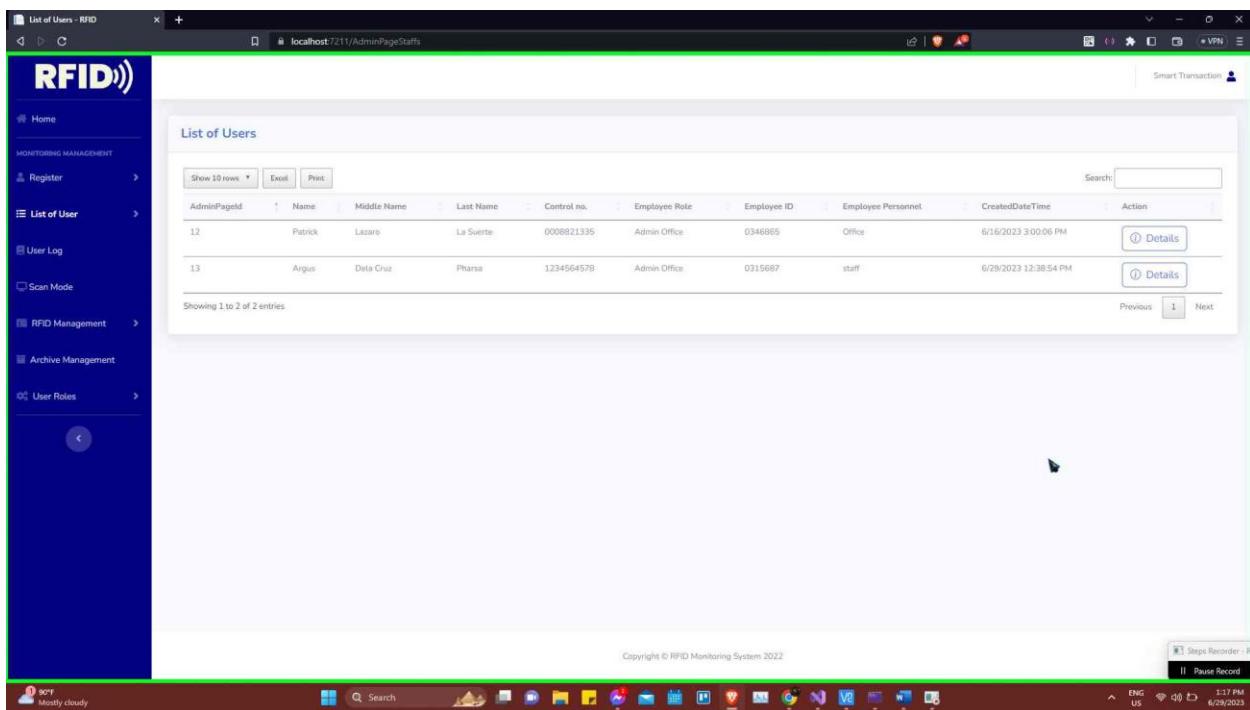
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3.3.1 List of User – Staff List

1. Go to the List of User section.



2. Under the staff list are all registered staff members.



3.4 User Log – User Log

1. Go to the User Log section.

User Logs

ID Log	Log State	Card Id No.	Name	CreatedDateTime
108	Time In	0007102749	LA SUERTE, PATRICK LAZARO	15/06/2023 9:29:20 am
107	Time Out	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:29:18 am
106	Time In	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:28:41 am
105	Time Out	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:28:36 am
104	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:19 pm
103	Time In	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:18 pm
102	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:03 pm
101	Time In	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:26:38 pm
100	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:26:37 pm

2. Viewed here are all the time in and time out of the student or staff.

User Logs

ID Log	Log State	Card Id No.	Name	CreatedDateTime
108	Time In	0007102749	LA SUERTE, PATRICK LAZARO	15/06/2023 9:29:20 am
107	Time Out	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:29:18 am
106	Time In	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:28:41 am
105	Time Out	0008434707	AMBONAN, RHICA MEI BRIONES	15/06/2023 9:28:36 am
104	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:19 pm
103	Time In	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:18 pm
102	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:27:03 pm
101	Time In	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:26:38 pm
100	Time Out	0007102749	LA SUERTE, PATRICK LAZARO	29/03/2023 1:26:37 pm

3. If you're looking for a specific student or staff, you can search its name, RFID number, and Student ID number in the search box.

The screenshot shows a web browser window titled "List of Users - RFID". The URL is "https://localhost:7211/AdminPages/StudentLogList". On the left, there is a sidebar with the "RFID" logo and navigation links: Home, MONITORING MANAGEMENT (Register, List of User, User Log, Scan Mode, RFID Management, Archive Management, User Roles), and a bottom section with a circular icon and a back arrow. The main content area is titled "User Logs". It features a table with columns: ID Log, Log State, Card Id No., Name, and CreatedDateTime. A red box highlights the "Card Id No." column header and the search input field above the table. The table contains ten rows of log entries. At the bottom of the table, there are "Details" buttons for each row. Below the table, there is a "Search:" input field and a "Show 10 rows" dropdown. The URL "https://localhost:7211/AdminPages/StudentLogList" is also visible at the bottom of the page.

4. Data can be exported and printed.

This screenshot is identical to the one above, showing the "User Logs" page. However, a red box highlights the "Excel" and "Print" buttons located just below the "Show 10 rows" dropdown and above the table. The rest of the interface, including the table of logs and the search functionality, remains the same.

5. By clicking the details button, you will be directed to the student's profile information. In the details screen, you can only view the profile information.

The screenshot shows a web browser window titled "List of Users - RFID" with the URL <https://localhost:7211/AdminPages/DetailsLoglist/108>. The page displays a "Details" section for a student with the following information:

StudentId	205
Card ID No.	0007102749
Name	PATRICK
Middle	LAZARO
Surname	LA SUERTE
LogState	<input checked="" type="checkbox"/>
CreatedDateTime	15/06/2023 9:29:20 am

A "Back to List" button is located at the bottom left of the details box. The left sidebar of the application includes navigation links such as Home, Register, List of User, User Log, Scan Mode, RFID Management, Archive Management, and User Roles. The footer of the page contains the text "Copyright © RFID Monitoring System 2022".

3.5 Scan Mode – Scan Mode

1. Go to the Scan Mode section, it displays the screen for end-users' information whenever they tap their RFID Card into the scanner.

The screenshot shows a web browser window titled "List of Users - RFID" with the URL <https://localhost:7211/AdminPages/Login>. The page features the Polytechnic University of the Philippines Parañaque Campus logo and displays the following information for a scanned user:

- Surname**, Name Middle Name
- Course**
- Year And Section**
- 01/01/2020**
- 09123456789**
- Address**

The card number **0000-0000-PQ-0** is shown at the bottom left, and the timestamp **07/03/2023 - 12:32:23 AM** is at the bottom right. The left sidebar of the application includes navigation links such as Home, Register, List of User, User Log, Scan Mode, RFID Management, Archive Management, and User Roles.

3.6 Archive Management – Archive Management

1. Go to the Archive Management section. This section is like a recycle bin where you can see the deleted accounts of students and staff.

The screenshot shows a web browser window titled "Archive List of Users - RFID". The URL is "https://localhost:7211/AdminArchives". The page has a sidebar on the left with "RFID" branding and navigation links: Home, MONITORING MANAGEMENT (Register, List of User, User Log, Scan Mode, RFID Management, Archive Management), User Roles, and a "ROLE MANAGEMENT" section with "List of Role" and "Assign Role". The main content area is titled "Archive List of Users" and contains a table with two entries:

AdminPageId	Name	Middle Name	Last Name	Control no.	Student Id No.	Course	YearAndSection	Birthdate	Phone Number	Email	Address	ContactPerson	Eme
8	Patrick	Lazaro	La Suerte	12345678	687326	BSCPE	1-Jan	03/13/2023					
9	Patrick	Lazaro	La Suerte	0004953408	687326	BSCPE	1-1	03/01/2023	09319435359	lasuertepatrick092699@gmail.com	Area 1 Libjo, Moonwalk	Lazaro	093

Below the table, it says "Showing 1 to 2 of 2 entries". At the bottom right, there are "Previous" and "Next" buttons, and a page number "1". The footer of the page says "Copyright © RFID Monitoring System 2022".

3.7 User Role – Role Management: List of Role

1. Go to the User Roles section and under it are role management which divides into two roles, List of Role, and Assign Role.

The screenshot shows a web browser window titled "General Page - RFID". The URL is "https://localhost:7211". The page has a sidebar on the left with "RFID" branding and navigation links: Home, MONITORING MANAGEMENT (Register, List of User, User Log, Scan Mode, RFID Management, Archive Management), User Roles, and a "ROLE MANAGEMENT" section with "List of Role" and "Assign Role". The main content area displays a welcome message "WELCOME, Smart Transaction!" and three boxes with statistics:

- NO. OF PEOPLE INSIDE: 4
- TOTAL BSCPE: 160
- TOTAL BSIT: 0

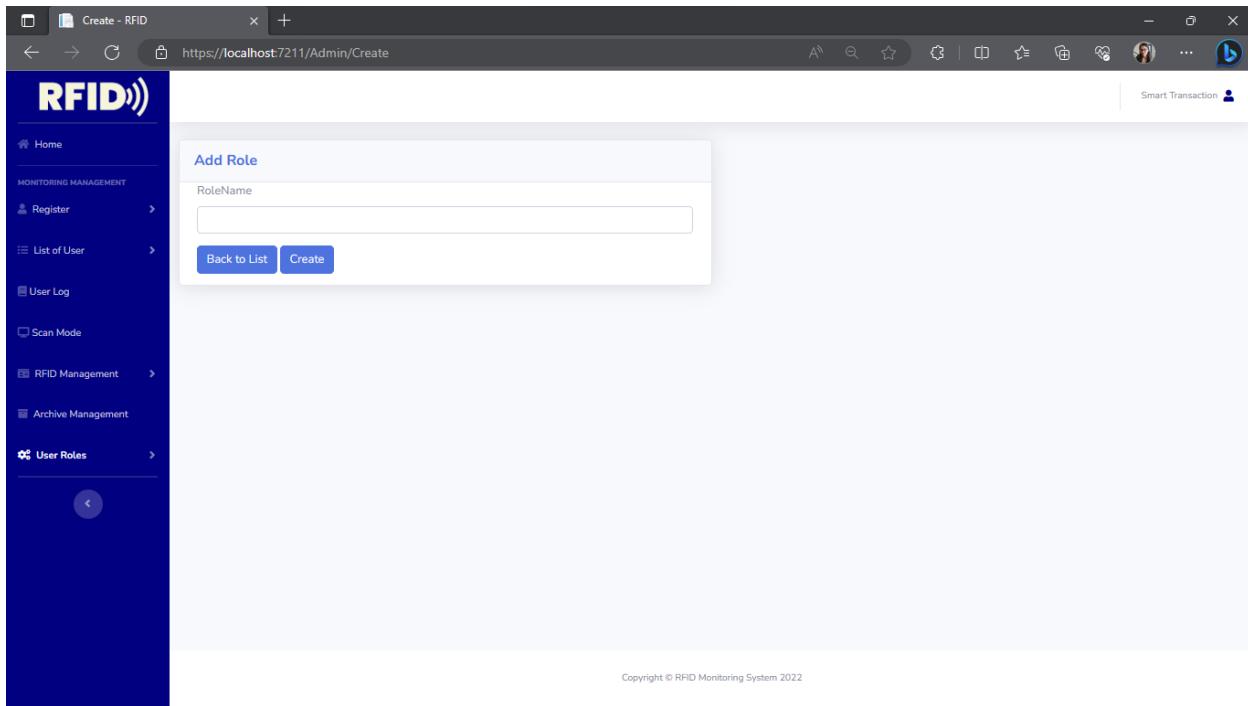
At the bottom of the page, it says "Copyright © RFID Monitoring System 2022".

2. Click List of Role. Viewed here are the roles that the current system has.

Role Names	Action
Administrator	
Kiosk	Edit Delete
User	Edit Delete

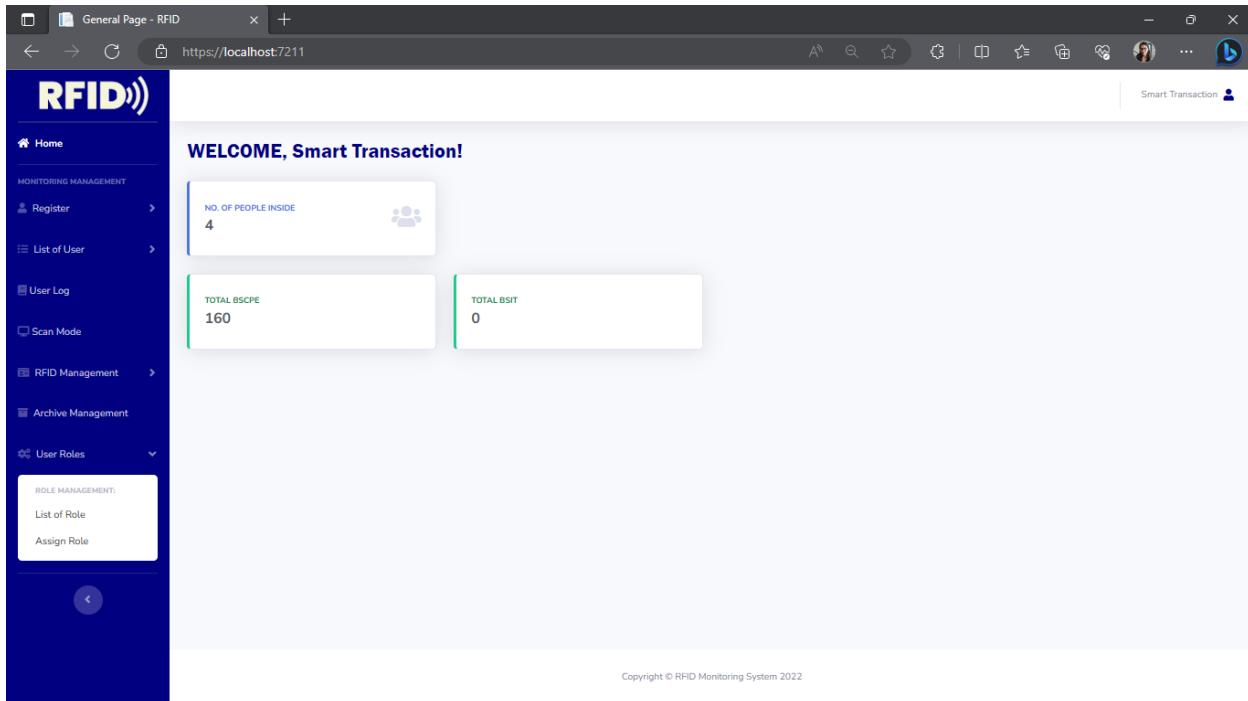
3. By clicking the Add Role button, let's create a new role for the system.

4. After creating or adding a role, don't forget to click save.



3.8 User Role – Role Management: Assign Role

1. Go to the User Roles section and under it are role management which divides into two roles, List of Role, and Assign Role.



2. Click Assign Role. Viewed here are the assigned roles that the current system has.

The screenshot shows a web browser window for the 'Index - RFID' application at <https://localhost:7211/UserAssign>. The left sidebar contains navigation links for Home, MONITORING MANAGEMENT (Register, List of User, User Log, Scan Mode, RFID Management), ARCHIVE MANAGEMENT, and User Roles (selected). The main content area is titled 'List of Assign Role' and displays a table of user assignments:

UserName	Email	Role	Action
smarttransaction2022@gmail.com	smarttransaction2022@gmail.com	Administrator	Edit
Solarrfid2022@gmail.com	Solarrfid2022@gmail.com	Kiosk	Edit
thesisnamintobakitba@gmail.com	thesisnamintobakitba@gmail.com	Kiosk	Edit

Below the table, it says 'Showing 1 to 3 of 3 entries'. The bottom right corner of the page footer shows 'Copyright © RFID Monitoring System 2022'.

4. Troubleshooting & Support

Any system can experience faults and malfunctions, thus it's essential to have recovery and error-correction methods in place to guarantee the stability and dependability of the system. The typical sub-sections that may be used to describe these methods are described in this text.

Error Conditions:

1. System Errors:

- These errors describe problems that interfere with the system's overall performance. It involves computer system failures, network issues, or power outages. Additionally, faulty configurations, compatibility issues, or a lack of resources might result in system faults.

2. Data Errors:

- Data integrity, accuracy, and completeness problems are problems with the data that the system processes or stores. This may involve data loss, data duplication, data corruption, or data inconsistency. Software faults, bad input, human mistakes, and other causes can all result in data errors.

Error Recovery Procedures:

1. System-Level Recovery:

- Restart: A system restart is frequently able to fix problems in the event of a system crash or failure. Restarting servers, services, or configurations may be necessary in this situation.
- Backup and Restore: Recovery from unexpected events or data loss requires regular backups of crucial data and the application of restoration processes. These backups can be kept in faraway places or on other systems.

2. Data-Level Recovery:

- Data Validation and Correction: Early errors can be found and fixed by implementing data validation checks during the input and processing stages. This may entail checking data formats for validity, running checksums, or using algorithms for error detection.
- Data Replication: It is possible to recover from data loss or hardware failures by replicating data across numerous servers or data centers, which provides redundancy.

4.1 Error Messages

Error Message: "404 Not Found" – The server was unable to locate the requested file or webpage.

- Make sure the URL or web address is accurate by checking it twice.
- If the problem persists, try refreshing the page and trying again.
- Try to access the website again after clearing the cache and cookies in your browser.
- For more help, get in touch with the website's support staff or administrator.

Error Message: "500 Internal Server Error" – The server cannot process the request because of a problem that prevents it from fulfilling it.

- It can be a momentary server issue, so reload the page and try again.
- Try to access the website again after clearing the cache and cookies in your browser.
- To report the error, get in touch with the website's support staff.
- If you are the administrator, look up more specific error information in the server logs.
- Examine recent code or configuration upgrades or alterations.

Error Message: "Connection Timed Out" – It takes too long for the server or network to react to the request.

- Make sure your internet connection is steady by checking it.
- Try again after refreshing the page because there might be a brief network issue.
- If the problem continues, get in touch with the website's support staff or administrator to let them know.
- If you are the administrator, look for any oddities in the server logs and network configuration.

4.2 Special Considerations

To troubleshoot effectively, consider the following special circumstances, actions, caveats, exceptions, and so on:

1. Special Circumstances:

- Check for any recent upgrades or modifications that may be the root of the problem.
- Determine whether the issue is unique to a certain hardware, application, or operating system.
- Check to see if the problem only occasionally or always happens.

2. Actions:

- Make sure that all necessary hardware is turned on and connected correctly.
- To fix temporary bugs, restart the problematic hardware or software.
- Look for any warnings or error messages that can contain hints about the issue.

3. Caveats:

- Make sure you have the credentials or permissions required before doing some troubleshooting procedures.
- Be careful while adjusting complex or important system settings to prevent unwanted repercussions.

4. Exceptions:

- Some problems can call for very specialized equipment or highly advanced technological knowledge. When this occurs, think about getting help from a professional.
- Further research may be required if the problem cannot be fixed using the suggested troubleshooting procedures.

4.3 Support

In case of emergencies or if you require system support, please refer to the following information:

Table 1 - Support Points of Contact

Contact	Phone	Email	Role	Responsibility
Jhon Rafael Camarig	09935312330	jrcamarig@gmail.com	Help Desk Support	Provides technical support to end users, troubleshoots customer and user issues, and/or guides them through specific tasks and actions.
Patrick La Suerte	09319814470	lasuertepatrick092699@gmail.com	Full-stack Developer Support	Provides technical support and assistance to other developers or teams working on full-stack development projects. Handles both front-end and back-end development, handling various aspects of software development.
Rhica Mei Ambonan	09924702533	rhicamei0914@gmail.com	Production Support Manager	Responsible for managing and overseeing the support and maintenance of software applications or systems in a production environment. Their primary role is to ensure the smooth operation and availability of the systems, minimize downtime, and resolve any issues that arise during production.

Reporting System Problems:

If you encounter any issues or problems with the system, please follow these steps to report them:

1. Contact the Help Desk Support.
2. Provide and describe the issue you're having in clear, specific detail.
3. Send screenshots or any error messages that can help with the troubleshooting issue.

4. If the Help Desk Support is unable to fix it or if it needs more attention, the issue will be escalated to the other support members, such as the Full-Stack Developer Support or the Production Support Manager.
5. The escalation procedure will guarantee that the problem is solved quickly and effectively.

Security Incident Handling:

In the event of a security incident, please follow these steps:

1. Report the event right away.
2. Contact the Help Desk Support.
3. Provide and describe the security event in full and provide all necessary details.
4. Give a brief account of the incident, mentioning any pertinent information like the time it happened, any affected systems or data, and any initial observations or signs of compromise.
5. The Supports will take control of the investigation and response once the incident has been reported.
6. The Supports will undertake a thorough investigation to figure out the type and extent of the security issue.
7. Immediate action will be taken to control the problem and stop additional damage or unauthorized access.
8. This may include installing other appropriate measures, disabling hacked accounts, or isolating impacted systems.
9. The Supports will investigate the incident to determine how it happened, find any systemic flaws, and provide repair plans as necessary.
10. Depending on the seriousness of the occurrence, data or system recovery may be necessary. To reduce downtime and resume normal operations, the Supports will plan and carry out recovery measures.
11. The Supports will keep in touch with the impacted parties, clients, and other relevant authorities as needed throughout the incident handling procedure. The incident response procedures, outcomes, and corrective actions will all be recorded for future use and system security posture enhancement.
12. The Supports will perform a post-incident evaluation after the event is resolved to determine lessons learned and potential areas for improvement. To increase the system's overall security, all necessary adjustments will be made to the policies, processes, and technical controls.

Appendix A: Record of Changes

The User Manual will be controlled and tracked by implementing the following methods:

1. Each iteration of the user manual should be given a special version number or identity, and the order of the sections should be sequential.
2. Decide on a responsible person or group to oversee the User Manual's creation and maintenance.
3. Define their duties and responsibilities precisely, including the need to make sure the manual is accurate, thorough, and updated on time.
4. The manual should go through a systematic approval and review process before any alterations, updates, or additions are made.
5. Create a method for users to give comments on the User Manual, like a special email address or an online form.
6. Encourage users to be aware of the availability and position of the manual and to know where to find the most recent edition.

Table 2 - Record of Changes

Version Number	Date	Author/Owner	Description of Change
1.0	06/19/2023	RMS	Since this is a first draft, there haven't been any modifications yet.

Appendix B: Glossary

Table 3 - Glossary

Term	Acronym	Definition
Joint Photographic Experts Group	JPEG/JPG	JPEG is a widely used image file format. It is designed to compress and store digital images in a compact form while maintaining a reasonable level of image quality. A method of reducing the file size of an image by discarding some information that the human eye is less likely to notice.
Portable Network Graphics	PNG	PNG is another commonly used image file format. It is designed to store and display digital images with high quality while also supporting transparency. In simple terms, PNG is a file format that allows you to have images with sharp details and clear colors, including the ability to have transparent backgrounds.
Radio Frequency Identification	RFID	RFID is a technology that identifies and tracks persons or objects using radio waves. It depends on RFID readers that receive the data supplied by the RFID tags, which include unique identifiers. This technology provides effective and automatic identification and tracking operations and has a wide range of real-world applications.
User Manual	UM	A document that provides information and instructions for users of the RFID Monitoring System (RMS).

Appendix C: Referenced Documents

Alpha testing is carried out in the initial stages of software development to find defects and test the features and functionalities unique to the system. The group tested all features and functions during the alpha test to identify bugs and fix them.

Beta testing is conducted outside the group to gather feedback and identify remaining bugs and glitches before the official release. Changes were made to update and improve the system's performance.

The information on new features, enhancements, known problems, and other crucial specifications pertaining to the software is documented in the release notes.

Here is a list of all the important documents for the system's development, including alpha, beta, and release notes:

Table 4 - Referenced Documents

Document Name	Document Location and/or URL	Issuance Date
Alpha Testing	https://drive.google.com/drive/folders/17Qq4pJrYu0hi_nM8ResRU6w9c3FXnCdD	April 25, 2023
Beta Testing	https://drive.google.com/drive/folders/1nJwHOYCBalauZ3rUWm9bdYfs4uHqMMwl	June 15, 2023
Release Notes	https://drive.google.com/drive/folders/158oxpP9Ag1xvwnrlF8moUWsEo9l73ZaB	June 17, 2023

Appendix D: Approvals

The undersigned acknowledge that they have reviewed the User Manual and agree with the information presented within this document. Changes to this User Manual will be coordinated with, and approved by, the undersigned, or their designated representatives.

Table 5 - Approvals

Document Approved By	Date Approved
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date
Name: <Name>, <Job Title> - <Company>	Date