# TSE2101
# Final Report

## for

# <Project>

**Version <X.X>**

**Group No.:** *<place your group number here>*

| | |
|---|---|
| **<name>** | **<student #>** |
| **<name>** | **<student #>** |
| **<name>** | **<student #>** |
| **<name>** | **<student #>** |
| **<name>** | **<student #>** |

**Date:** **<place the date of submission here>**

# Contents

**CONTENTS** ..... **2**

**REVISIONS** ..... **3**

**1. PROJECT MANAGEMENT** ..... **4**

**1.1.** Team Members ..... 4
**1.2.** Project Plan ..... 4

**2. SYSTEM OVERVIEW** ..... **5**

**2.1.** Description ..... 5
**2.2.** Use Case Diagram ..... 6

**3. BASIC REQUIREMENTS** ..... **10**

**3.1.** Actor 1 ..... 10
**3.2.** Staff Manager ..... 11

**4. SPECIFIC REQUIREMENTS** ..... **12**

**4.1.** Class Diagrams ..... 12

**5. BEHAVIOURAL REQUIREMENTS** ..... **13**

**5.1.** Sequence Diagram ..... 13
**5.2.** Data Flow Diagrams ..... 17

**6. DATA DESIGN** ..... **21**

**6.1.** Data Dictionary ..... 21

**7. ARCHITECTURE DESIGN** ..... **25**

**7.1.** Software Architecture ..... 25

**8. INTERFACE DESIGN** ..... **27**

**8.1.** Main Screens ..... 27
**8.2.** Registrar ..... 28
**8.3.** Sale Agent ..... 33
**8.4.** Staff Manager ..... 35
**8.5.** Tour Guide ..... 39

**9. COMPONENT DESIGN** ..... **42**

**9.1.** Main Components ..... 42

**10. DEPLOYMENT DESIGN** ..... **48**

**10.1.** Deployment Diagram ..... 48

**11. TEST DATA** ..... **49**

**11.1.** Test Data Set 1 ..... 49
**11.2.** Test Data Set 2 ..... 49
**11.3.** Test Data Set 3 ..... 50
**11.4.** Test Data Set 4 ..... 50
**11.5.** Test Data Set 5 ..... 51
**11.6.** Test Data Set 6 ..... 51
**11.7.** Test Data Set 7 ..... 52
**11.8.** Test Data Set 8 ..... 52

**12. ACCEPTANCE TEST ..... 53**

**12.1.** Acceptance Test 1 ..... 53
**12.2.** Acceptance Test 2 ..... 54
**12.3.** Acceptance Test 3 ..... 55
**12.4.** Acceptance Test 4 ..... 56

**13. SAMPLE SCREENS ..... 57**

**13.1.** Registrar 57
**13.2.** Sales Agent ..... 58
**13.3.** Staff Manager ..... 59
**13.4.** Tour Guide ..... 60

**14. CONCLUSION ..... 61**

**14.1.** Summary of Results ..... 61
**14.2.** Problems Encountered ..... 61
**14.3.** Limitations and Future Enhancements ..... 61

**15. USER GUIDE ..... 62**

# Revisions

| Version | Primary Author(s) | Description of Version | Date Completed |
|---|---|---|---|
| Draft Type and Number | Full Name | Information about the revision. This table does not need to be filled in whenever a document is touched, only when the version is being upgraded. | 00/00/00 |

# 1. Project Management

## 1.1. Team Members

*Mahmoud Abdalazim 1132702480 (Programmer Leader and Project Leader )*
*Ali Omran Ali Hewaigh 1141327922(Document Manager Quality Manager)*

## 1.2. Project Plan

*<TO DO: Briefly describe the software process model and the main activities in the project. Place the Gantt chart also.>*

# 2. System Overview

## 2.1. Description

The museum management system is a system that has several functions which provide seamless ways for employee to accomplish their tasks properly with security and credibility. Each employee is authorized to access some part of the system that are related to his/her task inside the museum

Actors

1- Registrar : capable to manage the records of paintings and view employee attendance and ticket sales reports.

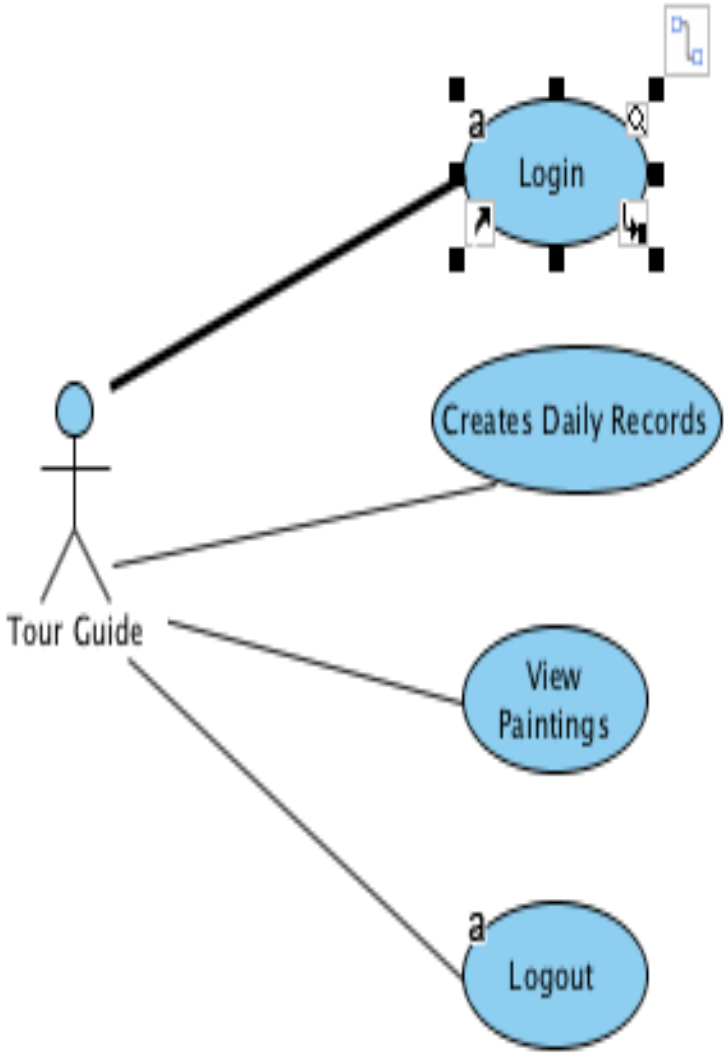
2- Sale Agent : capable to sell tickets and send ticket sales report to the registrar.

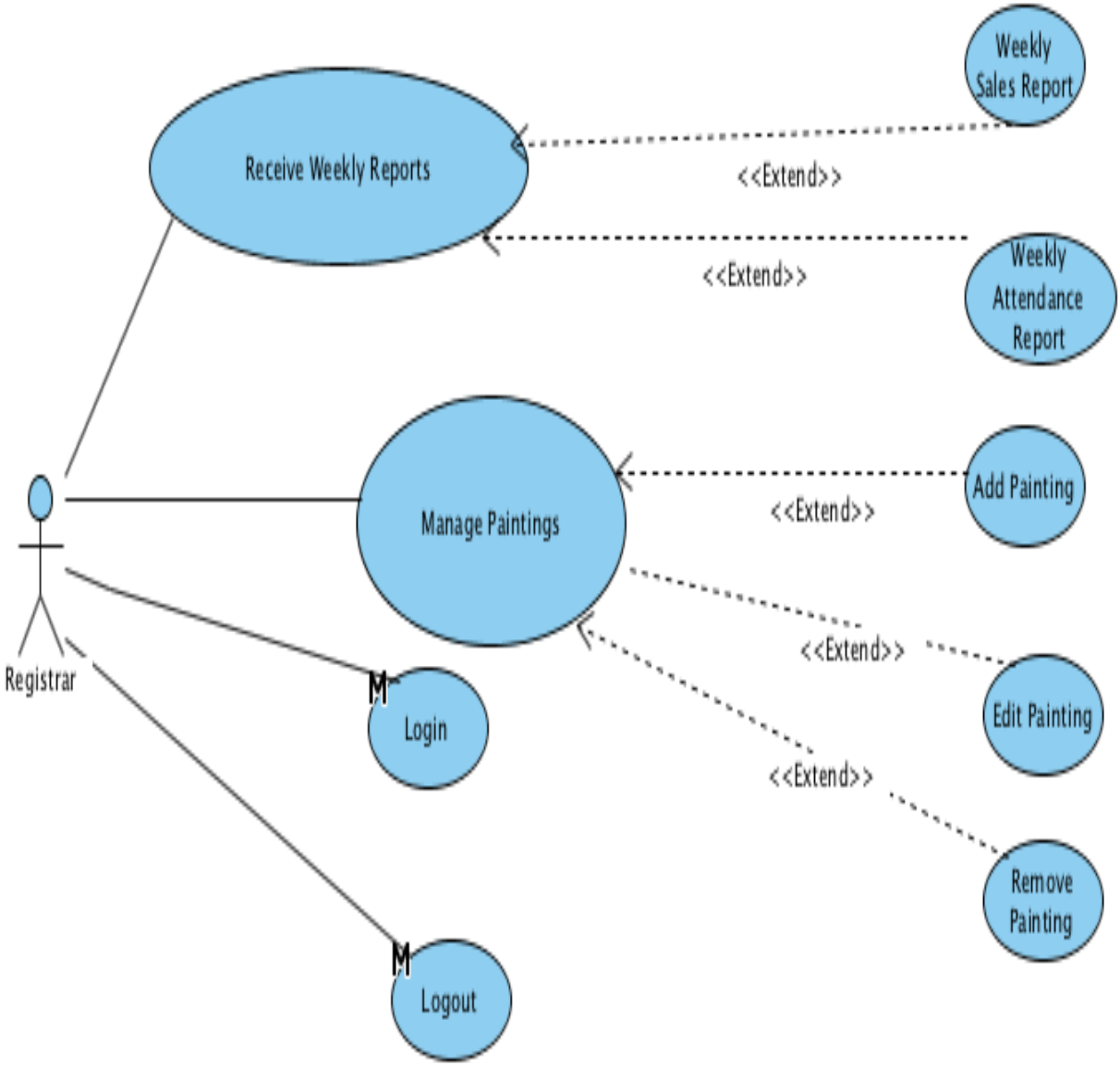
3- Tour Guide : capable to view the records of paintings and create daily schedule.

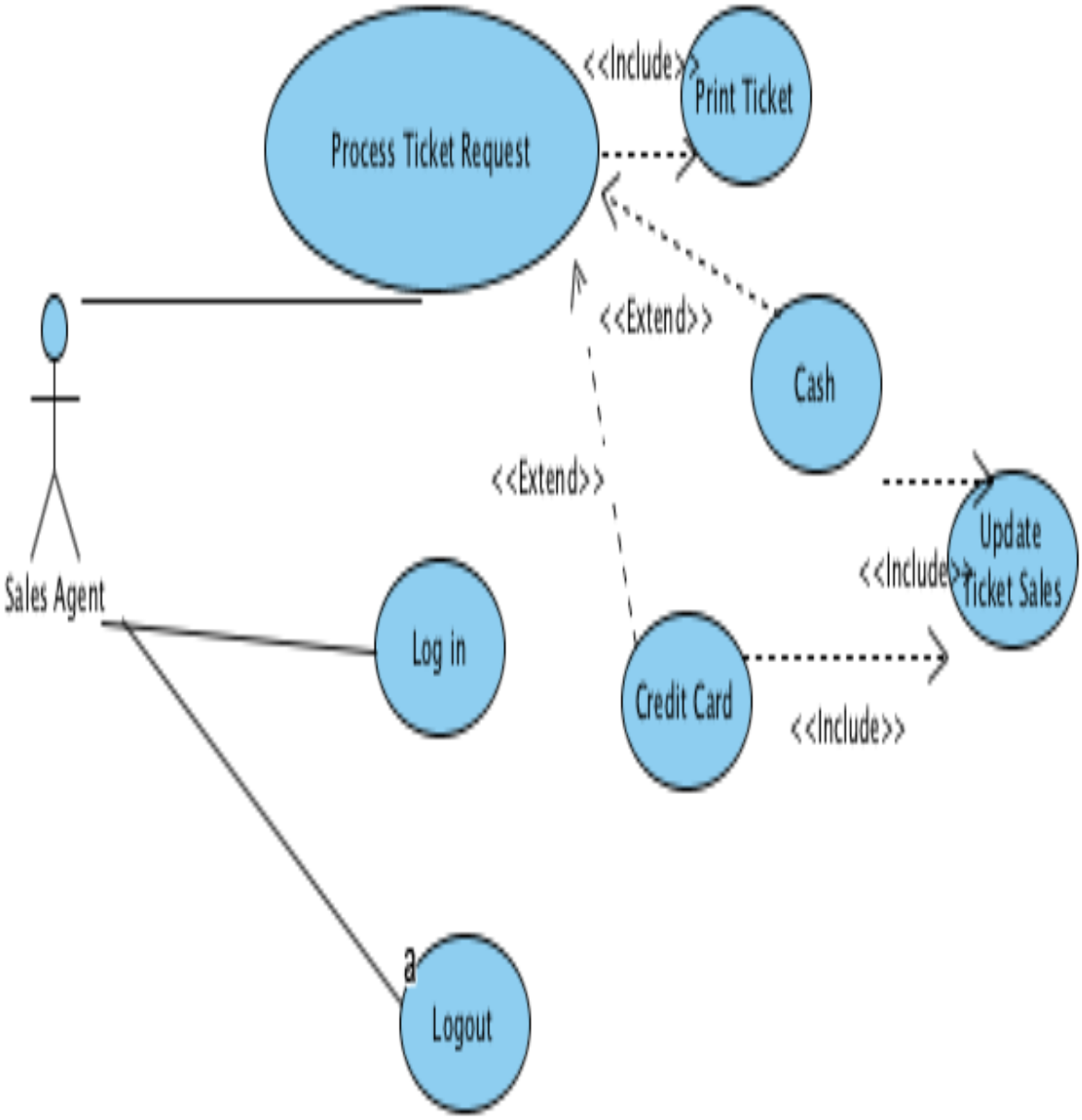
4- Staff Manager : capable to manage the attendance of the employee and send an attendance report to the registrar. Also, he is responsible to add, edit and remove employee who orates in the museum.

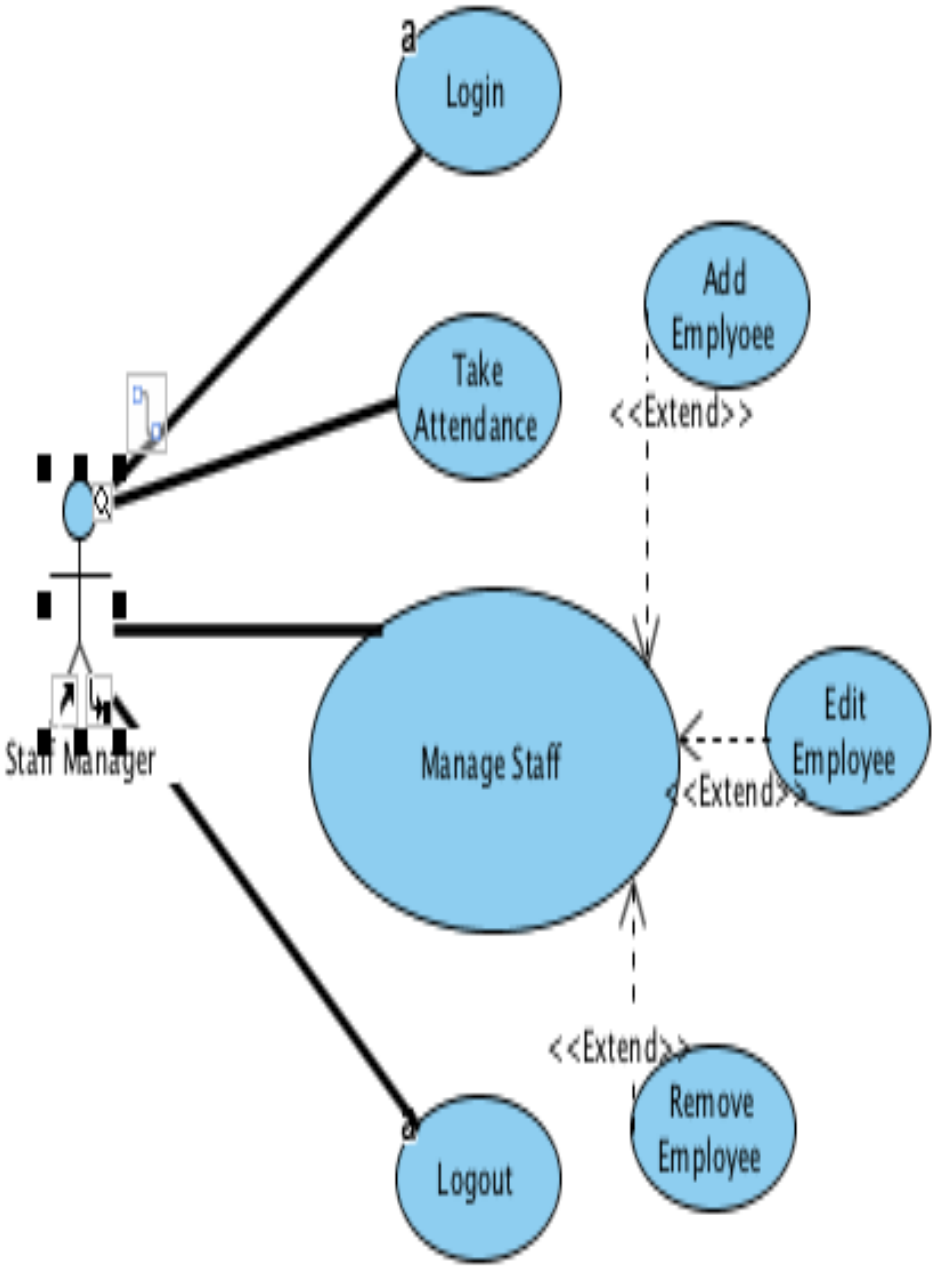
Assumptions and Dependencies
1. The system will be used on multiple units.
2. Failing of credit card payment might cause transaction fail.
3. The system is not maintained constantly which may create bugs
4. The software is not being updated with new features that allow more users to make use of it.

## 2.2. Use Case Diagram




Weekly Sales Report
Receive Weekly Reports
<<Extend>>
<<Extend>>
Weekly Attendance Report
Manage Paintings
Add Painting
<<Extend>>
<<Extend>>
Edit Painting
<<Extend>>
Remove Painting
Registrar
Login
Logout


Process Ticket Request
<<Include>>
Print Ticket
<<Extend>>
Cash
<<Extend>>
Update Ticket Sales
<<Include>>
Sales Agent
Log in
Credit Card
<<Include>>
Logout


Login
Add Emplyoee
Take Attendance
<<Extend>>
Staff Manager
Manage Staff
Edit Employee
<<Extend>>
<<Extend>>
Remove Employee
Logout

# 3. Basic Requirements

## 3.1. Actor 1

3.2. Login

The registrar is provided with username and password for accessing the system.

3.2.2. Manage Records of Paintings

The registrar is responsible to add, edit and remove details of paintings. For example, information of a new arrival painting can be added in the system by the register.

3.2.3. View Reports

The registrar can view reports which are sent by the sale agent and the stuff manager. For example, Ticket sale reports provides the details of the tickets that are sold so that the registrar can check the financial state of ticket sales. Also, the registrar can check the state of the employee in terms of the attendance by displaying the attendance report.

### 3.1.1. Sale Agent

3.2.1. Login

The sale agent is provided with username and password for accessing the system.

3.2.2. Process Ticket Request

The sale agent is authorized to access ticket sales part so he/she is responsible for sell tickets to costumers and the process payment. Moreover, he is responsible to update ticket sale to avoid inaccurate report which must be sent to the registrar.

### 3.1.2. Tour Guide

3.3.1 Login

The tour guide is provided with username and password for accessing the system.

3.3.2 Create Daily Records

The tour guide has to create a daily schedule so that he/she can mange the time for the paintings that will be viewed.

3.3.3 View Painting

The tour guide can view the details of the paintings the are inserted by the registrar.

## 3.2. Staff Manager

### 3.4.1 Login

The staff manager is provided with username and password for accessing the system.

### 3.4.2 Take Attendance

The staff manager is responsible to insert the daily attendance report to the system and send it to the registrar.

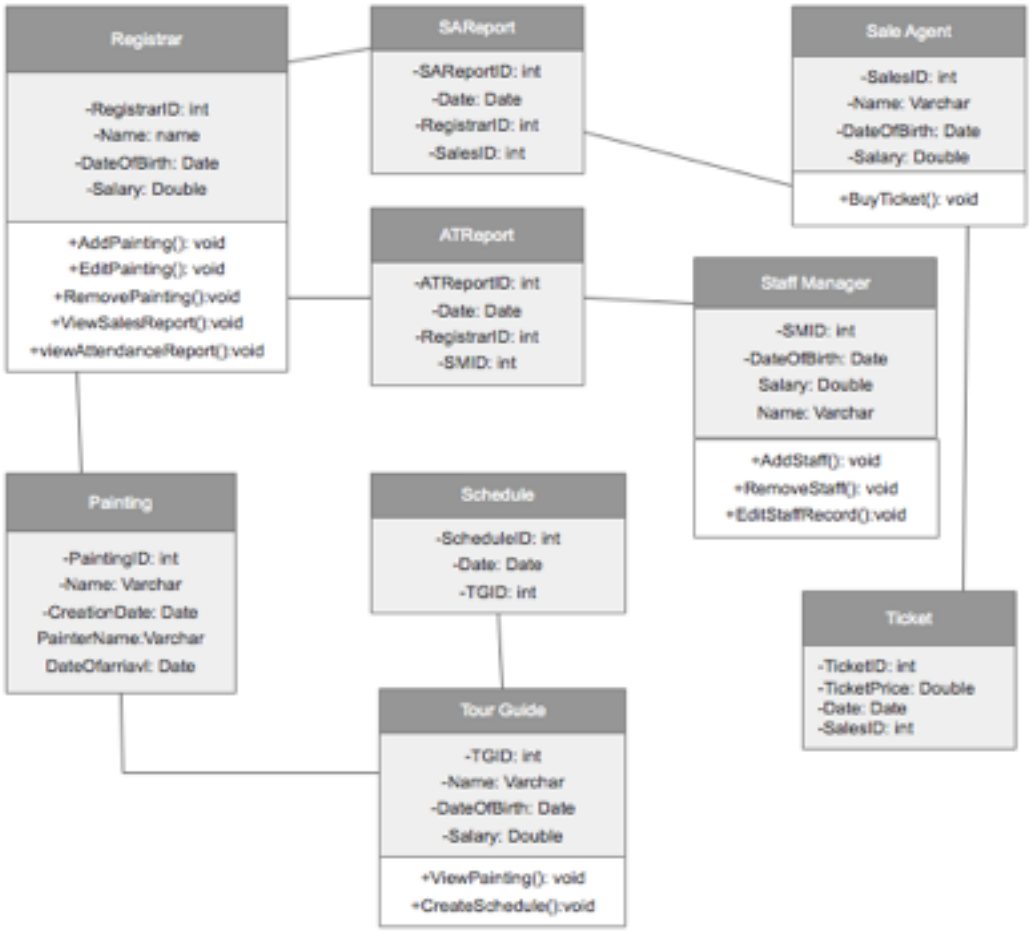
### 3.4.3 Manage Employee Records :

The staff manager is responsible to manage the details of employee such as adding the details of a new employe to the system.

# 4. Specific Requirements

## 4.1. Class Diagrams

*If the screen shot of classes diagram is not clear, please check it in submit file.*



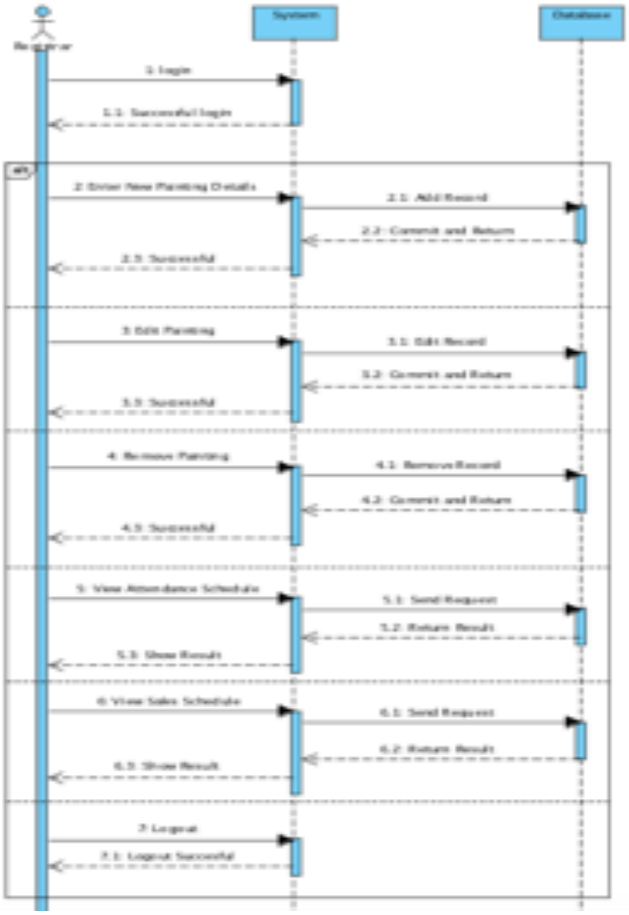
# 5. Behavioural Requirements

## 5.1. Sequence Diagram

Note : if the sequence diagrams are not clear, please check them in submit file.

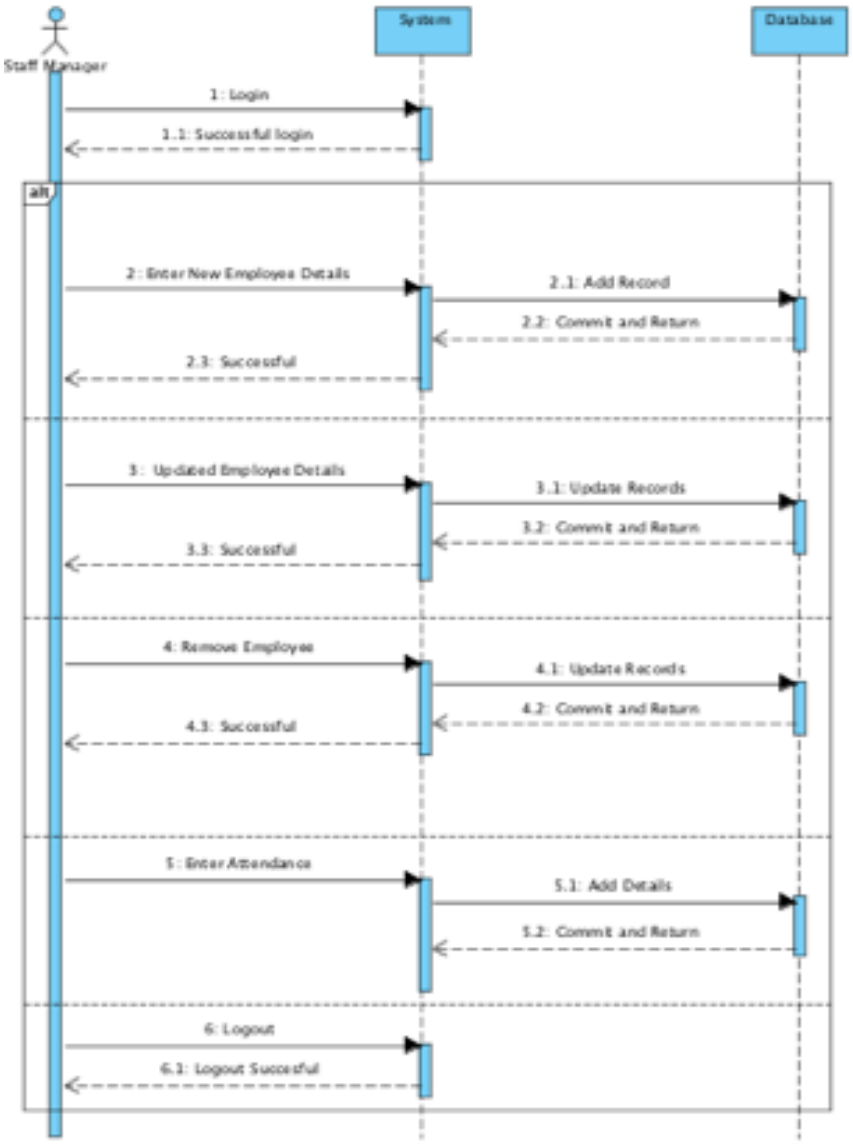
Registrar :

This sequence diagram illustrates the interaction between the registrar and the system. as shown, the registrar has to login with valid username and password. Once the registrar access the system, he/she can choose one of three options which are manage paintings, view reports and logout. Also, the registrar has indirect interaction with database which can be managed by the system. This interaction allows the registrar to add, edit and remove records from the database and viewing the reports from the database.



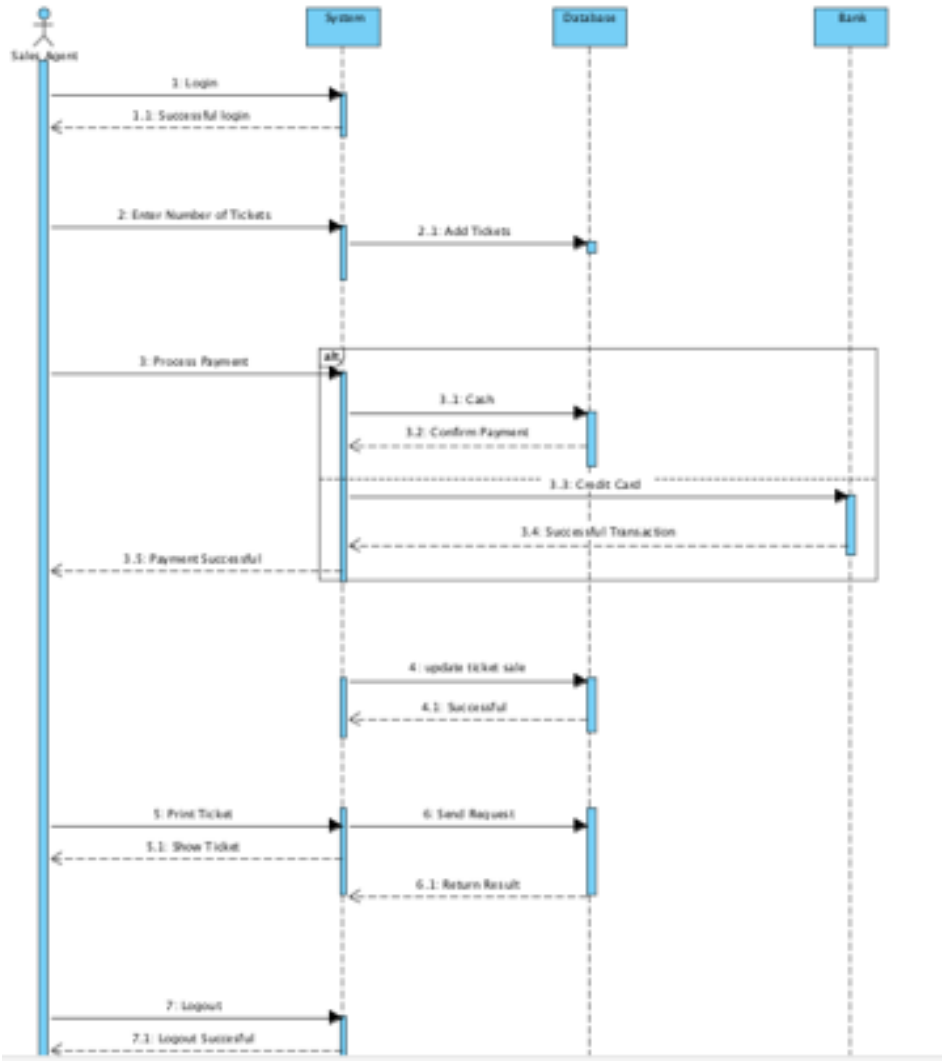
Staff Manager :

This sequence diagram illustrates the interaction between the sale agent and the system. as shown, the registrar has to login with valid username and password. Once the registrar access the system, he/she can choose one of three options which are Enter New Employee Details, Update Employee Details and Logout. The sale agent can interact with database by the system.



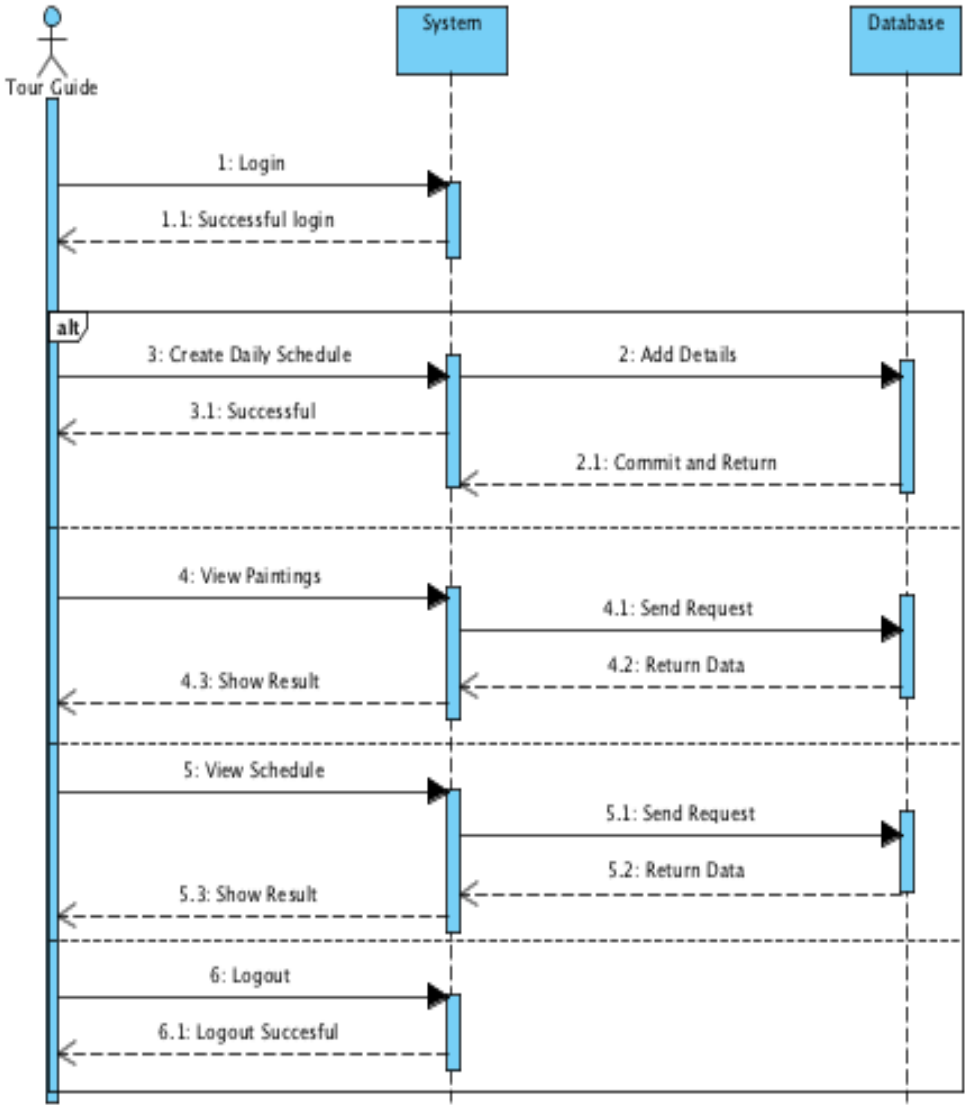
Sale Agent :

This sequence diagram illustrates the interaction between the sale agent and the system. as shown, the sale agent has to login with valid username and password. Once the sale agent access the system, he/she has to do the process ticket request step by step. Firstly, the sale agent has to enter how many tickets will be sold for each time there is a customer. Then, starting with the payment process that is involved with database to insert ticket sales and bank to check if the payment with credit card is valid. At the end, the sale agent prints the tickets on the screen. Once this is done, the information of this process is inserted the file report in database so that it can be viewed by the registrar.



Tour Guide :

This sequence diagram illustrates the interaction between the tour guide and the system. as shown, the tour guide has to login with valid username and password. Once the tour guide access the system, he/she can choose one of four options which are Create Daily Schedule, View Paintings, View Schedule and Logout.



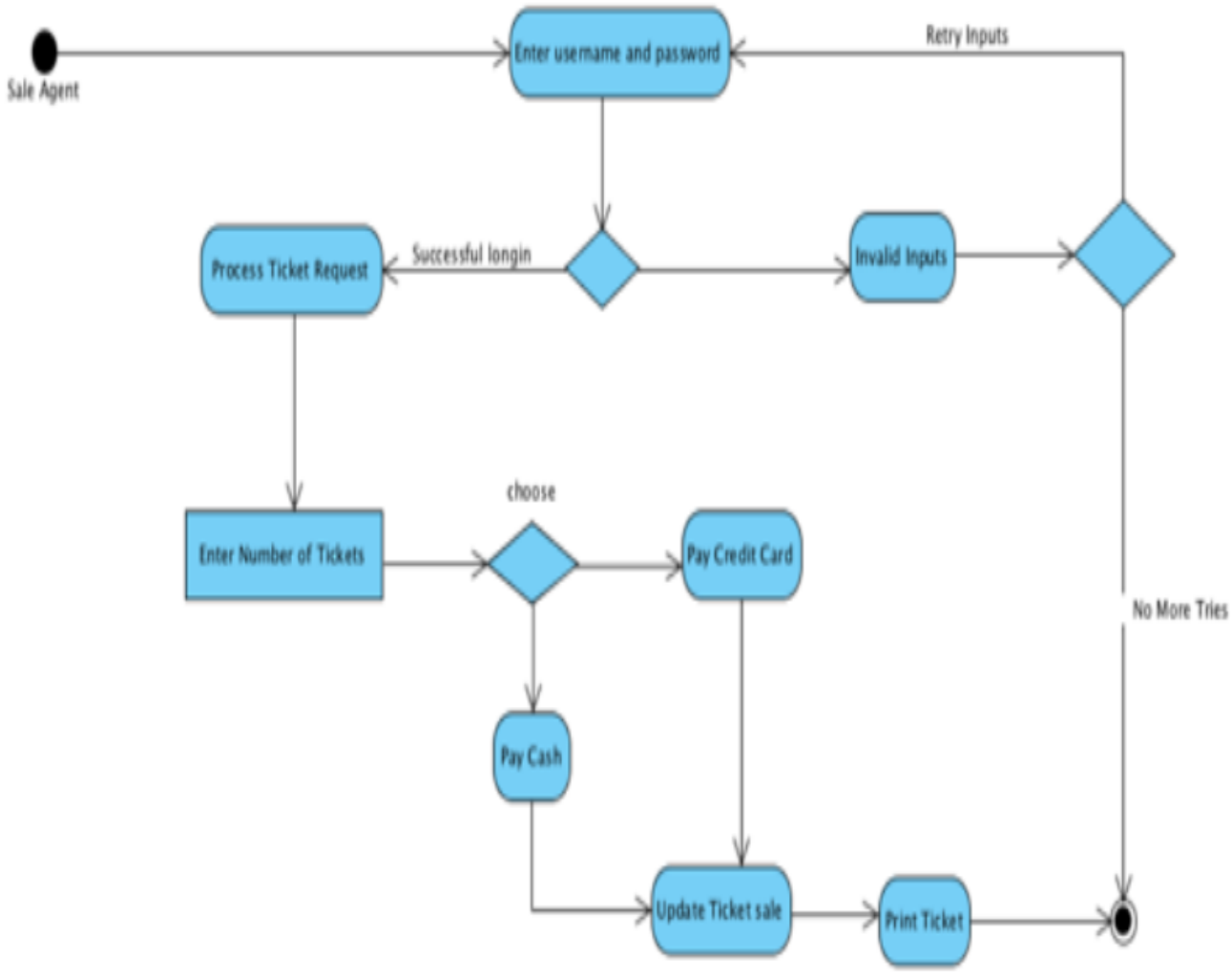
## 5.2. Data Flow Diagrams

*1- Registrar :*

This state diagram illustrates the interaction between the registrar and the system. as shown, the registrar has to login with valid username and password. Once the registrar access the system, he/she can choose one of three options which are manage paintings, view reports and logout.

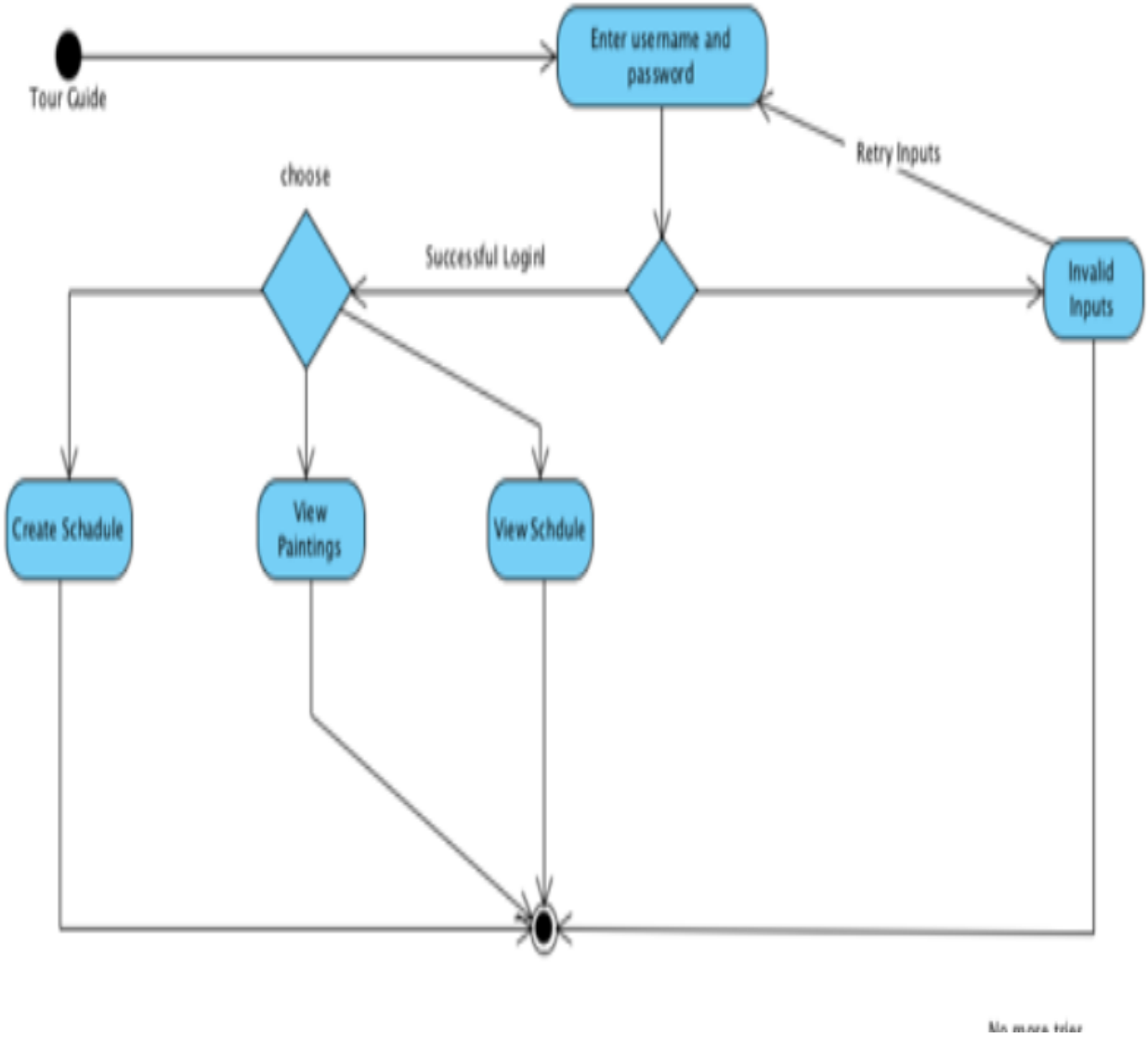
*2- Sale Agent:*

This state diagram illustrates the interaction between the sales agent and the system. as shown, the sales agent has to login with valid username and password. Once the sales agent access the system, he/she can choose one of three options which are Enter New Employee Details, Update Employee Details and Logout. The sale agent can interact with database by the system.



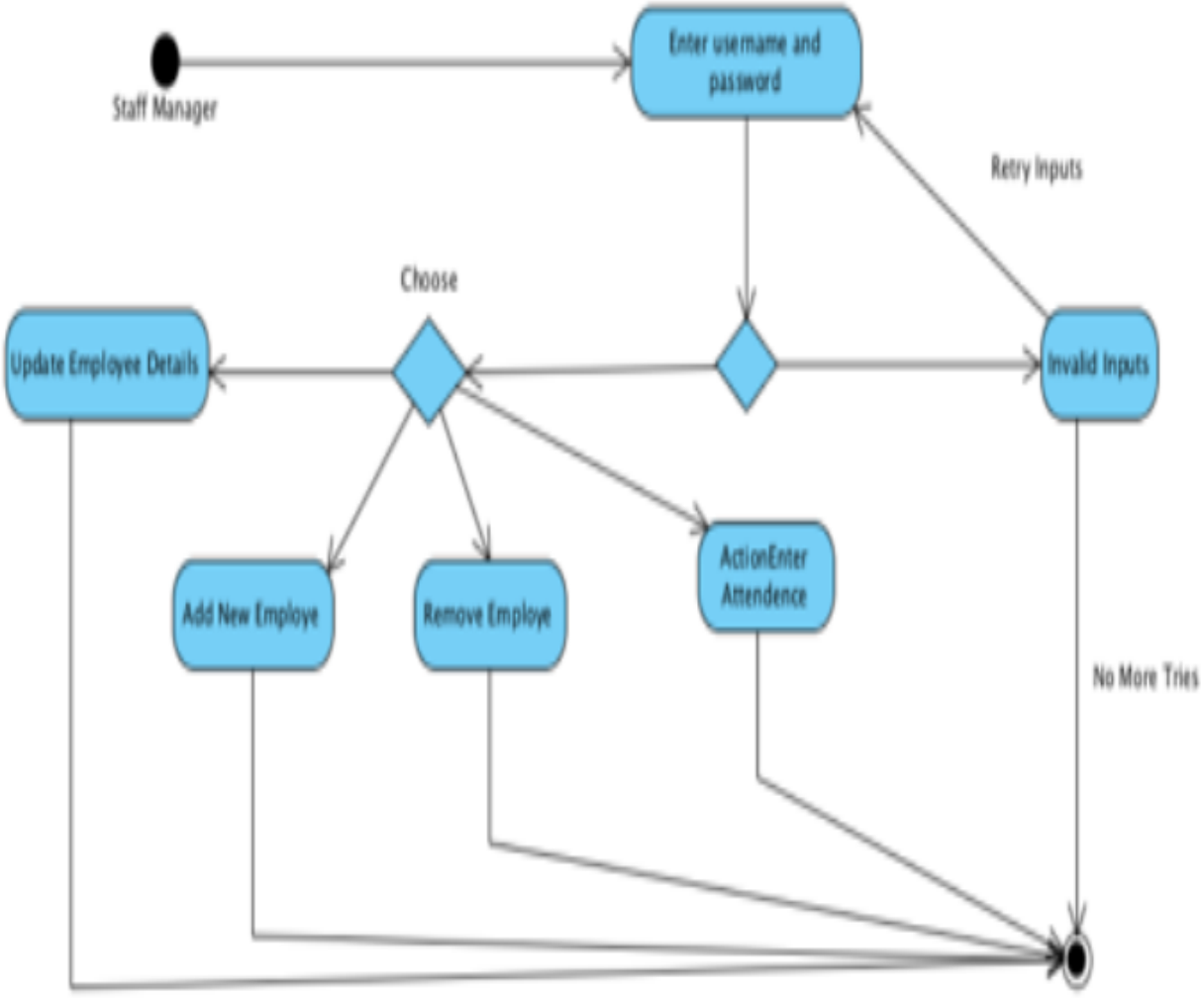

*3- Tour Guide:*

This state diagram illustrates the interaction between the tour guide and the system. as shown, the tour guide has to login with valid username and password. Once the tour guide access the system, he/she can choose one of four options which are Create Daily Schedule, View Paintings, View Schedule and Logout.




*4 Staff Manager :*

This state diagram illustrates the interaction between the staff manager and the system. as shown, the staff manager has to login with valid username and password. Once the staff manager access the system, he/she can choose one of four options which are Create Daily Schedule, View Paintings, View Schedule and Logout.



# 6. Data Design

## 6.1. Data Dictionary

| TABLE NAME | ATTR. NAME | DESC | TYPE | FORMAT | RANGE | REQUIRED | PK OR FK | FK REF TABLE |
|---|---|---|---|---|---|---|---|---|
| **Staff Manager** | SMID | | Int | xxxxxxxxx | 333333330-333333339 | Y | PK | |
| | Date of Birth | | Date | dd/mm/yyyy | | Y | | |
| | Salary | | Double | xxxxx.xx | | Y | | |
| | Name | | Varchar (30) | Xxxxxxxx | | Y | | |
| **Sale Agent** | Sales ID | | Int | xxxxxxxxx | 444444440 - 444444449 | Y | PK | |
| | Name | | Varchar (30) | Xxxxxxxx | | Y | | |
| | Date of Birth | | Date | dd/mm/yyyy | | Y | | |
| | Salary | | Double | xxxxx.xx | | Y | | |
| **Ticket** | Ticket ID | | Int | xxxxxxxxx | | Y | PK | |
| | Ticket Price | | Double | xxxxx.xx | | Y | | |

| TABLE NAME | ATTR. NAME | DESC | TYPE | FORMAT | RANGE | REQUIRED | PK OR FK | FK REF TABLE |
|---|---|---|---|---|---|---|---|---|
| Schedule | Date | | Date | dd/mm/yyyy | | Y | | |
| | Sales ID | | Int | xxxxxxxxxx | 444444440 - 444444449 | Y | FK | Sale Agent |
| | Schedule ID | | Int | xxxxxxxxxx | | Y | PK | |
| | Date | | Date | dd/mm/yyyy | | Y | | |
| | TGID | | Int | xxxxxxxxxx | 555555550 - 555555559 | Y | FK | Tour Guide |
| Tour Guide | TGID | | Int | xxxxxxxxxx | 555555550 - 555555559 | Y | PK | |
| | Name | | Varchar (30) | Xxxxxxxx | | Y | | |
| | Date of Birth | | Date | dd/mm/yyyy | | Y | | |
| | Salary | | Double | xxxxx.xx | | Y | | |

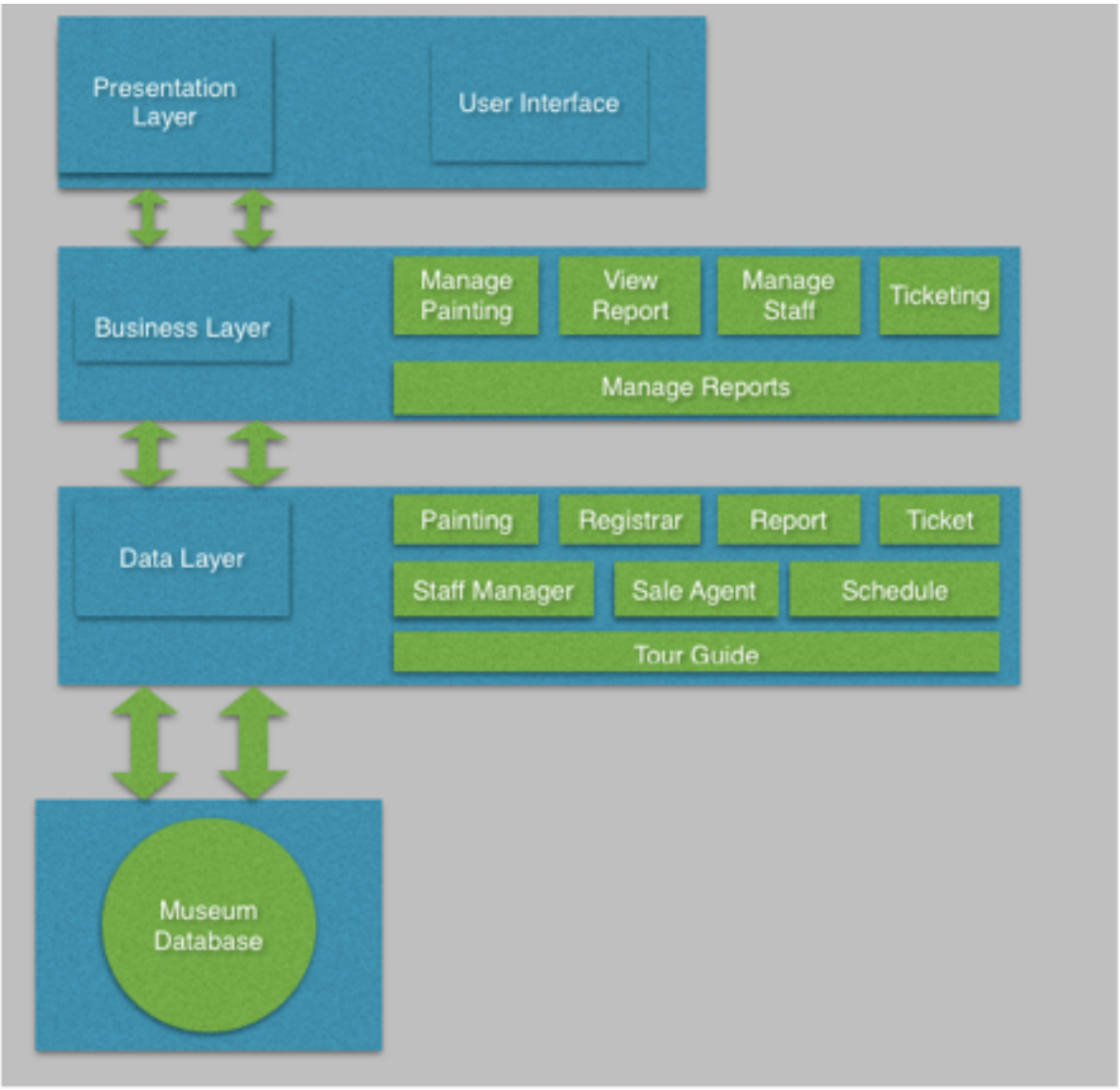
| TABLE NAME | ARRT.NAME | DESC | TYPE | FORMAT | RANGE | REQUIRED | PK OR FK | FK REF TABLE |
|---|---|---|---|---|---|---|---|---|
| Painting | Painting ID | | int | xxxxxxxxxx | 11111111 0-999999999 | Y | PK | |
| | Name | | Varchar (30) | Xxxxxxxx | | Y | | |
| | creation date | | Date | dd/mm/yyyy | | | | |
| | Painter name | | Varchar (30) | Xxxxxxxx | | | | |
| | Date of arrival | | Date | dd/mm/yyyy | | Y | | |
| _____ | Registrar ID | | int | xxxxxxxxxx | | Y | FK | Registrar |
| Registrar | Registrar ID | | int | xxxxxxxxxx | | Y | PK | |
| | Name | | Varchar (30) | Xxxxxxxx | | Y | | |
| | Date of Birth | | Date | dd/mm/yyyy | | Y | | |
| _____ | Salary | | Double | xxxxx.xx | | Y | | |
| ATReport | ATReport ID | | int | xxxxxxxxxx | ???? | Y | PK | |
| | Date | | Date | dd/mm/yyyy | | Y | | |
| | Registrar ID | | int | xxxxxxxxxx | ???? | Y | FK | Registrar |
| | SMID | | int | xxxxxxxxxx | 3333333330-3333333339 | Y | FK | Staff Manager |

| TABLE NAME | ARRT.NAME | DESC | TYPE | FORMAT | RANGE | REQUIRED | PK OR FK | FK REF TABLE |
|---|---|---|---|---|---|---|---|---|
| SAReport | SAReport ID | | int | xxxxxxxxxx | ???? | Y | PK | |
| | Date | | Date | dd/mm/yyyy | | Y | | |
| | Registrar ID | | int | xxxxxxxxxx | ???? | Y | FK | Registrar |
| | Sales ID | | int | xxxxxxxxxx | 444444440-444444449 | | | |

# 7. Architecture Design

## 7.1. Software Architecture

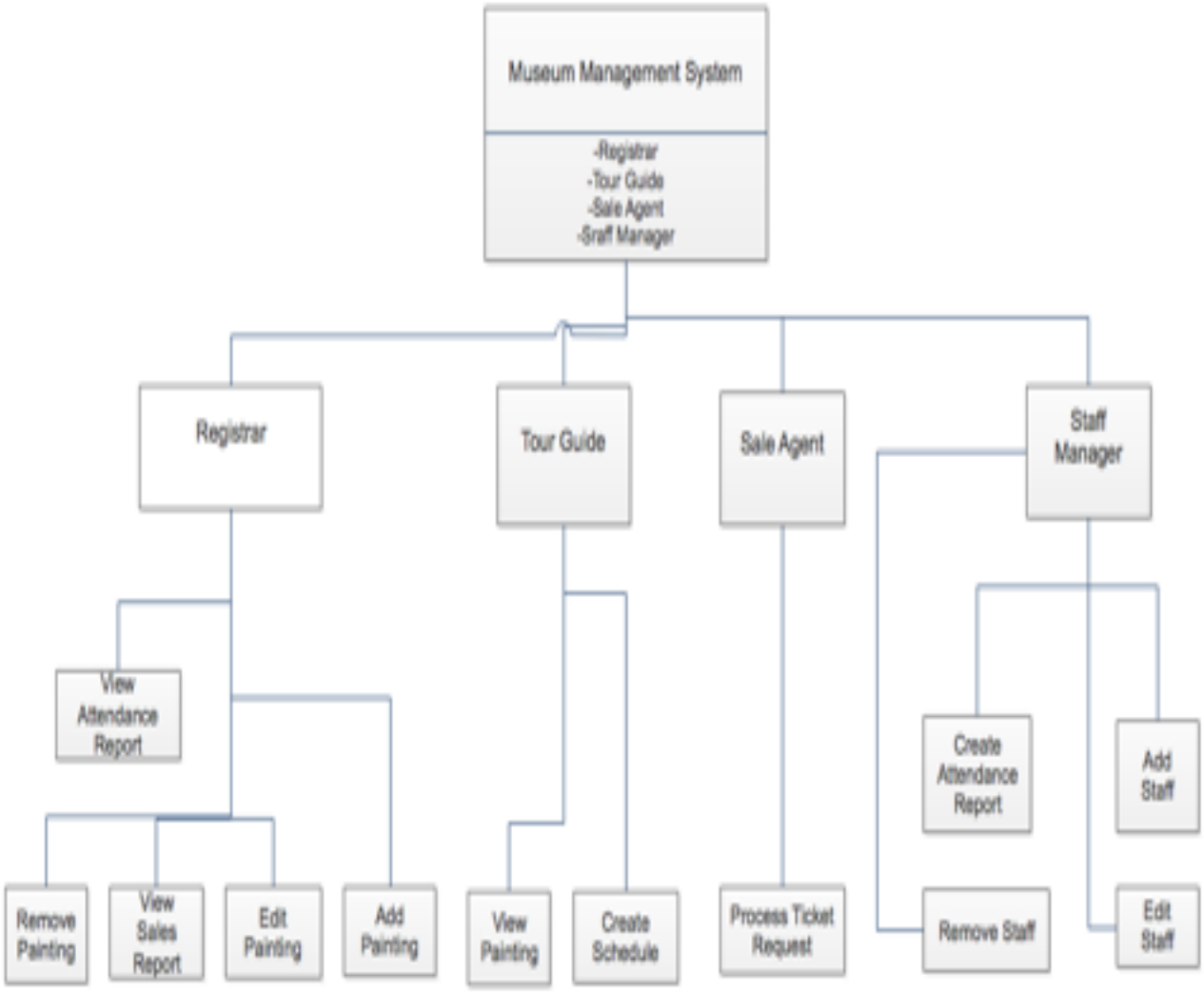
*The software architecture represents the underlying design of the entire system. The business layer will be communicating with the presentation layer to provide functionality. It will also access the data layer to retrieve the data it need to perform its functions. The data layer in turn is connected to the Museum database which permanently hold the data.*



### 7.1.1. Subsystem 1

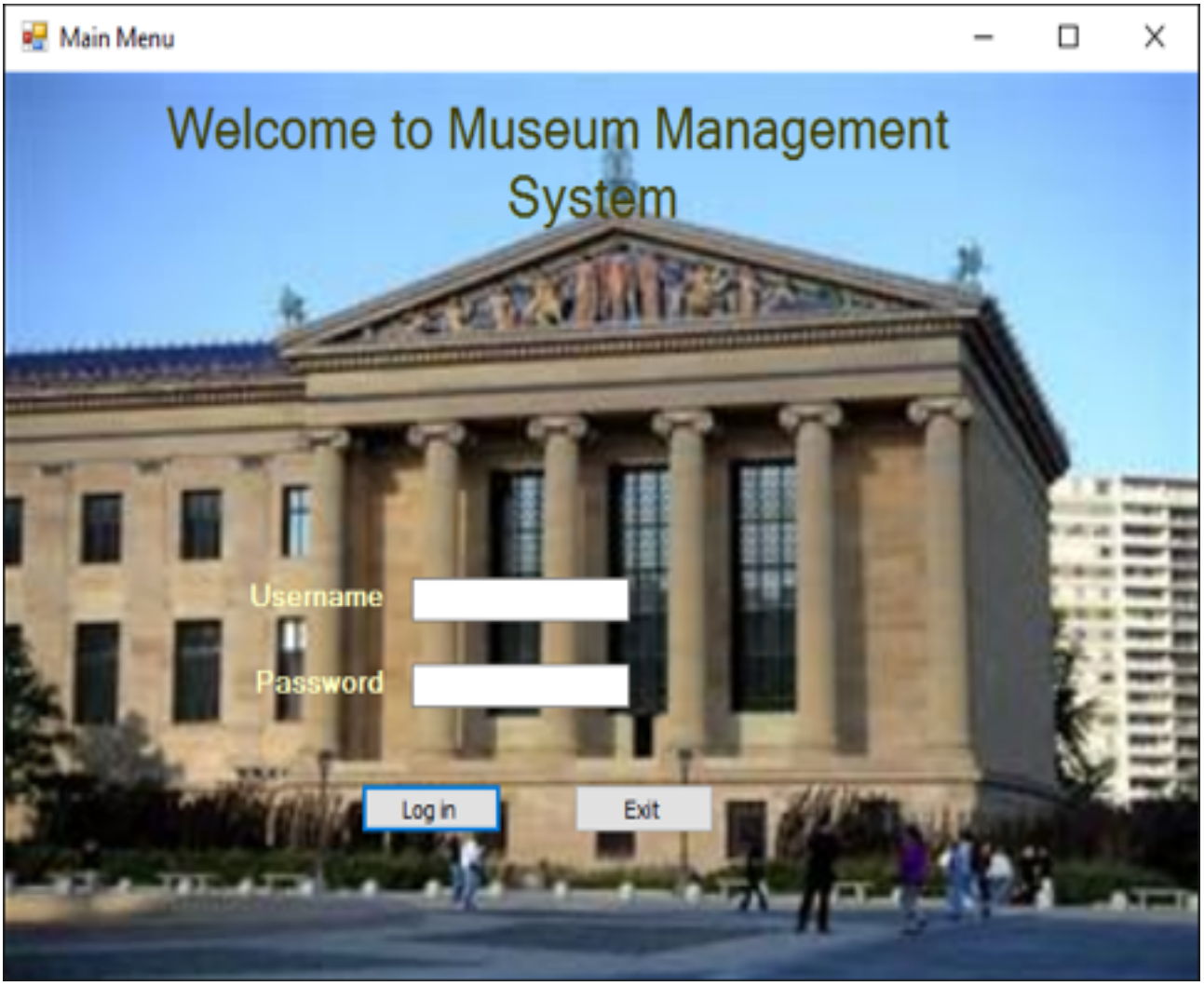
*This subsystem represents all the functionality that the system offers with respect to its users. Following the subsystem diagram are the pseudocode used to define the implementation of these functions.*

*Note : if the subsystem is mot clear, Please check it in submit file.*

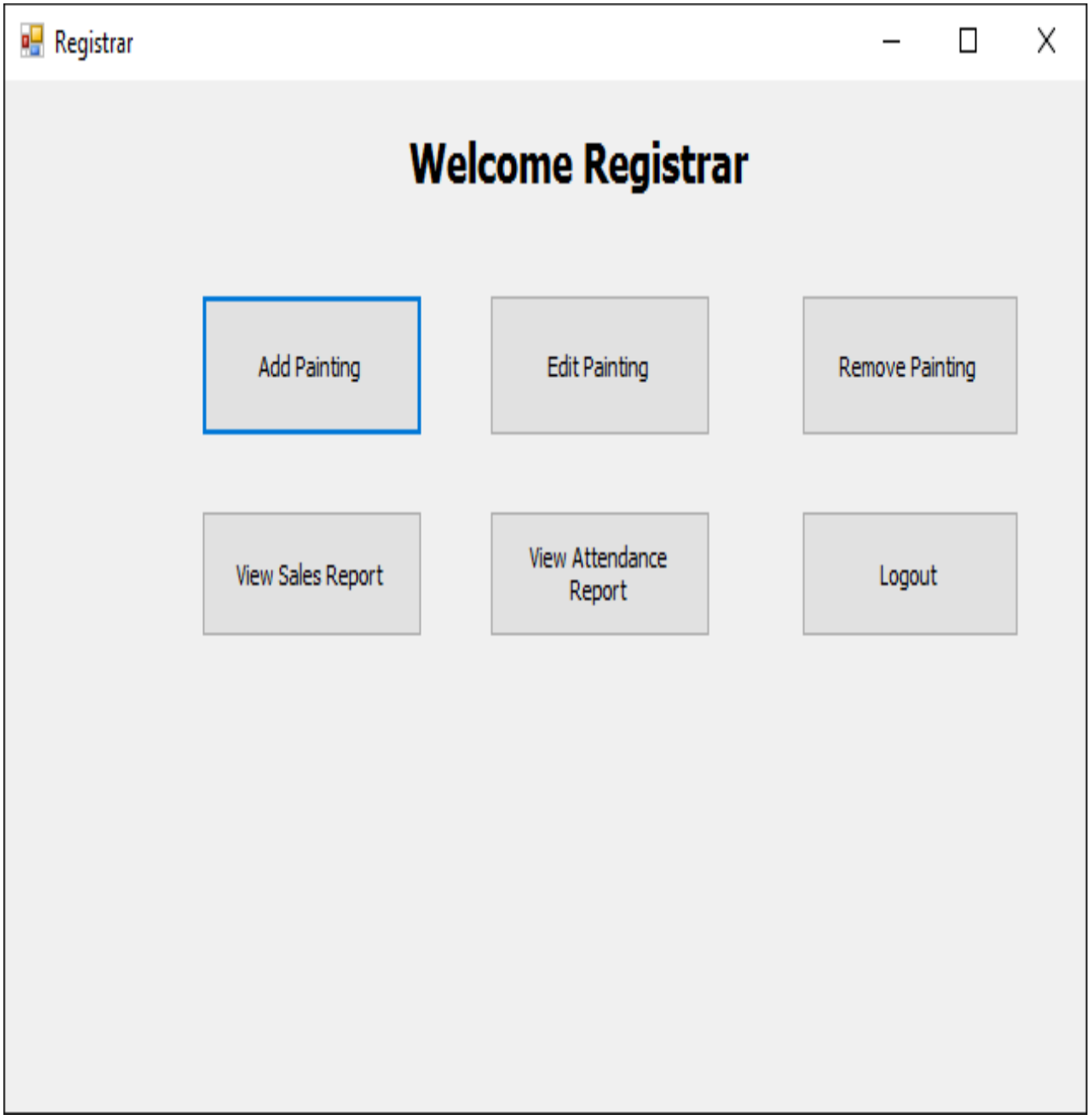


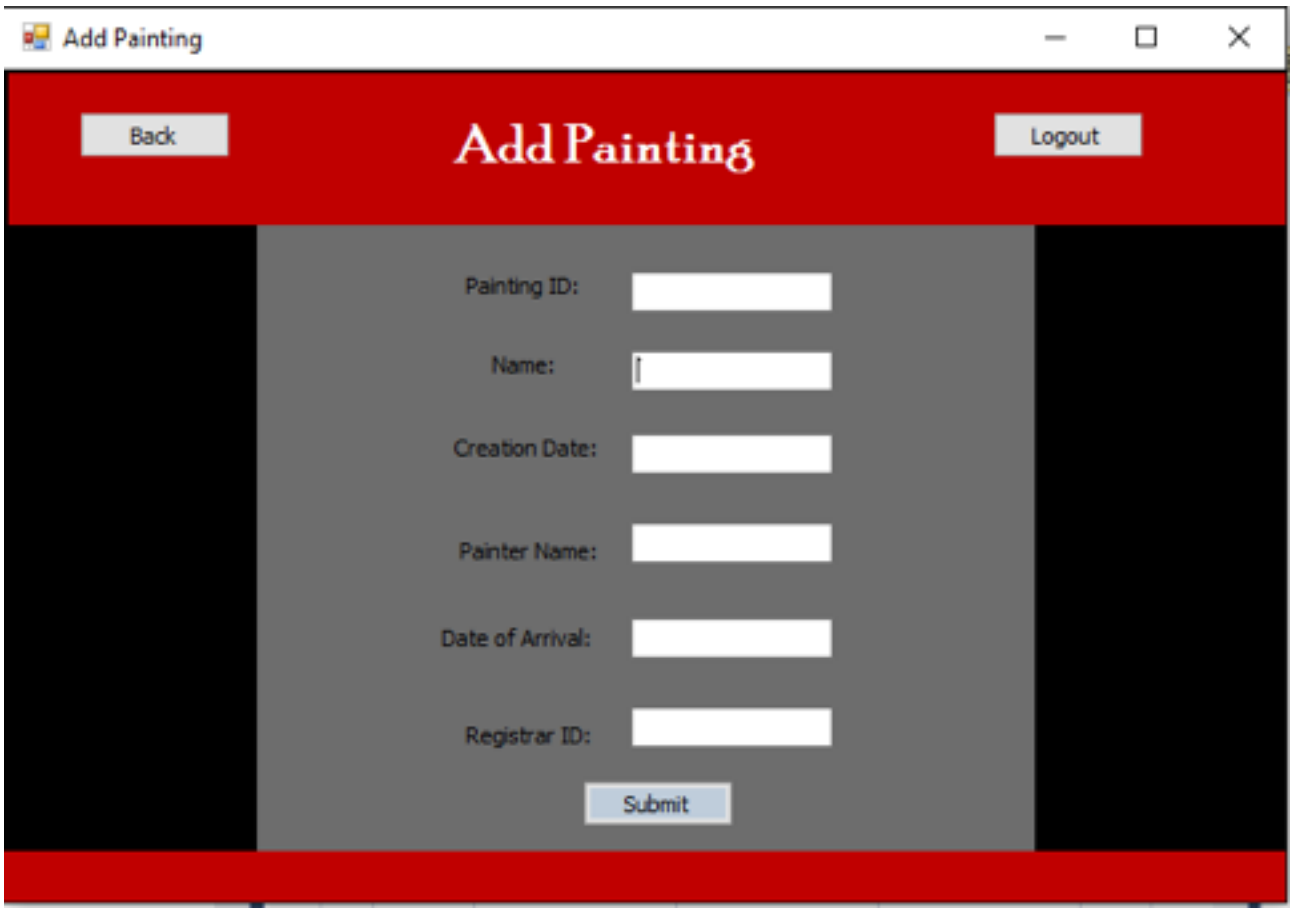
# 8. Interface Design

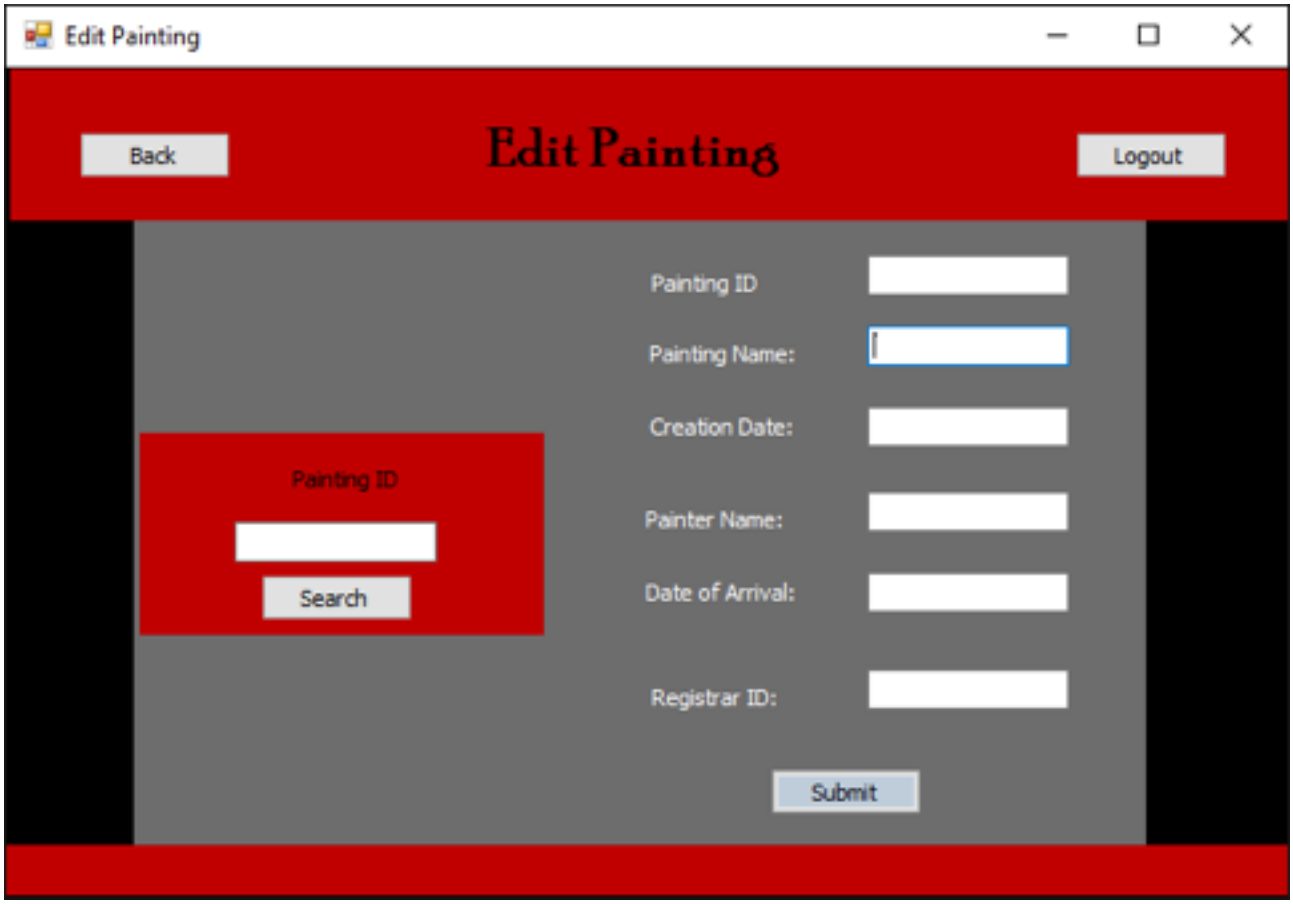
## 8.1. Main Screens

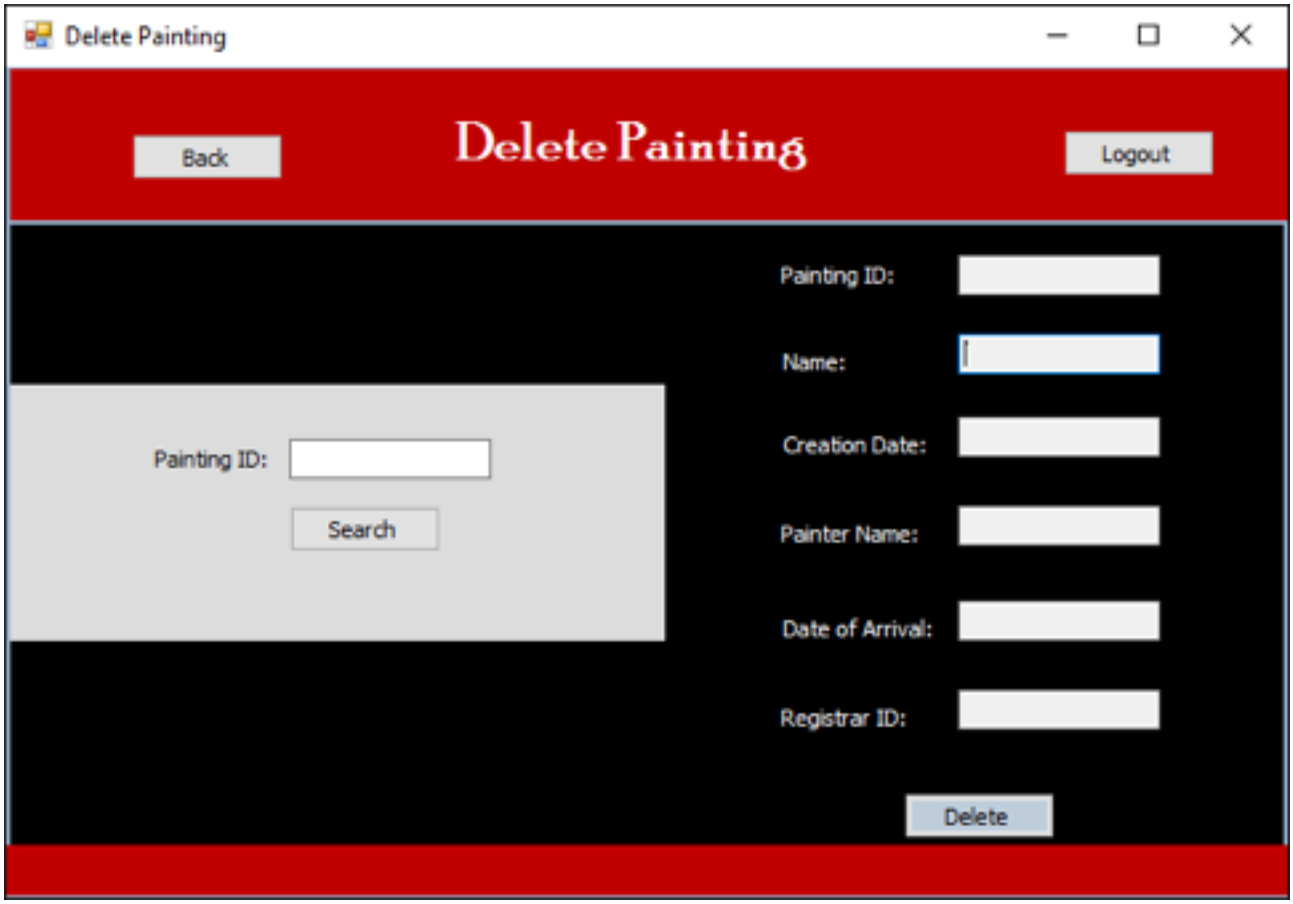


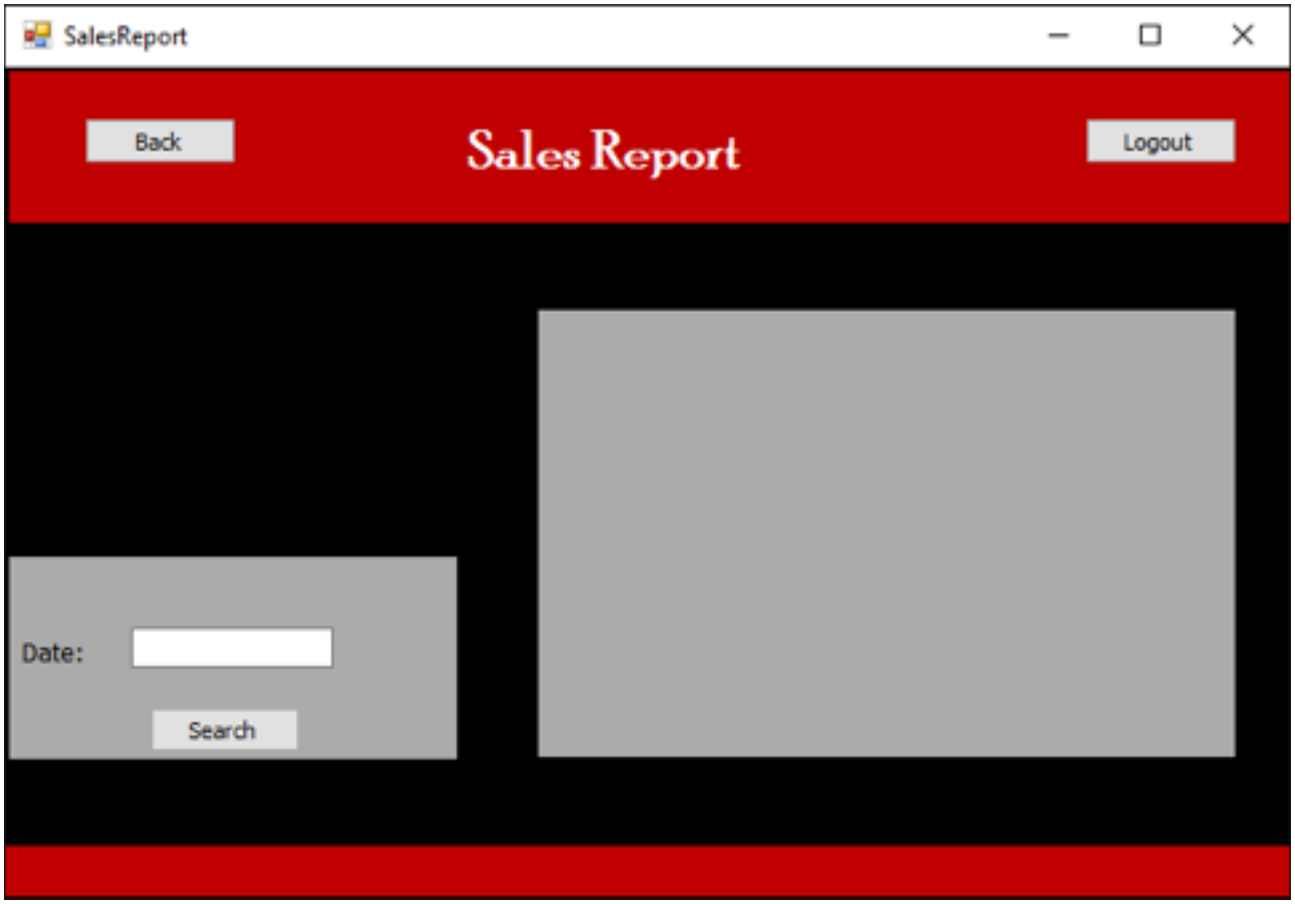
## 8.2. Registrar



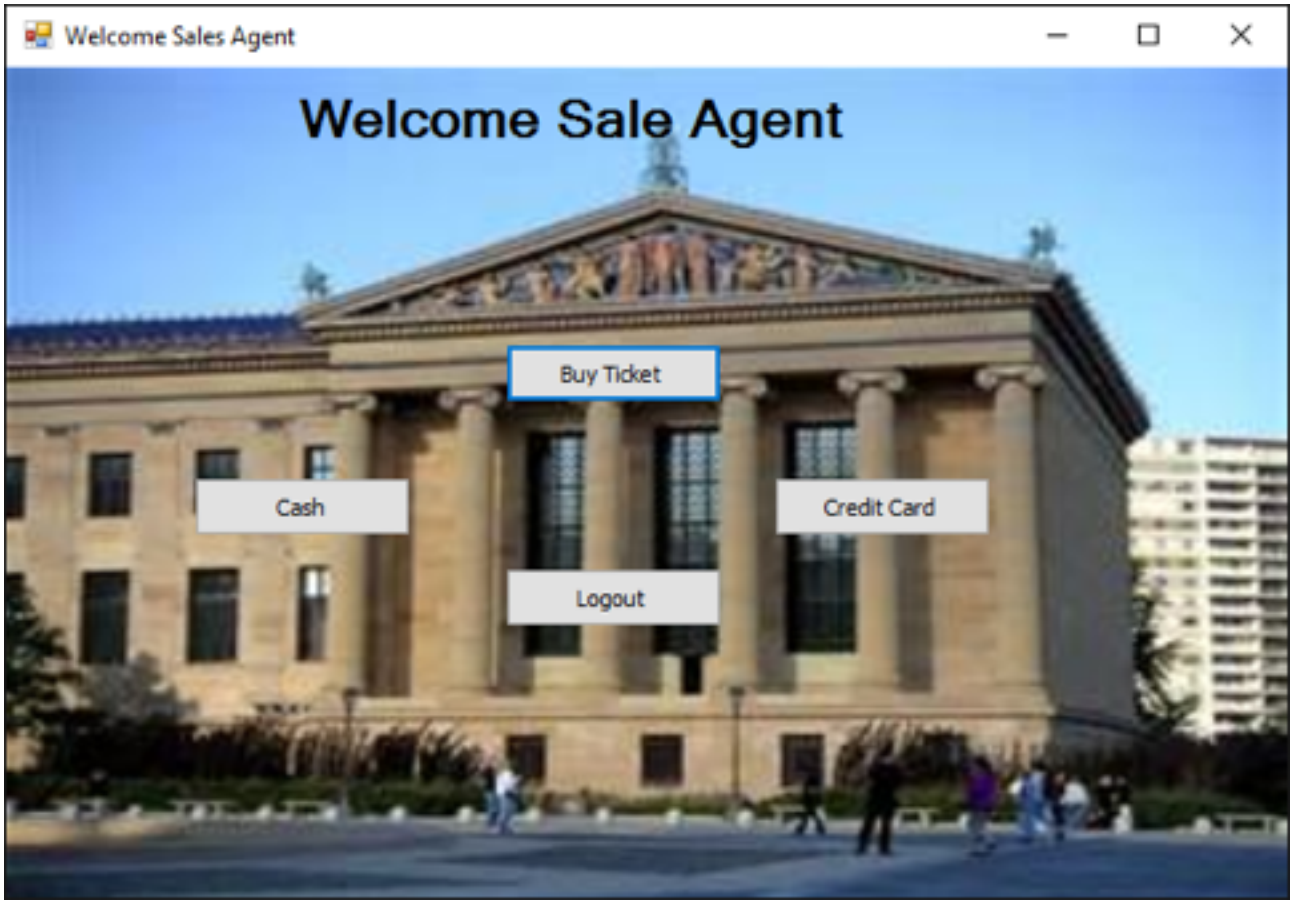

Add Painting
Back
Add Painting
Logout
Painting ID:
Name:
Creation Date:
Painter Name:
Date of Arrival:
Registrar ID:
Submit

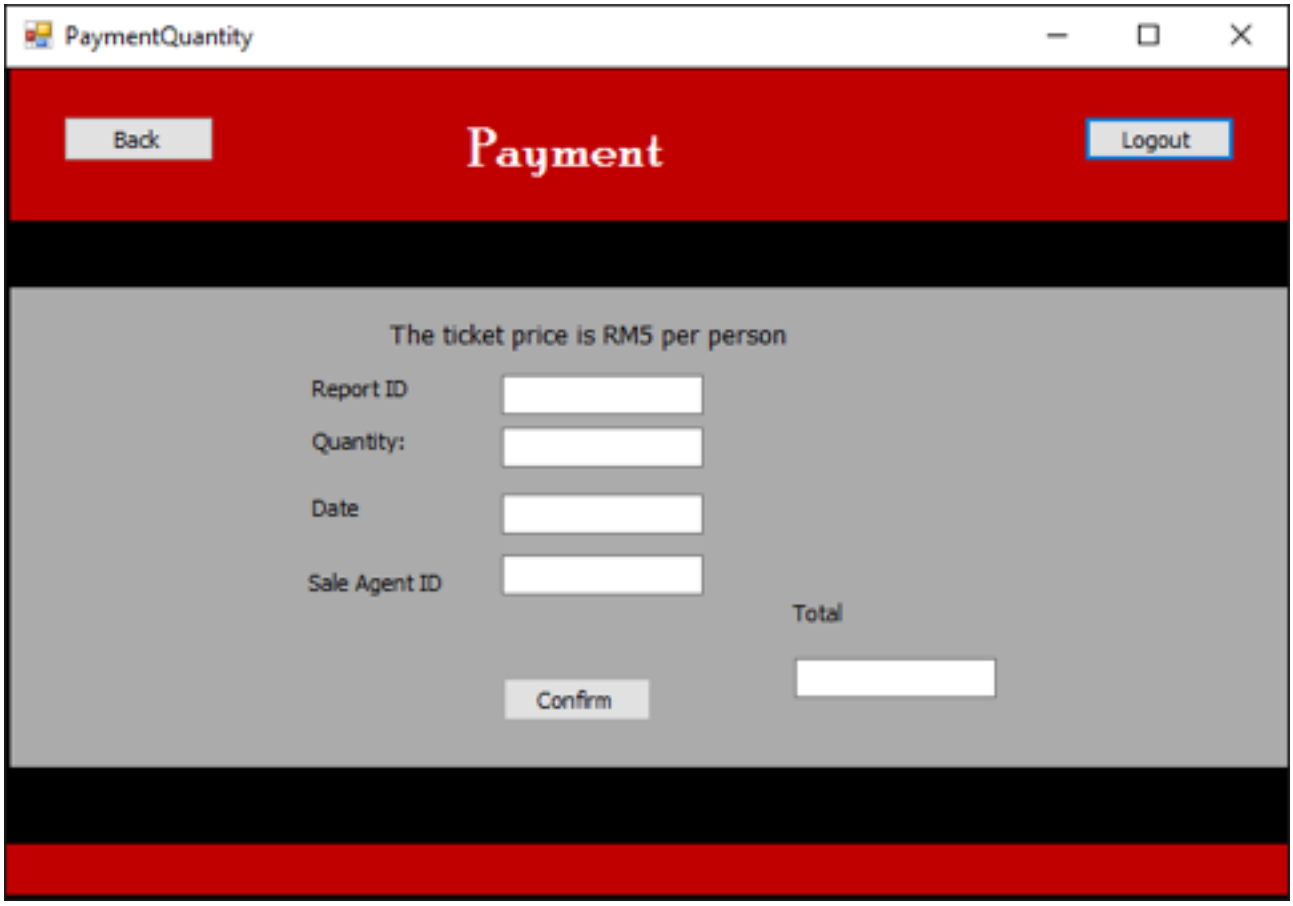

Edit Painting
Back
Edit Painting
Logout
Painting ID
Painting Name:
Creation Date:
Painter Name:
Date of Arrival:
Registrar ID:
Submit
Painting ID
Search


Delete Painting
Back
Delete Painting
Logout
Painting ID:
Name:
Creation Date:
Painter Name:
Date of Arrival:
Registrar ID:
Delete
Painting ID:
Search

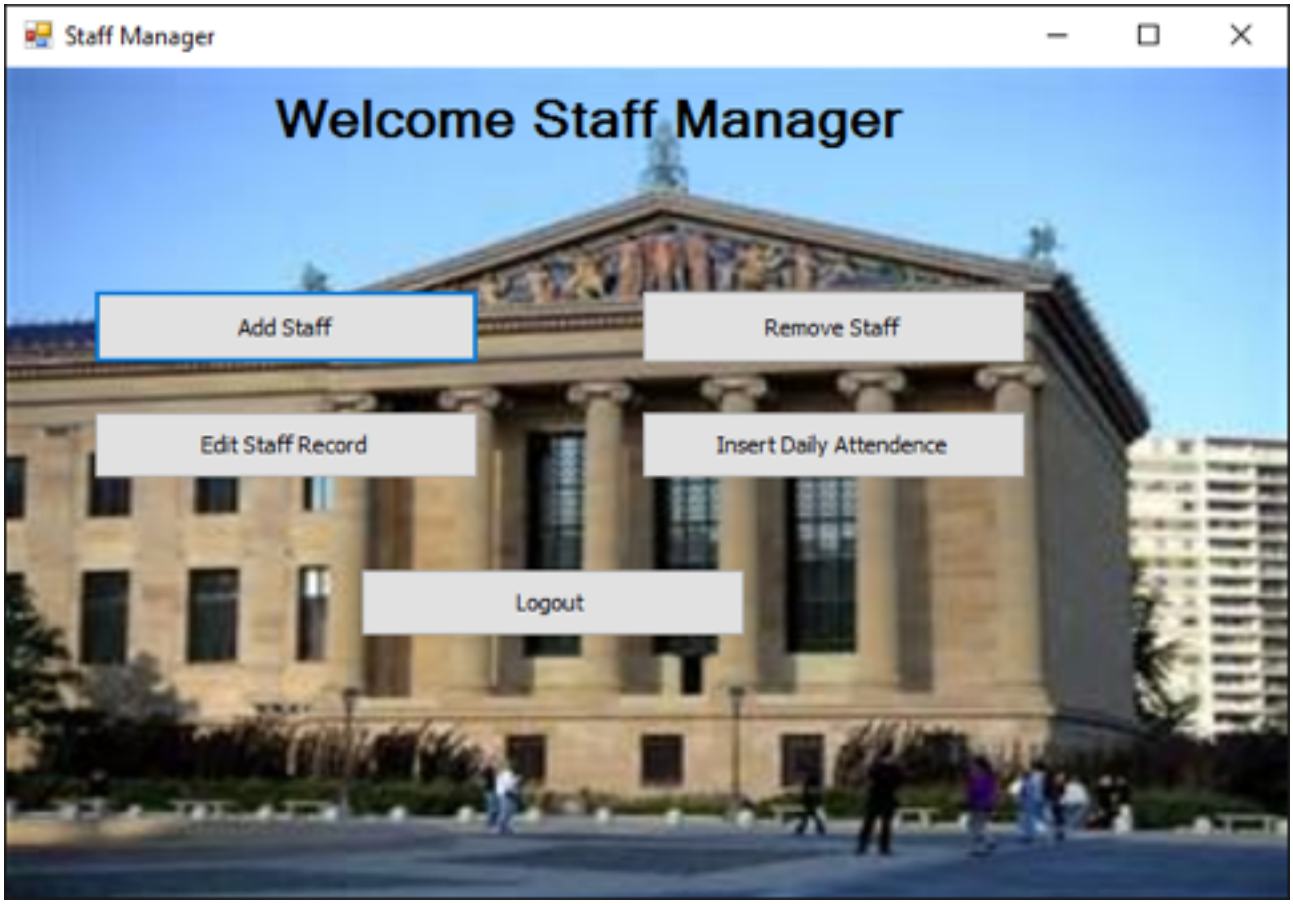

SalesReport
Back
Sales Report
Logout
Date:
Search

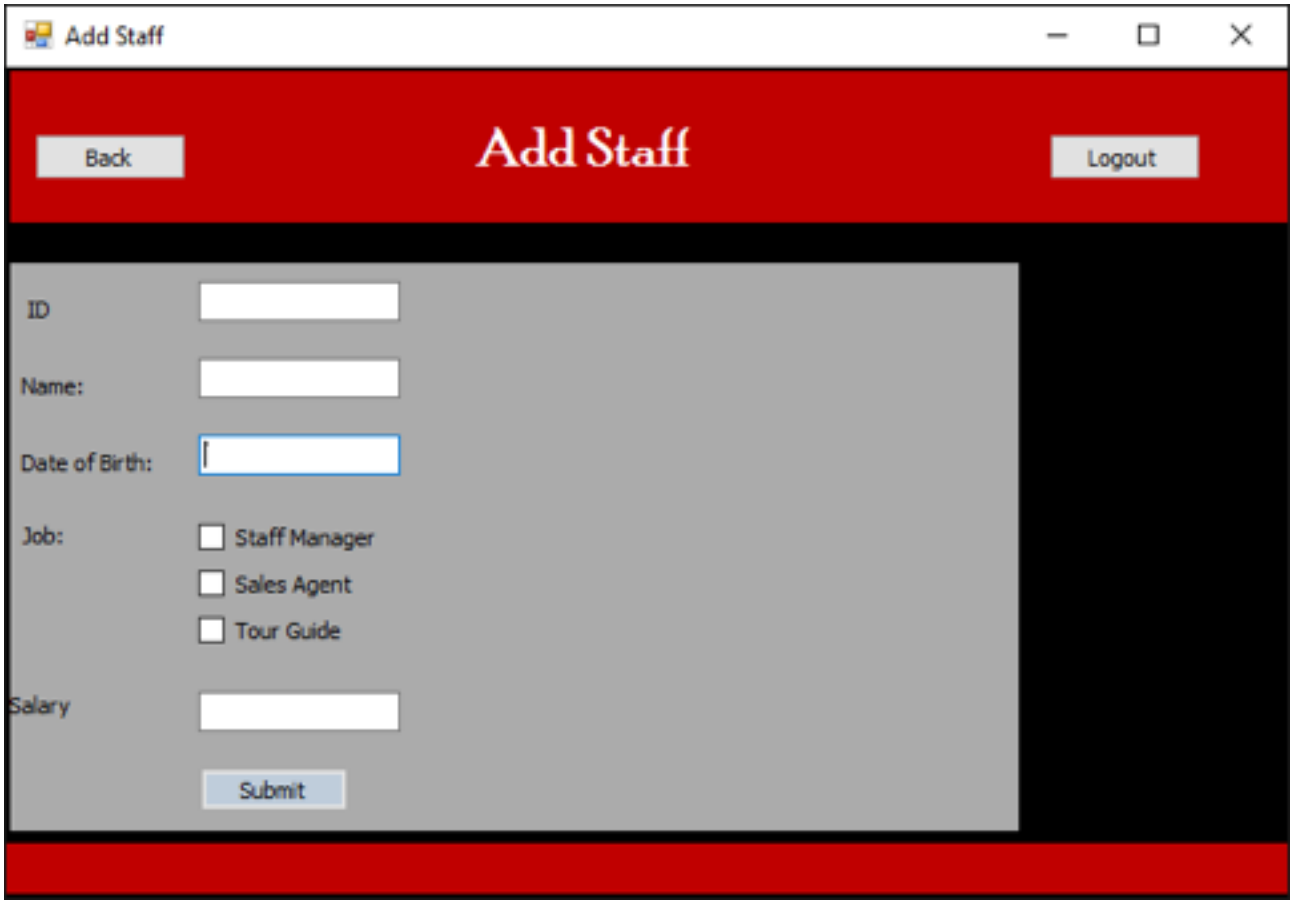
## 8.3. Sale Agent

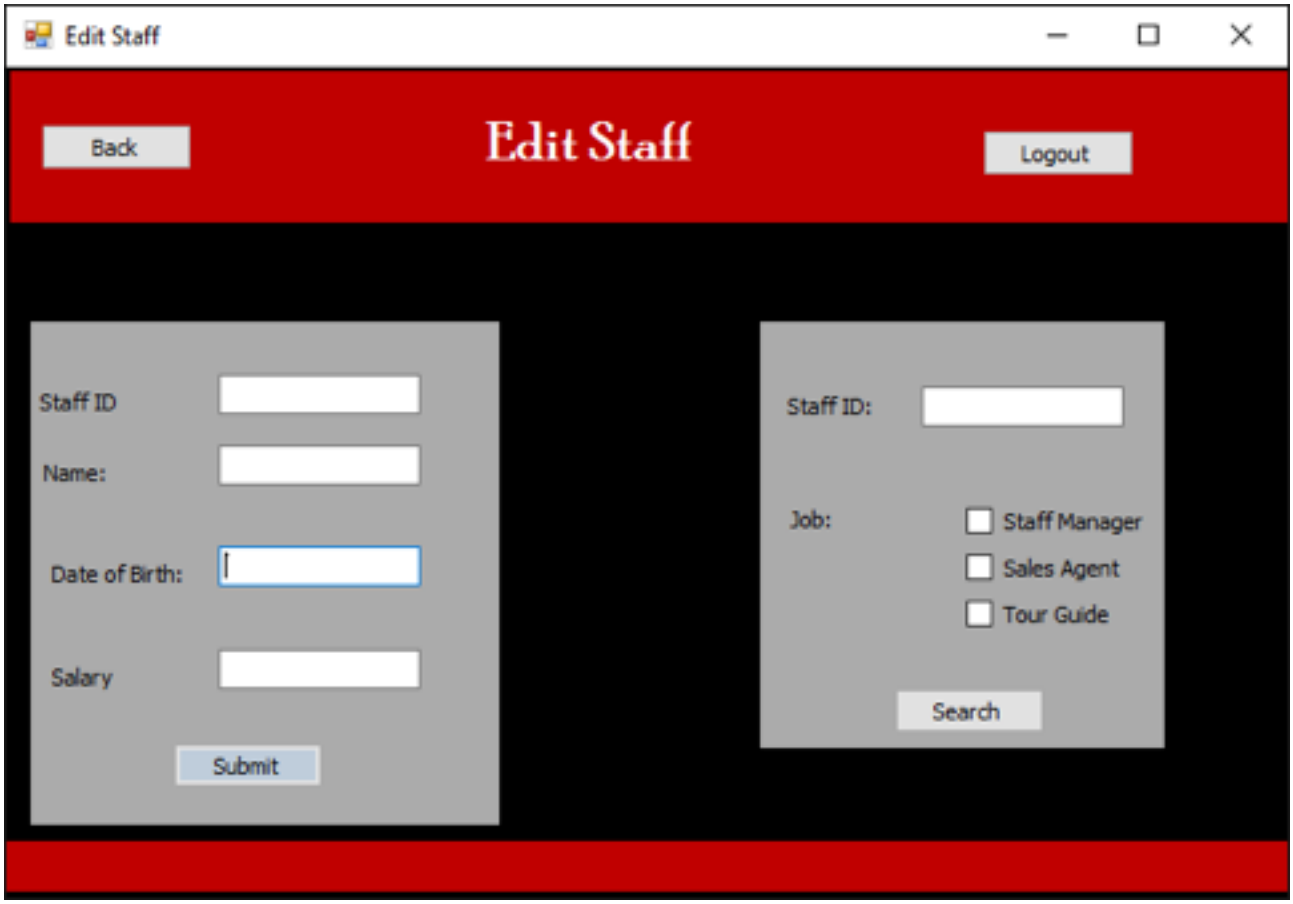


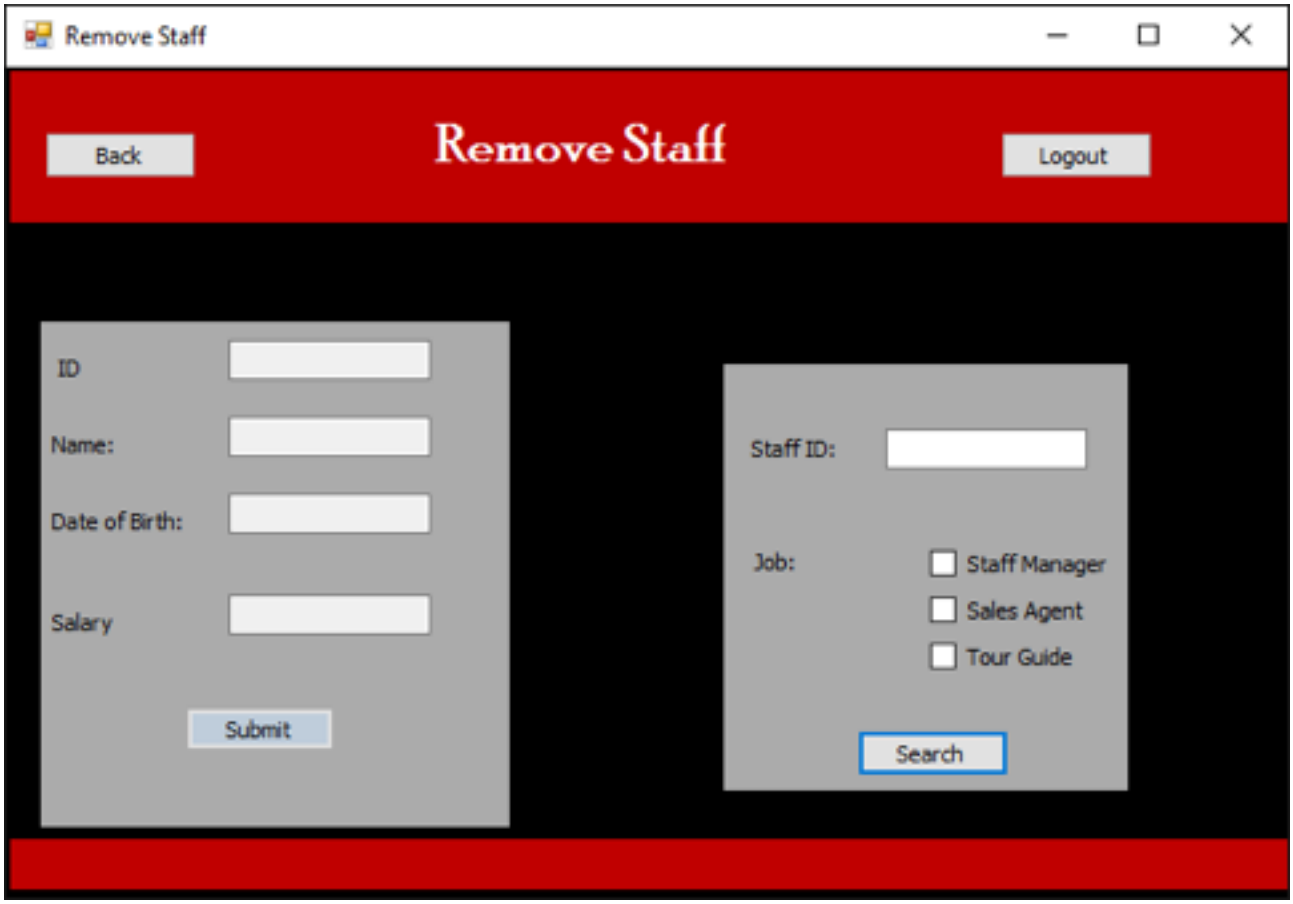

PaymentQuantity
Back
Payment
Logout
The ticket price is RM5 per person
Report ID
Quantity:
Date
Sale Agent ID
Total
Confirm

## 8.4. Staff Manager

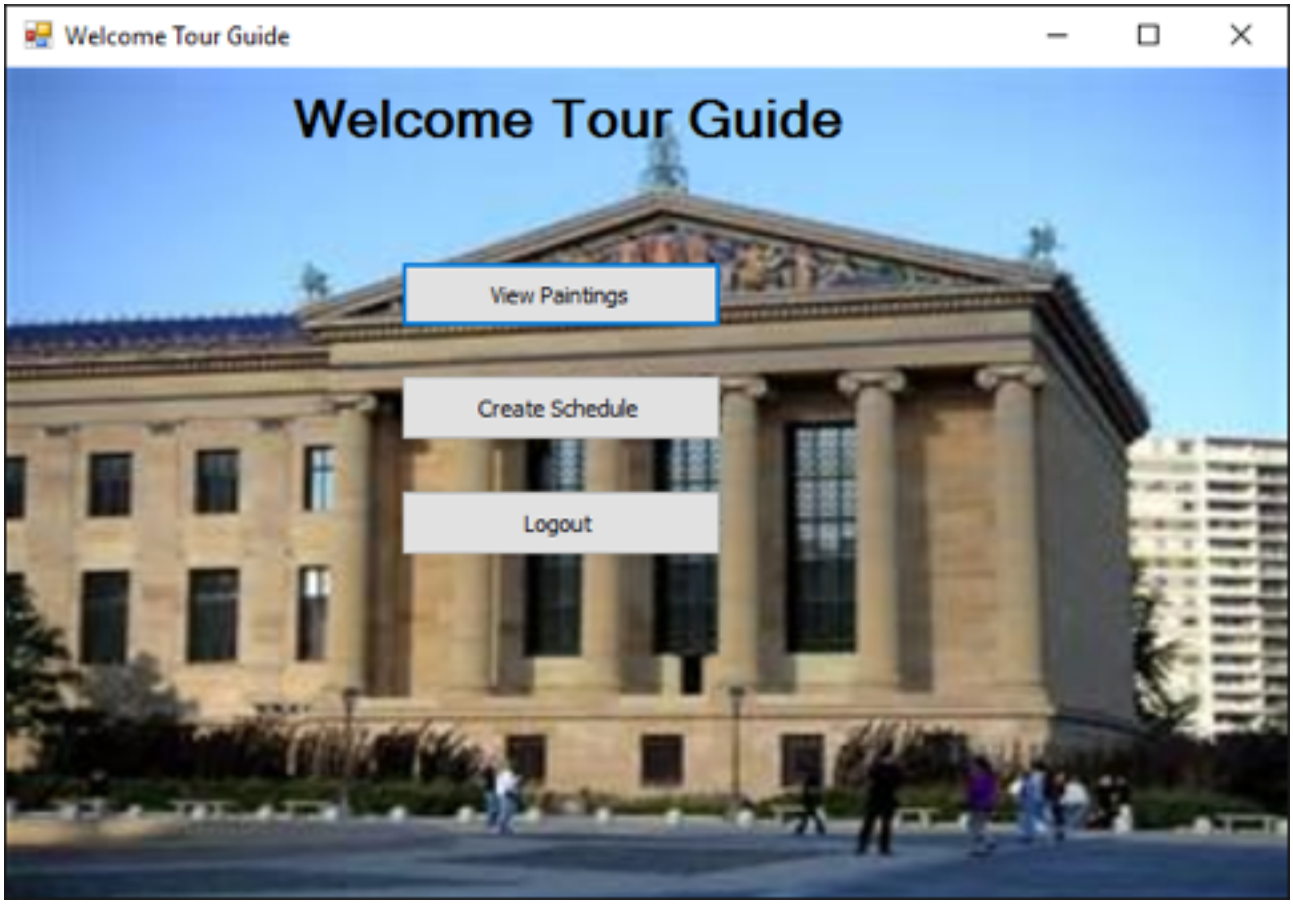


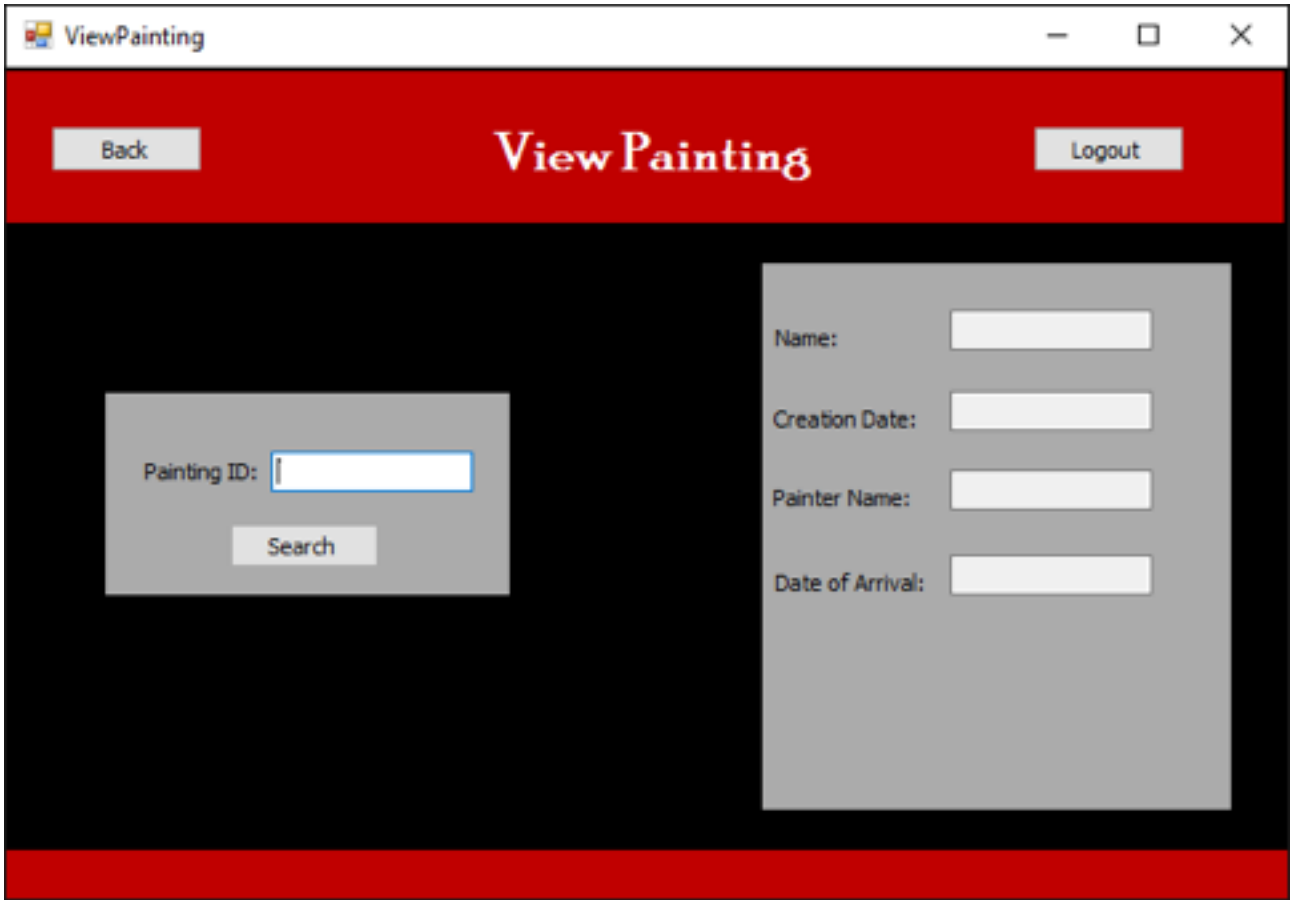

Add Staff
Back
Add Staff
Logout
ID
Name:
Date of Birth:
Job:
Staff Manager
Sales Agent
Tour Guide
Salary
Submit

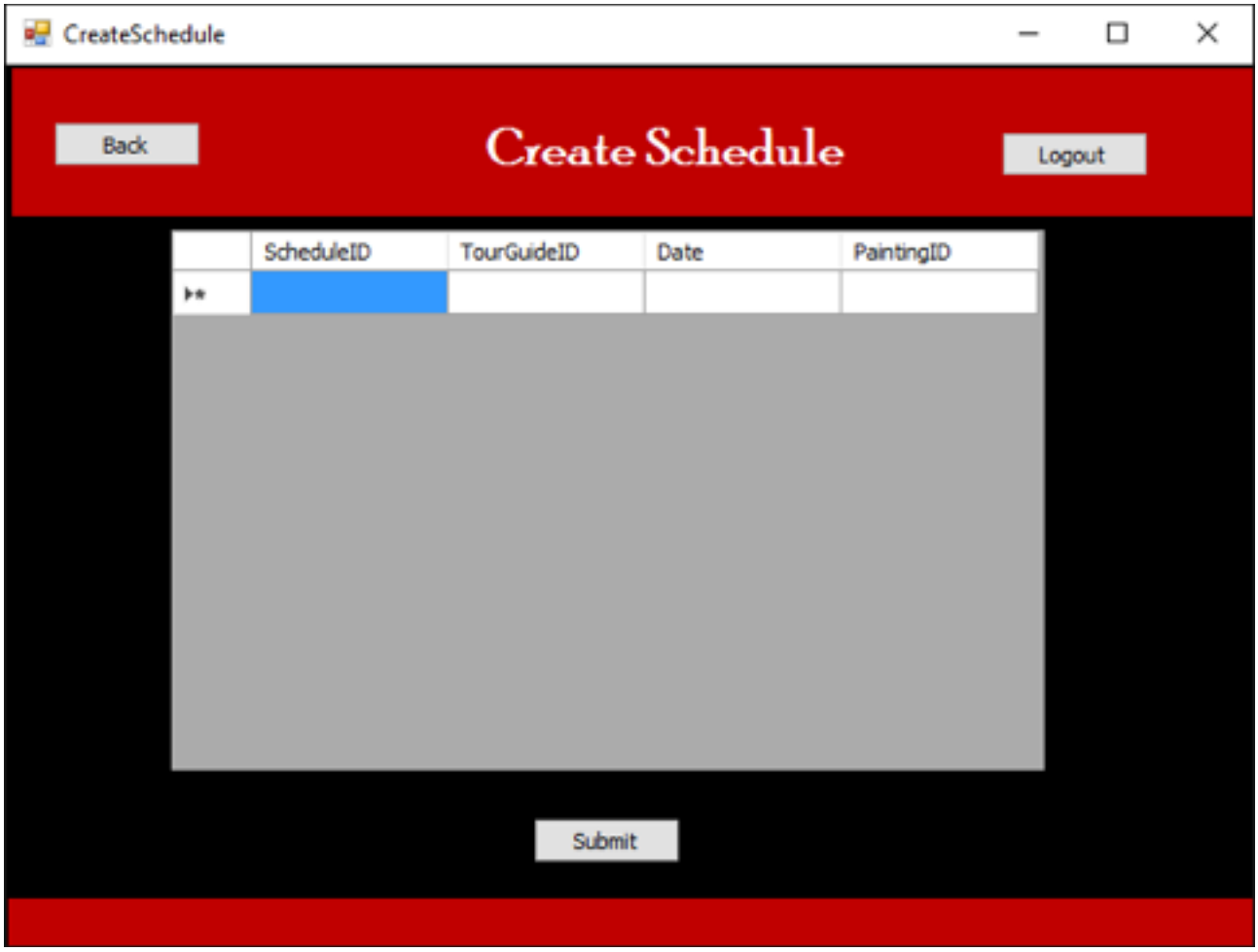

Edit Staff
Back
Edit Staff
Logout
Staff ID
Name:
Date of Birth:
Salary
Submit
Staff ID:
Job:
Staff Manager
Sales Agent
Tour Guide
Search


Remove Staff
Back
Remove Staff
Logout
ID
Name:
Date of Birth:
Salary
Submit
Staff ID:
Job:
Staff Manager
Sales Agent
Tour Guide
Search

## 8.5. Tour Guide



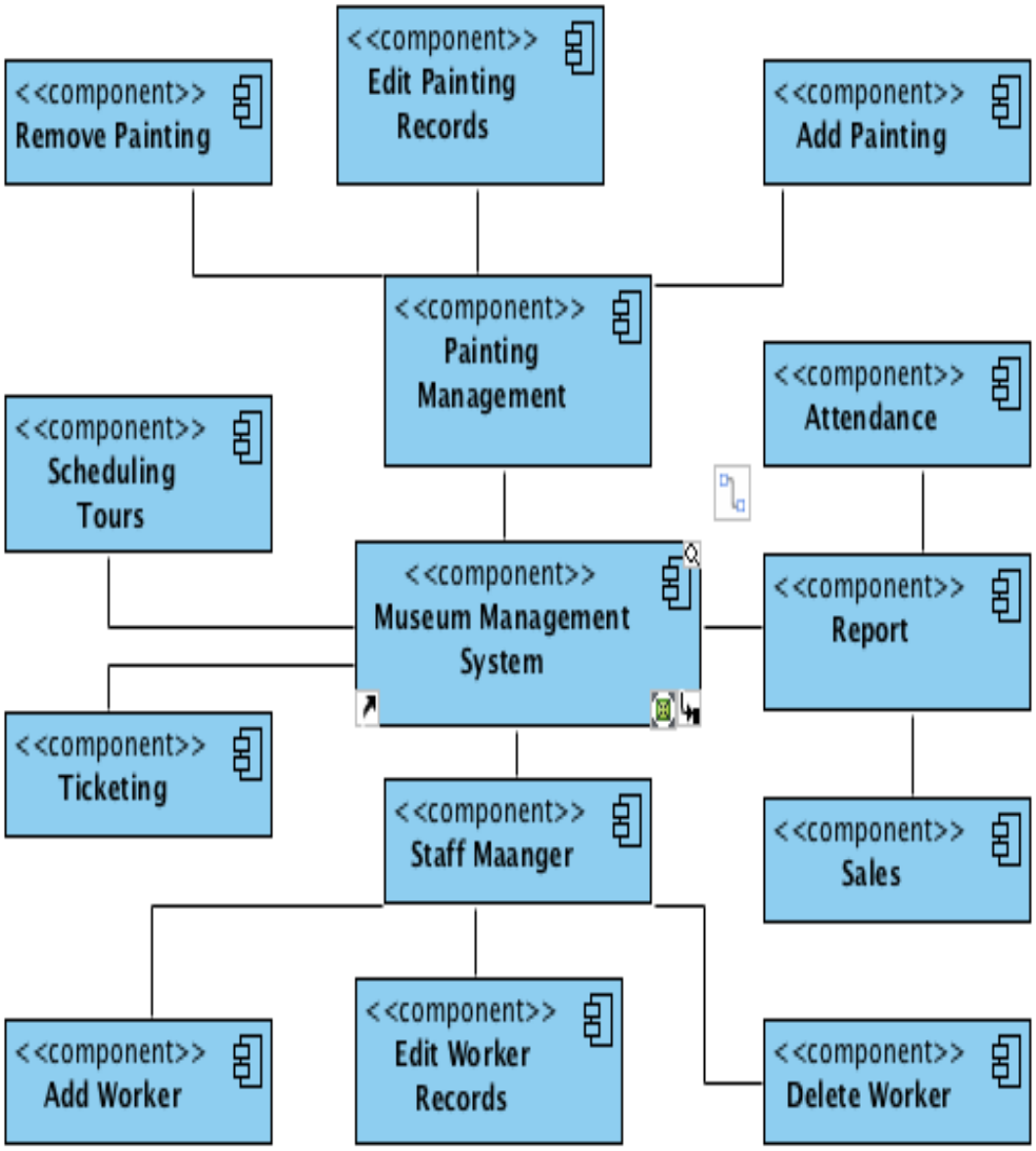

ViewPainting
Back
View Painting
Logout
Painting ID:
Search
Name:
Creation Date:
Painter Name:
Date of Arrival:


CreateSchedule
Back
Create Schedule
Logout
ScheduleID
TourGuideID
Date
PaintingID
Submit

# 9. Component Design

## 9.1. Main Components

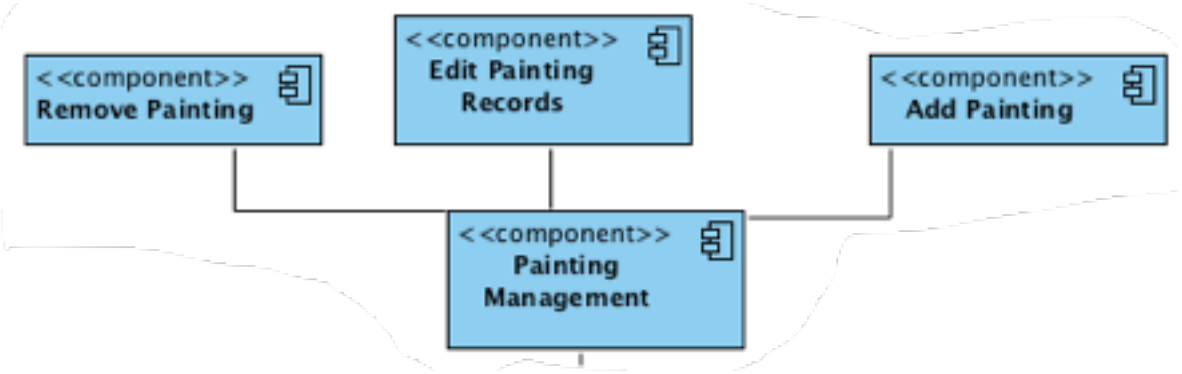
*The main components are the painting management system, report, staff manager(Staff management system), ticketing , and scheduling tours.*



### 9.1.1. Component 1

*The painting management system is responsible for manipulating painting's information.*
*Pseudocode:*

```
void addPainting(){
        enter the painting ID
        if the painting ID doesn't exist
                enter painting details
                add the painting details to the database
                print "Painting has been successfully added"

        else
                print"The painting already exists. Please try again"

}

void editPainting(){

        enter painting ID
        if the painting ID exists
                enter painting details
                print "Painting has been successfully edited"

        else
                print"The painting doesn't exist. Please try again"

}


void removePainting(){
        enter painting ID
        if the painting ID exists
                remove painting from the database
                print "Painting has been successfully removed"

        else
                print"The painting doesn't exist. Please try again"

}
```

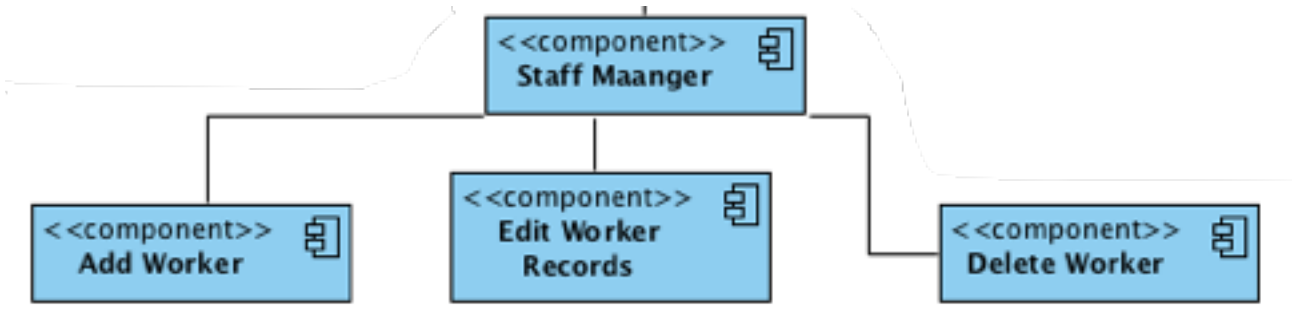



### 9.1.2. Component 2

*The staff management system is responsible for manipulating staff's information.*
*Pseudocode:*

```
void addStaff(){
        enter employee ID
        if the employee ID doesn't exist
                enter employee details
                add the employee details to the database
                print "Employee has been successfully added"

        else
                print"The employee already exists. Please try again"

}

void editStaff(){
        enter employee ID
        if the employee ID exists
                enter employee details
                print "Employee has been successfully edited"

        else
                print"The employee name doesn't exist. Please try again"

}


void removeStaff(){
        enter employee ID
```

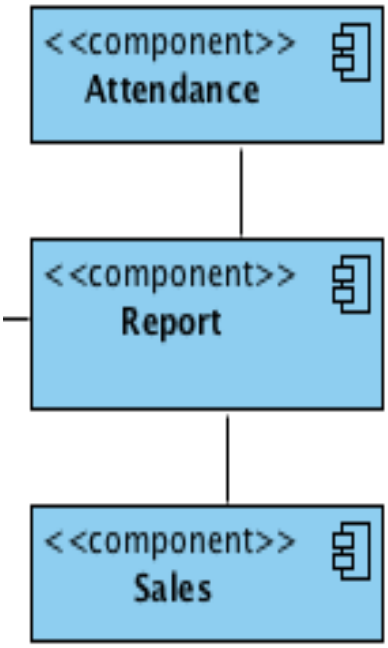
```
        if the employee ID exists
                remove employee from the database
                print “Employee has been successfully removed”

        else
                print”The employee doesn’t exist. Please try again”

}
```




### 9.1.3. Component 3

*The report management system is responsible for managing attendance and sales report.*
*Pseudocode:*

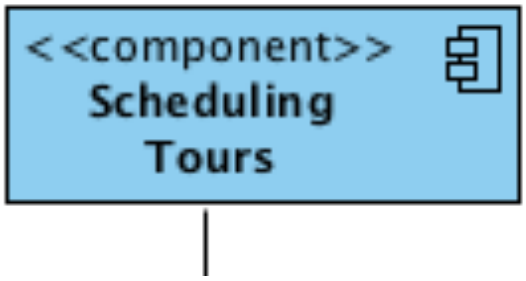
```
void showSalesReport(){
        show ticketID
        show SalesAgentID
}

void showAttendanceReport(){
        show name
        show month
        show ID
        show Percentage
}
```




### 9.1.4. Component 4

*This component is for creating scheduling tours.*
*Pseudocode:*

```
void createSchedule(){
        enter ScheduleID
        enter TourGuideID
        enter date
        enter PaintingID
}
```



### 9.1.5. Component 5

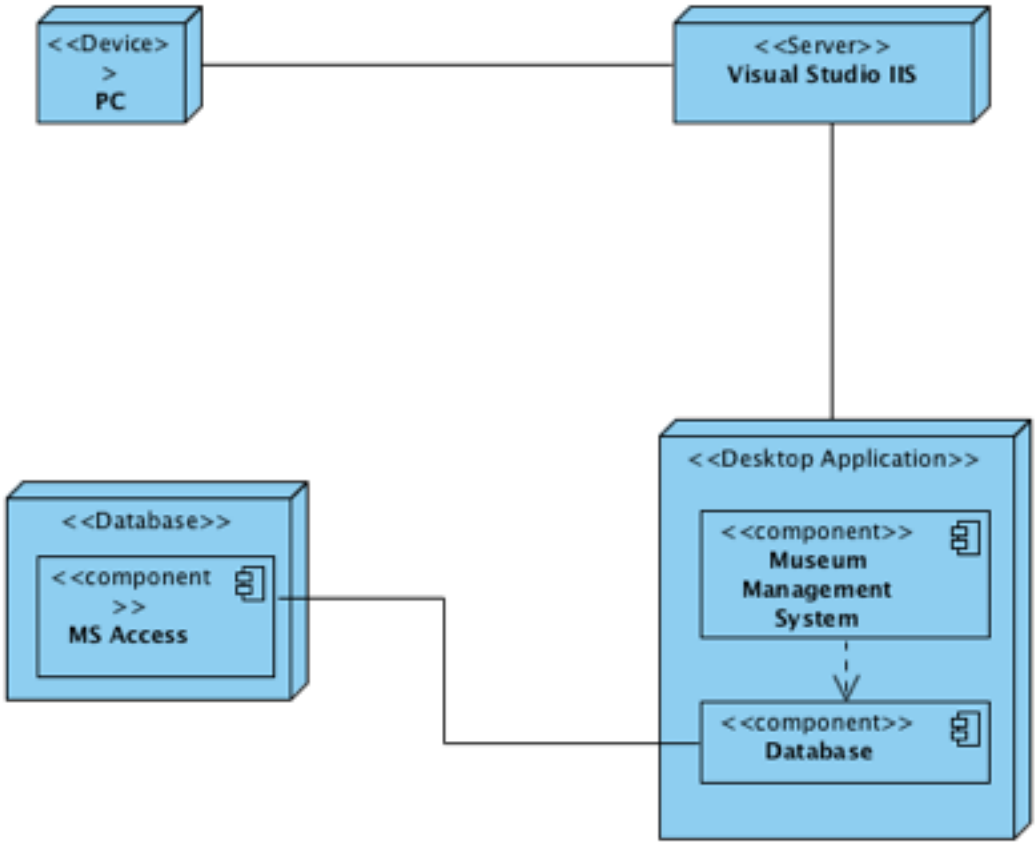
*This component is for selling tickets to the public.*
*Pseudocode:*

```
void buyTicket(){
        enter number of tickets
        enter cash or credit card
        if cash
                wait for sales agent to confirm payment
        else
                if credit card payment is successful
                        print"Payment is successful"
                else
                        print "Payment is unsuccessful. Please try again."


}
```

# 10. Deployment Design

## 10.1.Deployment Diagram

*The application will be deployed on a PC which will be used on the Visual Studio IIS server. The server will hold the management system, which will use the Microsoft Access database as its source of data.*



# 11. Test Data

## 11.1.Test Data Set 1

*Registrar table specifies that there can be only one Registrar in the table holding the id '222', as there can be only one registrar responsible for the care of the paintings.*

| RegistrarID | RName | Date of Birtl | Salary |
|---|---|---|---|
| 222 | Ahmad | 10/10/1990 | 20 |

## 11.2.Test Data Set 2

Staff Manager table specifies that the painting id must be between the ranges of 333333330-333333339. Also all attributes must exist in order to add a record.

| SMID | DateofBirth | Salary | STName |
|---|---|---|---|
| 333333330 | 02/02/1992 | 90000 | Jack |
| 333333331 | 10/10/1982 | 10000 | Khaled |
| 333333332 | 02/02/1980 | 20123 | Ali |
| 333333333 | 15/04/1988 | 15000 | Abu |
| 333333334 | 05/09/1970 | 35000 | Edward |
| 333333335 | 26/11/1976 | 25000 | Frank |

## 11.3.Test Data Set 3

*Sale Agent table specifies that the painting id must be between the ranges of 444444440-444444449. Also all attributes must exist in order to add a record.*

| SalesID | SName | DateofBirth | Salary |
|---|---|---|---|
| 444444440 | ahmad | 10/10/2010 | 3000 |
| 444444441 | Ali | 08/07/1993 | 2000 |
| 444444442 | Mahmoud | 02/02/1992 | 900 |
| 444444443 | John | 04/03/1990 | 2100 |
| 444444444 | Sarah | 07/11/1993 | 3400 |
| 444444445 | Lisa | 03/12/1990 | 1500 |
| 444444446 | Julia | 05/29/1991 | 3890 |

## 11.4.Test Data Set 4

Tour Guide specifies that the painting id must be between the ranges of 555555550-555555559. Also all attributes must exist in order to add a record.

| TGID | TGName | DateofBirth | Salary |
|---|---|---|---|
| 555555550 | Jennifer | 05/05/1994 | 1000 |
| 555555551 | Selena | 27/02/1995 | 900 |
| 555555552 | Lopez | 10/03/1993 | 800 |
| 555555553 | Christina | 21/12/1992 | 780 |
| 555555554 | Amanda | 24/10/1989 | 1200 |
| 555555555 | Angelina | 03/07/1991 | 850 |

## 11.5.Test Data Set 5

Ticket table specifies that the painting id must be between the ranges of 666666660-6666666669. Also all attributes must exist in order to add a record.

| TicketID | Ticket Price | SDate | SalesID |
|---|---|---|---|
| 666666660 | 20 | 20/20/2016 | 444444441 |
| 666666661 | 40 | 21/20/2016 | 444444440 |
| 666666662 | 35 | 21/20/2016 | 444444444 |
| 666666663 | 10 | 22/10/2016 | 444444442 |
| 666666664 | 5 | 23/10/2016 | 444444443 |

## 11.6.Test Data Set 6

Sales Report table specifies that the painting id must be between the ranges of 222222220-222222229. Also all attributes must exist in order to add a record.

| SAReportID | SADate | Quantity | Price | SalesID |
|---|---|---|---|---|
| 222222220 | 02/02/2012 | 10 | 50 | 444444440 |
| 222222221 | 12/02/2012 | 10 | 50 | 444444440 |
| 222222222 | 05/04/2011 | 10 | 50 | 444444440 |
| 222222223 | 10/02/2012 | 7 | 35 | 444444440 |
| 222222224 | 10/02/2011 | 5 | 25 | 444444440 |
| 222222225 | 10/04/2011 | 10 | 50 | 444444440 |
| 222222226 | 08/02/2011 | 3 | 15 | 444444440 |
| 222222227 | 10/05/2011 | 4 | 20 | 444444440 |
| 222222228 | 06/06/2016 | 4 | 20 | 444444444 |

## 11.7.Test Data Set 7

Painting table specifies that the painting id must be between the ranges of 11111110-111111119. Also all attributes must exist in order to add a record.

| PaintingID | PName | CreationDate | PainterName | DateofArrival | RegistrarID |
|---|---|---|---|---|---|
| 111111110 | The Scream | 02/03/1992 | Edvard Munch | 04/05/1931 | 222 |
| 111111111 | Monalisa | 15/10/1902 | Leonardo DaVinci | 30/01/1920 | 222 |
| 111111112 | The Last Suppe | 04/11/1900 | Malek | 02/03/1915 | 222 |
| 111111113 | Starry Night | 01/01/1904 | Van Gogh | 01/01/1907 | 222 |
| 111111114 | The Kiss | 27/06/1931 | Gustav Klimit | 04/07/1932 | 222 |

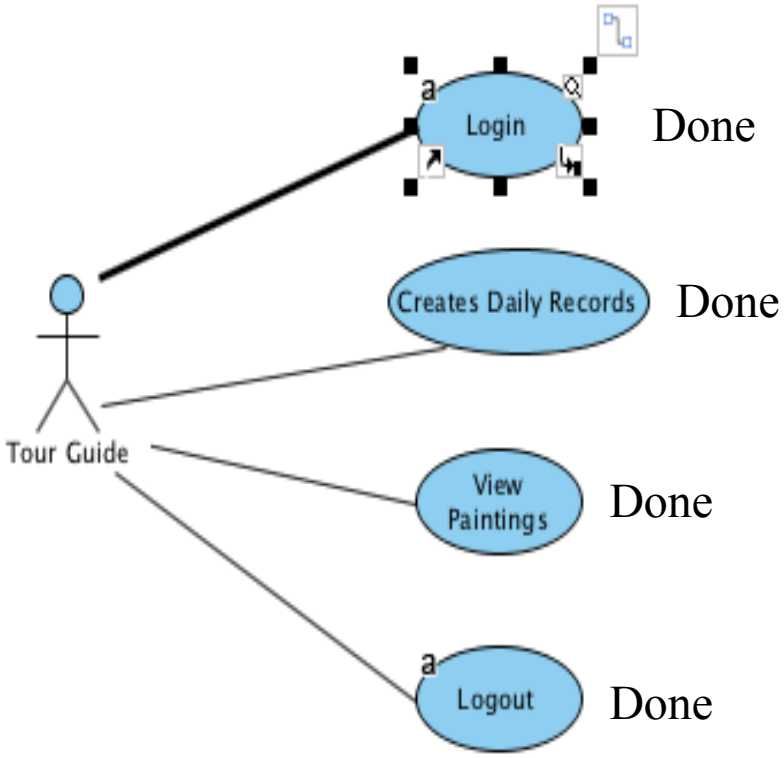
## 11.8.Test Data Set 8

Attendance Report Table

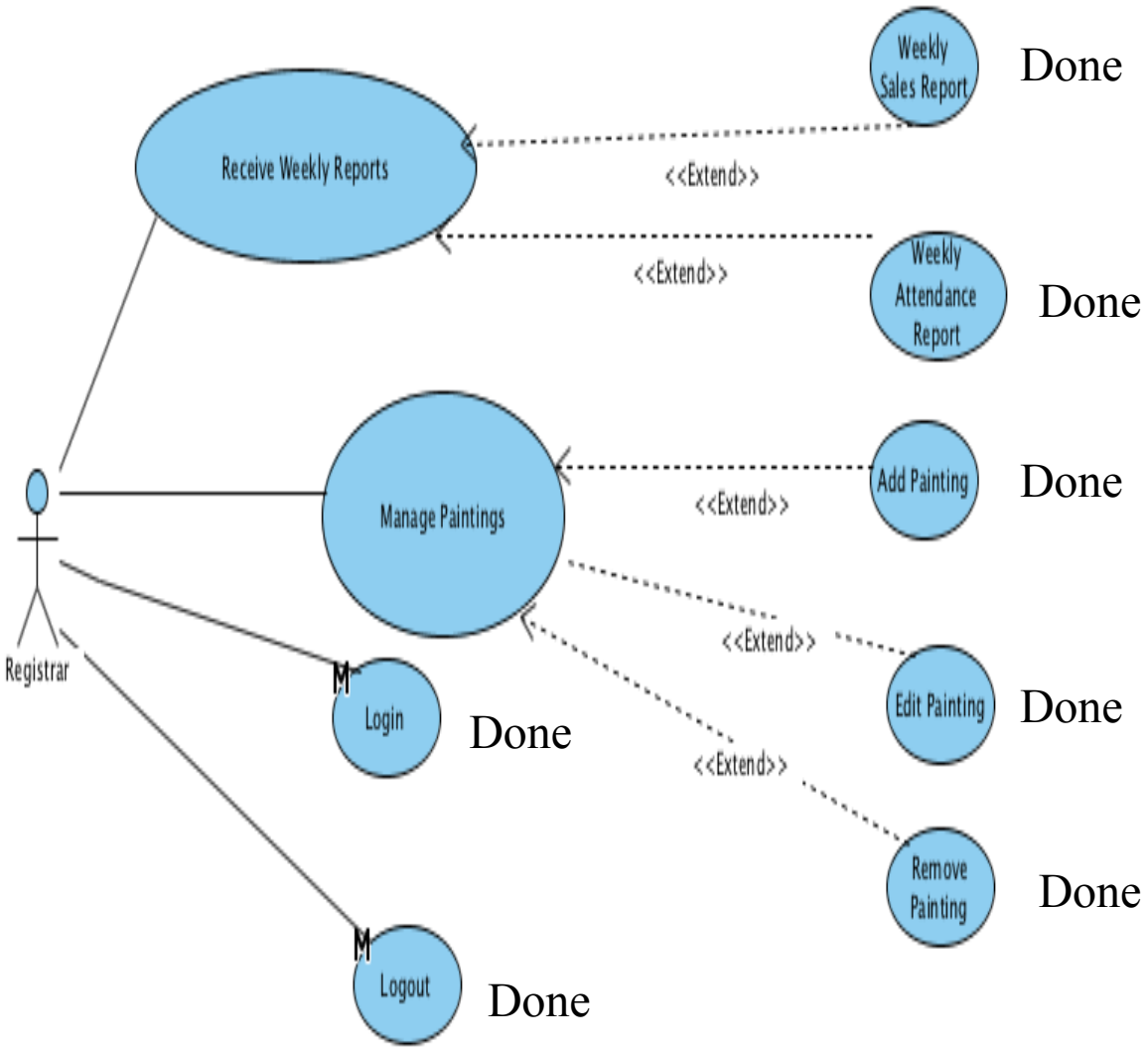
| ATReportID | ATDate | SMID | RegistrarID | ATName | TGID | SalesID | Attended_ |
|---|---|---|---|---|---|---|---|
| 8881 | 07/04/2016 | 333333331 | 222 | James | | | |
| 8888 | 06/04/2016 | 333333330 | | Khaled | | | Y |

# 12. Acceptance Test

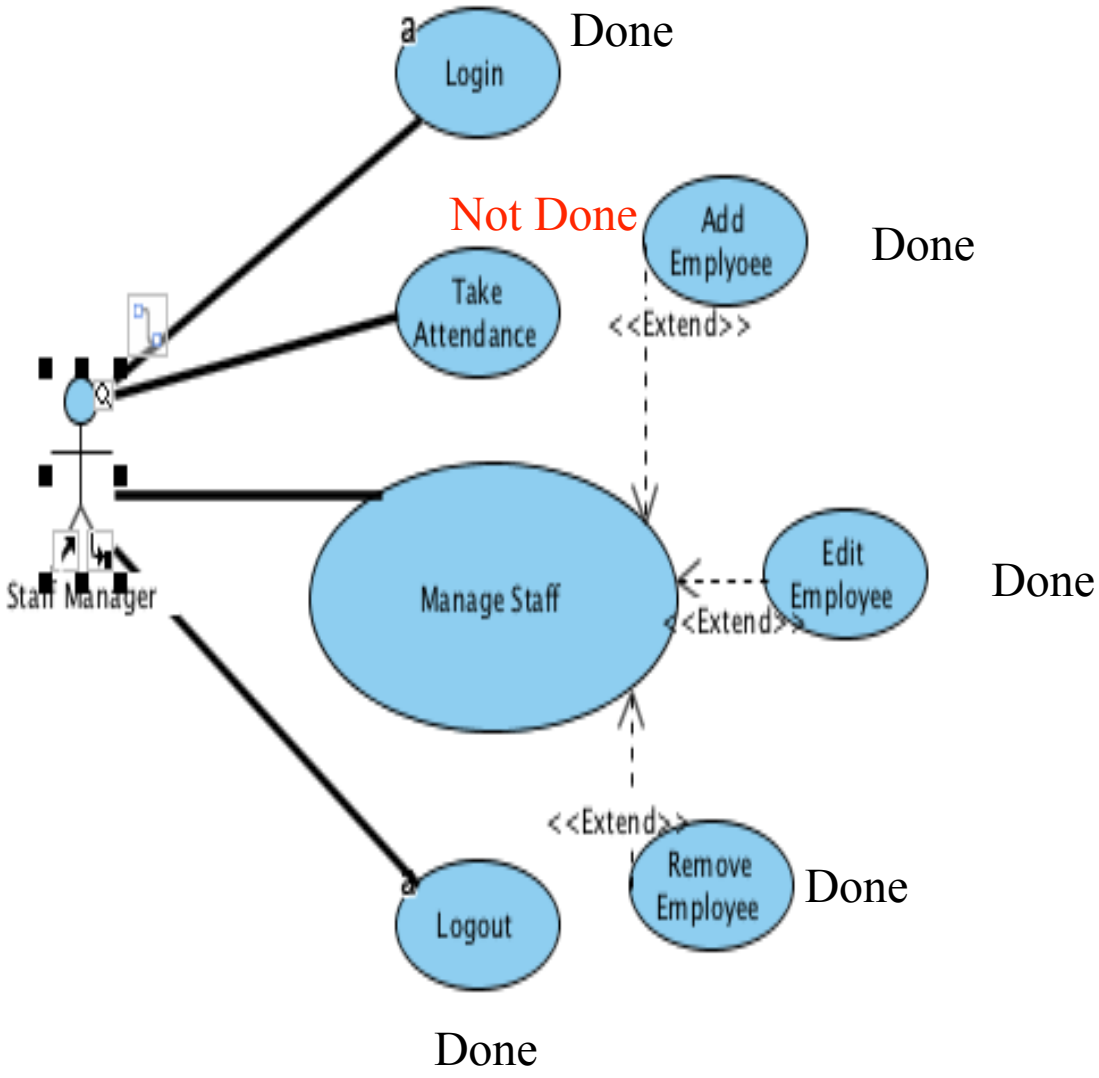
## 12.1.Acceptance Test 1



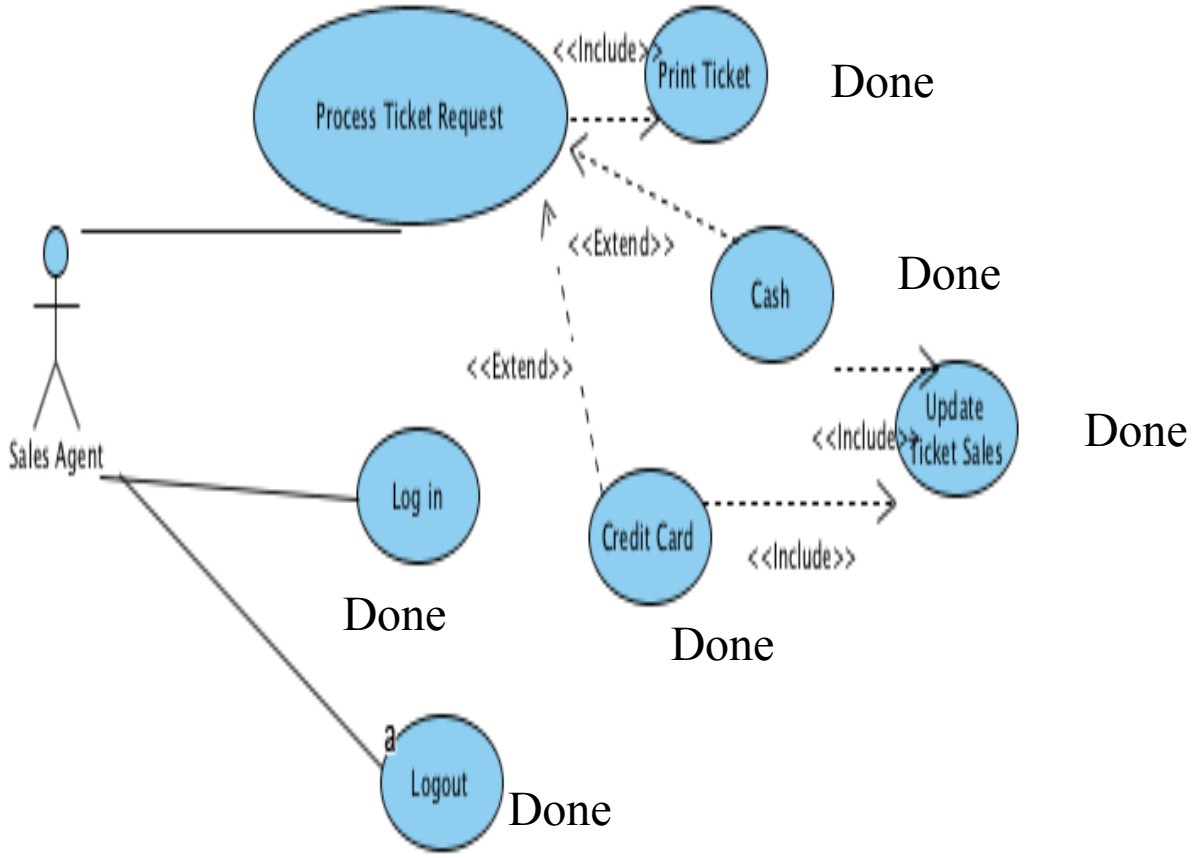
## 12.2.Acceptance Test 2



## 12.3.Acceptance Test 3

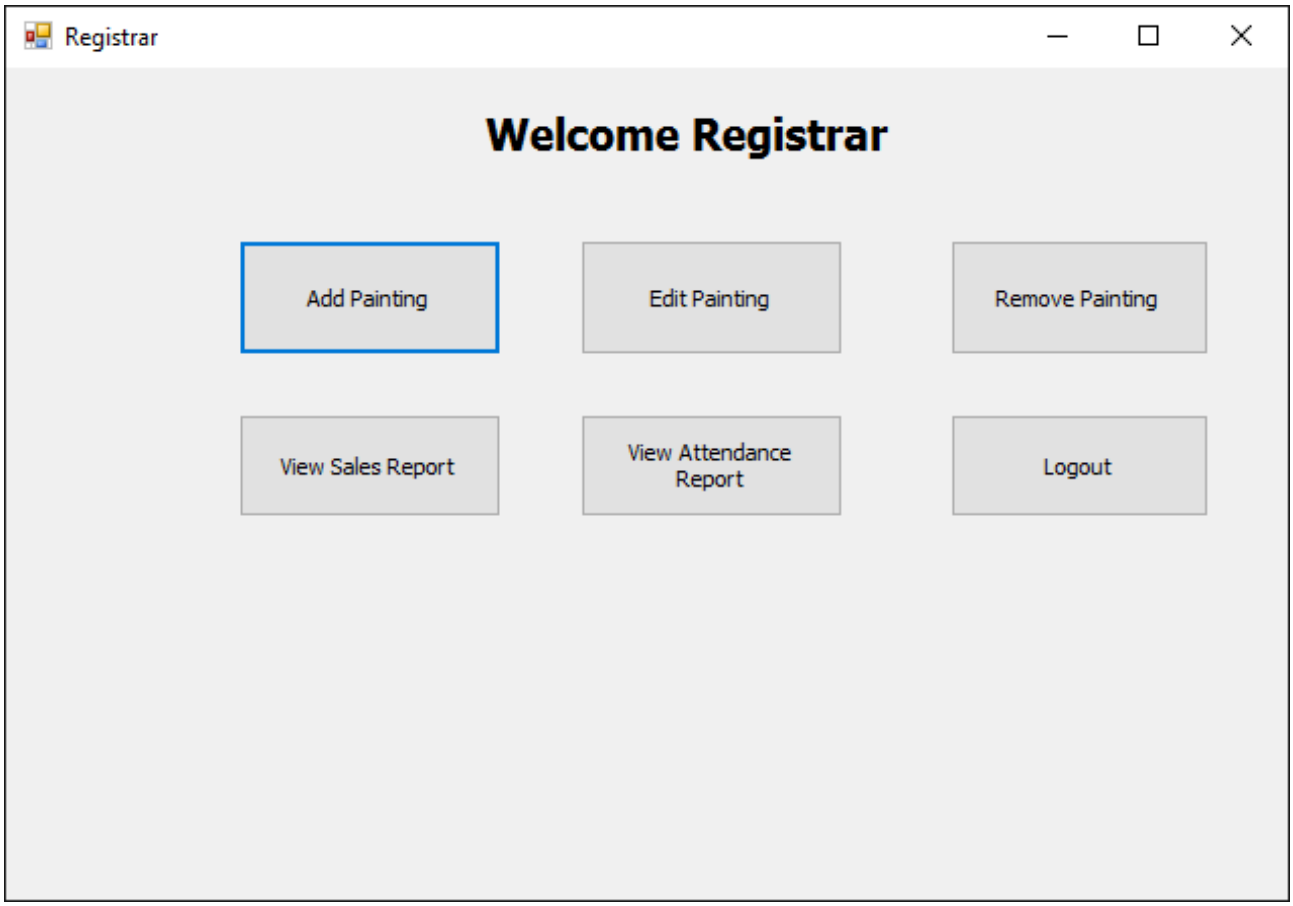


## 12.4.Acceptance Test 4



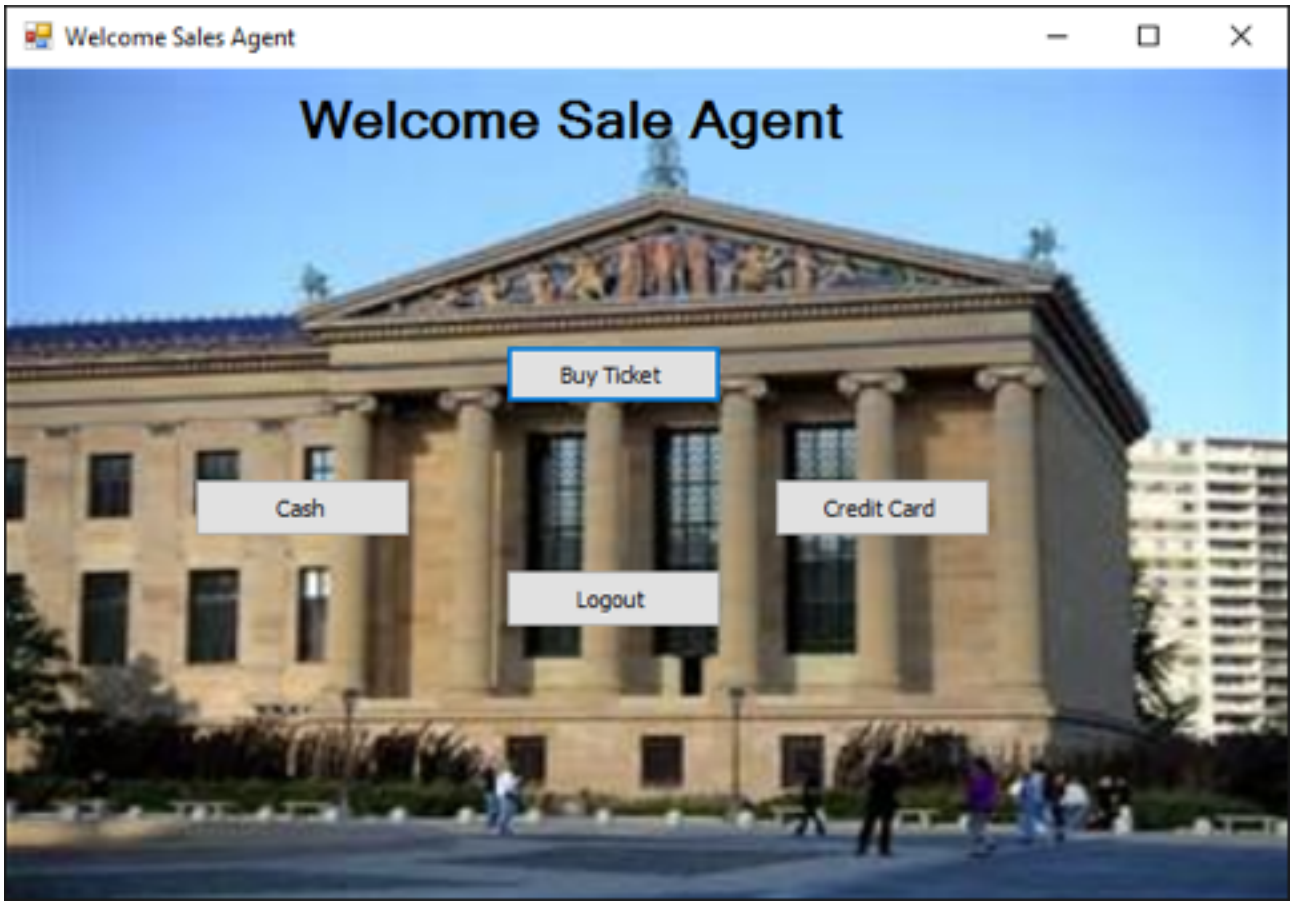
# 13. Sample Screens

## 13.1.Registrar



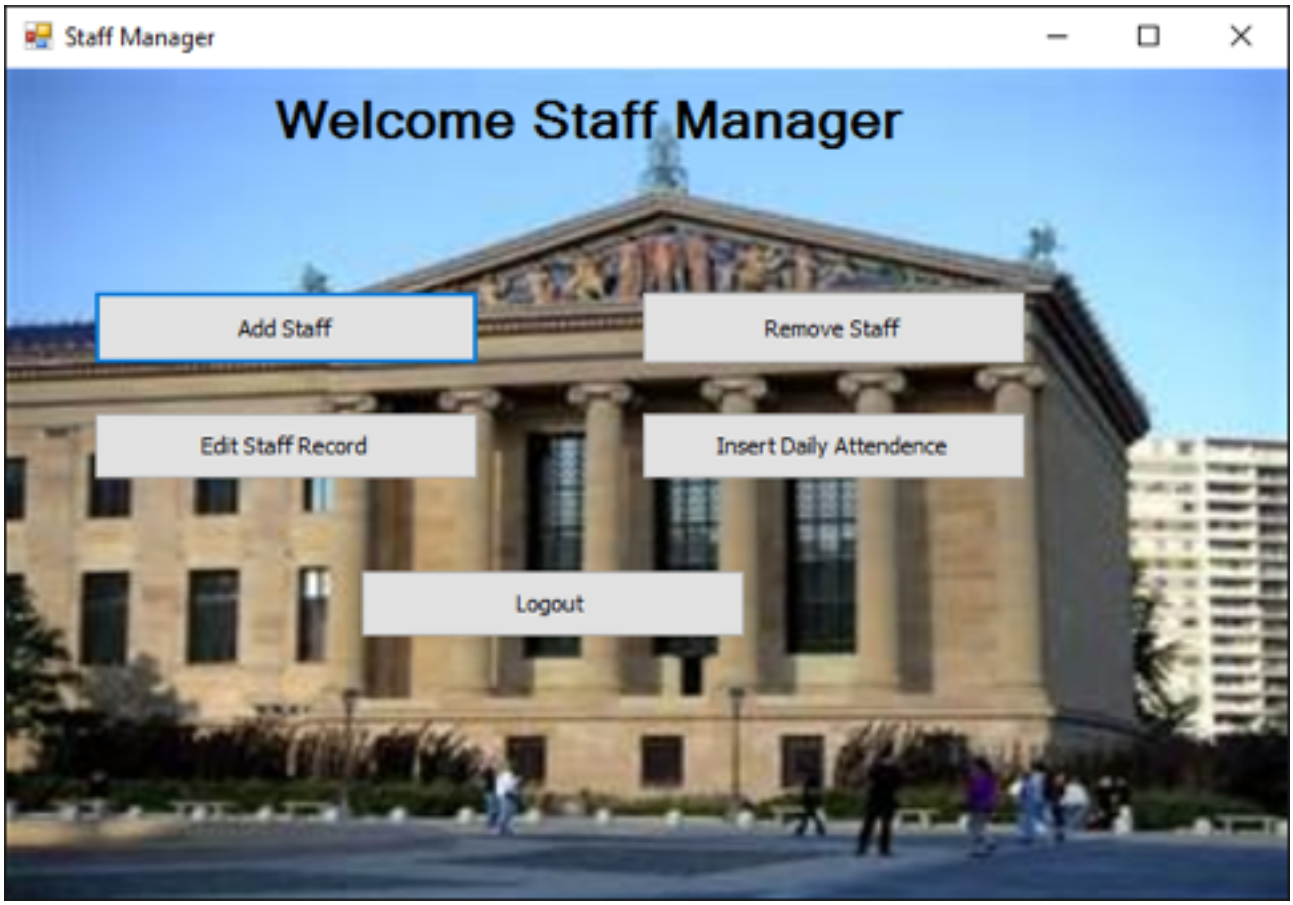

When the registrar signs in, the above window appears, which allows him to manage paintings that are in the database, or add new ones. Also he can view the sales report, or the attendance report.

## 13.2.Sales Agent



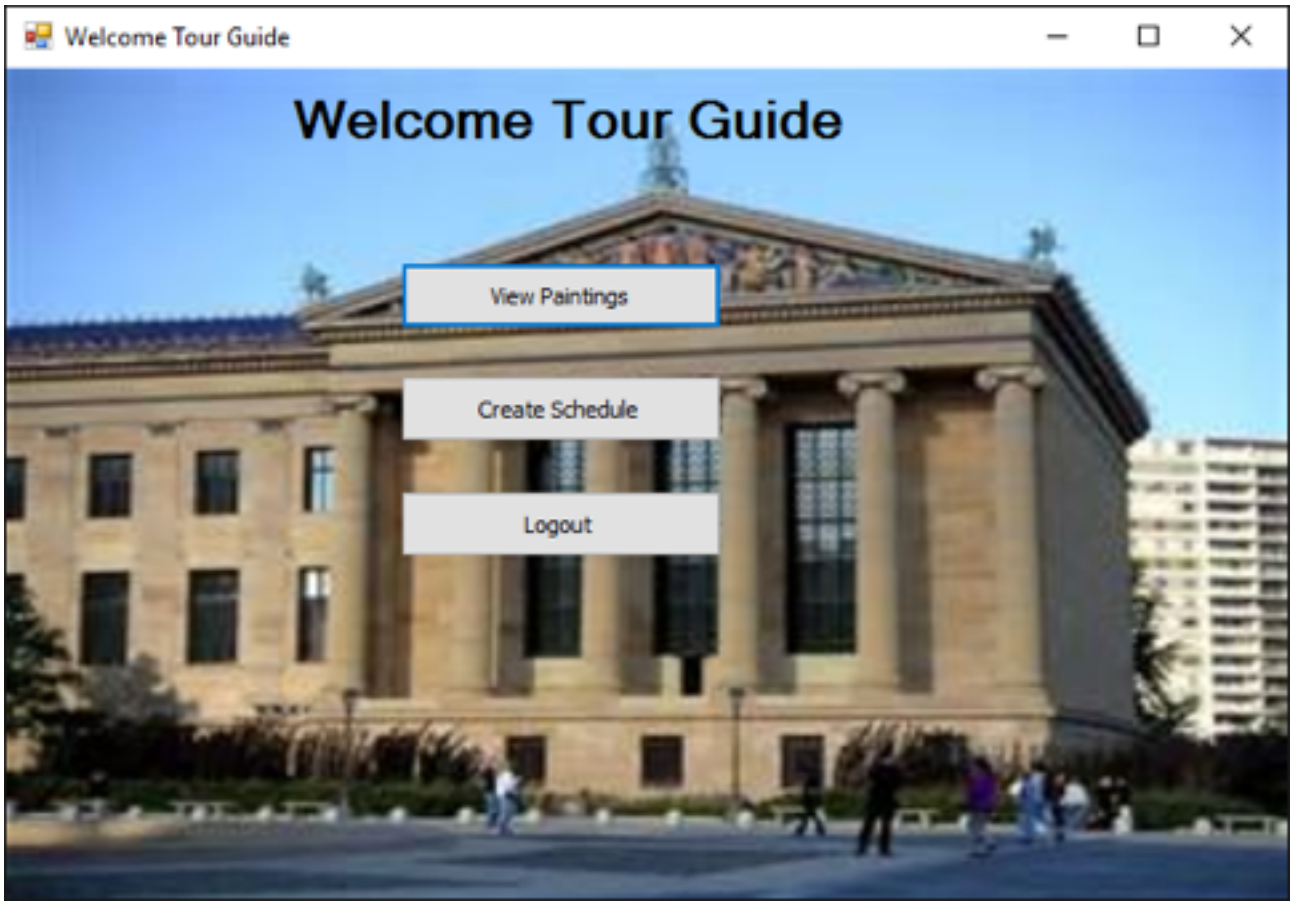

When the sales agent signs in, the window shown above appears, which allows him to process the ticket payments, either in cash or credit card.

## 13.3.Staff Manager




When the staff manager signs in, the window shown above appears, which allows him to manage the staff in the system, and manage their attendance.

## 13.4.Tour Guide




When the tour guide signs in, the window shown above appears. This window enables the tour guide to access paintings, and create schedules.

# 14. Conclusion

## 14.1.Summary of Results

In conclusion the Museum Management System is a software that allows the users to manipulate data of paintings in the museum, and the staff that work in it. The system can be used by the Registrar, who is responsible for managing the Paintings in the museum and viewing reports. Next is the staff manager, who is responsible for managing the staff who are working in the museum. Next is the sales agent, who is responsible for selling tickets, and preparing the sales report.Finally is the tour guide, who is responsible for viewing painting information, and creating schedules. All in all, the system did almost everything that was stated in the requirements except a few ones.

## 14.2.Problems Encountered

Of the problems we have faced, dealing with information within tables was the hardest. We had issues with reading information from a table into the museum's database. Other problems were problems regarding constraints with our information, where some of our information was sensitive that it had to be put within limits for the user to adhere to.

## 14.3.Limitations and Future Enhancements

*The software has performed almost all of the requirements presented. However, it was unable to transfer data from the tables in the system to the museum's database. That will be worked on and improved in the future. Also the system didn't have high portability. This will be enhanced in the future to allow its use on multiple platforms.*

# 15. User Guide

*<This section is **Optional**. Write a user guide on how to use the system and place it here.>*