Project Deliverable-04

Votix

In partial
fulfillment of the requirements
for the course of

FA2024-CS3004
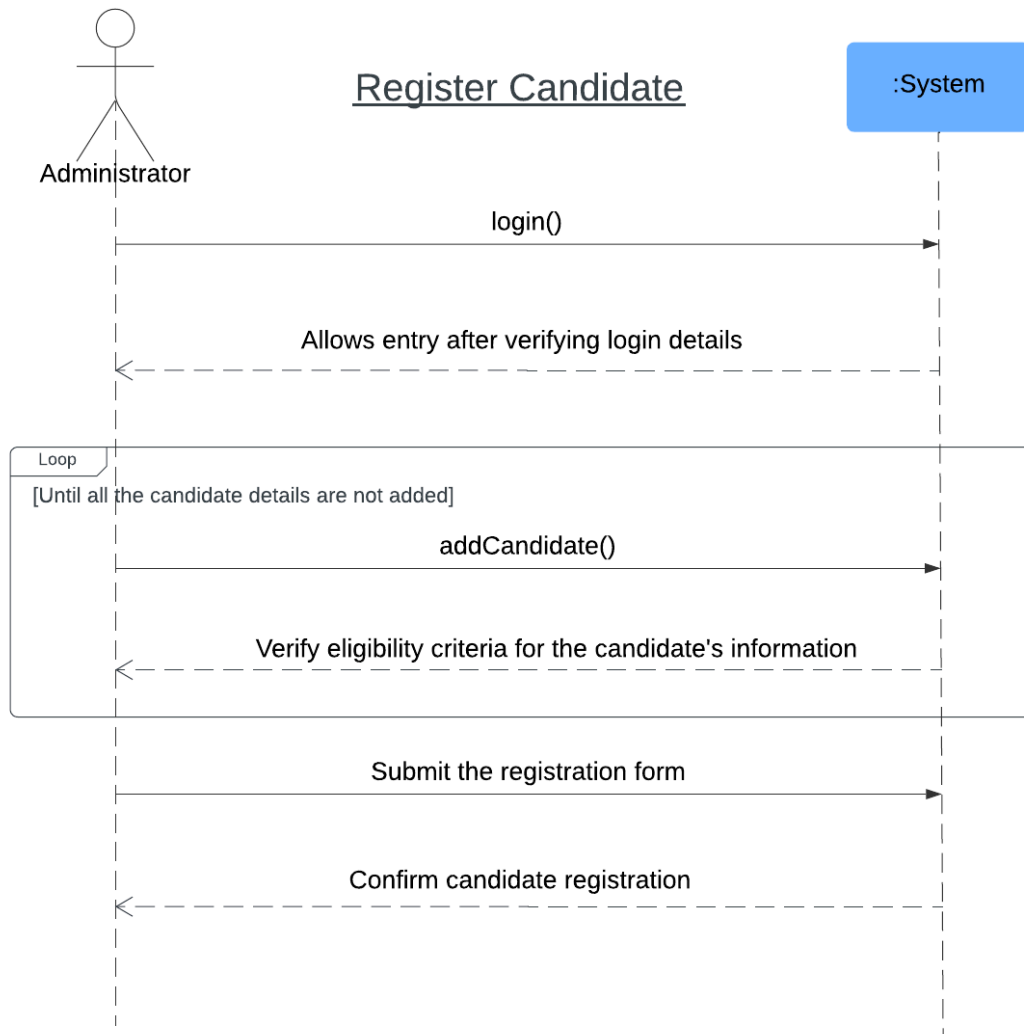
Software Development
and Analysis

By:

BSCS_C

Arrij Fawad i220755
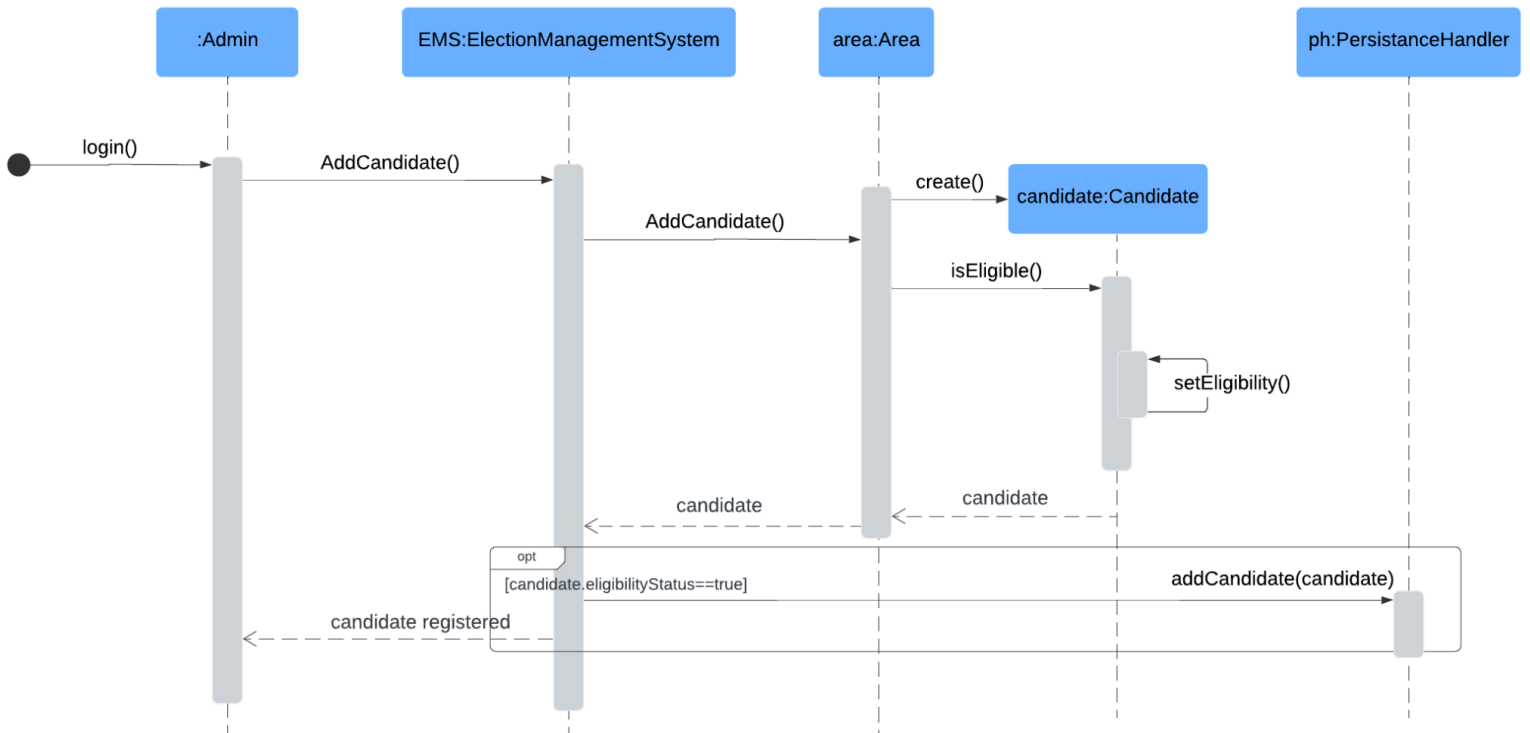Hamna Arshad i221098
Maryam Masood i221169

Use Case-01

Done by: Hamna Arshad (i221098)

System Sequence Diagram:

Register Candidate

Administrator

:System

login()

Allows entry after verifying login details

Loop
[Until all the candidate details are not added]

addCandidate()

Verify eligibility criteria for the candidate's information

Submit the registration form

Confirm candidate registration

Sequence Diagram:

```
    :Admin       EMS:ElectionManagementSystem      area:Area                              ph:PersistanceHandler

  login()
●─────────►
              AddCandidate()
         ──────────────────────────►
                          AddCandidate()
                     ──────────────────────────►
                                                    create()
                                               ──────────────► candidate:Candidate

                                              isEligible()
                                         ──────────────────────────►
                                                                        ◄─┐ setEligibility()
                                                                          │
                                                                        ──┘

                          candidate                candidate
                     ◄─ ─ ─ ─ ─ ─ ─ ─ ─ ─ ◄─ ─ ─ ─ ─ ─ ─ ─

         ┌─ opt ────────────────────────────────────────────────────────────────────────┐
         │ [candidate.eligibilityStatus==true]              addCandidate(candidate)       │
         │                                          ─────────────────────────────────────►│
         │  candidate registered                                                          │
         │ ◄─ ─ ─ ─ ─ ─ ─ ─                                                               │
         └────────────────────────────────────────────────────────────────────────────────┘
```
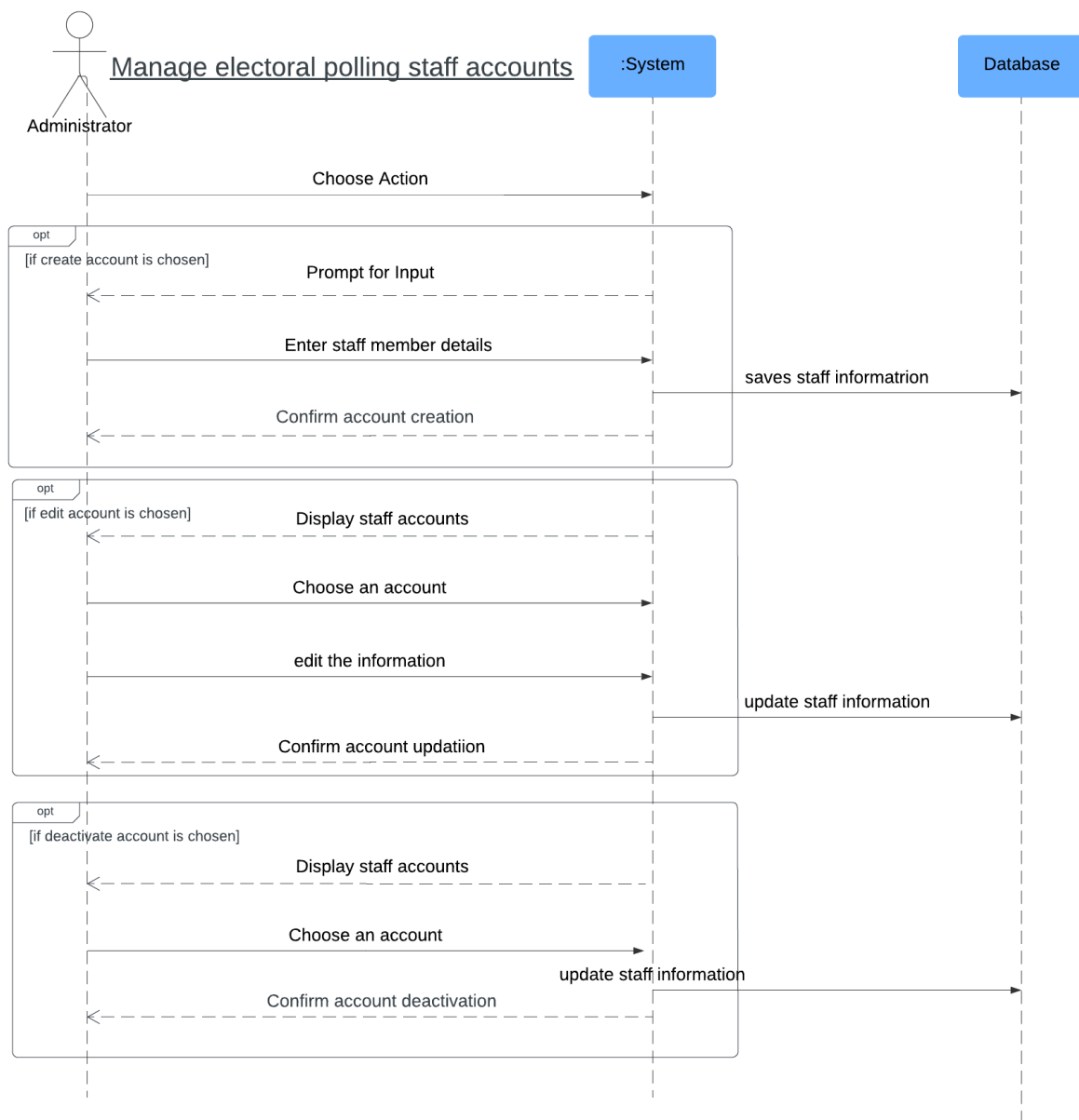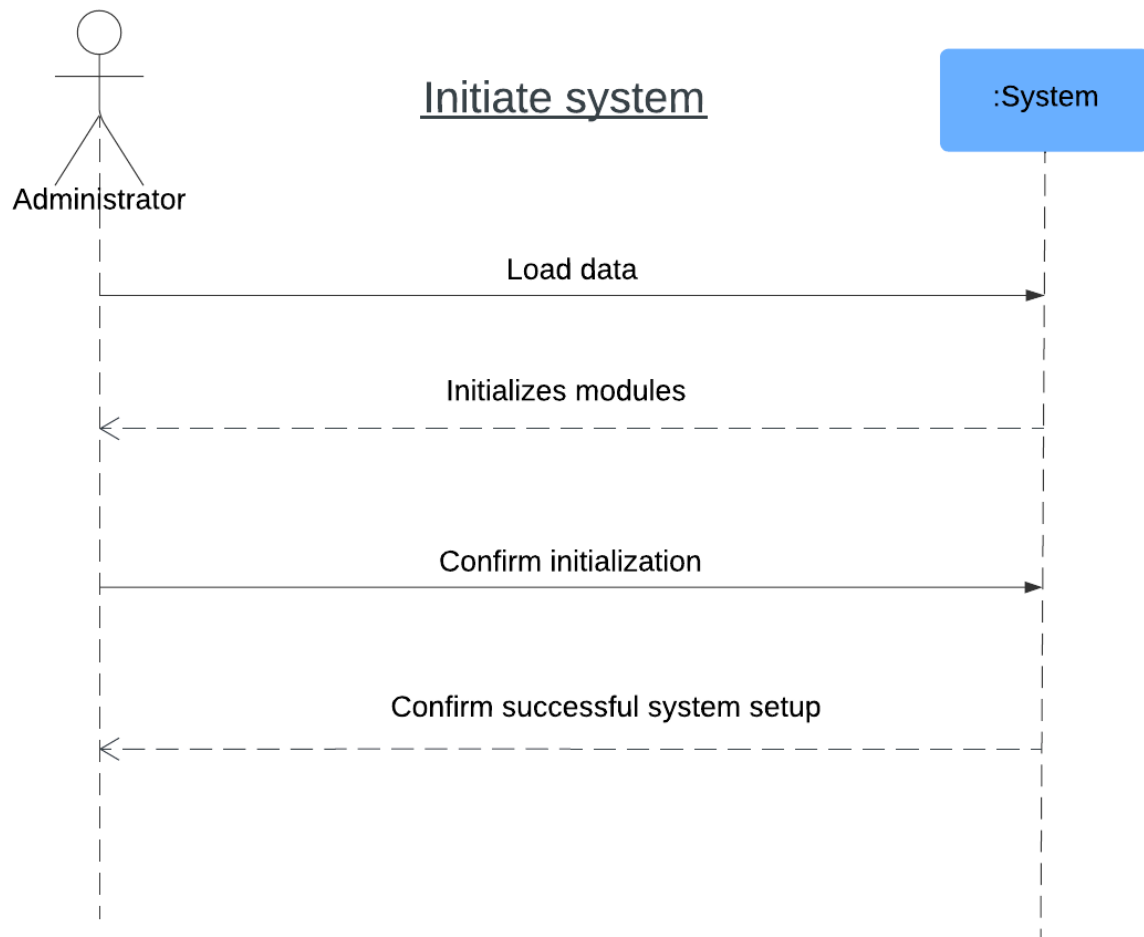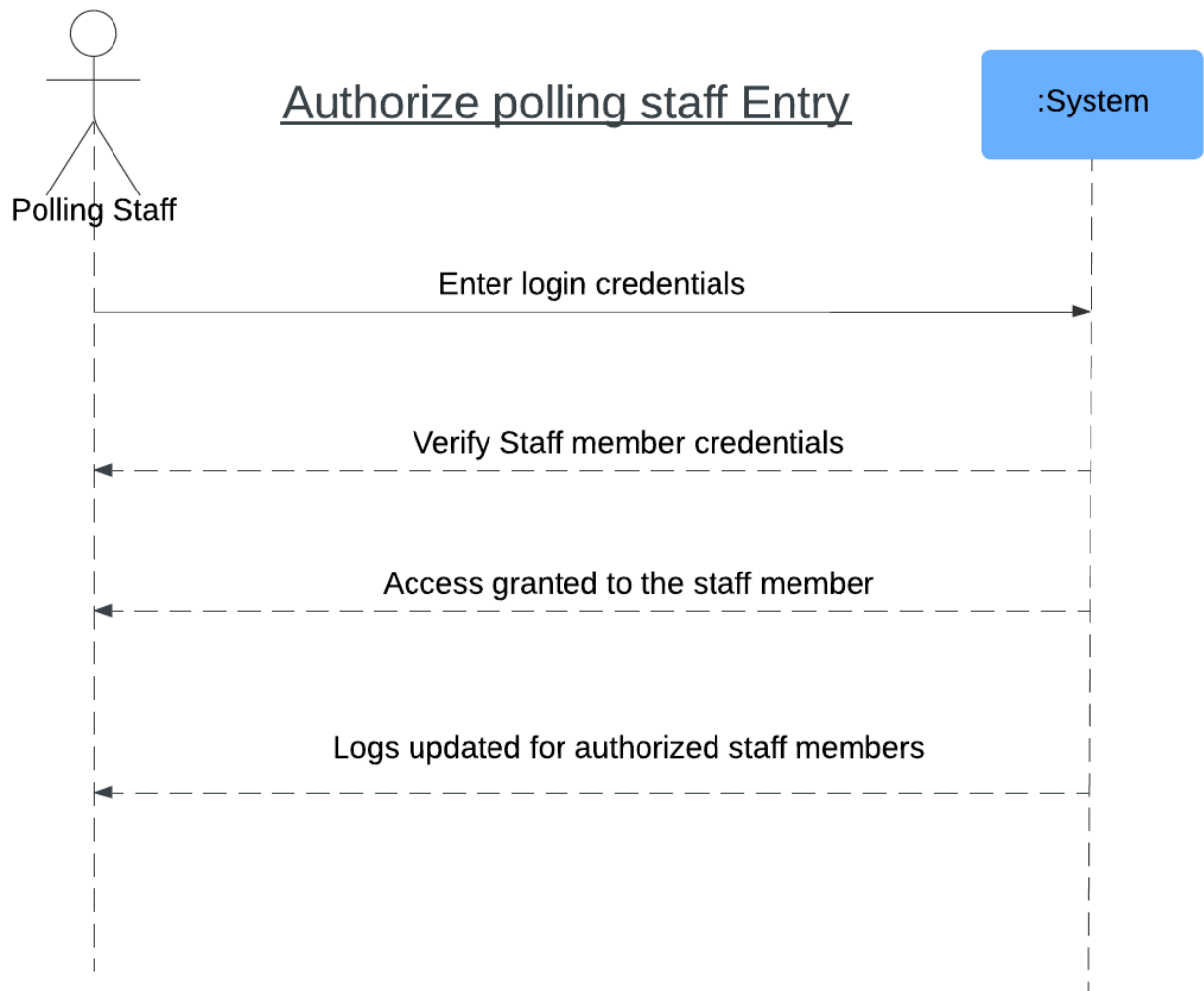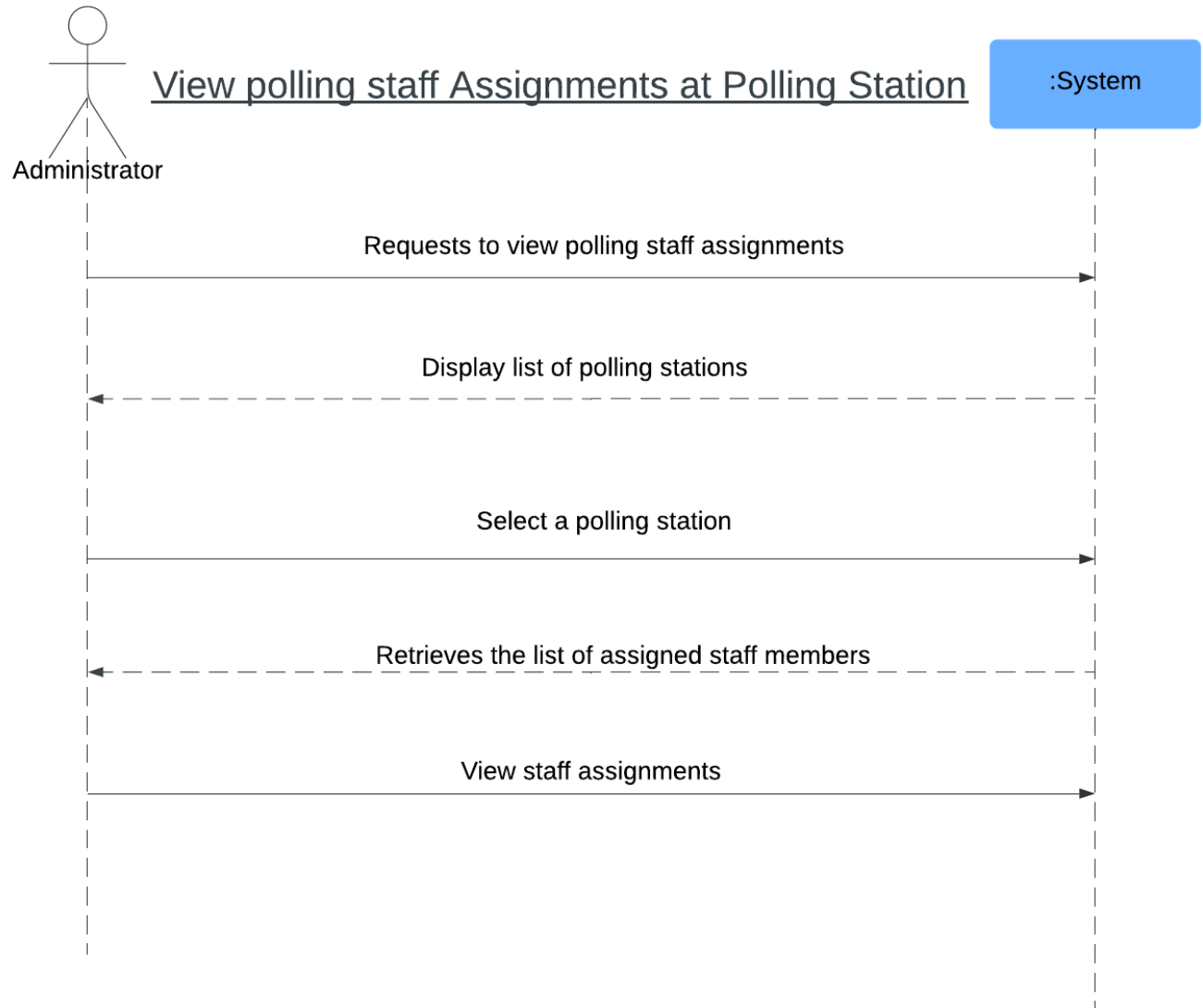
Use Case-02

Done by: Hamna Arshad (i221098)

System Sequence Diagram:

Sequence Diagram:

| :Admin | EMS:ElectionManagementSystem | areas:Area | pollingStation:PollingStation | staff:PollingStaff | ph:PersistanceHandler |

login()
managePollingStaff()
manageStaffbyStation()
manageAssignedStaff()

opt [if create account is chosen]
createAccount()
staff
staff
staff
addPollingStaffAccount(staff)

opt [if edit account is chosen]
editAccount()
staff
staff
staff
updatePollingStaffAccount(staff)

opt [if deactivate account is chosen]
deactivateAccount()
staff
staff
staff
deactivatePollingStaffAccount(staff)

Use Case-03

Done by: Hamna Arshad (i221098)

System Sequence Diagram:

Initiate system

Administrator

:System

Load data

Initializes modules

Confirm initialization

Confirm successful system setup

Sequence Diagram:

- login()
- initiateSystem()
- loadCandidateData()
- candidateList
- setCandidateData(candidateList)
- loadPollingStaffAssignments()
- pollingStaffList
- setStationStaffInfo(pollingStaffList)
- setAssignedPollingStaff(pollingStaffList)
- Confirmation

Participants:
- :Admin
- EMS:ElectionManagementSystem
- ph:PersistanceHandler
- area:Area
- pollingStation:PollingStation

Use Case-04

Done by: Hamna Arshad (i221098)

System Sequence Diagram:

Authorize polling staff Entry

Polling Staff → :System

Enter login credentials

Verify Staff member credentials

Access granted to the staff member

Logs updated for authorized staff members
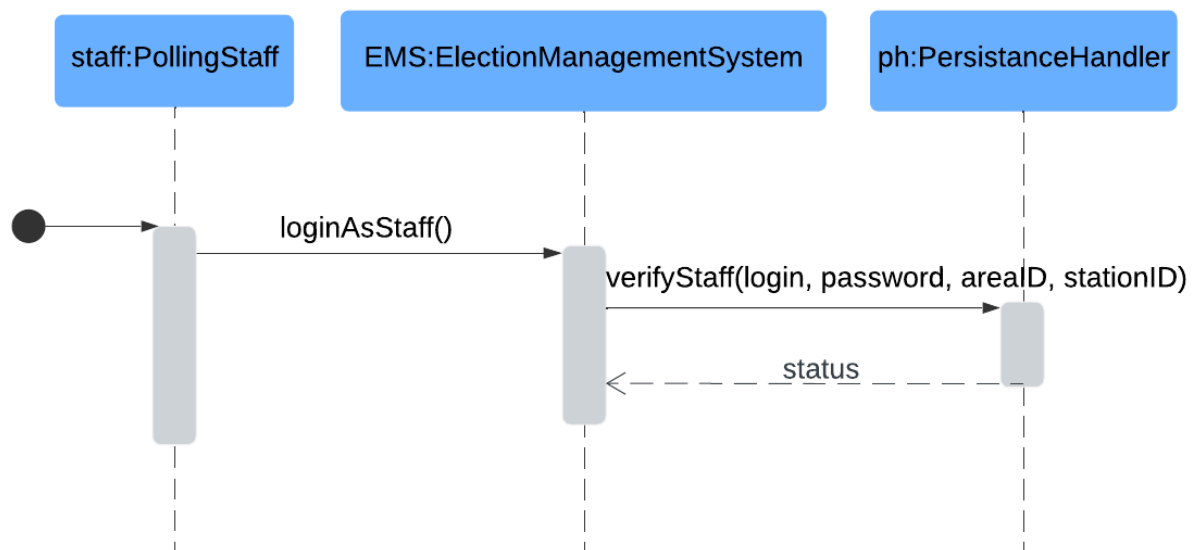
Sequence Diagram:

Use Case-05

Done by: Hamna Arshad (i221098)

System Sequence Diagram:

View polling staff Assignments at Polling Station — Administrator — :System

- Requests to view polling staff assignments
- Display list of polling stations
- Select a polling station
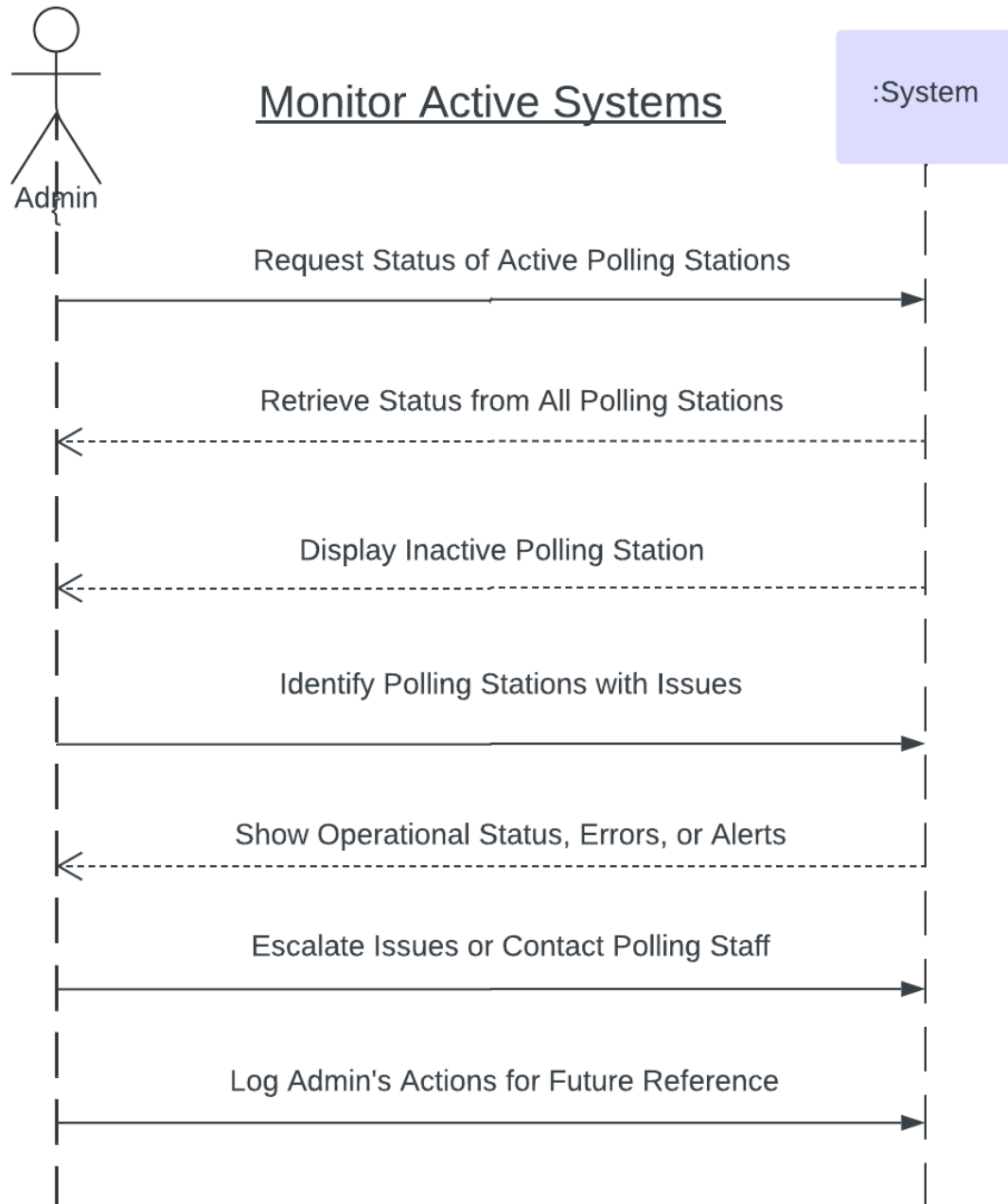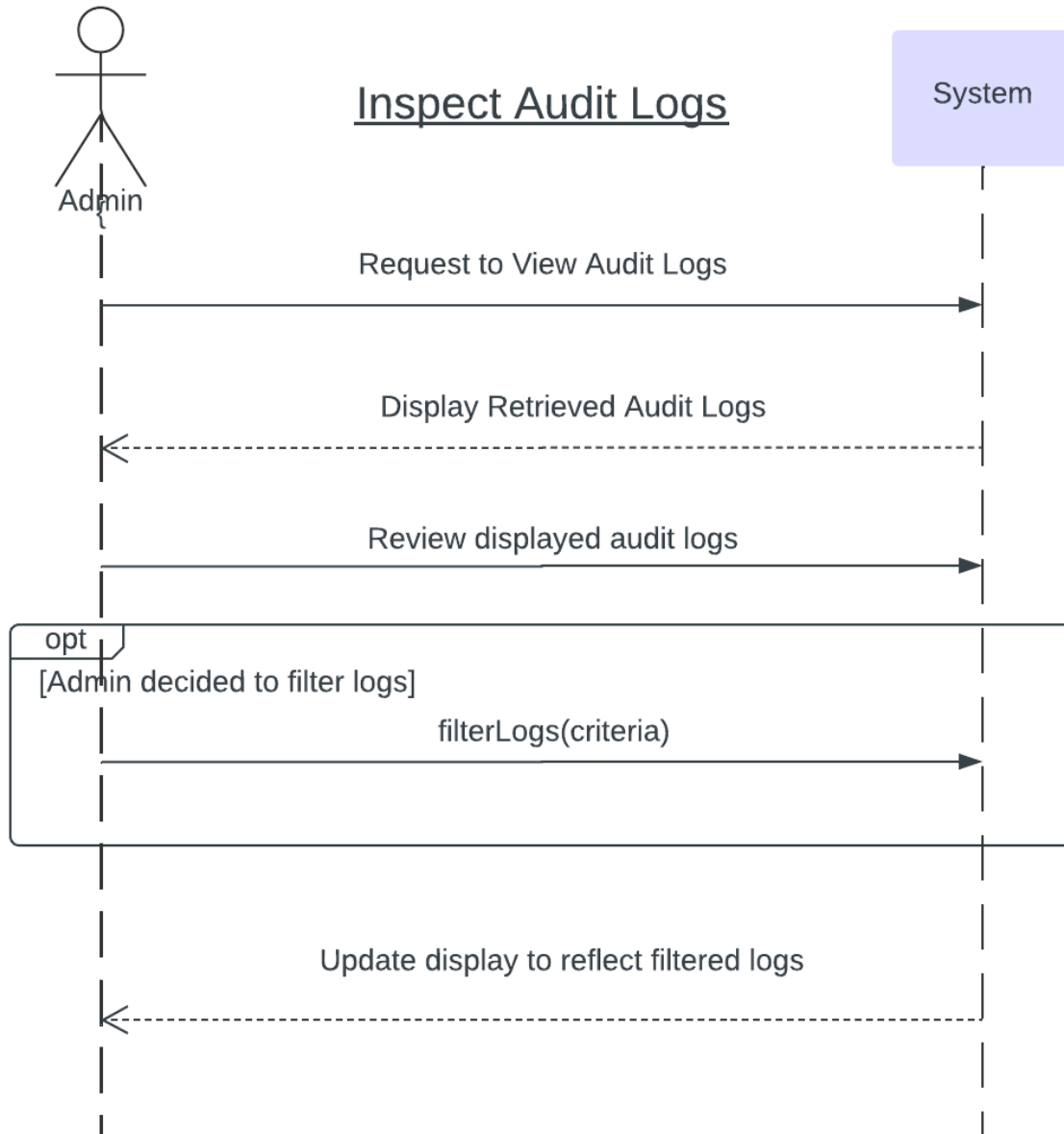- Retrieves the list of assigned staff members
- View staff assignments
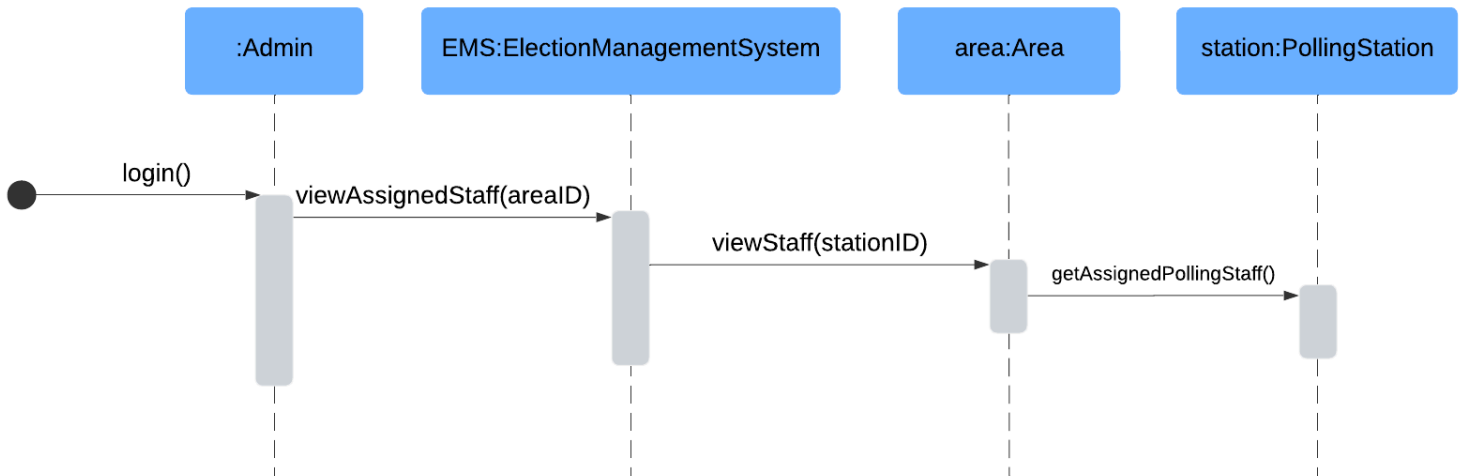
Sequence Diagram:

Use Case-06

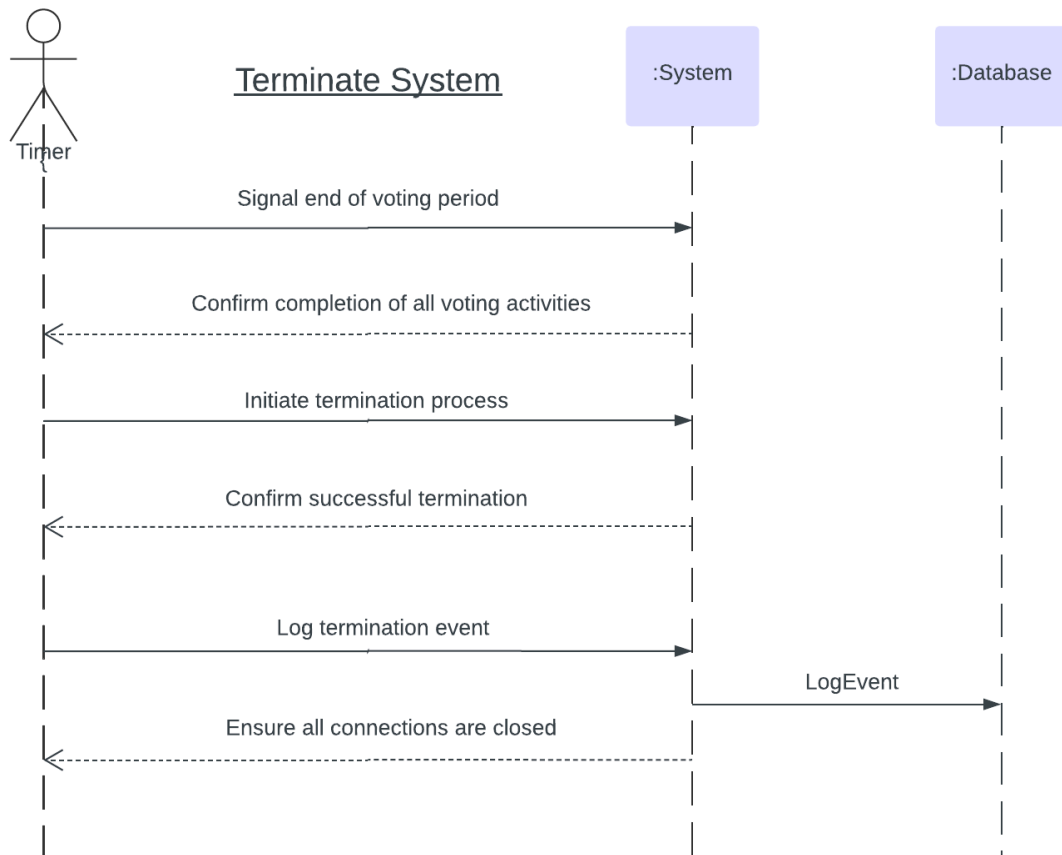Done by: Maryam Masood (i221169)

System Sequence Diagram:

PollingStaff

Capture Voter Information

:System

:Database

Start voter information capture

Request Voter Details

Input voter data (CNIC, biometric)

isVoterRegistered()

Confirm voter registration

Acknowledge voter data entry

Save Voter Data

Acknowledge data saved

Sequence Diagram:

PollingStaff

EMS:ElectionManagementSystem

ph:PersistanceHandler

Loop

[if info remaining or incorrect]

captureVoterInfo(cnic,biometric)

isVoterRegistered(cnic,pollingstation)

is_registered

opt

[if voter is registered]

confirms data entry

storeInfoAndBiometric

Use Case-07

Done by: Maryam Masood (i221169)

System Sequence Diagram:

Sequence Diagram:

Voter

EMS:ElectionManagementSystem

results:ElectionResult

ph:PersistanceHandler

selects candidate

castVote(candidateID,voterID)

UpdateVoteCount(candID,sysID)

updateVoteCount(candID,sysID)

saveVote

Vote saved

generatePaperTrail()

createLogEntry()
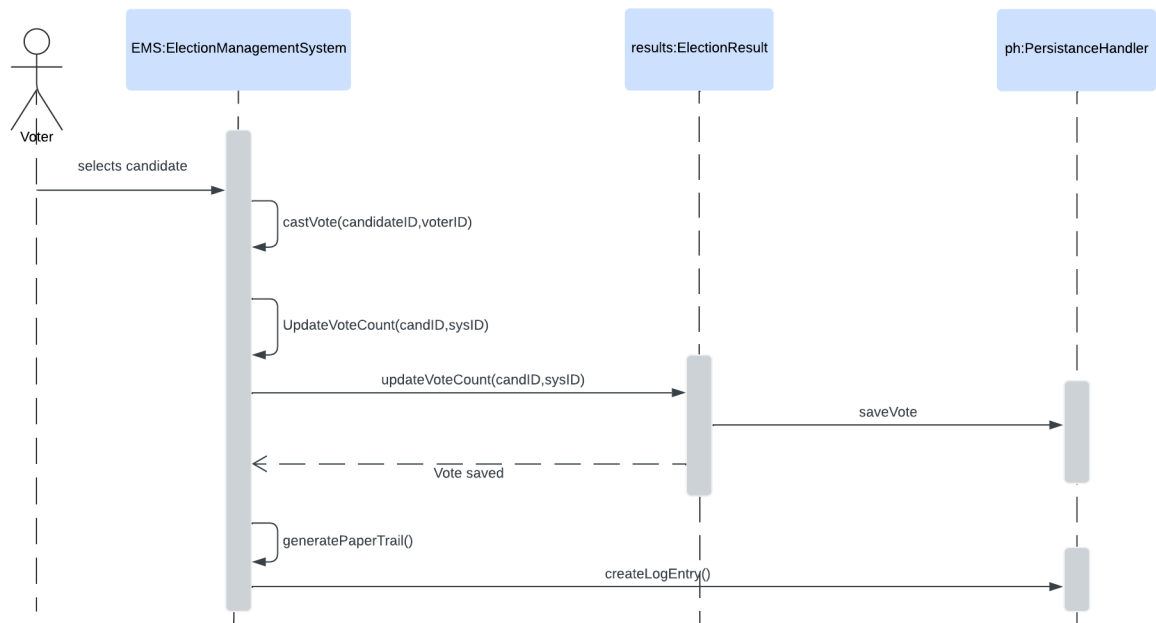
Use Case-08

Done by: Maryam Masood (i221169)

System Sequence Diagram:
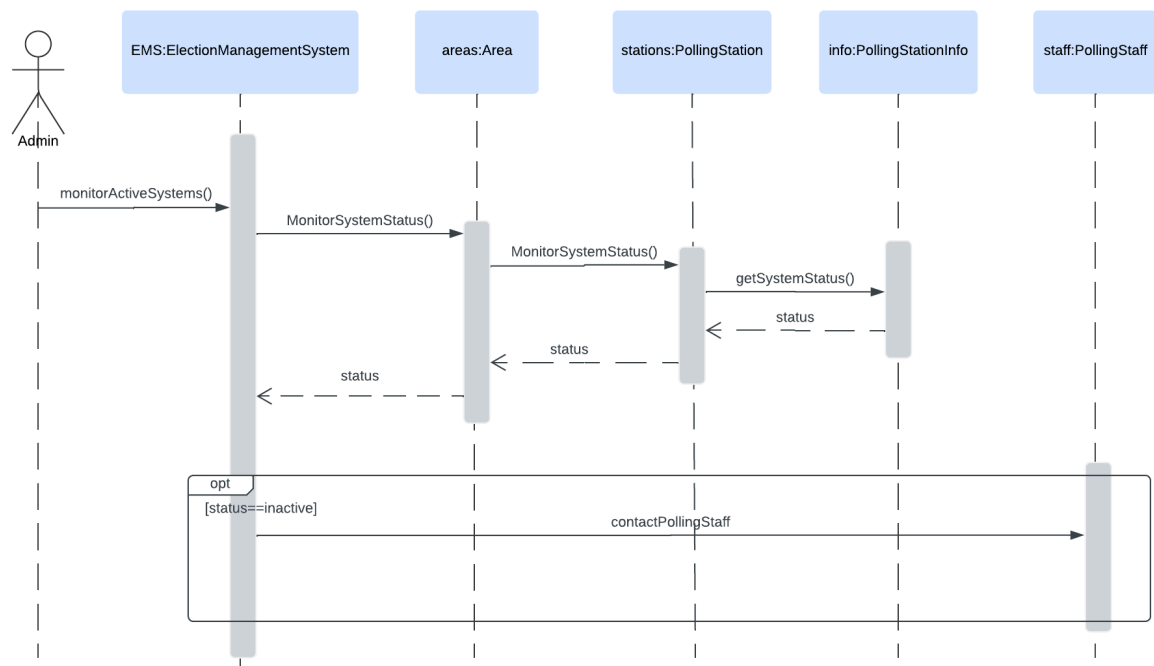
Sequence Diagram:

Use Case-09
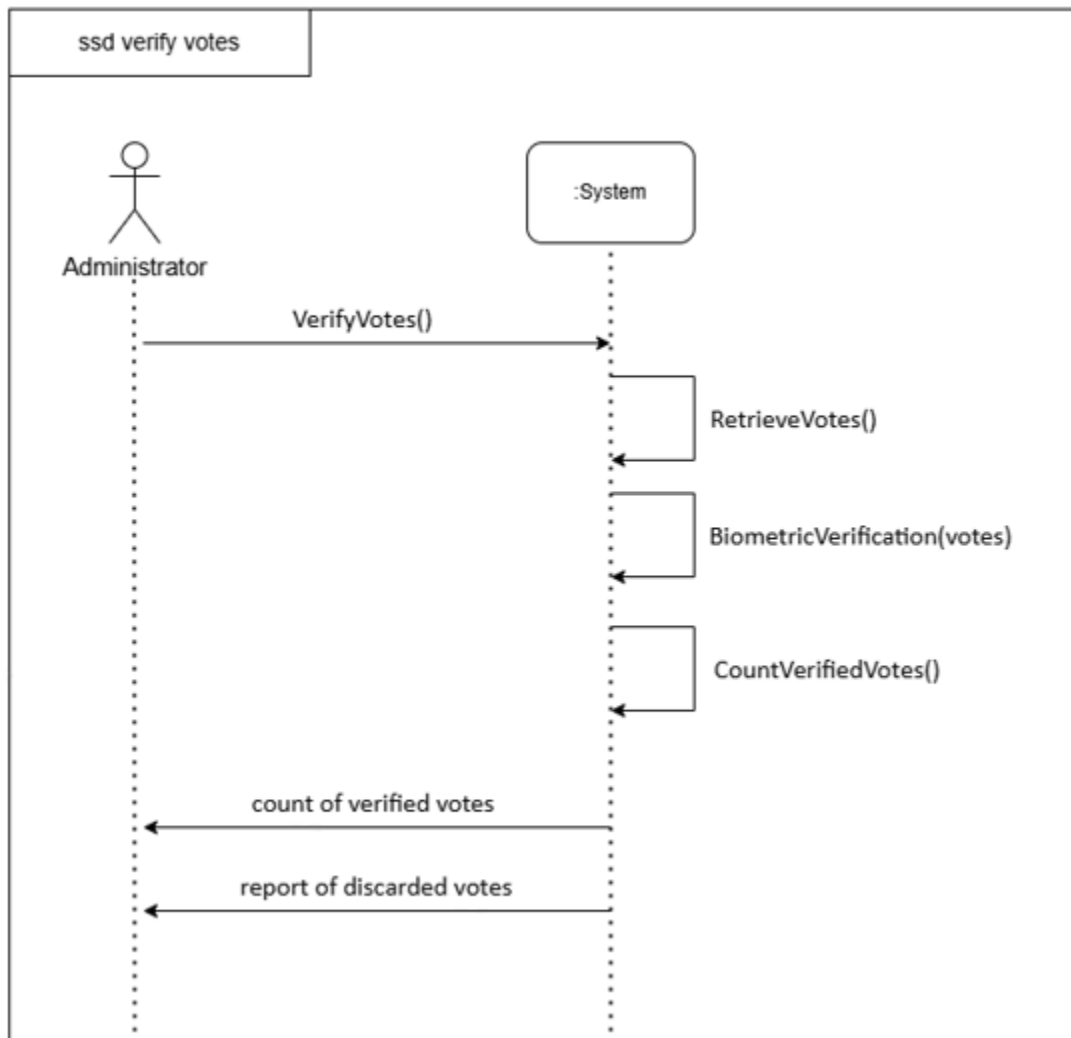
Done by: Maryam Masood (i221169)

System Sequence Diagram:
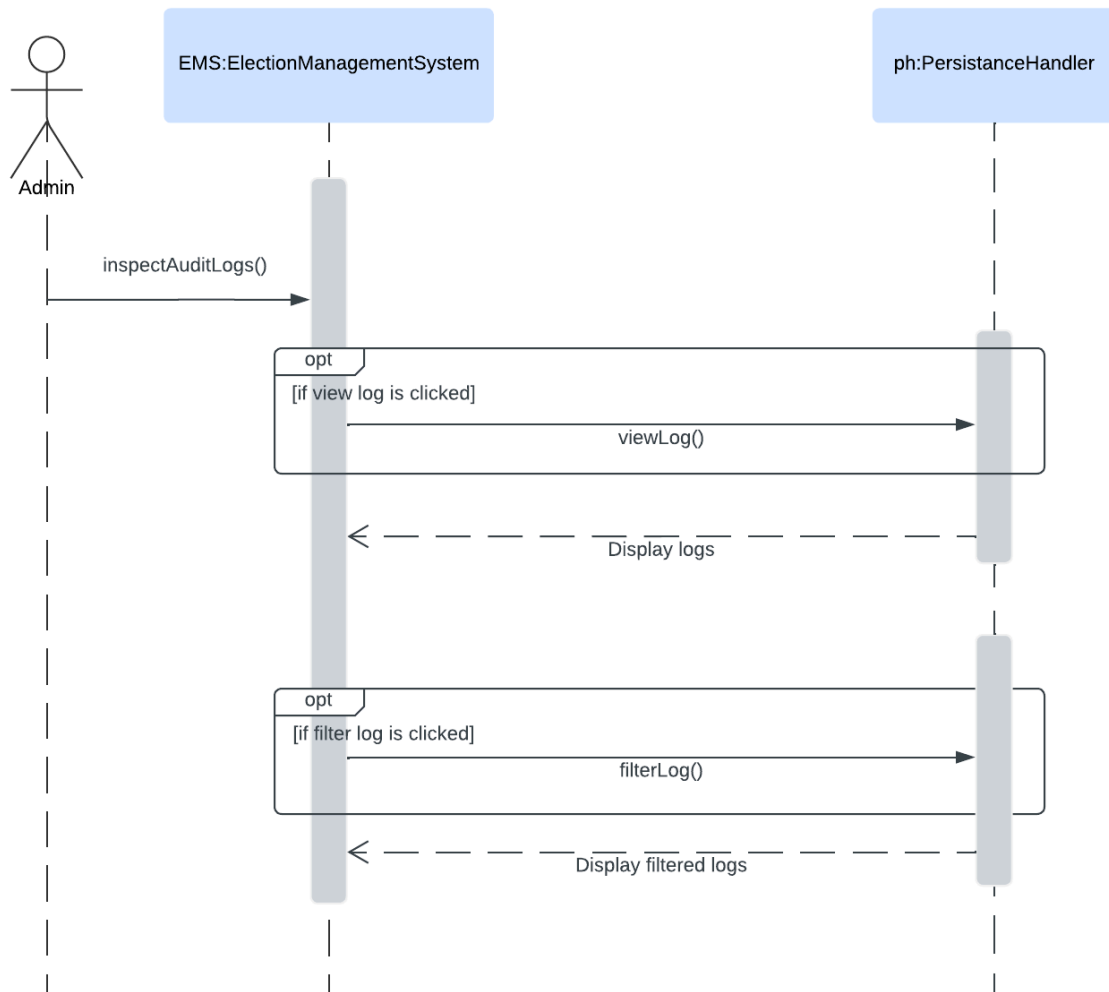
Sequence Diagram:

Use Case-10

Done by: Maryam Masood (i221169)

System Sequence Diagram:

Terminate System

:System

:Database

Timer

Signal end of voting period

Confirm completion of all voting activities

Initiate termination process

Confirm successful termination

Log termination event

LogEvent

Ensure all connections are closed

Sequence Diagram:

Timer

EMS:ElectionManagementSystem

ph:PersistanceHandler

terminateSystem()

createLogEntry()

saveLogEntry()

connections closed
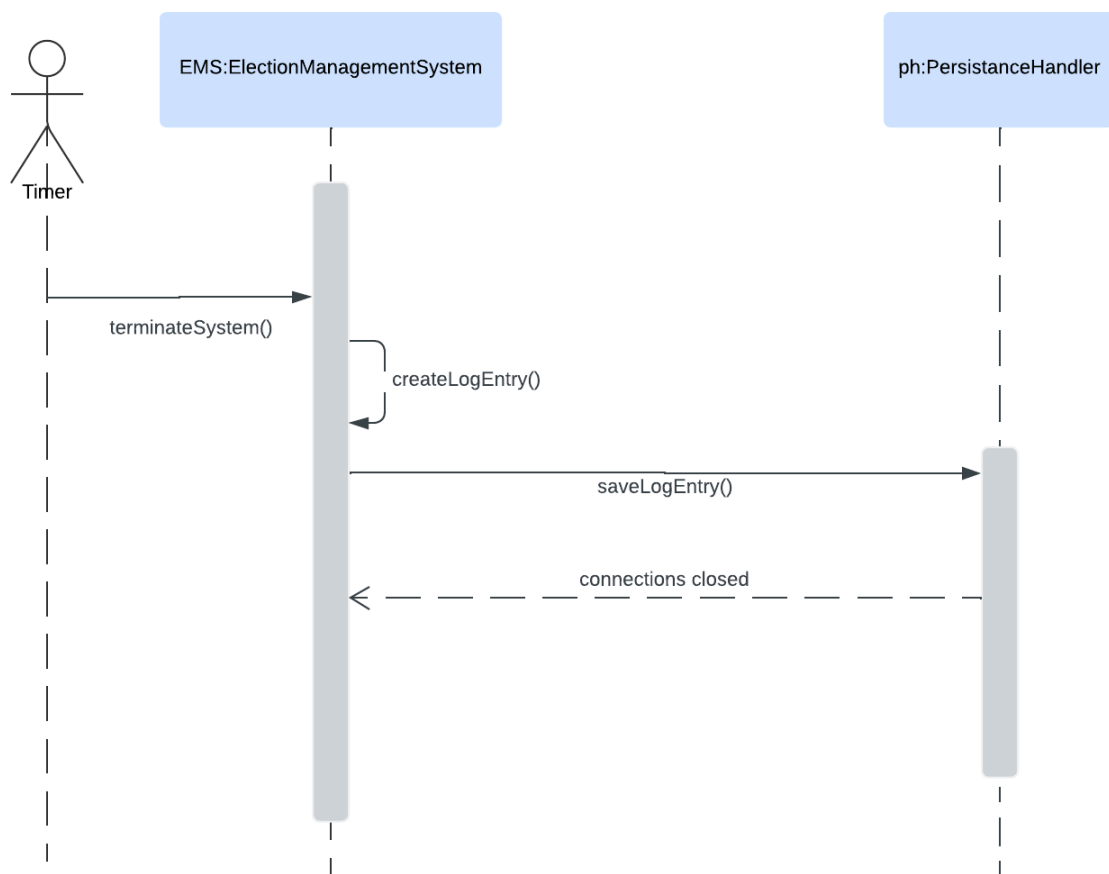
Use Case-11

Done by: Arrij Fawwad (I220755)

System Sequence Diagram:

ssd verify votes

Administrator → :System : VerifyVotes()

:System → :System : RetrieveVotes()

:System → :System : BiometricVerification(votes)

:System → :System : CountVerifiedVotes()

:System → Administrator : count of verified votes

:System → Administrator : report of discarded votes
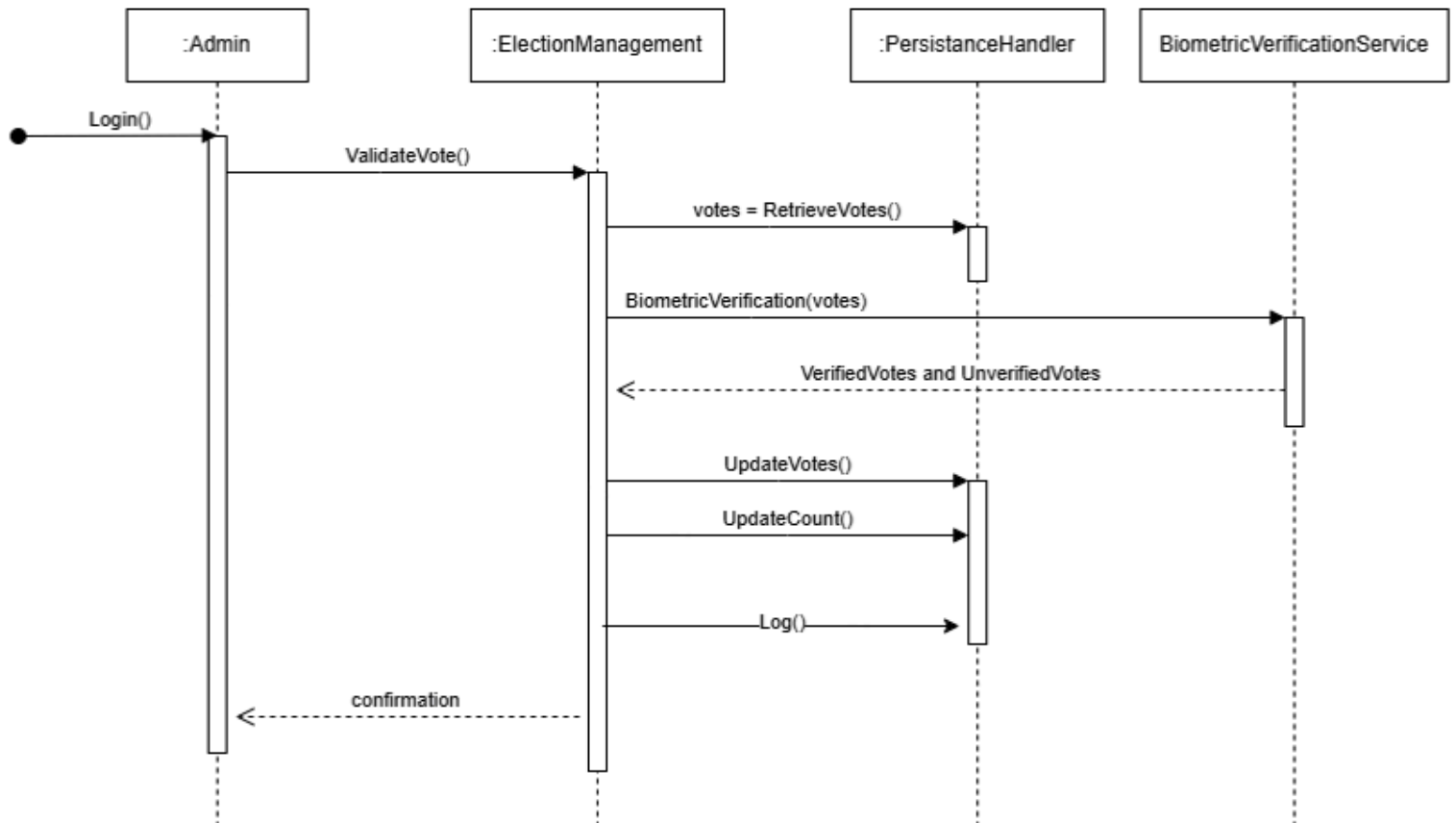
Sequence Diagram:

Use Case-12

Done by: Arrij Fawwad (I220755)

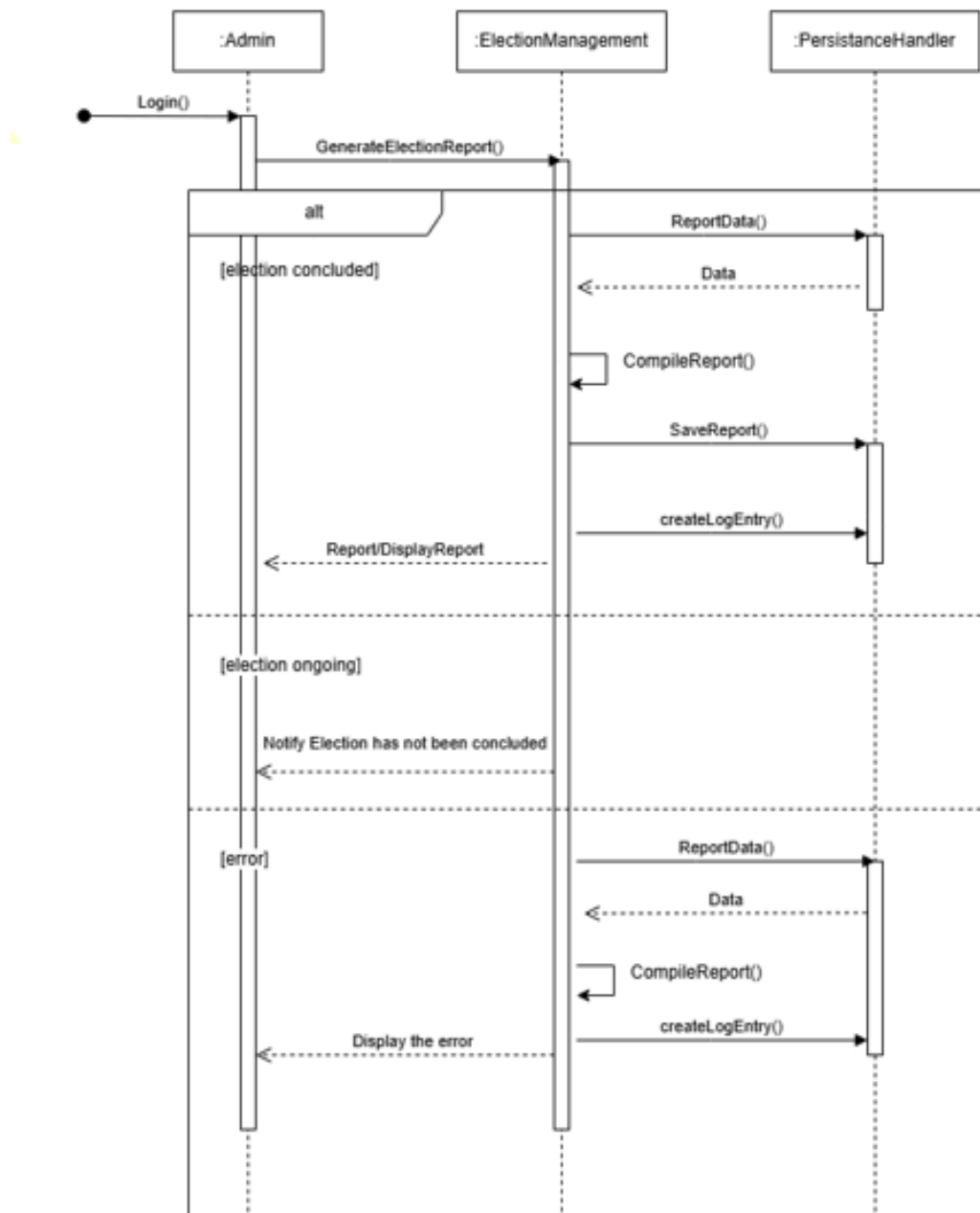## System Sequence Diagram:
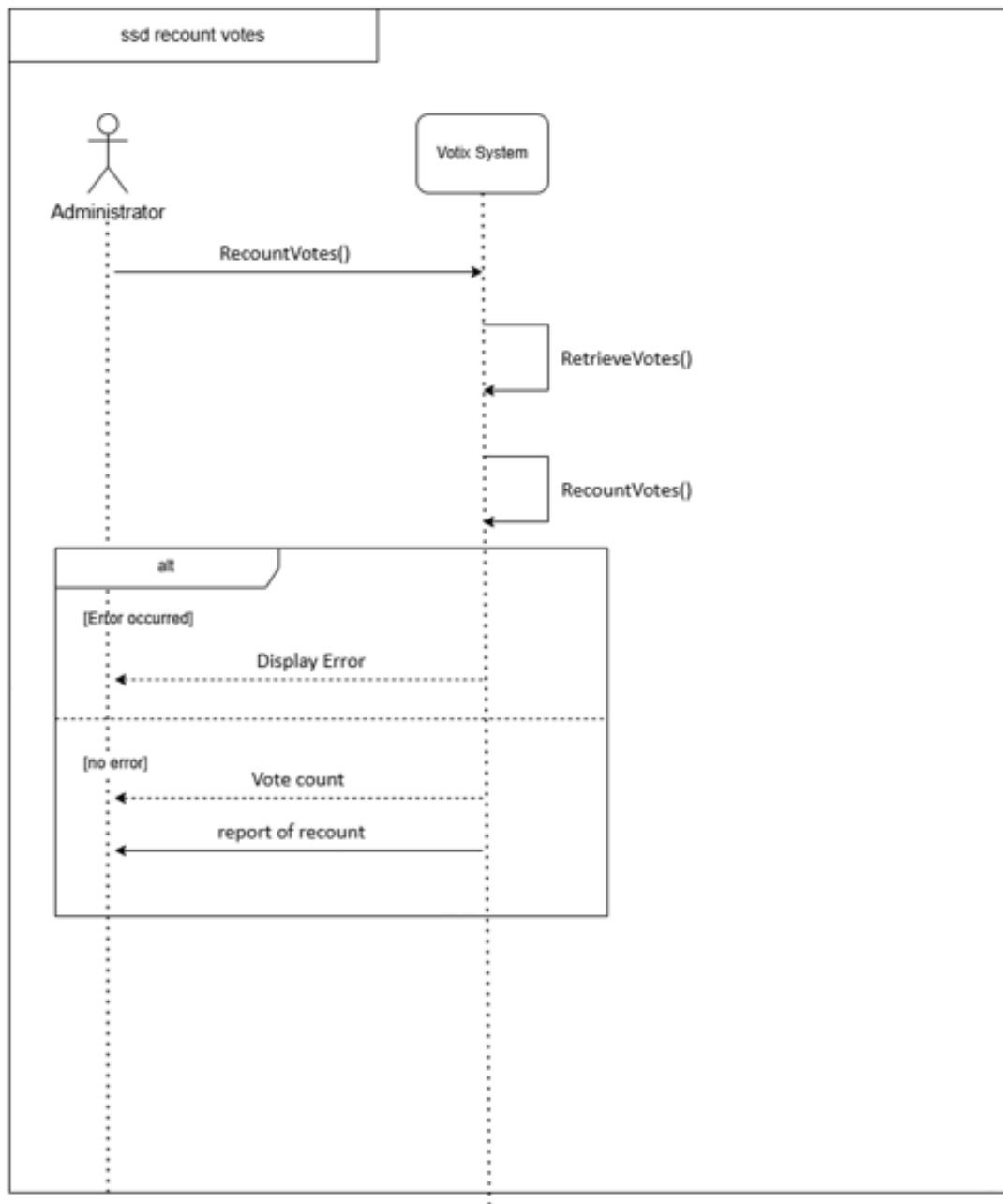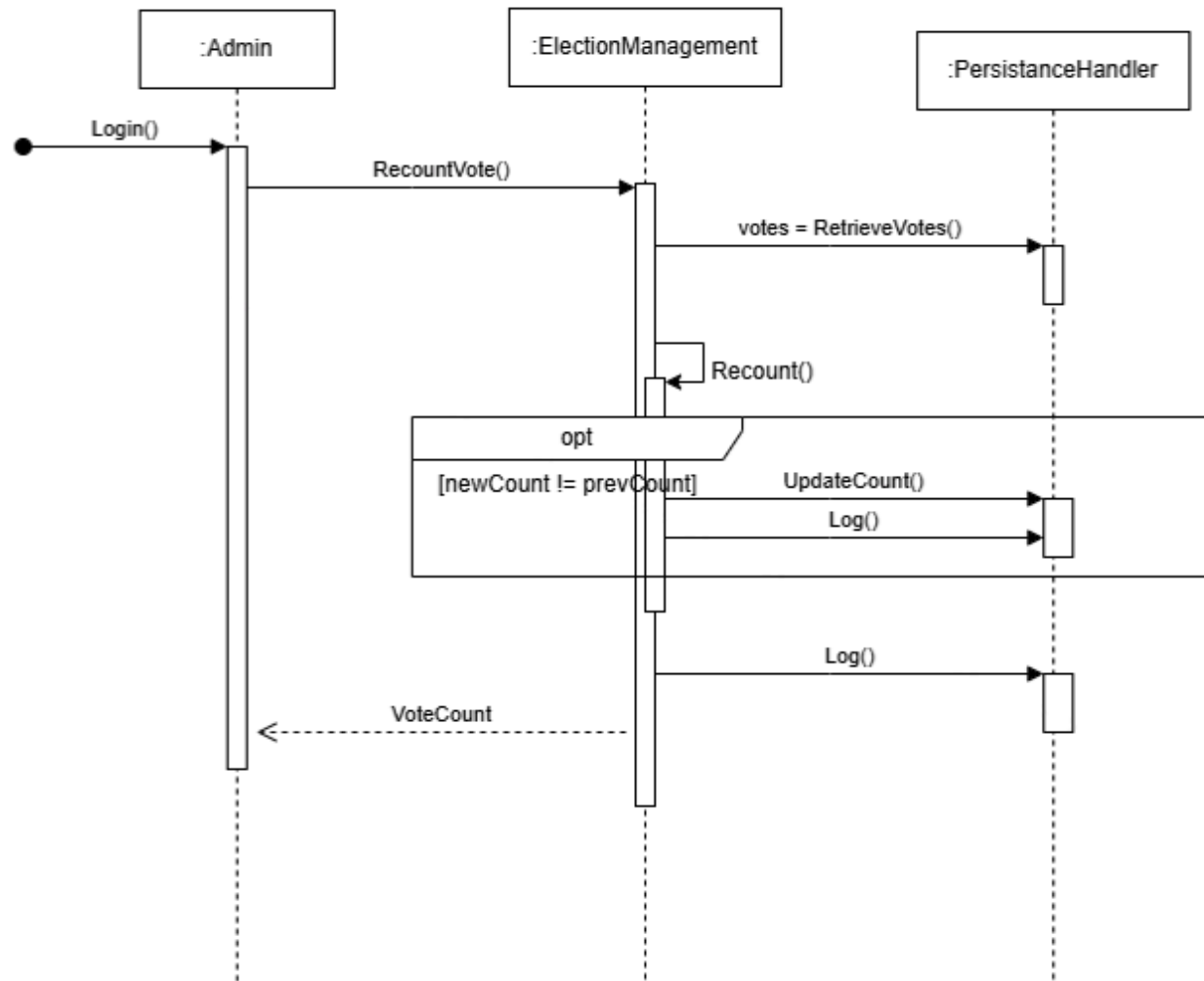
Sequence Diagram:

Use Case-13

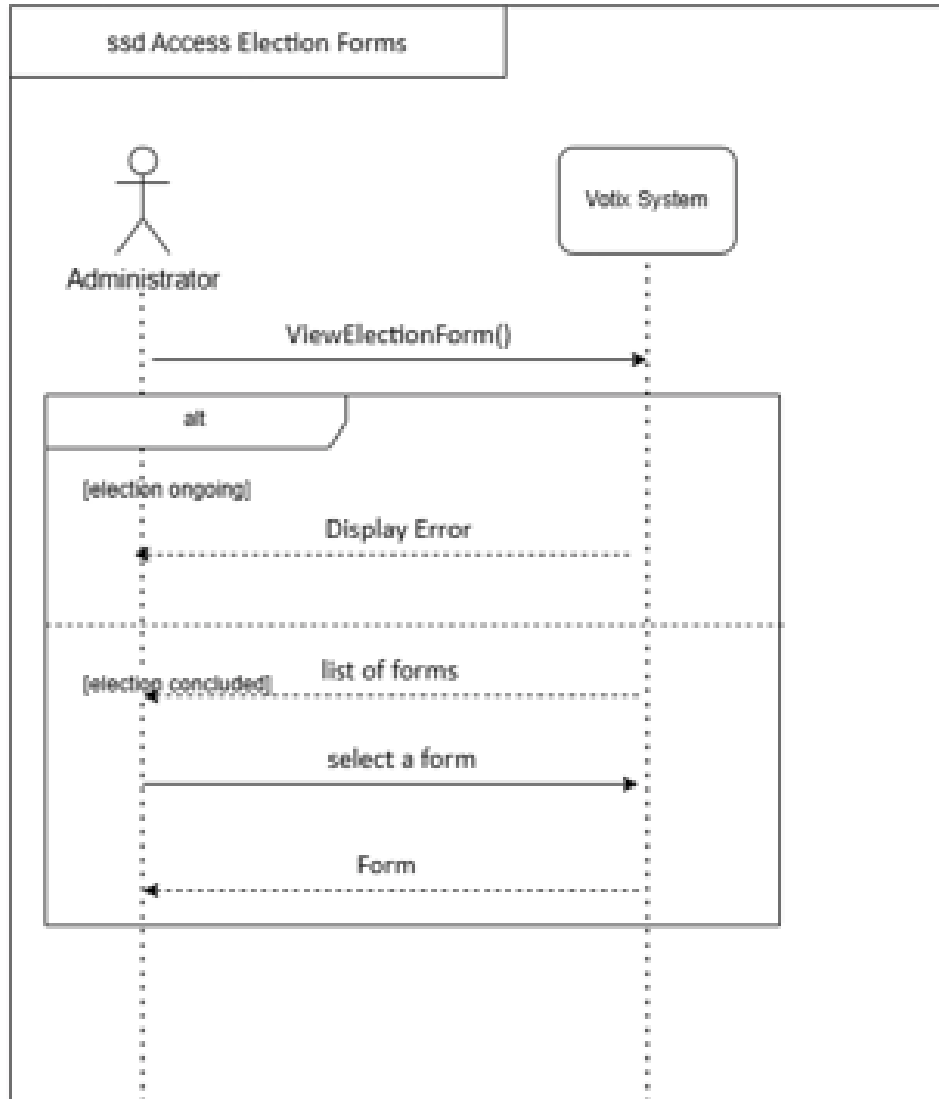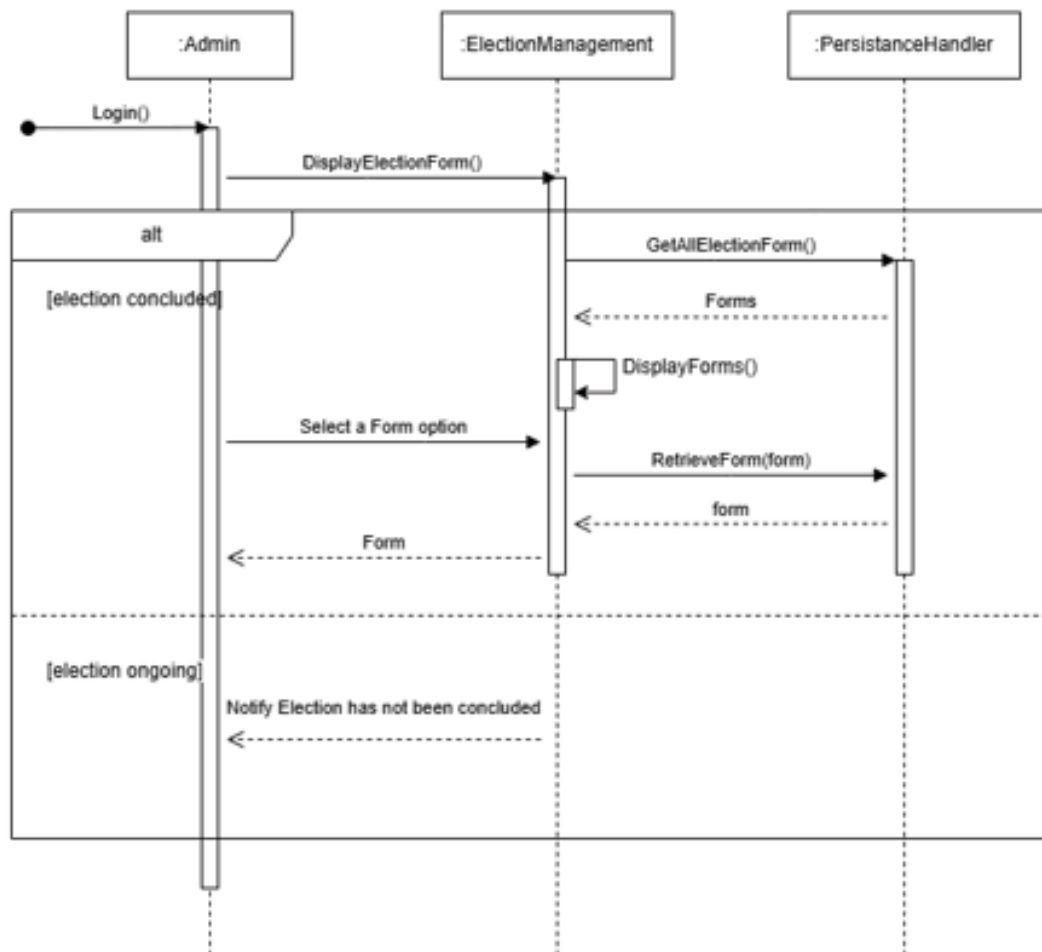Done by: Arrij Fawwad (I220755)
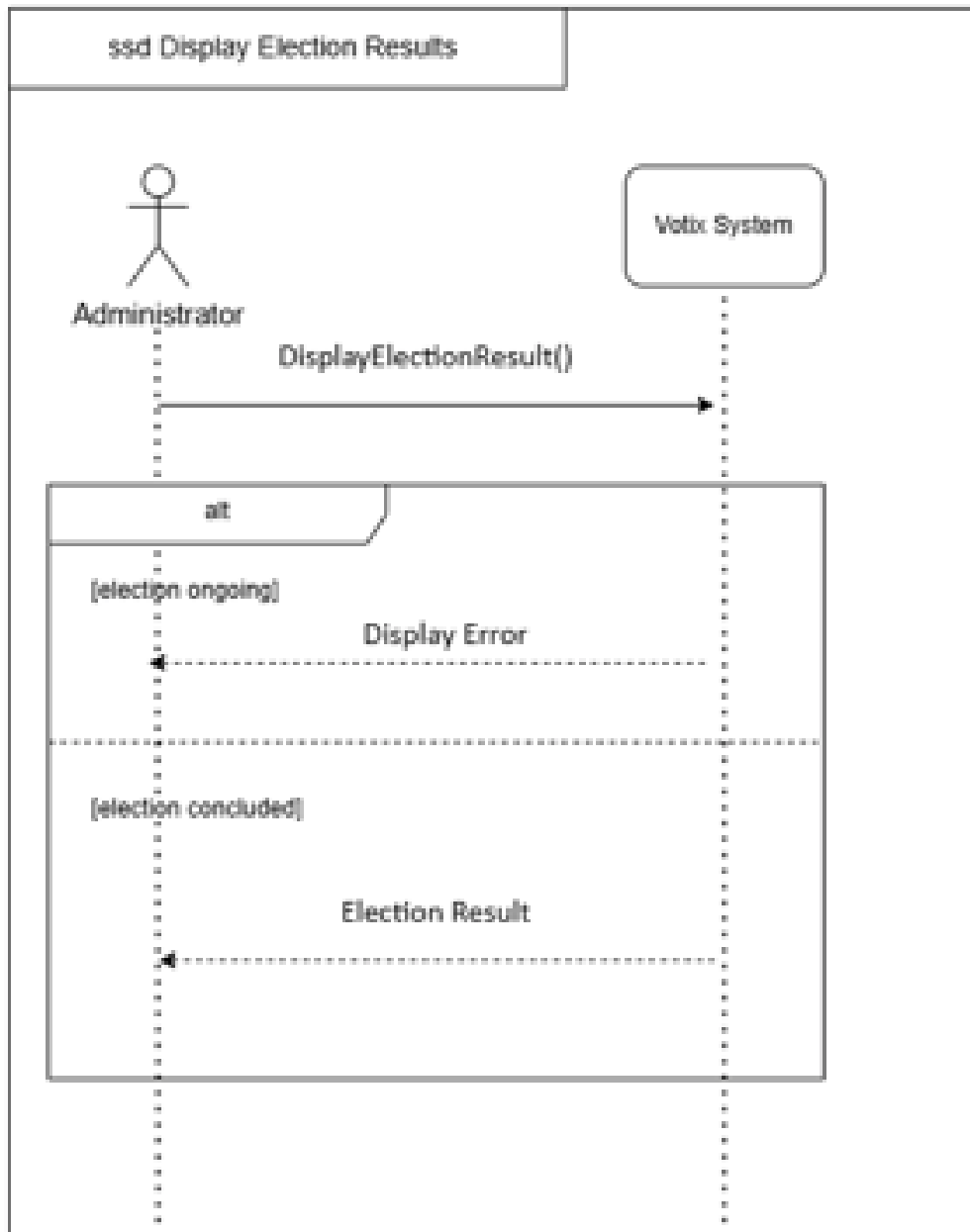
System Sequence Diagram:
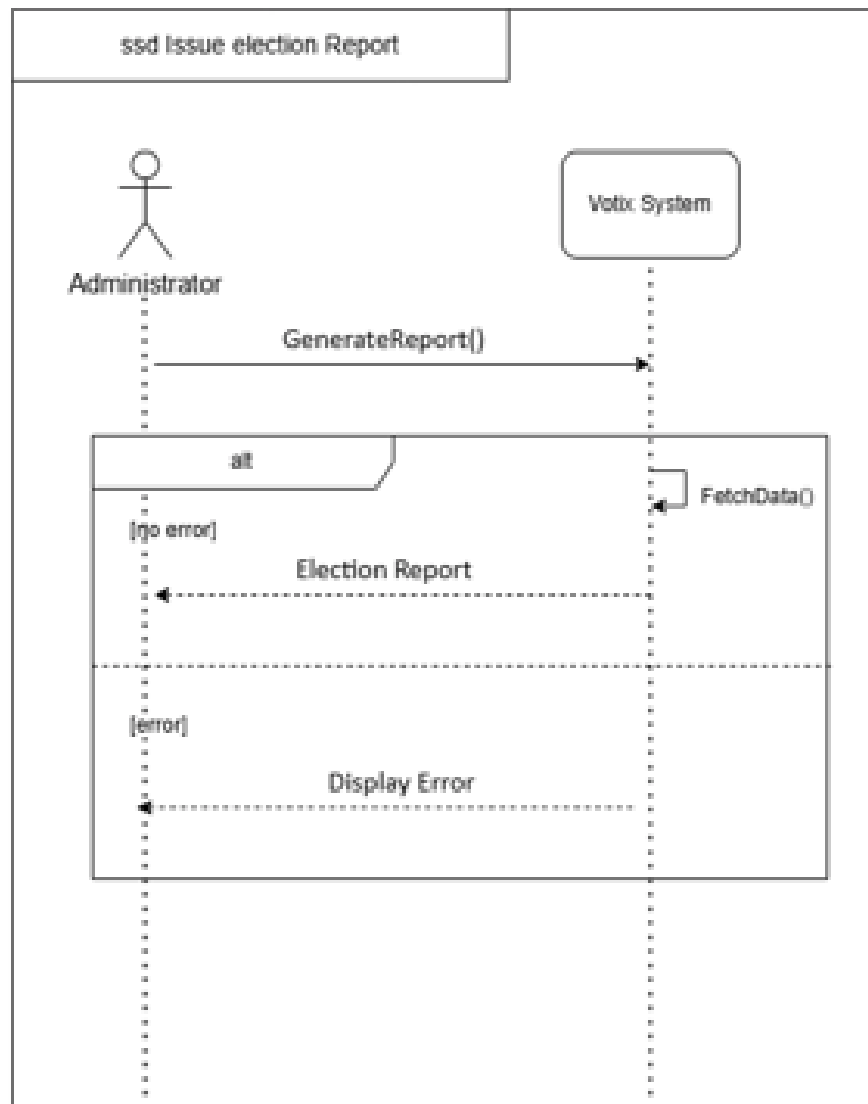
Sequence Diagram:

Use Case-14

Done by: Arrij Fawwad (I220755)

System Sequence Diagram:

Sequence Diagram:

| | :Admin | :ElectionManagement | :PersistanceHandler |

Login()

DisplayElectionForm()

alt

[election concluded]

GetAllElectionForm()

Forms

DisplayForms()

Select a Form option

RetrieveForm(form)

form

Form

[election ongoing]

Notify Election has not been concluded

Use Case-15

Done by: Arrij Fawwad (I220755)

System Sequence Diagram:

Sequence Diagram: