

Mini Project Report

on

“Secure File Sharing”

Submitted by

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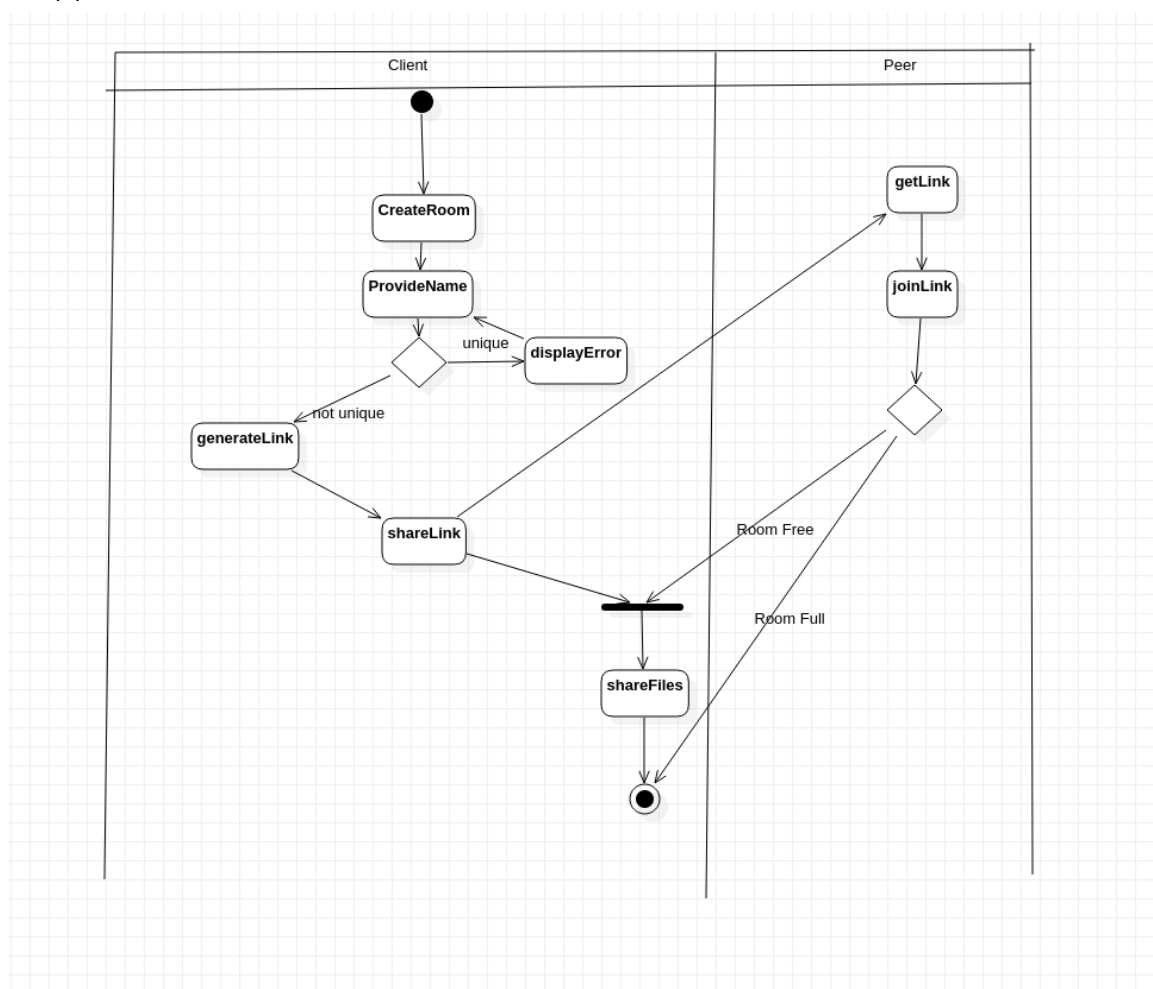
PES1UG19CS497: Sowmya M

PES1UG19CS469: Shreyas Vinayaka Basri KS

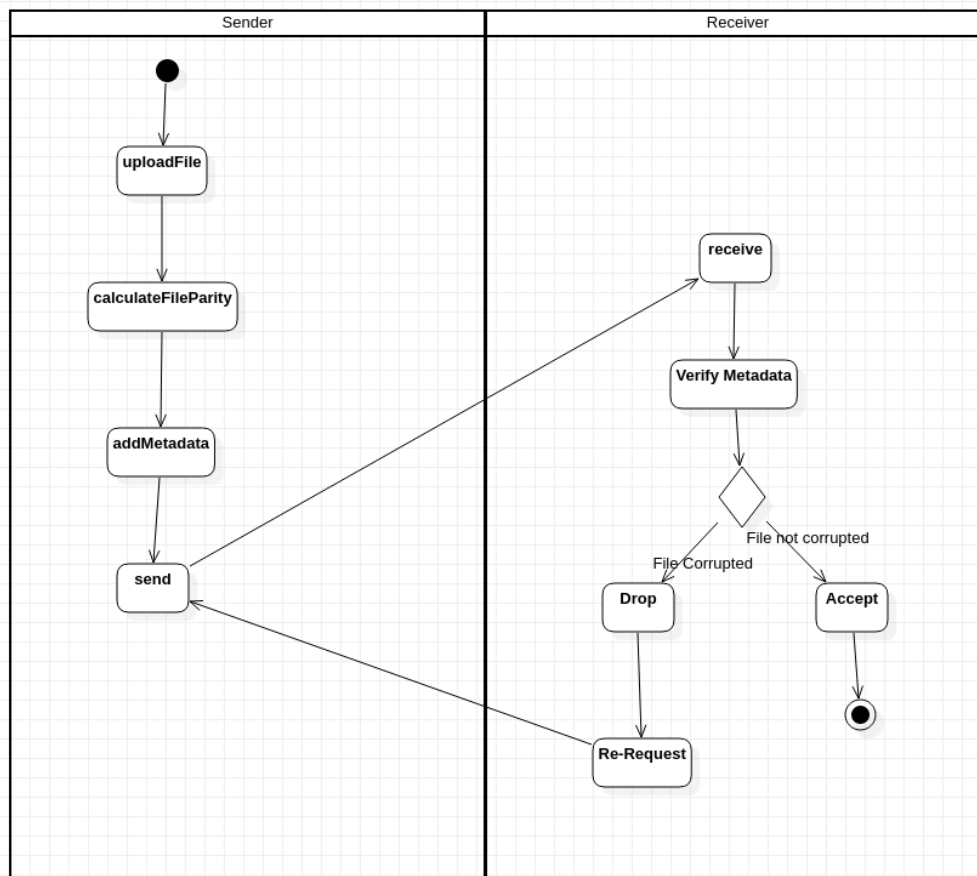
1. By: Sumukh Raju Bhat, PES1UG19CS519

- Activity Diagrams

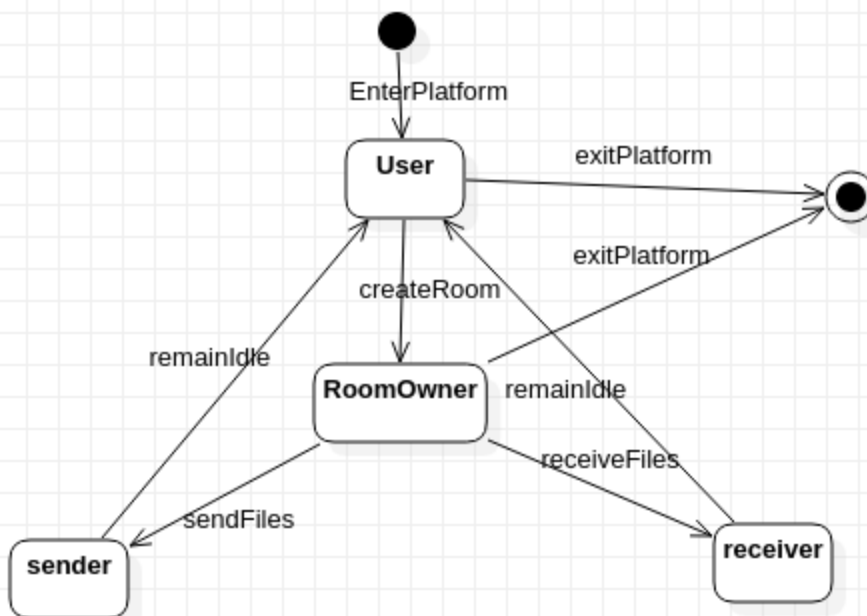
(a) CreateRoom Use Case:



(b) DropFile Use Case:



- State Diagram: Client Object



- Use case specifications:

1.

1. Name: CreateRoom
2. Summary: Create a room where peers can share files
3. Actor: Client/Peer
4. Preconditions: The Client has entered the platform
5. Description:
 - Click on "create room"
 - Click on "generate room link"
 - Click on "share link" and share it with other peers and the peers can join the room if the room limit has not been exceeded
6. Exceptions: The room limit exceeds
7. Post-condition: Peers can join and share files

2.

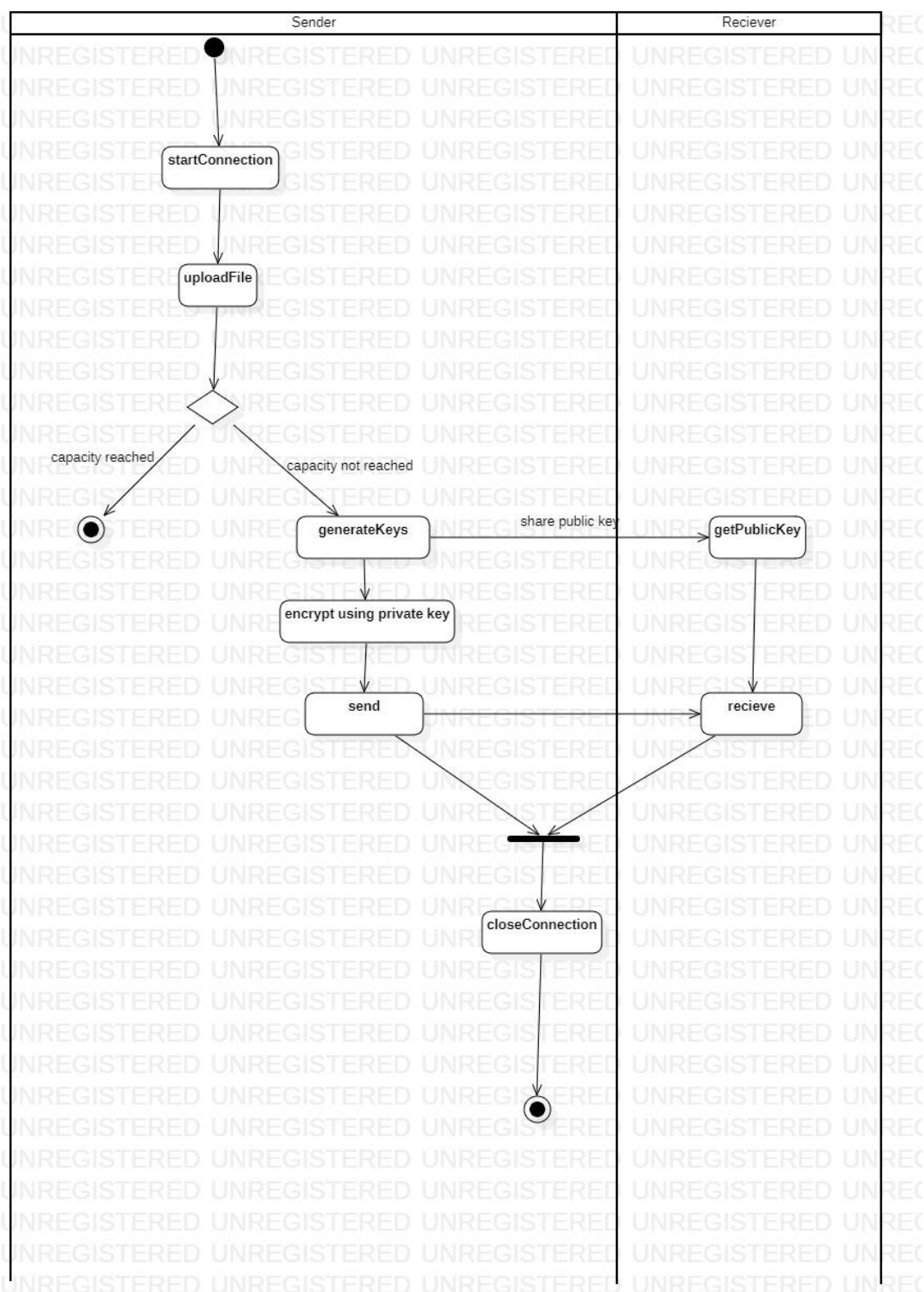
1. Name: DropFile
2. Summary: On receiving the file, drop the file if it was corrupted during transfer

3. Actor: Receiver/Peer

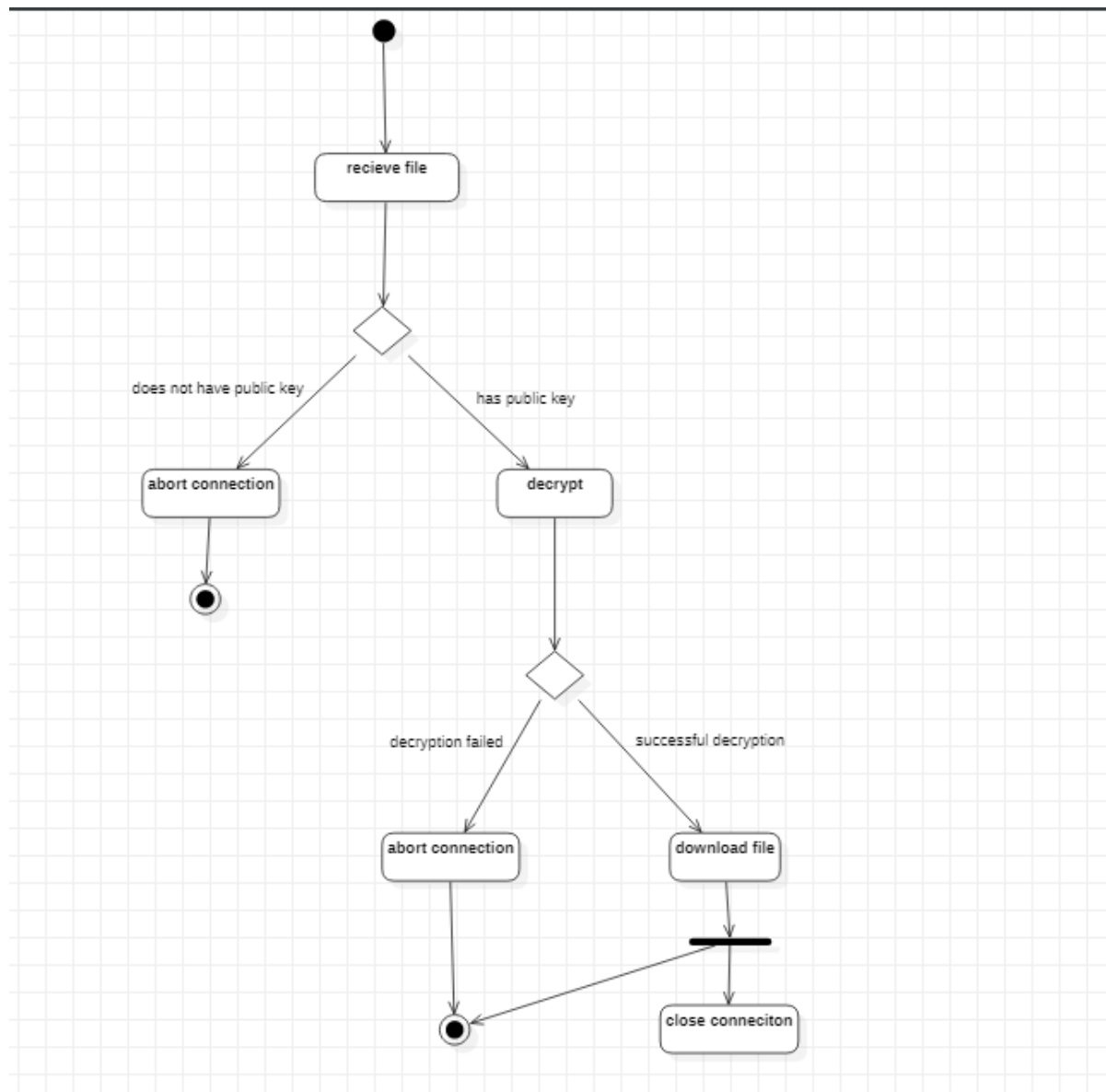
3. Preconditions: File is uploaded and is ready to be sent over the network
4. Description:
 - Calculate the file parity at the sender side, which upon received at the receiver side is used to verify the integrity of the file
 - It is added as metadata of the file
 - It is encrypted, sent over the network and received on the other side, and decrypted.
 - The metadata appended to the file is used to check the integrity of the file
 - If the file is found to be tampered, it is dropped immediately and a new request to resend the file goes to the sender, else accept the file.
5. Exceptions: The file doesn't reach the receiver side
6. Post-condition: Receiver can download the files

2. By: Shreyas VBKS, PES1UG19CS469

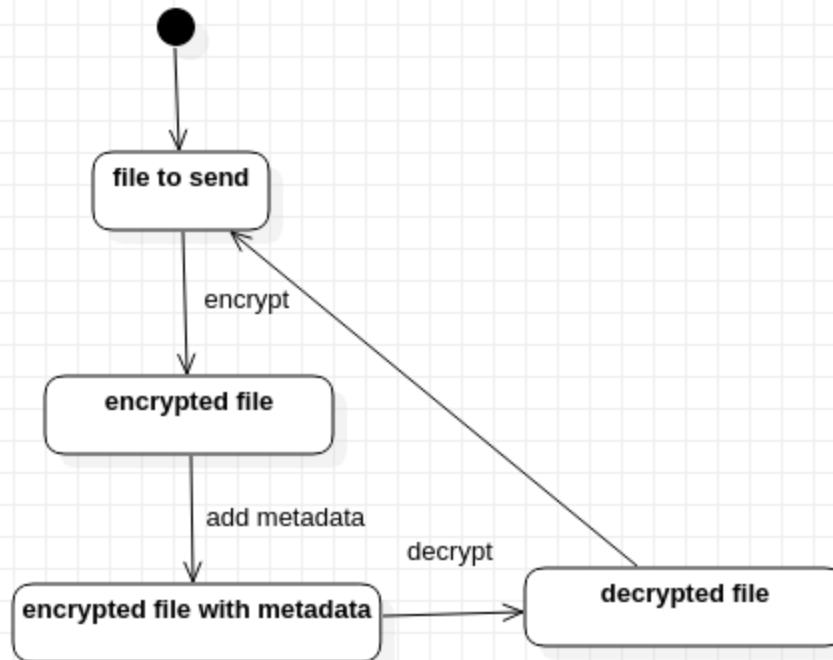
- Activity Diagrams
- (c) SendFile Use Case:



(d) ReceiveFile Use Case:



- State Diagram: File Object



- Use case specifications:

1.

1. Name: SendFile

2. Summary: Prepare the file to be sent over the network

3. Actor: Sender/Peer

4. Preconditions: The file is uploaded onto the platform

5. Description:

- On starting the connection, keys generated for secure transmission i.e encryption
- Share the public key to the receiver
- Encrypt the file with the key already generated
- Send the file to the receiver
- Receive at the receiver side
- Close connection

6. Exceptions: File doesn't exist in the DB

7. Post-condition: Receiver can receive the sent file

2.

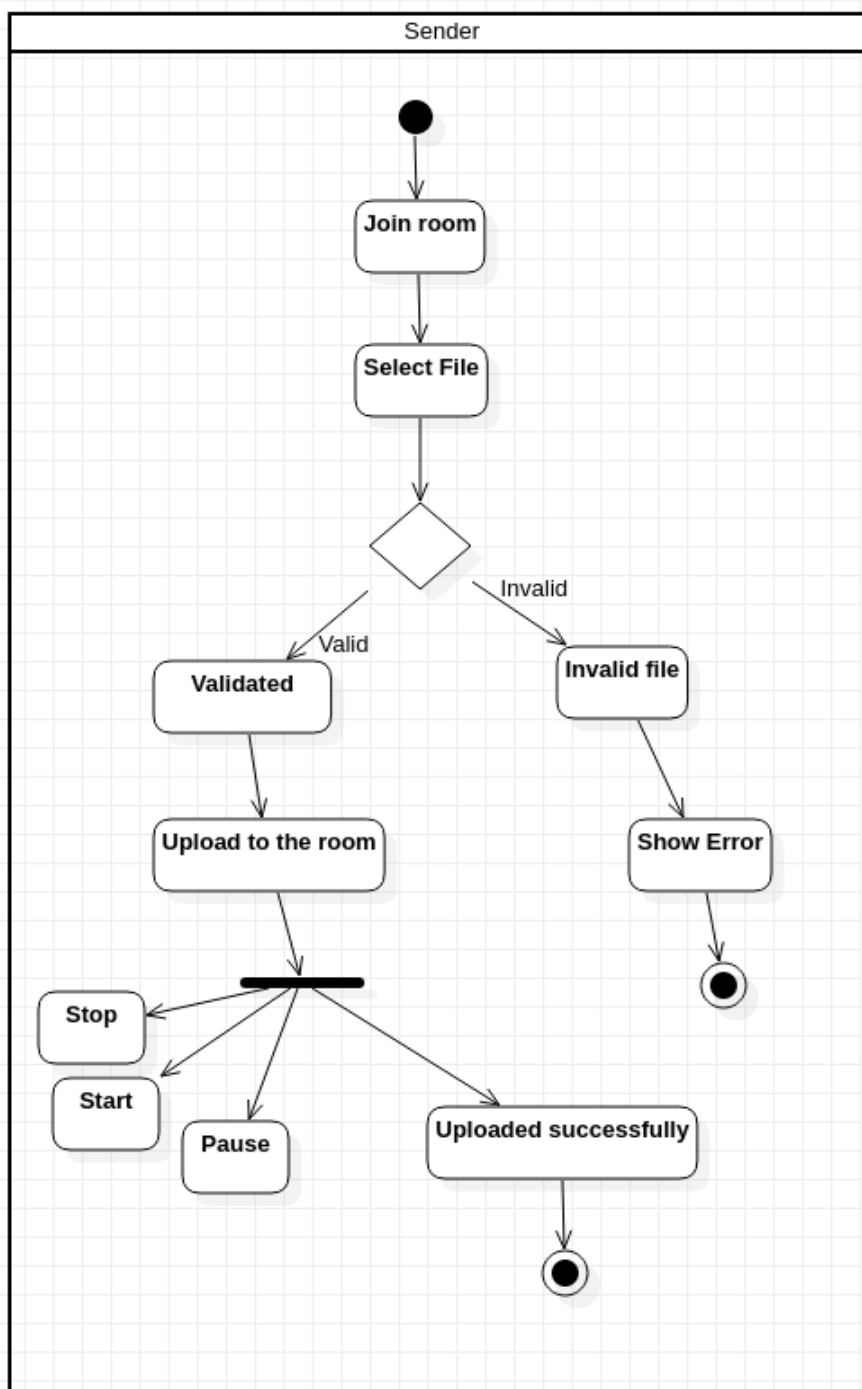
1. Name: Receive File
2. Summary: Receive the file sent over the network.
3. Actor: Peer/Receiver
4. Preconditions: The Sender has pushed a file to the fileDB
5. Description:
 - Click on “receive” file
 - Click on “verify” to verify the contents of the file by decrypting the file using the public key of the sender.
 - Click on “download” to download the file after successful verification.
6. Exceptions: Verification fails.
7. Post-condition: The file can now be downloaded by the receiver.

3. By: Sowmya M, PES1UG19CS497

- Activity Diagrams

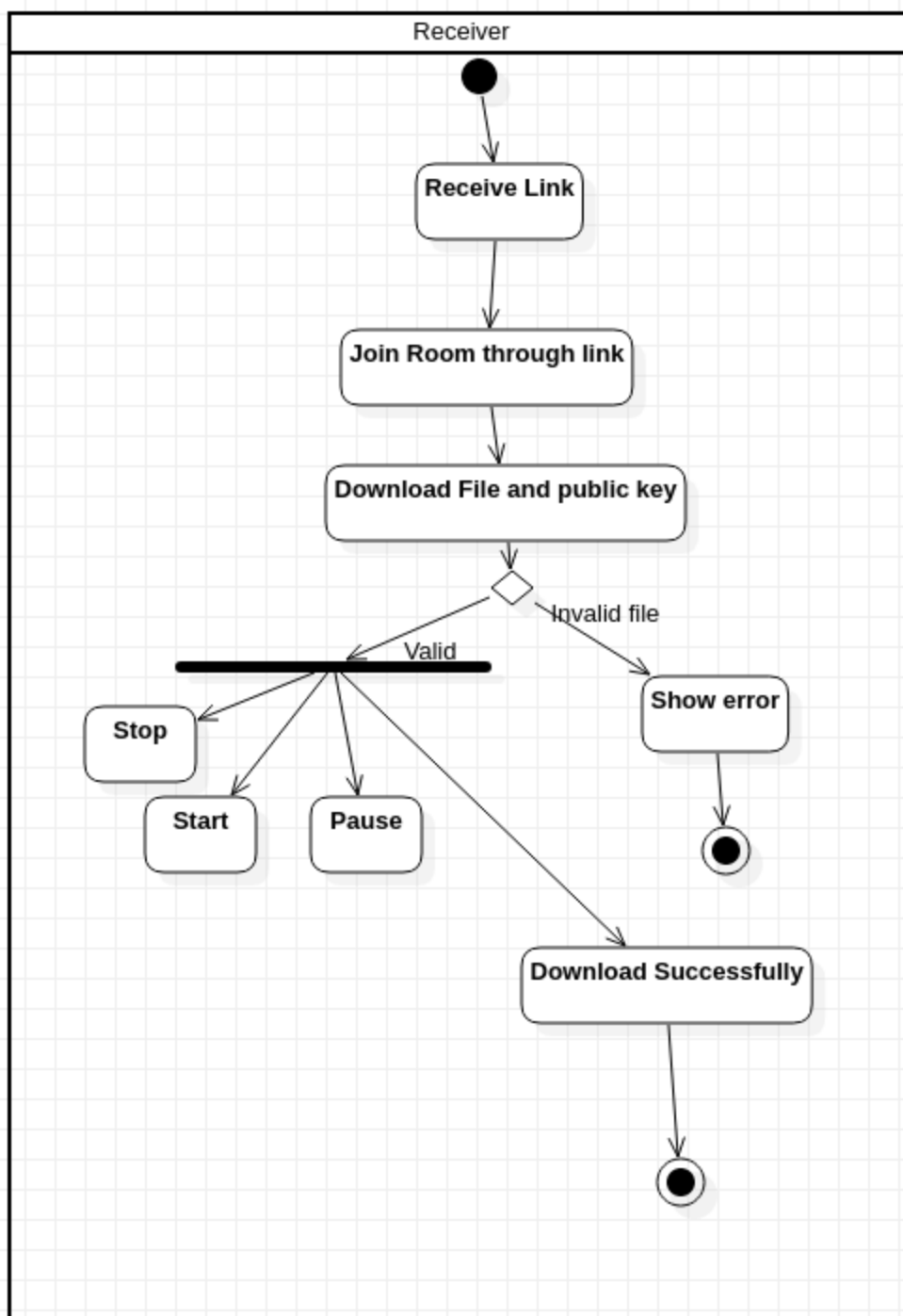
(e) UploadFile Use Case:

1. Name: Upload File use case
2. Summary: Select the file and upload the file in the FileDB
3. Actor: Client/Peer
4. Pre-conditions: The Client has entered the platform
5. Description:
 - Click on “upload” to upload the file
 - Select the file from the peer local system.
 - Click on “OK” to start uploading.
 - The uploading actions have start, pause and stop options.
6. Exception - File is invalid or corrupted.
7. Post-condition - Send the file for encryption.

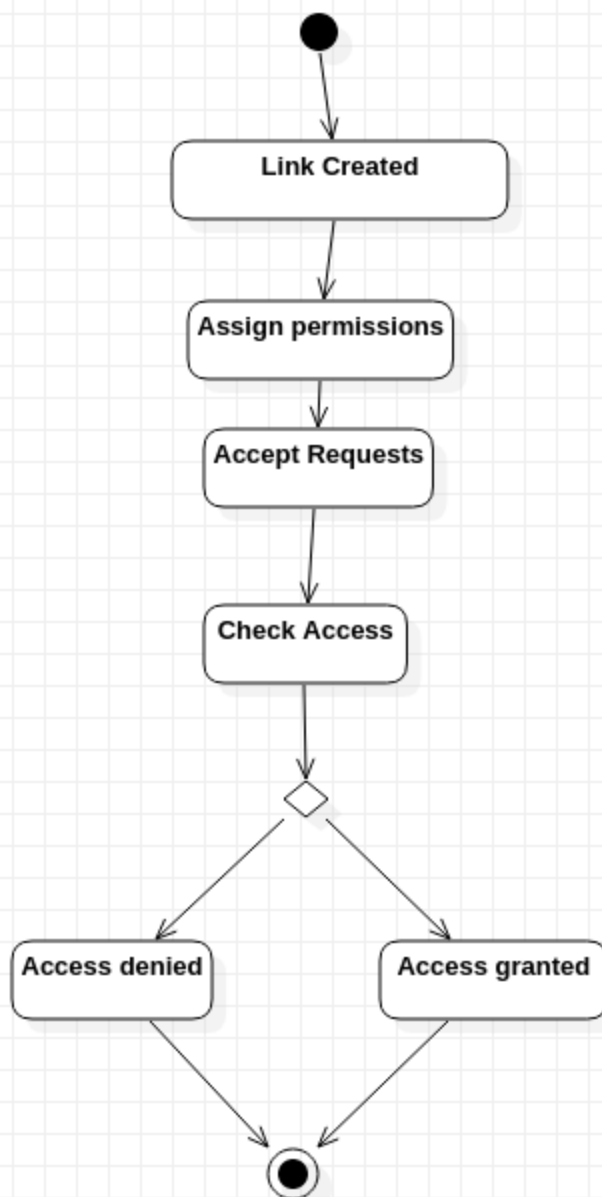


(f) DownloadFile Use Case:

1. Name: Download File use case
2. Summary: Download the shared file in the room
3. Actor: Receiver/Peer
4. Pre-conditions: The file had been received and verified by decryption.
5. Description:
 - Click on “download” to download the file.
 - Select the destination to download in the peer’s local system.
 - Click on “OK” to start downloading.
 - The downloading actions have start, pause and stop options.
6. Exception - File is invalid or corrupted (verification failed).
7. Post-condition - The peer can continue being in the room to share and receive files.



- State Diagram: Link accessibility





**Week 5: Project Document –
02- State and Activity Diagram**

2022