

DESIGN PHASE

Identify Classes

- Message
- MessageQueue
- Mailbox
- MailCenter
- ControlHub
- Telephone

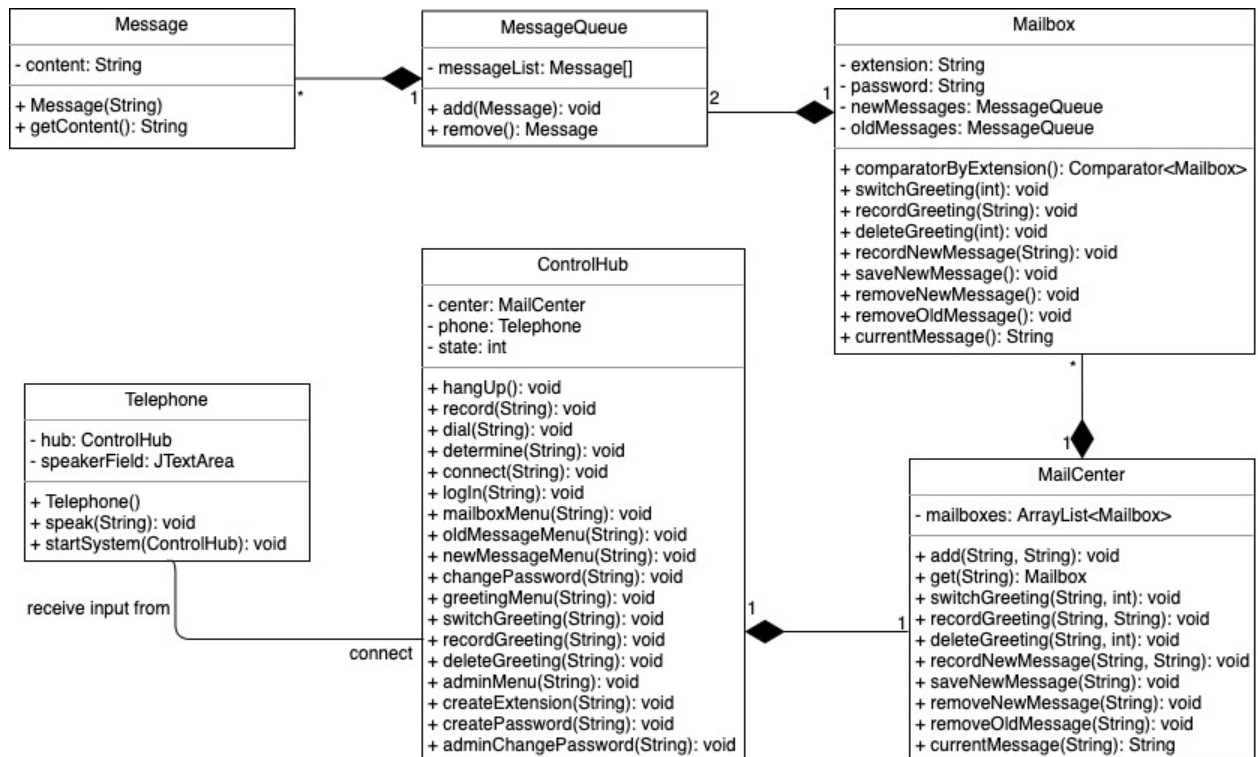
Class Responsibility

- Message contains message content.
- MessageQueue stores lists of messages in a circular array. It can append message at the tail and removes message at the head of the list.
- Mailbox has its own extension number, password, and maximum 3 greetings. It also keeps old and new messages in 2 different MessageQueues. Its operations allow users to compare 2 Mailboxes, change password, manipulate greetings, as well as save and delete Messages.
- MailCenter has an array list of Mailboxes. Based on the order from ControlHub, it modifies, manages and controls multiple Mailboxes.
- ControlHub gets user input from Telephone, records voice Message and carries out all user commands (from caller, mailbox owner, or administrator).
- Telephone receives all user inputs, speaks prompt and content of Messages through a Graphical User Interface.

Class Relationship

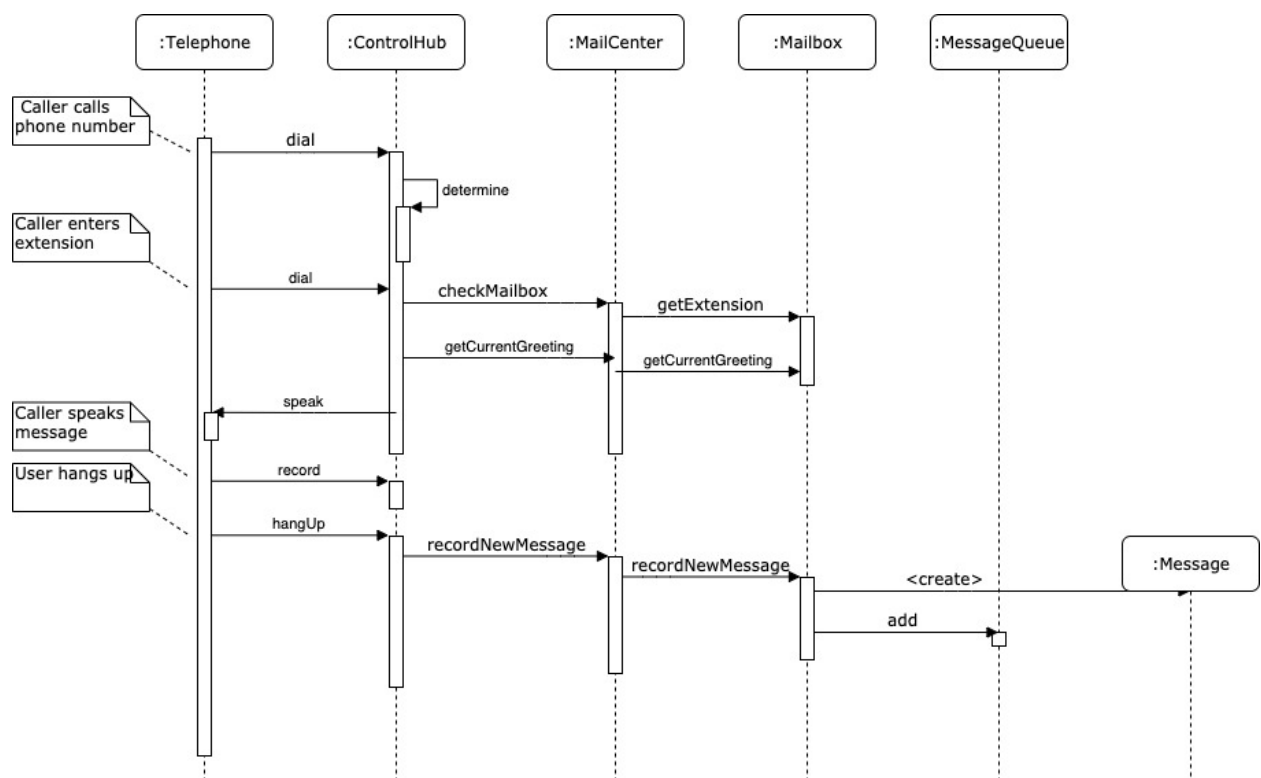
- 1 MessageQueue “has” any number of Messages (composition).
- 1 Mailbox “has” 2 MessageQueues (composition).
- 1 MailCenter “has” any number of Mailboxes (composition).
- 1 ControlHub “has” 1 MailCenter (composition).
- Telephone and ControlHub has association relationship.

UML Diagram

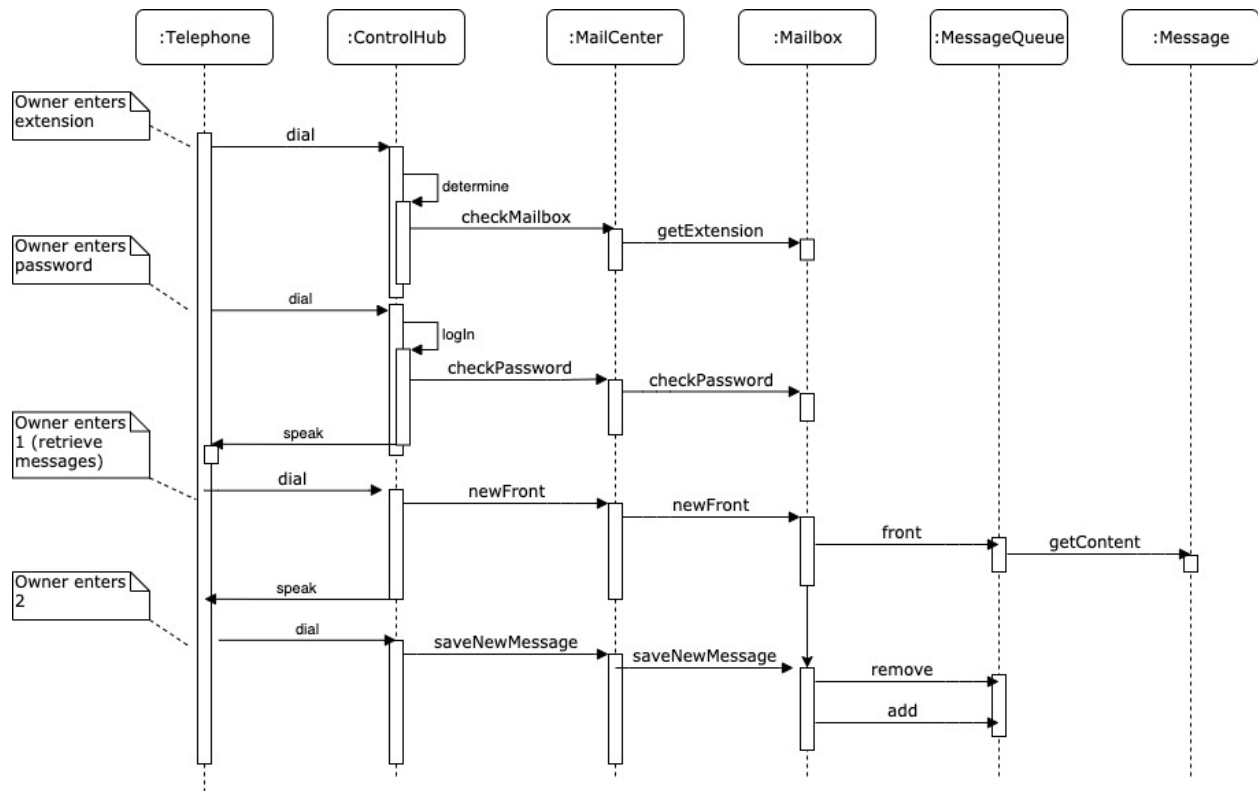


Sequence Diagram

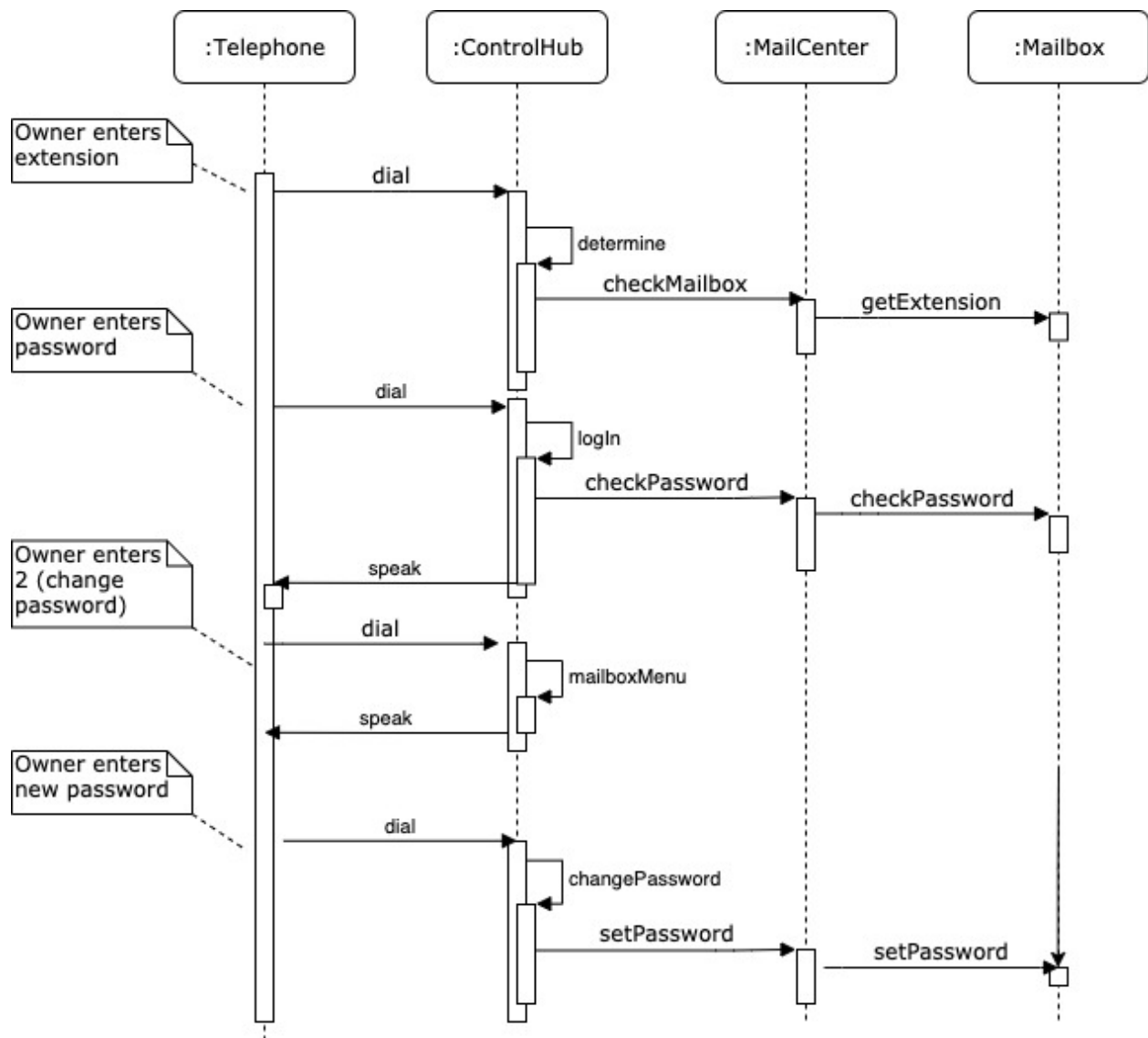
- Caller Leaves a Message:



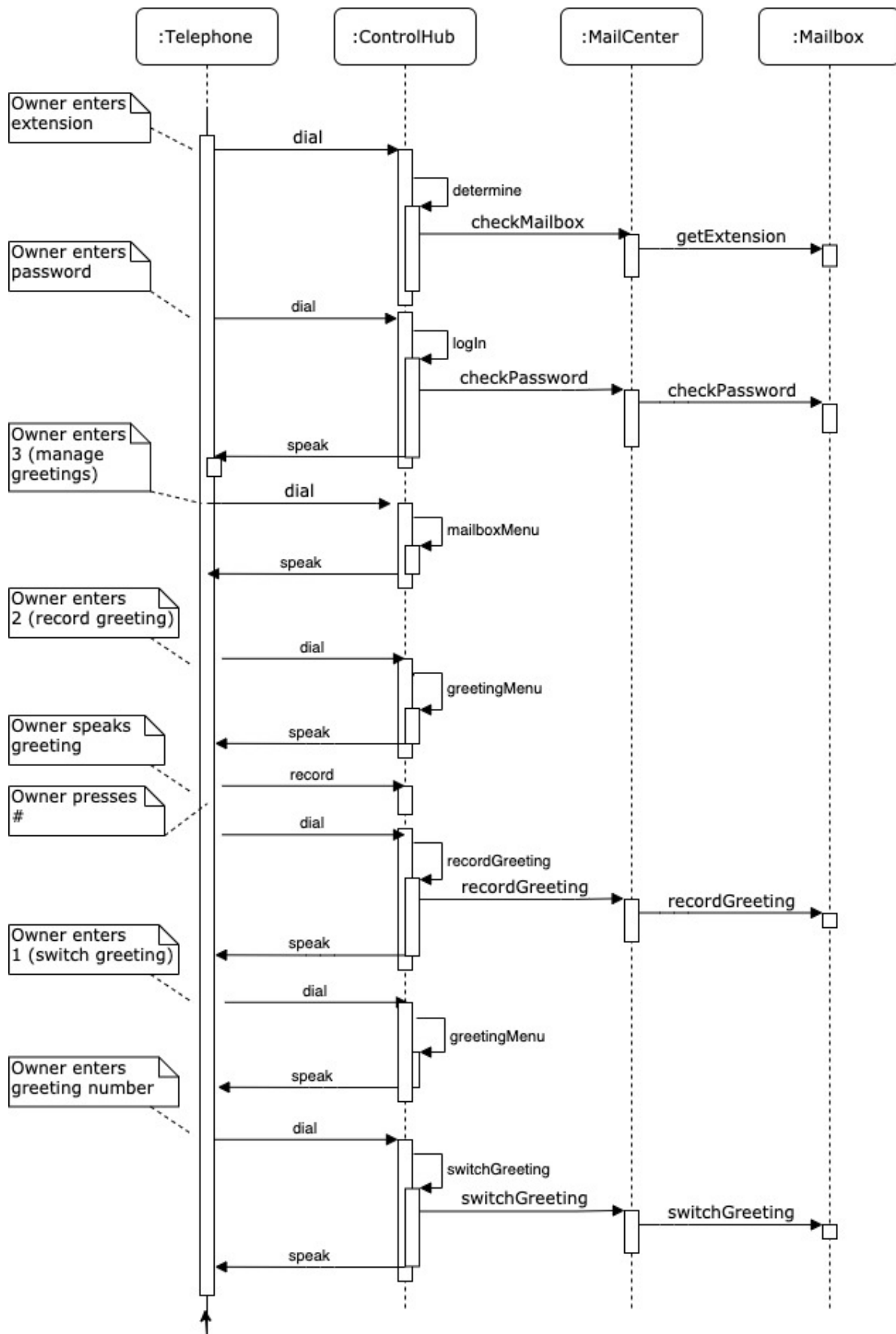
- Owner Retrieves New Message:



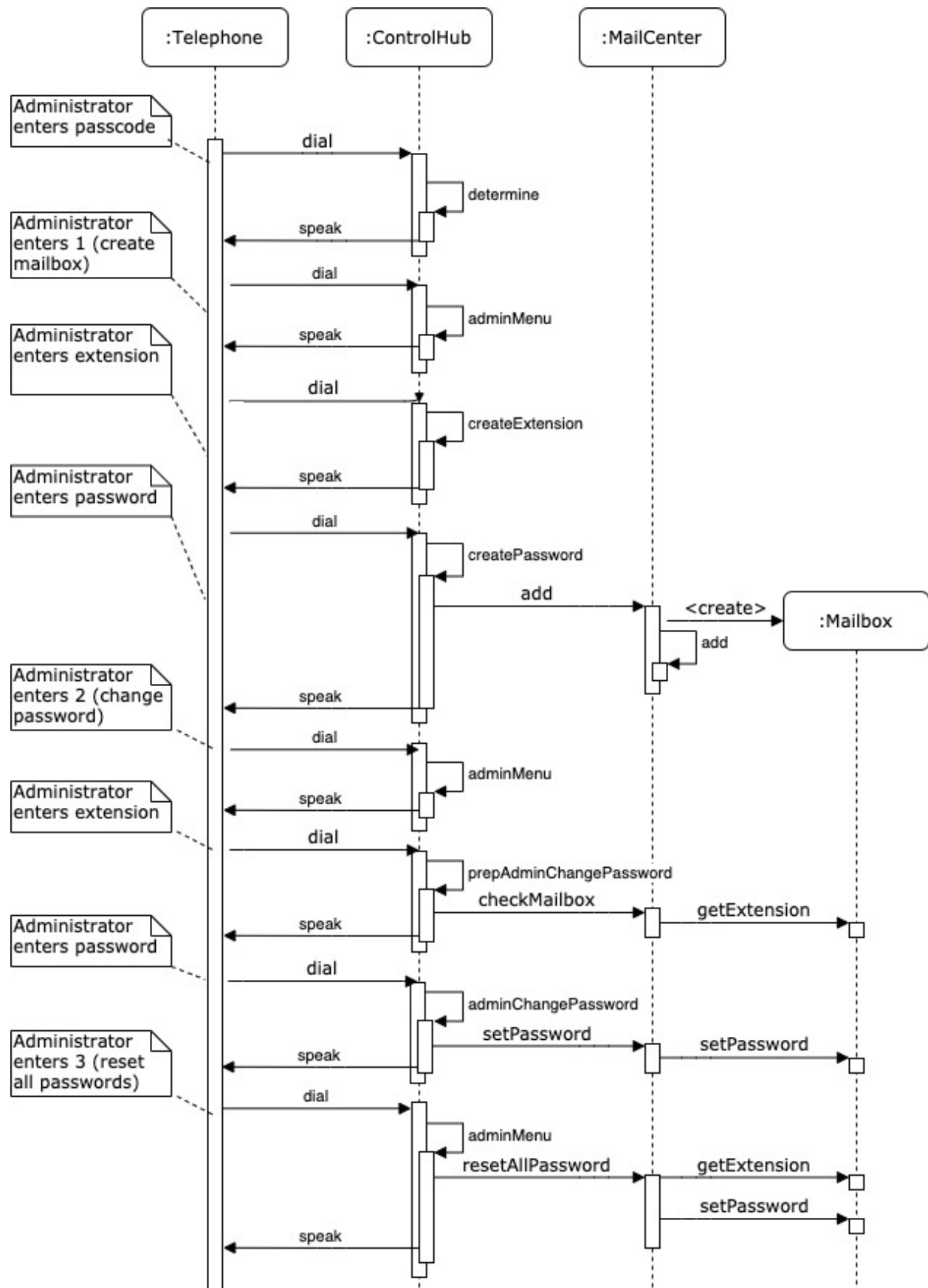
- Owner Changes Password:



- Owner Changes and Records Greeting:



- Administrator Menu:



State Diagram

