# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Email Creation Function   
Function ID: FR-01   
Description: Users can compose and create new emails with specified recipient, subject, and body content. The system supports additional options such as file attachments, priority settings, and scheduling.   
Input: Recipient email address, subject, body content, optional attachments, priority level, and scheduling preferences.   
Output: A new email object with attributes (EmailID, Subject, Body, SenderID, ReceiverID, SendDate, Status) saved in the system.  
  
## 1.2 Email Sending Function   
Function ID: FR-02   
Description: After creating or editing an email, users can send it to the intended recipient(s). The system validates the email and ensures it is sent successfully.   
Input: A composed email object with valid recipient, subject, and body.   
Output: The email is sent to the recipient, and a record is created in the EmailRecord table (RecordID, EmailID, ActionType, ActionDate, Status).  
  
## 1.3 Email Receiving Function   
Function ID: FR-03   
Description: The system receives incoming emails from the email server or other users, verifies the sender, and stores the email in the appropriate user's inbox.   
Input: An incoming email from the email server or another user with attributes (Subject, Body, SenderID, ReceiverID).   
Output: The email is stored in the user's inbox with attributes (InboxID, UserID, EmailID, ReadStatus, DateAdded) and a record is created in the EmailRecord table.  
  
## 1.4 Email Deletion Function   
Function ID: FR-04   
Description: Users can delete emails from their inbox or other folders. The system prompts for confirmation and optionally moves the email to a trash folder before permanent deletion.   
Input: Selected email(s) to be deleted from a folder or inbox.   
Output: The selected email(s) are removed from the folder or inbox, and a record is created in the InboxRecord table (RecordID, InboxID, ActionType, ActionDate, Status).  
  
## 1.5 Email Viewing Function   
Function ID: FR-05   
Description: Users can view the content of an email, including subject, body, and attachments. The system updates the email's read status and logs the view action.   
Input: A selected email from the inbox or another folder.   
Output: The email content is displayed to the user, the email is marked as "read", and a record is created in the InboxRecord table.  
  
## 1.6 User Creation Function   
Function ID: FR-06   
Description: Administrators can create new user accounts in the system. The system validates the input data and stores the user information securely.   
Input: User details including name, email address, password, and role.   
Output: A new user object with attributes (UserID, Name, EmailAddress, Password, Role) stored in the database.  
  
## 1.7 User Registration Function   
Function ID: FR-07   
Description: Administrators can register new users in the system. The system ensures the email is unique and the password meets security requirements.   
Input: User details including full name, email address, password, and role.   
Output: A registered user object with attributes (UserID, Name, EmailAddress, Password, Role) stored in the database.  
  
## 1.8 User Management Function   
Function ID: FR-08   
Description: Administrators can manage existing user accounts by editing, disabling, or deleting them. The system updates the user's status and logs the action.   
Input: Target user ID and the action to be performed (edit, disable, delete).   
Output: Updated user object or user deletion confirmation, with a record created in the EmailRecord or InboxRecord table as needed.  
  
## 1.9 Administrator Creation Function   
Function ID: FR-09   
Description: Administrators can create new administrator accounts in the system. The system validates the input data and stores the administrator information securely.   
Input: Administrator details including name, email address, password, and permissions.   
Output: A new administrator object with attributes (AdminID, Name, EmailAddress, Password, Role) stored in the database.  
  
## 1.10 Administrator Management Function   
Function ID: FR-10   
Description: Administrators can manage existing administrator accounts by editing, disabling, or deleting them. The system updates the administrator's status and logs the action.   
Input: Target administrator ID and the action to be performed (edit, disable, delete).   
Output: Updated administrator object or administrator deletion confirmation, with a record created in the EmailRecord or InboxRecord table as needed.  
  
## 1.11 Contact Management Function   
Function ID: FR-11   
Description: Users and administrators can add, edit, or delete contacts in the user's contact list. The system validates the contact information and logs the action.   
Input: Contact details including name, email address, phone number, and address.   
Output: Updated contact list with a new, modified, or removed contact, and a record created in the EmailRecord or InboxRecord table as needed.  
  
## 1.12 Contact Addition Function   
Function ID: FR-12   
Description: Users can add a new contact to their contact list. The system validates the contact's email address and ensures it is not a duplicate.   
Input: New contact details including name, email address, phone number, and address.   
Output: A new contact object with attributes (ContactID, UserID, Name, EmailAddress, PhoneNumber, Address) stored in the database.  
  
## 1.13 Contact Deletion Function   
Function ID: FR-13   
Description: Users can delete a contact from their contact list. The system prompts for confirmation and optionally moves the contact to a trash or archive folder.   
Input: Selected contact(s) to be deleted.   
Output: The selected contact(s) are removed from the contact list, and a record is created in the EmailRecord or InboxRecord table as needed.