# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Email Account Creation Function   
\*\*Function ID\*\*: FR-01   
\*\*Description\*\*: Administrators can create a new email account for a user, including configuration of the email domain, password, and association with contact information.   
\*\*Input\*\*: Username, password, email domain, user ID   
\*\*Output\*\*: Created email account, associated contact record, confirmation message to the administrator   
  
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## 1.2 Email Account Management Function   
\*\*Function ID\*\*: FR-02   
\*\*Description\*\*: Administrators can update or modify an existing email account's configuration, such as password, access permissions, or recovery options.   
\*\*Input\*\*: Email account ID, updated password or permissions, user ID (if applicable)   
\*\*Output\*\*: Updated email account, synchronized email flow and recovery settings, confirmation message to the administrator   
  
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## 1.3 Email Account Deletion Function   
\*\*Function ID\*\*: FR-03   
\*\*Description\*\*: Administrators can delete an email account, removing it from email flow and recovery configurations and archiving its data according to the archive policy.   
\*\*Input\*\*: Email account ID, confirmation of deletion   
\*\*Output\*\*: Deactivated and removed email account, archived data, confirmation message to the administrator   
  
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## 1.4 Email Sending Function   
\*\*Function ID\*\*: FR-04   
\*\*Description\*\*: Administrators can send an email to one or more recipients, either individual contacts or distribution groups, with validation and routing based on email flow rules.   
\*\*Input\*\*: Sender email account ID, recipient contact or distribution group ID(s), subject, body, formatting template (if applicable)   
\*\*Output\*\*: Sent email, updated email flow record, confirmation message to the administrator   
  
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## 1.5 Email Receiving Function   
\*\*Function ID\*\*: FR-05   
\*\*Description\*\*: The system receives and processes incoming emails, storing them in the inbox or archive based on email flow and archive policy rules.   
\*\*Input\*\*: Email message from external/internal source, recipient email account ID   
\*\*Output\*\*: Stored email in inbox/archive, updated email flow record, notification to the administrator (if enabled)   
  
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## 1.6 Email Formatting Function   
\*\*Function ID\*\*: FR-06   
\*\*Description\*\*: Administrators can apply formatting to an email using a template or manual configuration, ensuring the formatting is valid and aligned with email flow rules.   
\*\*Input\*\*: Email account ID, email body, formatting rules or template   
\*\*Output\*\*: Formatted email, updated email flow record, confirmation for review   
  
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## 1.7 Email Reading Function   
\*\*Function ID\*\*: FR-07   
\*\*Description\*\*: Administrators can read emails from the inbox, with the system updating the email flow to reflect the read status.   
\*\*Input\*\*: Email account ID, email ID   
\*\*Output\*\*: Displayed email content, updated email flow status, options for reply/forward/delete   
  
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## 1.8 Email Archiving Function   
\*\*Function ID\*\*: FR-08   
\*\*Description\*\*: Administrators can archive one or more emails based on archive policy rules, removing them from the inbox and storing them in the archive module.   
\*\*Input\*\*: Email account ID, selected email ID(s), archive policy rules   
\*\*Output\*\*: Archived email(s) in storage, updated inbox, confirmation message to the administrator   
  
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## 1.9 Archived Email Search Function   
\*\*Function ID\*\*: FR-09   
\*\*Description\*\*: Administrators can search for archived emails using criteria such as sender, recipient, subject, date range, or keywords.   
\*\*Input\*\*: Search criteria (sender, recipient, subject, date range, keywords)   
\*\*Output\*\*: List of matching archived emails, options to retrieve or delete   
  
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## 1.10 Email Recovery Function   
\*\*Function ID\*\*: FR-10   
\*\*Description\*\*: Administrators can recover expired or deleted emails from the archive, restoring them to the email account's inbox or a recovery folder.   
\*\*Input\*\*: Email account ID, archived email ID(s)   
\*\*Output\*\*: Recovered email(s) in inbox or recovery folder, updated archive policy, confirmation message to the administrator   
  
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## 1.11 Contact Creation Function   
\*\*Function ID\*\*: FR-11   
\*\*Description\*\*: Administrators can create a new contact record for a user, including name, email, phone number, and address.   
\*\*Input\*\*: Name, email address, phone number, address, associated user ID   
\*\*Output\*\*: Created contact record, confirmation message to the administrator   
  
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## 1.12 Contact Management Function   
\*\*Function ID\*\*: FR-12   
\*\*Description\*\*: Administrators can update a contact's information or delete a contact, ensuring any references in distribution groups or email accounts are updated.   
\*\*Input\*\*: Contact ID, updated information or deletion confirmation   
\*\*Output\*\*: Updated or deleted contact, updated distribution groups and email accounts, confirmation message   
  
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## 1.13 Contact Reading Function   
\*\*Function ID\*\*: FR-13   
\*\*Description\*\*: Administrators can view the details of a contact, including whether it is part of any distribution groups or linked to an email account.   
\*\*Input\*\*: Contact ID   
\*\*Output\*\*: Displayed contact information, links to related email accounts or groups   
  
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## 1.14 Distribution Group Creation Function   
\*\*Function ID\*\*: FR-14   
\*\*Description\*\*: Administrators can create a new distribution group and assign contacts or email accounts as members.   
\*\*Input\*\*: Group name, description, selected contacts or email account IDs   
\*\*Output\*\*: Created distribution group with members, confirmation message   
  
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## 1.15 Distribution Group Management Function   
\*\*Function ID\*\*: FR-15   
\*\*Description\*\*: Administrators can update or delete an existing distribution group, ensuring its members and associated email configurations are synchronized.   
\*\*Input\*\*: Distribution group ID, updated information or deletion confirmation   
\*\*Output\*\*: Updated or deleted group, synchronized email flow and email account data, confirmation message   
  
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## 1.16 Calendar Event Creation Function   
\*\*Function ID\*\*: FR-16   
\*\*Description\*\*: Administrators can create a new calendar event, invite contacts or distribution groups, and send email invites via the associated email account.   
\*\*Input\*\*: Event title, description, start and end time, invited contact or group IDs   
\*\*Output\*\*: Created calendar event, sent email invites, updated email flow, confirmation message   
  
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## 1.17 Calendar Event Update Function   
\*\*Function ID\*\*: FR-17   
\*\*Description\*\*: Administrators can update an existing calendar event, including time, description, and invited participants, with optional email notifications.   
\*\*Input\*\*: Event ID, updated details, updated invited contact or group IDs   
\*\*Output\*\*: Updated calendar event, updated email flow (if invites sent), confirmation message   
  
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## 1.18 Calendar Event Deletion Function   
\*\*Function ID\*\*: FR-18   
\*\*Description\*\*: Administrators can delete a calendar event, cancel associated email invites, and update the email flow and recovery settings if needed.   
\*\*Input\*\*: Event ID, confirmation of deletion   
\*\*Output\*\*: Deleted event, updated email flow and recovery, confirmation message   
  
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## 1.19 Calendar Event Reading Function   
\*\*Function ID\*\*: FR-19   
\*\*Description\*\*: Administrators can view the details of a calendar event, including its title, time, description, and participants.   
\*\*Input\*\*: Event ID   
\*\*Output\*\*: Displayed calendar event details, options to edit or delete   
  
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## 1.20 Archive Policy Creation Function   
\*\*Function ID\*\*: FR-20   
\*\*Description\*\*: Administrators can create a new archive policy with retention periods and rules for email archiving.   
\*\*Input\*\*: Policy name, description, retention duration, start/end dates   
\*\*Output\*\*: Created archive policy, associated retention period, confirmation message   
  
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## 1.21 Archive Policy Update Function   
\*\*Function ID\*\*: FR-21   
\*\*Description\*\*: Administrators can modify an existing archive policy to change its retention rules or storage configuration.   
\*\*Input\*\*: Archive policy ID, updated retention or archive rules   
\*\*Output\*\*: Updated archive policy, recalculated email retention/deletion schedule, confirmation message   
  
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## 1.22 Archive Policy Deletion Function   
\*\*Function ID\*\*: FR-22   
\*\*Description\*\*: Administrators can delete an archive policy, ensuring that it is not in use by any email accounts or flows.   
\*\*Input\*\*: Archive policy ID, confirmation of deletion   
\*\*Output\*\*: Deleted policy, updated associated email accounts and flows, confirmation message   
  
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## 1.23 Email Flow Management Function   
\*\*Function ID\*\*: FR-23   
\*\*Description\*\*: Administrators can create, update, or delete an email flow to define routing and filtering rules for email processing.   
\*\*Input\*\*: Email flow ID or new flow details, flow rules, associated email account IDs   
\*\*Output\*\*: Updated or created email flow, synchronized with email account settings, confirmation message   
  
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## 1.24 Email Flow Capture Function   
\*\*Function ID\*\*: FR-24   
\*\*Description\*\*: The system captures the flow of emails as they are sent or received, recording details such as sender, recipient, timestamp, and status.   
\*\*Input\*\*: Email ID, flow description, timestamp   
\*\*Output\*\*: Captured and stored email flow record, confirmation of capture   
  
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## 1.25 User Management Function   
\*\*Function ID\*\*: FR-25   
\*\*Description\*\*: Administrators can create, update, or delete user records, ensuring consistency with email accounts, contacts, and archive policies.   
\*\*Input\*\*: User ID, user details (name, role, access level), associated email account or contact ID (if applicable)   
\*\*Output\*\*: Updated or created user record, synchronized related configurations, confirmation message   
  
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## 1.26 Email Ownership Assignment Function   
\*\*Function ID\*\*: FR-26   
\*\*Description\*\*: Administrators can assign ownership of an email account or calendar event to a user, ensuring the user has the appropriate access and permissions.   
\*\*Input\*\*: Email account or calendar event ID, user ID   
\*\*Output\*\*: Updated ownership, synchronized with related modules (email flow, archive policy), confirmation message   
  
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## 1.27 Contact Ownership Assignment Function   
\*\*Function ID\*\*: FR-27   
\*\*Description\*\*: Administrators can assign ownership of a contact to a user, ensuring the user can manage or access it.   
\*\*Input\*\*: Contact ID, user ID   
\*\*Output\*\*: Updated ownership, synchronized with distribution groups and email accounts, confirmation message   
  
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## 1.28 Archive Policy Application Function   
\*\*Function ID\*\*: FR-28   
\*\*Description\*\*: The system applies an archive policy to an email account, identifying and archiving emails that meet the policy criteria.   
\*\*Input\*\*: Archive policy ID, email account ID   
\*\*Output\*\*: Archived emails, updated inbox, confirmation of policy application   
  
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## 1.29 Email Recovery Record Deletion Function   
\*\*Function ID\*\*: FR-29   
\*\*Description\*\*: Administrators can delete an email recovery record, ensuring it is not in use for compliance or audit purposes.   
\*\*Input\*\*: Email recovery ID, confirmation of deletion   
\*\*Output\*\*: Deleted recovery record, updated email account and archive policy, confirmation message   
  
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## 1.30 Email Flow Assignment Function   
\*\*Function ID\*\*: FR-30   
\*\*Description\*\*: Administrators can add an email account to an email flow, ensuring the email flow is updated and synchronized with the account configuration.   
\*\*Input\*\*: Email account ID, email flow ID   
\*\*Output\*\*: Updated email flow, confirmation message   
  
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## 1.31 Email Sending to Distribution Group Function   
\*\*Function ID\*\*: FR-31   
\*\*Description\*\*: Administrators can send an email to a distribution group, with validation of group members and email flow rules.   
\*\*Input\*\*: Email account ID, distribution group ID, email content   
\*\*Output\*\*: Sent email to all valid members, updated email flow record, confirmation message   
  
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## 1.32 Email Flow Belonging Function   
\*\*Function ID\*\*: FR-32   
\*\*Description\*\*: An email account is associated with an email flow, ensuring that all sent and received emails are processed according to flow rules.   
\*\*Input\*\*: Email account ID, email flow ID   
\*\*Output\*\*: Email account included in the flow, updated flow configuration, confirmation message   
  
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## 1.33 Email Archiving According to Policy Function   
\*\*Function ID\*\*: FR-33   
\*\*Description\*\*: The system automatically archives emails based on archive policy rules, such as retention periods or content criteria.   
\*\*Input\*\*: Email account ID, archive policy ID   
\*\*Output\*\*: Archived emails, updated inbox, confirmation of archiving action   
  
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## 1.34 Email Recovery from Archive Function   
\*\*Function ID\*\*: FR-34   
\*\*Description\*\*: Administrators can recover an email from the archive and restore it to the email account's inbox or recovery folder.   
\*\*Input\*\*: Email account ID, archived email ID   
\*\*Output\*\*: Recovered email, updated archive policy, confirmation message   
  
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## 1.35 Distribution Group Membership Update Function   
\*\*Function ID\*\*: FR-35   
\*\*Description\*\*: Administrators can add or remove contacts or email accounts from a distribution group.   
\*\*Input\*\*: Distribution group ID, contact or email account ID(s), action (add/remove)   
\*\*Output\*\*: Updated group membership, confirmation message   
  
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## 1.36 Retention Period Definition Function   
\*\*Function ID\*\*: FR-36   
\*\*Description\*\*: Administrators can define a retention period for an archive policy, specifying the duration for which emails will be retained before archiving.   
\*\*Input\*\*: Archive policy ID, retention duration, start and end dates   
\*\*Output\*\*: Created or updated retention period, confirmation message   
  
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## 1.37 Retention Period Modification Function   
\*\*Function ID\*\*: FR-37   
\*\*Description\*\*: Administrators can modify an existing retention period to adjust the duration or conditions.   
\*\*Input\*\*: Retention period ID, new retention duration or conditions   
\*\*Output\*\*: Updated retention period, recalculated email retention/deletion schedule, confirmation message   
  
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## 1.38 Retention Period Deletion Function   
\*\*Function ID\*\*: FR-38   
\*\*Description\*\*: Administrators can delete a retention period, ensuring that it is not in use by any active archive policies.   
\*\*Input\*\*: Retention period ID, confirmation of deletion   
\*\*Output\*\*: Deleted retention period, updated archive policy, confirmation message   
  
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## 1.39 Archive Policy Application Execution Function   
\*\*Function ID\*\*: FR-39   
\*\*Description\*\*: The system executes the archive policy application, identifying and archiving emails based on the defined policy.   
\*\*Input\*\*: Email account ID, archive policy ID   
\*\*Output\*\*: Archived emails, updated inbox, updated archive policy application log, confirmation message   
  
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