# Functional Requirement

# 1. Functional Requirements  
  
## 1.1 Email Creation Function   
Function ID: FR-01   
Description: Administrators can create new email accounts with associated distribution groups.   
Input: Email address, password, contact information, selected distribution group   
Output: Created email account with status set to active, added to the specified distribution group  
  
## 1.2 Email Sending Function   
Function ID: FR-02   
Description: Users can compose and send emails to individual contacts or distribution groups.   
Input: Selected email account, subject, body content, attachment files, recipient contact/distribution group selection   
Output: Sent email with timestamp, status set to sent, copy stored in archive if configured  
  
## 1.3 Email Receiving Function   
Function ID: FR-03   
Description: System automatically receives and processes incoming emails for associated accounts.   
Input: Email server connection, active email account, system notification settings   
Output: Received email with sender/receiver information, timestamp, status set to received, copy stored in archive if configured  
  
## 1.4 Email Viewing Function   
Function ID: FR-04   
Description: Administrators can view email contents from inbox or archive.   
Input: Selected email ID, administrator credentials, viewing permissions   
Output: Displayed email content including subject, sender, recipient, body, and attachments, email status updated to read  
  
## 1.5 Email Reply Function   
Function ID: FR-05   
Description: Users can reply to received emails and send responses.   
Input: Selected email to reply to, reply content (subject, body, attachments), active email account   
Output: Sent reply email, original email marked as replied, reply copy stored in archive if configured  
  
## 1.6 Email Forwarding Function   
Function ID: FR-06   
Description: Users can forward received emails to new recipients.   
Input: Selected email to forward, forwarding content (subject, body, attachments), new recipient contact/distribution group selection, active email account   
Output: Sent forwarded email, original email marked as forwarded, forwarded copy stored in archive if configured  
  
## 1.7 Email Archiving Function   
Function ID: FR-07   
Description: System can move selected emails to archive storage for long-term retention.   
Input: Selected email ID, archive configuration settings, administrator credentials   
Output: Archived email with archive date, retention period, and status set to archived  
  
## 1.8 Email Recovery Function   
Function ID: FR-08   
Description: Administrators can restore archived emails to inbox.   
Input: Selected archive record ID, administrator credentials, recovery permissions   
Output: Recovered email in inbox with recovery date, archive status updated to recovered  
  
## 1.9 Contact Management Function   
Function ID: FR-09   
Description: Administrators can add, edit, or delete contact records associated with email accounts.   
Input: Contact details (name, email address, phone number, address), distribution group association, administrator credentials   
Output: Updated contact records with status tracking, associated email account and distribution group updates  
  
## 1.10 Distribution Group Management Function   
Function ID: FR-10   
Description: Administrators can create, update, or delete distribution groups and manage their members.   
Input: Group name, description, member contacts/accounts, administrator credentials   
Output: Updated distribution groups with valid members and status tracking  
  
## 1.11 Email Account Management Function   
Function ID: FR-11   
Description: Administrators can update or delete email account records and associated data.   
Input: Email account details (username, password, status), administrator credentials   
Output: Updated or deleted email account with cascading updates to contacts and distribution groups  
  
## 1.12 Administrator Management Function   
Function ID: FR-12   
Description: Administrators can assign or remove administrator privileges from users.   
Input: Target user account, administrator credentials, access permissions   
Output: Updated administrator records with role changes and access updates  
  
## 1.13 Email Template Management Function   
Function ID: FR-13   
Description: Administrators can create, update, or delete reusable email templates.   
Input: Template name, content, creator information, email account/distribution group association, administrator credentials   
Output: Updated email template records with version tracking and archive capability  
  
## 1.14 Email Settings Management Function   
Function ID: FR-14   
Description: Administrators can configure email account preferences like themes, language, and notification settings.   
Input: Selected email account, settings parameters (theme, language, signature, notification settings), administrator credentials   
Output: Updated email settings record with applied configurations  
  
## 1.15 Archive Record Management Function   
Function ID: FR-15   
Description: Administrators can view, edit, or delete archive records.   
Input: Selected archive record ID, administrator credentials, modification parameters (tags, retention status)   
Output: Updated archive records with metadata changes, deletion tracking  
  
## 1.16 Email Deletion Function   
Function ID: FR-16   
Description: Administrators can delete emails from inbox or archive.   
Input: Selected email ID, administrator credentials, deletion confirmation   
Output: Deleted email record, updated inbox/archive status, audit log entry  
  
## 1.17 Email Formatting Function   
Function ID: FR-17   
Description: System supports formatting of emails with text styling and layout options.   
Input: Email content, formatting instructions (font style, size, color, layout)   
Output: Formatted email content ready for sending or viewing  
  
## 1.18 Email Filtering Function   
Function ID: FR-18   
Description: System allows filtering of emails based on criteria like date range, contacts, or distribution groups.   
Input: Filter criteria (date range, contact, group), administrator/user credentials   
Output: Filtered list of emails for viewing or exporting  
  
## 1.19 Email Export Function   
Function ID: FR-19   
Description: Administrators can export selected email data in specified formats.   
Input: Export criteria (email account, date range, contacts/groups), selected format (CSV, PDF, etc.), administrator credentials   
Output: Exported file with structured email data, download availability confirmation  
  
## 1.20 Email Validation Function   
Function ID: FR-20   
Description: System validates email content and recipient information before sending.   
Input: Email content, recipient information, email account status   
Output: Validation results, error/warning messages if validation fails  
  
## 1.21 Email Status Tracking Function   
Function ID: FR-21   
Description: System tracks and updates email statuses throughout its lifecycle.   
Input: Email event (sent, received, read, archived, recovered, deleted)   
Output: Updated email status field in database  
  
## 1.22 Email Template Application Function   
Function ID: FR-22   
Description: Users can apply pre-defined email templates when composing new emails.   
Input: Selected template ID, template parameters, email account   
Output: Composed email using template content, template reference tracking  
  
## 1.23 Email Storage Function   
Function ID: FR-23   
Description: System stores emails and related data in database with metadata tracking.   
Input: Email content, sender/receiver information, timestamp, status   
Output: Persisted email record in database with full metadata  
  
## 1.24 Email Access Control Function   
Function ID: FR-24   
Description: System enforces access control policies for email viewing, management, and operations.   
Input: User credentials, requested operation, target email/contact/group/resource   
Output: Access granted/denied status, operation execution result  
  
## 1.25 Email Notification Function   
Function ID: FR-25   
Description: System provides notifications for email events like new messages or archive actions.   
Input: Notification settings, email event (new email received, email sent, archive action)   
Output: Delivered notification to user/administrator  
  
## 1.26 Email Association Function   
Function ID: FR-26   
Description: System manages associations between emails, accounts, templates, and archive records.   
Input: Email ID, account ID, template ID, archive ID   
Output: Updated association records in database  
  
## 1.27 Email Error Logging Function   
Function ID: FR-27   
Description: System logs errors and warnings during email operations for troubleshooting.   
Input: Error event (invalid data, failed send/receive/archive), system status information   
Output: Recorded error log entry with timestamp and details  
  
## 1.28 Email Search Function   
Function ID: FR-28   
Description: System allows searching for emails in inbox or archive by keywords or metadata.   
Input: Search query (subject, sender, recipient, date range), administrator/user credentials   
Output: List of matching emails with relevant metadata  
  
## 1.29 Email Auto-reply Function   
Function ID: FR-29   
Description: System supports configuring and sending automated reply emails.   
Input: Auto-reply settings, trigger conditions (time-based, specific senders), template content   
Output: Sent auto-reply email, status tracking of auto-reply action  
  
## 1.30 Email Security Function   
Function ID: FR-30   
Description: System ensures secure handling of email data and credentials.   
Input: Email content, user credentials, security policies   
Output: Encrypted data storage, secure authentication, access control enforcement  
  
## 1.31 Email Audit Function   
Function ID: FR-31   
Description: System maintains audit trails for all email-related operations.   
Input: Operation type (create, send, receive, archive, recover, delete), operator information   
Output: Created audit log entry with timestamp and details  
  
## 1.32 Email Retention Policy Enforcement Function   
Function ID: FR-32   
Description: System enforces configured retention policies for email archiving.   
Input: Email metadata, retention policy rules   
Output: Automated archiving decision, email status updates based on policy  
  
## 1.33 Email Statistics Reporting Function   
Function ID: FR-33   
Description: System generates reports on email activity and archive status.   
Input: Report criteria (email account, time period, activity type), administrator credentials   
Output: Generated report with statistical data and visualizations  
  
## 1.34 Email Backup Function   
Function ID: FR-34   
Description: System creates backups of email data and archive records.   
Input: Backup schedule, selected data for backup   
Output: Created backup file, backup status confirmation  
  
## 1.35 Email Restoration Function   
Function ID: FR-35   
Description: System can restore email data from backups.   
Input: Backup file, restoration criteria, administrator credentials   
Output: Restored email data, updated status of restored items  
  
## 1.36 Email Template Validation Function   
Function ID: FR-36   
Description: System validates email templates for content and format integrity.   
Input: Template content, template configuration   
Output: Validation result, error/warning messages if validation fails  
  
## 1.37 Email Configuration Function   
Function ID: FR-37   
Description: System manages configuration settings for email operations.   
Input: Configuration parameters (server settings, archive rules), administrator credentials   
Output: Updated configuration records, system behavior changes based on configuration