

Software Requirements Specification

for

<File Tracking System>

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<version 1.0>

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1. Introduction

File Tracking System is intended to assist in the tracking of files in our Institute right from the time it is created. It would simplify the process of tracking down a particular file, making the whole movement of file as transparent as possible.

1.1 Purpose

There exists a lot of time overhead and paper-work involved in the day-to-day file tracking activities. The whole process is quite cumbersome and also inconvenient for any user who wants to know the status of a particular file. With the use of File Tracking System, the whole notion of tracking down a file would undergo a major shift from the paper-work based tracking to online tracking.

The project aims at designing and implementing a user-friendly and secure File Tracking System which addresses the above-mentioned shortcomings of the traditional system, which doesn't provide any easy approach to tracking a file. It would also cater to the needs of different class of users, i.e. Employee(s) and Employee Head(s).

1.2 Product Scope

The Scope of the File Tracking System includes:

- Providing a user-friendly interface for the staff and administrators.
- Providing a secure mode for interacting with the system.
- Providing a secured means for creating or processing a file.
- Providing a secured means for tracking status of a file.
- Providing a secured means for visualizing the complete flow of a file.
- Providing secured storage of confidential data on the server.
- Providing appropriate privileges to the different authorities.
- Handling a huge number of files efficiently.

Providing the authenticated users privilege for changing their account settings, such as registered email address and login password

1.3 References

- Rizwan, Assistant Registrar.
- Dr. Atul Gupta.

2. Overall Description

2.1 Product Perspective

An Employee have web-based user-interface through which they can interact with the File Tracking System and perform various file operations. There is a login page for the users, from where they can log into their accounts. The user has the option of resetting his/her lost password. After successfully logging into the account, the user can perform the available file operations like creating new file/documents, viewing list of draft files, inward files, outward files, forwarding a file and tracking a file with file flow options. These form the part of employee-side interface.

The System Administrator also have web-based user-interface through which they can interact with the File Tracking System and perform various administrative operations. These consist of creating new user account, adding new designations to user accounts, viewing and updating designations, deleting a user account, deleting a designation and changing account settings like email & password. These form the part of system administrator-side interface.

2.2 Product Functions

File Tracking System provides for online file tracking services to the already registered users, who are the employees and their heads. The system would be accessed by both employee(s) and their heads. It is designed to handle a large number of accounts & files efficiently, with the users having to be registered for the service, which is done by the System Administrator.

The first category of users consist of all employee including heads. Employees are privileged with required permissions to create a file/document, process a file, view pending files etc. Where as Employee Head who either approves and send it back to sender or forward to higher head for approval are privileged with create a file/document, process a file, view pending files as well as track file. Any employee can change account settings like email and password.

The other category of users consist of system administrator, who are responsible for performing various administrative operations available with the file tracking system to manage the first category of users. However, system administrator have no privilege to perform any file-related operation. Administrative actions include creation of new user accounts, adding new

designations to existing user accounts, viewing the registered set of designations and corresponding details, resetting login password for any user account, deleting a user account, deleting a particular designation from a user account and changing account settings like email and password.

The files involved in the File Tracking System are categorized into two types.

- Hard copies where all attachments are hard copies.
- Soft copies where all attachments are scanned/soft copies.

Mostly employees are involved in Hard copy files. To track and process hard copies, employees involved in the work flow must enter status manually into system to reflect it to other employee.

Major Functions of File Tracking System:

- User Login page with captcha-based security for filtering out automated password guessing attempts.
- Password Reset page with captcha-based security for assisting authentic users in resetting their login password.
- **Features accessible to Employee:**
 - Create new File/document.
 - Send File (hard copy or soft copy).
 - View List of Pending Files to receive, send or pending acknowledgement.
 - Track File (searching file, view file flow).
 - Change Account Settings like email address and login password.
- **Features accessible to System Administrator:**
 - Create new user or administrator account.
 - Add new designation(s) to a user account.
 - View and update designations & their details.

2.3 User Classes and Characteristics

Following are the users of the module

Employee: An employee is a person serving the PDPM-IIITDM Jabalpur in some capacity like a faculty or a staff and should have a PF number and an official institute email id, which should be used for accessing the system.

Employee has privileges like Create File, Receive/Send File, View Pending Files where as **Employee Head** can Create File, Receive/Send File and as well as Track Files, View Performance Statistics, Transfer Or Revoke Privileges.

System Administrator: Generally referred to as an Server-Side Administrator, it refers to a user with enhanced privileges for creating/deleting other user accounts, adding/deleting designations from user accounts and other administrative functions.

2.4 Operating Environment

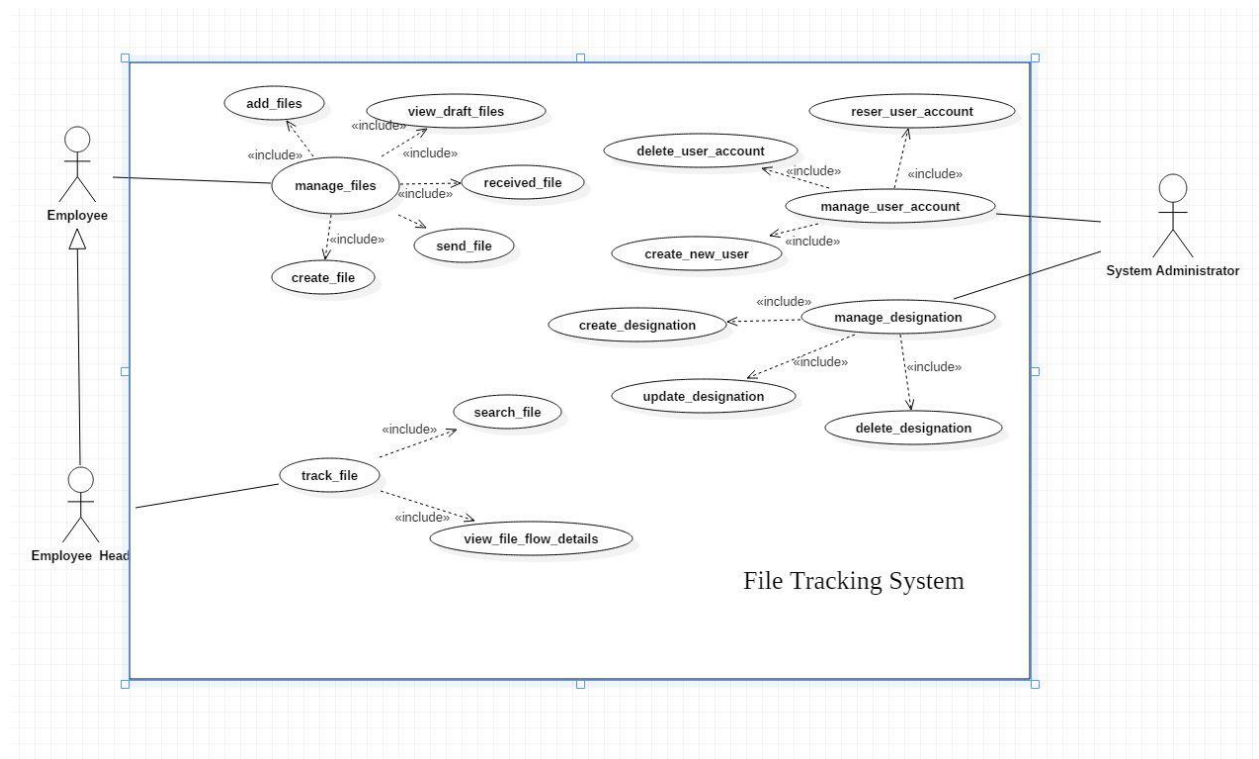
File Tracking System can be accessed over all platforms using majority of available web browsers.

An Institute employee can only access file tracking system. Any user from outside the Institue will not be able to access the system.

3. System Features

3.1 Use Case Diagram

We specify the functional requirements for the module using use cases. The figure represents the use case diagram for the module features.



3.1.0 Use Case for Managing Files

➤ Use Case #1

UC ID	UC#1	
Use case Name	manage_files	
Description	This use case specifies the managing files of the employee to process the file. For this, the employee can create, send, receive, add and process files/documents.	
Actor	Employee	
Precondition	An Employee must be logged-into File Tracking System	
Main Flow	S NO.	Description
Main Flow	1	An Employee choose the "managing files" option.
	2	The system presents a list of the operations like create, send, view pending, add files etc.
	3	An employee selects one of listed options to perform file operations
	4	Following operations can be performed by an employee: Create File : Creating new file/document. A new file consisting of Reference No. [A1] [S1], Designation to create file [A2], Subject [A1], Origin (Optional field), Single Document field, Destination field [A1] and notify email address field (optional). Send File : An employee can send either a soft copy file to another employee. [A3] Add File : An employee (mostly Head) can add file attachments to received file. Received File : An employee can find all the received soft copy files from another employee by clicking on Inbox file.[S2] View Draft File : An employee can check draft files (files created by user and yet to send) in file work flow.
	5	A successful message is displayed corresponding to file operation.
Post Condition	After operations are succesully performed, they will be reflected in the database.	
Alternate Flow	ID.	Description
Alternate Flow	A1	Reference No., Subject, Destination field cannot be empty. If it is so, error pops up.
	A2	If designation selected doesn't have the privilege of creating file, an error pops up.
	A3	If 'cancel' option is selected, then operation will be aborted and system will be redirected to home page.
		Post-condition – The system displays the initial screen.
Sub Flow	S1	The reference no. is automatically generated (soft copy) and manually entered (hard copy).
	S2	An employee who sends file will be notified when receiver clicks on receive file option.
Global Alternate Flow	GA1	An employee can 'cancel' the operation at any time by exercising such an option.
		Post-condition – The system returns to the employee 'Dashboard' – initial screen.

3.1.1 Use Case for Tracking Files

➤ Use Case #2

UC ID	UC#2	
Use case Name	track_file	
Description	This use case specifies the tracking of file such as searching file, viewing file flow etc.	
Actor	Employee Head (Administrator)	
Precondition	The user must be logged-into File Tracking System.	
Main Flow	S NO.	Description
Main Flow	1	The user selects 'Track File' option
	2	The system presents a search box
	3	The user enters the details for the file to track consisting of Reference No or file ID. A list of matching files are displayed [A1] to the user to choose which file to track.
	4	
	5	Then successful message will be displayed.
Post conditions	Administrator completes his track file operation..	
Alternate Flow	AF ID.	Description
Alternate Flow	A1	If no matching files are found, the list of results is empty.
		Post-condition – The system displays the search box with the data filled in so far.
Global Alternate Flow	GA1	An user can 'cancel' the operation at any time by exercising such an option.
		Post-condition – The system returns to the employee 'Dashboard' – initial screen.

3.1.2 Use Case for Managing User Accounts

➤ Use Case #3

UC ID	UC#3	
Use case Name	manage_user_account	
Description	This use case describes the management of users accounts by System Administrator.	
Actor	System Administrator (SA)	
Precondition	The System Administrator must be logged-in	
Main Flow	S NO.	Description
Main Flow	1	The SA choose the "manage user account" option. Then, three options will be displayed as 'Create New User', 'Reset User Password ', 'Delete User account'.
	2	In 'Create New User', the SA enters the details for the new user such as PFId [A1], email address [A1], full name [A1], password [A1], confirm password [A2] and indicates whether the new user account is of a new system administrator or not and Clicks 'Create User' button. A success message is displayed back.
	3	In 'Reset User Password ', the SA enters the PFId [A1], new password [A1], retypes new password [A2] and clicks 'Change Password' button. A success message is displayed back to the user saying that the password was reset successfully for the user account [S1].
	4	In 'Delete User Account', the SA enters the PFId whose account is to be deleted [A1], indicates whether the account to be deleted is a SA's account and clicks 'Delete User Account' button. Then, user account is succesfully deleted.
	5	The SA will be redirected to Dashboard.
Post conditions	The SA processes the user account operations, and corresponding data is reflected in the database.	
Alternate Flow	AF ID.	Description
Alternate Flow	A1	PFId, new password and retype new password fields should not be empty and should contain valid PFId, valid password.
	A2	The confirm (retype) password and password fields must be same. If not, error pops up.
Sub Flow	S1	A mail containing the new password is sent to the email address corresponding to the PFId provided.
Global Alternate Flow	GA1	The SA can 'cancel' the procedure at any time by exercising such an option.
		Post-condition – The system returns to the SA 'Dashboard' – initial screen.

3.1.3 Use Case for Managing Designations

➤ Use Case #4

UC ID	UC#4	
Use case Name	manage_designation	
Description	This use case describes the management of designations by System Administrator.	
Actor	System Administrator (SA)	
Precondition	The System Administrator must be logged-in	
Main Flow	S NO.	Description
Main Flow	1	The SA choose the "manage designation" option. Then, three options will be displayed as 'Add New Designation', 'update designation ', 'Delete designation'.
	2	In ' Add New Designation ', the SA enters the details for the new user such as PFId [A1], designation code [A1], designation name [A1], whether the designation belongs to a staff administrator, selects appropriate privileges to assign to the designation and Clicks Add Designation button. A success message is displayed back.
	3	In ' Update designation ', the SA enters the PFId [A1], new designation code [A1], new designation name and clicks 'update designation' button. A success message is displayed back to the user saying that the designation is successfully updated[S1].
	4	In 'Delete designation ', the SA enters the PFId whose designation is to be deleted [A2], indicates whether the account to be deleted is a SA's account and clicks 'Delete Designation' button. Then, designation is succesfully deleted.
	5	The SA will be redirected to the Dashboard.
Post conditions	The SA processes the user designation operations, and corresponding data is reflected in the database.	
Alternate Flow	AF ID.	Description
Alternate Flow	A1	PFId, designation code and designation name fields should not be empty and should contain valid PFId and designation code which doesn't exist already.
	A2	SA can 'cancel' delete operation.
Sub Flow	S1	A mail containing the new designation is sent to the email address corresponding to the PFId provided.
Global Alternate Flow	GA1	The SA can 'cancel' the procedure at any time by exercising such an option.
		Post-condition – The system returns to the SA 'Dashboard' – initial screen.

4. Other Nonfunctional Requirements

4.1 Performance Requirements

System should perform efficiently, with all major tasks like updating database

User response: The Home Page as well as the other web pages on the website should be able to load in minimum time possible, in which case the page should not be heavy on the network. The system shall respond to any user input within seconds, considering no glitches in the network.

- **Efficiency:** Better component design to get better performance at peak time. The Database accesses should be as efficient as possible. Also, the system will be available to the users 365x24x7 with negligible downtime.

4.2 Security Requirements

Following are the security-related issues to be taken care of:

- Only authorized employees can use the system and no others.
- **Secured Login:** The system will use Captcha Code for filtering automated systems from logging into the system by guessing passwords.
- **Secured Data:** The system will employ complex encryption or hashing algorithm to save confidential user data into the database. It is to be noted that hashing algorithms offer a fool-proof security to store passwords in database.
- System Administrator can only manage user accounts but he cannot do any operations on user data (files).
- An employee can only view files of other employees if and only if he has been granted permission.

4.3 Software Quality Attributes

➤ Usability

- **User Interface:** The system shall allow a user to interface with it through mouse/keyboard events on text-fields, check-boxes, buttons and drop down boxes. Also, the user interface should be such that the system is easy to use.
- **Compatibility:** The user should be able to properly view the web-site in most of the available browsers (Internet Explorer, Firefox and Safari).
- **Validations:** The user should be flagged appropriate warnings/errors upon invalid input or operations, with specific reference to the error.

➤ Correctness

- Data content in files sent by one employee to other employee must be correct. Incorrect leads to failure of system.

➤ Interoperability

- In file tracking system, files are operated between several employees in file work flow. So, interoperability plays a crucial role in interaction of employees.
- It must ensure that data is exchanged and make use of that information among employees.

➤ Robustness

- Interaction between a some employees should not impact on interaction of other employees

4.4 Business Rules

1. System Administrator can only able to manage user accounts, but he cannot perform any operations on their files.