

Software Requirements Specification (SRS)

R & D Project

Version: 1.1

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1. Introduction

1.1 Purpose

The purpose of this document is to make all stakeholders understand the project.

1.2 Scope

Scope is detailed in the following sections but prima facia it's a web application which computes R&D efforts by a company Admin for its resources based on pre-defined business rules.

1.3 Definitions, Acronyms, and Abbreviations

None.

1.4 References

None.

1.5 Overview

The Document is structured with scope including features, flow chart, tech stack, sample User interface screens and assumptions.

2. Overall Description

2.1 Product Perspective

The product is planned to help Client's Firms get Tax benefits and / or Subsidies for their employees investing their time in R&D Activities.

2.2 Product Functions

The software is supposed to have the following functions:

→ Allow Client's Admin to login

- All Admin to create employees / Contractors
- Admin puts in All Business Rules for R&D
- Allow their employees / Contractors to log in
- Allow Employees / Contractors to put in their Email or other credentials
- Allow System to run those Business Rules and arrive at final report
- Consolidate All Employees / Contractor's data

2.3 User Classes and Characteristics

There would be 3 types of user roles:

- ✓ Super Admin (Overseeing the usage and data across Businesses)
- ✓ Admin (Firm's Admin person)
- ✓ User (Employees / Contractors)

2.4 Operating Environment

The System will operate in a Web Environment; however, the system is responsive hence can work on Mobile UI as well.

2.5 Design and Implementation Constraints

- The system cannot keep an archive of reports generated at different times.
- The system can read mail attachments of PDF, TXT, WORD and EXCEL only.
- The system can collate calendar events
- The system does not store versions of Business Rules set up by Admin since it will go through multiple iterations
- The system categorizes each search word in a business domain category for non duplicate entries.
- The system only scans the Inbox of emails, and does not enter other email folders like Spam, etc.

2.6 Assumptions and Dependencies

- ✓ AWS Cloud Setup Availability
- ✓ Product by Carrington
- ✓ Development Cost is included with no Client Customization expected
- ✓ Security, Patch and Maintenance is excluded
- ✓ Mobile View Responsive Screen Planned as far as possible
- ✓ Additional Forms or Reports expected as later enhancements
- ✓ Mail scanning in specific Folder, Spam, etc. excluded as of now

- ✓ Download possibility in pdf, text and word as of now
- ✓ Multi-Tenancy architecture built in, but multiple client management and license management is planned in future phases.

3. System Features and Requirements

3.1 Functional Requirements

The following broad level functional requirements are needed

- Scans emails
- Reads subject, body, and attachments (Word, PDF, Excel)
- Identifies keywords for business research
- Applies rule-based estimations (e.g., "100 words = 30 minutes")
- Calculates employee efforts spent on R&D

Functional Requirements in details:

1. Email cum calendar Integration

- 1.1 The system shall connect to user email accounts via IMAP or Microsoft Graph API.
- 1.2 The system shall periodically scan incoming and sent emails.
- 1.3 The system shall retrieve the subject line, sender, receiver, and timestamp of each email.
- 1.4 The system scans all calendar events with date timestamp.

2. Email Body & Attachment Parsing

- 2.1 The system shall extract and read the text content from the email body.
- 2.2 The system shall identify and download attachments in .docx, .pdf, and .xlsx formats.
- 2.3 The system shall extract readable text from these attachments using OCR (for scanned PDFs) and document parsers (for Word/Excel).

3. Keyword Extraction

- 3.1** The system shall identify and highlight keywords from the email body and attachments using:
 - Predefined business-related keyword list.
- 3.2** The system shall classify keywords into business domains (e.g., market research, product ideas, customer insights).

4. Rule Engine for Effort Estimation

- 4.1 The system shall apply configurable rules such as: "100 words of business content = 30 minutes of work", "Every business keyword mention repeated= 5 minutes", "Minimum effort if keyword found = 15 minutes", etc
- 4.2 The system shall aggregate effort estimates across:
- Individual emails
 - Calendar events
 - Attachments
 - Per employee

5. Employee Activity Mapping

- 5.1 The system shall map each email to the respective employee based on sender/receiver.
- 5.2 The system shall tag emails or calendar events as R&D-related if business keywords are found.
- 5.3 The system shall calculate total estimated time spent on R&D activities per employee per time period (daily, weekly, monthly).

6. Dashboard and Reports

- 6.1 The system shall provide a dashboard showing: Total R&D time per employee
- 6.2 The system shall generate exportable reports (Excel/PDF) for HR or Management.

7. Search and Filtering

- 7.1 The system shall allow users to search by employee, keyword, or time period.
- 7.2 The system shall allow filters by file type, date range, or business function.

8. Rule Management

- 8.1 Admin users shall be able to define, edit, or delete estimation rules.
- 8.2 Admin users shall be able to upload or modify keyword lists.

9. Notifications and Alerts

- 9.1 The system shall alert users if large volumes of R&D effort are detected.
- 9.2 The system shall notify admins if rule execution fails or parsing errors occur.

10. Security and Compliance

- 10.1 The system shall ensure email access is OAuth-based and securely encrypted.
- 10.2 The system shall restrict data access based on user roles (admin, employee, auditor).

10.3 All scanned content shall be stored securely with data retention policies.

3.2 Non-Functional Requirements

Specify performance, security, usability, scalability, and other non-functional requirements.

4. External Interfaces

4.1 User Interfaces

Few Screen samples are as follows:

Scan Emails

SCAN NOW

Keyword

Rule

Emails


John Smith
Market Research Report
Apr 20, 2024

Emily Johnson
Quarterly Analysis
Apr 18, 2024

Michael Brown
Customer Trends
Apr 15, 2024

Email Details

John Smith
Market Research Report
Apr 20, 2024

 Attachment:
report.docx

Lorem ipsum dolor sit amet, consectetur
adipiscing elit, sed do eiusmod

Email Analysis

Keywords

- market
- industry
- eompetitor

Estimated Time
1 hour

Employee R&D Effort

Employee	R&Dime
John Smith	12 h
Emily Johnson	9 h
Michael Brown	7 h

Dashboard

Emails Scanned

350

Average Time
per Keyword

20 min

R&D Effort



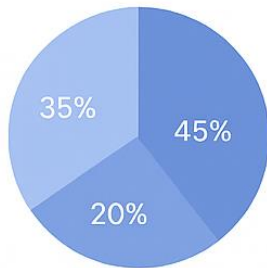
R&D Time by Employee

John Smith  20

Emily Johnson  18

Michael Brown  17

Keywords and Topics



Keywords

- market
- industry
- competitor

R&D Analysis Report

Date	Employee	Time(h)
Apr 20	John Smith	12 h
Apr 18	Emily Johnson	9 h
Apr 15	Michael Brown	7 h

4.2 Hardware Interfaces

None

4.3 Software Interfaces

The following interfaces would be needed

- ✓ E-Mail interface
- ✓ Calendar events interface
- ✓ Web Interface

4.4 Communication Interfaces

We will need to get the details of the email template for communication from Admin / System to employees / Contractor.

5. System Requirements

The system would need the following:

- ✓ AWS Account Console
- ✓ RDS Database Server
- ✓ EC2 Application Server
- ✓ API
- ✓ Front End (VueJS or Equivalent)
- ✓ Back End (MySQL)
- ✓ Language (Python or Equivalent)
- ✓ Security (OAuth)

6. Business Rules

Few Business Rules can be devised as:

- ✓ Word to be scanned
- ✓ Work Scan in Subject, Body and / or Attachment options
- ✓ Effort calculation Words / Sentences equivalent to Hours
- ✓ Scheduler to run at specified time/day

7. Quality Assurance & Test Plans

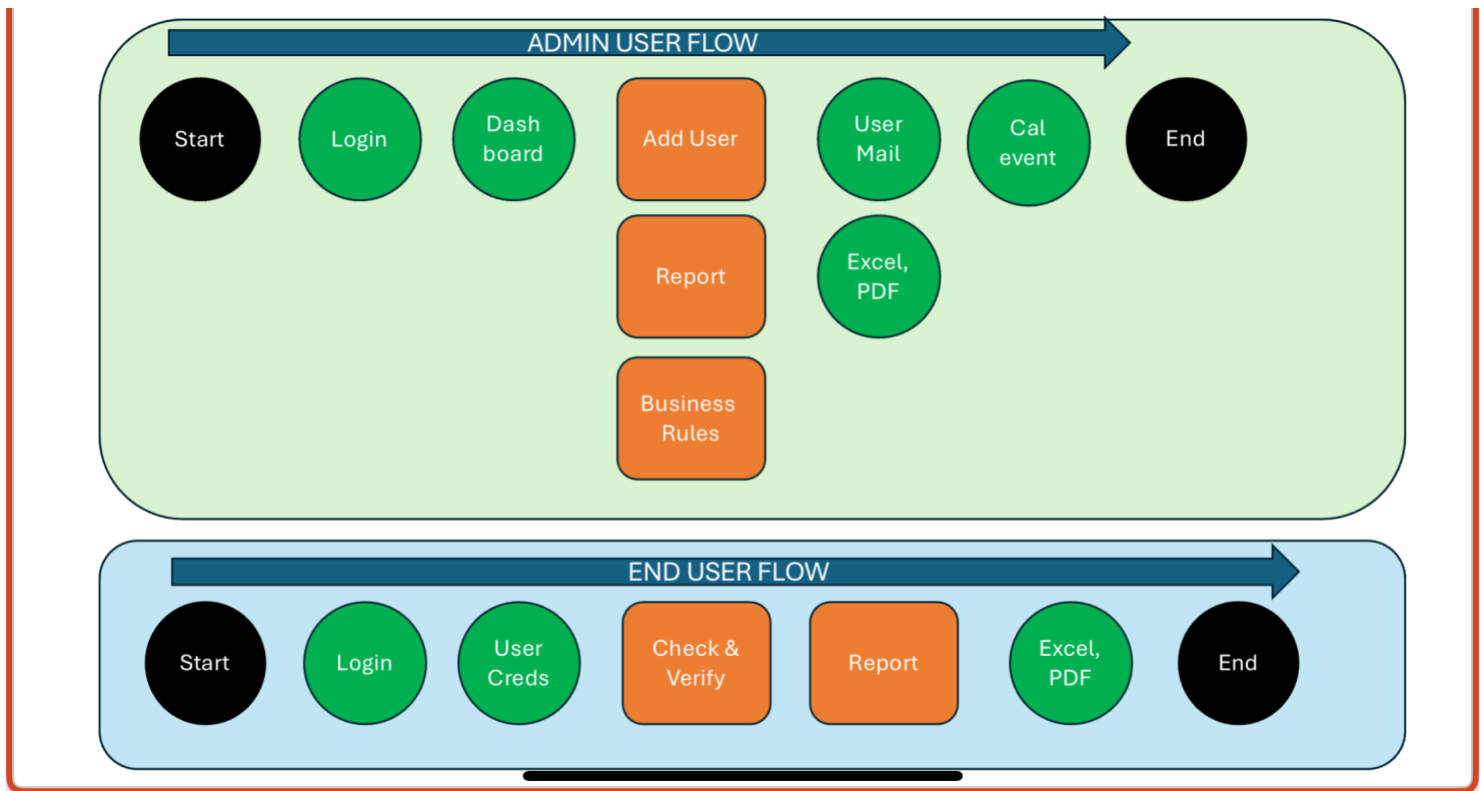
Few QA / Test Plans can be:

- ✓ Successful automatic login from backend and read mails
- ✓ Successful word scan in mails and attachments
- ✓ Successful effort calculations
- ✓ Report generated between specified periods.
- ✓ Mail can be scanned going back to history to about 3 yes

- ✓ Admin can only view all data, and user cannot see other user data.

8. Appendices

High Level Flow Chart



9. Change Management Process

We can maintain the changes in Excel, JIRA or equivalent.