Software Requirements Specification

for

ETAM Project

Version 1.0 approved

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Apr 24 2023

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Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
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|  |  |  |  |

# Introduction

## Purpose

The purpose of this SRS document is to identify the scope ,features and use cases of the ETAM project.

## Document Conventions

This document is prepared in adherence to the IEEE software requirements specification standard.

## Intended Audience and Reading Suggestions

This document is intended for users, developers, project managers and testers.

## Project Scope

Expense Management system/app is a software that helps users track and manage their daily ,weekly and monthly expenses.

The system provides analysis of user expenses and helps users to pinpoint the areas that cover high percentage of their expense. The system also helps users be educated in the finance field through news,blogs and articles. Users can also test their level of knowledge using built-in Q&A feature.

# Overall Description

## Product Perspective

The Etam system is a standalone system with self-contained database. This system contains modules such as Identity management module, expense tracking module ,expense analysis module,

finance intelligence module and Q&A module.

Identity Provider

Exp -Analyzer

Exp -Tracker

ETAM

Software

Q&A

Finance - Int

3rd Party

API

diagram 2.1.1 system modules

## Product Features

The Etam software lets users register ,track and manage their expenses and major expenses

. the software contains key features such as budget entry/registration,daily expense entry,budget vs expense analysis, major expense pinpointing, finance intelligence, knowledge test etc.

Data Flow Diagram

<Summarize the major features the product contains or the significant functions that it performs or lets the user perform. Details will be provided in Section 3, so only a high level summary is needed here. Organize the functions to make them understandable to any reader of the SRS. A picture of the major groups of related requirements and how they relate, such as a top level data flow diagram or a class diagram, is often effective.>

## User Classes and Characteristics

The first group users of this software/app are adult users who want to track and manage their finances. The second group users are users from all ages who can use this app to be informed on world wide financial developments and finance related topics, using the system’s financial intelligence component. The second group users can also use this app to test their knowledge on finance related topics ,this users will also benefit from the app resource recommendation to widen their knowledge and skills.

## Operating Environment

|  |  |  |  |
| --- | --- | --- | --- |
| Software | Operating System | Hosted on | Version of OS |
| ETAM client app | Android | TBD | TBD(to be decided) |
| ETAM client app | IOS | TBD | TBD |
| ETAM web app | All browsers | Heraku | DA(doesn’t apply) |
| ETAM web api | - | Heraku | DA |

## Design and Implementation Constraints

Some of the components of the software fetch data from other 3rd party APIs/sites , hence a stable internet would make user experience smoother. Other than the constraints listed above the client app executes on Android and IOS as expected.

## User Documentation

A short video tutorial and user manual will be available to client users. The api of the software will be documented for internal/external(future) use.

## Assumptions and Dependencies

The app depends on other sites for displaying information related to finance such as latest news ,articles, blogs etc.

# System Features

## Identity Provider(IP)

**3.1.1 Description and Priority**

This feature handles all functionalities related to user authentication and authorization. This feature communicates with Authorization Server to get a valid token and verify a token. This is high priority feature.

**3.1.2 Stimulus/Response Sequences**

3.1.2.1 Register

1. user clicks register button

2. user fills the form

3. IP registers the user in Ident

Login

1.user clicks login button

2.user enters their username/email and pass

3.IP takes username and pass and authenticates

the user

4. if the user is not valid user ,the IP sends error message

5. if user is valid, the IP communicates with Auth server to

get a token and directs it to the client to use for subsequent

requests.

6. user requests an api request with token

7. IP validates the token sent with token received ity Provider DB

3. IP registers the user in Ident

Login

1.user clicks login button

2.user enters their username/email and pass

3.IP takes username and pass and authenticates

the user

4. if the user is not valid user ,the IP sends error message

5. if user is valid, the IP communicates with Auth server to

get a token and directs it to the client to use for subsequent

requests.

6. user requests an api request with token

7. IP validates the token sent with token received ity Provider DB

3. IP registers the user in Ident

Login

1.user clicks login button

2.user enters their username/email and pass

3.IP takes username and pass and authenticates

the user

4. if the user is not valid user ,the IP sends error message

5. if user is valid, the IP communicates with Auth server to

get a token and directs it to the client to use for subsequent

requests.

6. user requests an api request with token

7. IP validates the token sent with token received ity Provider DB

3. send confirmation email

3. IP registers the user in Ident

Login

1.user clicks login button

2.user enters their username/email and pass

3.IP takes username and pass and authenticates

the user

4. if the user is not valid user ,the IP sends error message

5. if user is valid, the IP communicates with Auth server to

get a token and directs it to the client to use for subsequent

requests.

6. user requests an api request with token

7. IP validates the token sent with token received ity Provider DB

4.user confirms email

5.IP registers user

3.1.2.2 Login

2.User enters their username/email and pass

1.User clicks login button

3.IP authenticates username and pass

Of user

Is User Valid?

5. IP gets token from Auth server ;the token is directed to the client for subsequent requests.

YES

NO

4. IP sends error message

6. User requests an api resource using token

7. API Gateway validates the token

Is

Token Valid?

8. API Gateway sends error message

NO

YES

9.API Gateway sends response

3.1.2.3 Forget Password

System sends reset password to user’s email

User requests new password

User gets link to reset password

User changes their password

**3.1.3 Functional Requirement and User Stories**

3.1.3.1 Registration related User Stories and Functional Requirements

a. As a user I want to be able to register my account in order to use the system.

1. The system/IP should be able to register users by providing a form containing name ,age,gender, email, user name and password.

2. The system should verify user’s email account by sending verification link to their email account.

3. The system should display validation message if invalid email or already registered email is entered.

4. The system should display validation message if not unique user-name is entered.

5. The system shouldn’t allow users to use weak password.

b. As a user I want to be able to register using my Facebook or google account.

1. The system/IP should allow users to register using Facebook or google account.

c. As a user I want to edit my account ,reset my password in order to manage my account.

1. The system /IP should allow users to edit their account. i.e name, age, gender ,email and user name.

2. The system should allow users reset their password.

3. If users wish to change the email linked to their account ,the system should verify the email by sending verification link to their email.

4. The system should display validation message if not unique user-name is entered.

5. The system shouldn’t allow users to reset their password to weak password.

3.1.3.2 Login related User Stories and Functional Requirements

a. As a user, I want to be able to log into my account in order to access core features of the system.

1. The system should be able to authenticate user using their username/email and password.

2. The user should be able to display validation/error message if wrong email or password is used

3. The system should limit number of login trials.

4. The system should return token to the client if valid username and password is provided.

b. As a user, I want to be able to log into my account using Facebook or google account.

1. The system should allow users authenticate using Facebook or google account.

3.1.3.3 Forget password related User Stories and Functional Requirements

a. As a user, I want to reset my password in case I forget my password.

1. The system should send a temporary password to user’s email account. The temporary password should expire within one day.

2. The system should enforce users to change the temporary password.

## Expense Tracker(ET)

**3.2.2 Description and Priority**

This feature handles all functionalities related to budget ,expense entry and update. This feature also shows user the daily , weekly ,monthly or yearly remaining amount i.e (budget - entry). This is a high priority feature.

**3.2.2 Stimulus/Response Sequences**

3.user sets budget (daily/ weekly /monthly )

1. user authenticates

2. user selects expense tracking from menu

6.1 ET shows alert

Expense>

Budget

b

YES

6.2 ET shows major expenses

4.user enters expense / uploads receit (daily/weekly/monthly) multple times

6.3 ET notifies user via email

NO

5. ET Shows the remaining amount/budget

**3.2.3 Functional Requirement and User Stories**

3.2.3.1 Expense/Budget Entry related User Stories and Functional Requirements

a. As a user I want to be able to enter my budget and daily expense in order to track my expenses.

1. The system/ET should allow users enter their daily ,monthly and yearly budget.

2. The system/ET should allow users enter their daily expenses.

b. As a user I want to be able to upload receipt in order to easily register my expense.

1. The system/ET should allow users upload receipt.

2. The system/ET should extract the important data such as item title ,expense type ,item price from the receipt and register the expense.

c. As a user I want to be able modify the expense entered.

1. The system/ET should allow to edit/delete the expense entered.

3.2.3.2 Expense Tracking related User Stories and Functional Requirements

a. As a user I want to see the remaining amount from my budget.

1. The system/ET should display the daily , monthly ,yearly subtracted remaining amount(budget - expense).

b. As a user I want to see all expenses filtered by date ,category or type.

1. The system/ET should display all expenses between two date ranges.

2. The system/ET should display filters such as date ,expense type(food,cloth,luxury..), expense category(high,medium ,low).

c. As a user I want to know which of my expenses played major role in exceeding my budget in order to identify my major expenses.

1. The system/ET should highlight the major expenses .

3.2.3.3 Notification related User Stories and Functional Requirements

a. As a user I want to be notified when my expenses are greater then my budget.

1. The system/ET should be able to send notification message to user’s email account.

2. The system should send push notification.

## Finance/Expense Management (Expense Analysis)(FM)

## 3.3.1 Description and Priority

This feature shows users the analysis of their expenses. Using this feature users will be able to identify patterns of their expenditure which will help users to manage their finances in an efficient way. In addition to analysis this feature will give users tips and insights on their expenditure.

**3.3.2 Stimulus/Response Sequences**

1. User authenticates

2. user selects manage your expenses from menu

3. user sees multiple anaysis categorized by date range on budget /expense

**3.3.3 Functional Requirement and User Stories**

3.2.3.1 Expense Analysis related User Stories and Functional Requirements

a. As a user I want see different analysis of my expenses.

1. The system/EM should display various analysis such as budget vs expense,expense vs date ,expense vs expense type etc.

2. The system should allow users filter the analysis using filters.

## 3.4 Financial Intelligence(FI)

**3.4.1 Description and Priority**

This feature displays all the latest informative on finance ,using this feature users can access latest article ,blog ,videos and podcast related to finance and economy . This is a medium priority feature.

**3.4.2 Stimulus/Response Sequences**

3. FI shows options to choose such news ,article ,blog,podcast

2. User selects FI from menu

1. User authenticates

4. eg. user selects article

6.user access all articles from sources all around the world

5.FI fetchs latest articles on FI

**3.4.3 Functional Requirement and User Stories**

3.4.3.1 Financial Informative/Intelligence related User Stories and Functional Requirements

a. As a user I want to be able to choose from categories such as blog,article,news,podcast etc.

1. The system/FI should allow users choose from informative categories.

b. As a user I want to be able to see the latest news,blogs,articles

1. The system/FI should be able to fetch /scrap 3rd party api or web site in order to show latest news ,articles ,blogs etc.

c. As a user I want to be able to search and filter

1. The system/FI should allow users search news medial ,podcast ,YouTube channel etc.

## 3.5 Questions And Answers(Q&A)

3.5.1 Description and Priority

This feature displays sets of questions which users can unlock as they pass through the test. The aim of this feature is for users to test their knowledge on finance and identify on which areas they can improve.This is a medium priority feature.

3.5.2 Stimulus/Response Sequences

1. user authenticates

(optional)

3. system shows options to choose thier level

2. user selects Q&A from menu

4. user selects her level

5. Q&A shows set of questions related to her level

User Passed?

6. user earns points by answering the questions

7.system unlocks next set of questions

YES

NO

8. Q&A shows the same set of questions

**3.5.3 Functional Requirement and User Stories**

3.5.3.1 Q&A related User Stories and Functional Requirements

a. As a user I want to be able to choose my level .

1. The system/FI should allow users select their level.

b. As a user I want to be able to take quiz and advance to the next quiz set.

1. The system/FI should allow users unlock the next set of quiz if they pass the quiz.

c. As a user I want to see the answers of the quiz I took .

1. The system/FI should allow users see answers of the quiz if they passed the quiz.

# External Interface Requirements

## User Interfaces

<Describe the logical characteristics of each interface between the software product and the users. This may include sample screen images, any GUI standards or product family style guides that are to be followed, screen layout constraints, standard buttons and functions (e.g., help) that will appear on every screen, keyboard shortcuts, error message display standards, and so on. Define the software components for which a user interface is needed. Details of the user interface design should be documented in a separate user interface specification.>

## Hardware Interfaces

<Describe the logical and physical characteristics of each interface between the software product and the hardware components of the system. This may include the supported device types, the nature of the data and control interactions between the software and the hardware, and communication protocols to be used.>

## Software Interfaces

<Describe the connections between this product and other specific software components (name and version), including databases, operating systems, tools, libraries, and integrated commercial components. Identify the data items or messages coming into the system and going out and describe the purpose of each. Describe the services needed and the nature of communications. Refer to documents that describe detailed application programming interface protocols. Identify data that will be shared across software components. If the data sharing mechanism must be implemented in a specific way (for example, use of a global data area in a multitasking operating system), specify this as an implementation constraint.>

## Communications Interfaces

<Describe the requirements associated with any communications functions required by this product, including e-mail, web browser, network server communications protocols, electronic forms, and so on. Define any pertinent message formatting. Identify any communication standards that will be used, such as FTP or HTTP. Specify any communication security or encryption issues, data transfer rates, and synchronization mechanisms.>

# Other Nonfunctional Requirements

## Performance Requirements

<If there are performance requirements for the product under various circumstances, state them here and explain their rationale, to help the developers understand the intent and make suitable design choices. Specify the timing relationships for real time systems. Make such requirements as specific as possible. You may need to state performance requirements for individual functional requirements or features.>

## Safety Requirements

<Specify those requirements that are concerned with possible loss, damage, or harm that could result from the use of the product. Define any safeguards or actions that must be taken, as well as actions that must be prevented. Refer to any external policies or regulations that state safety issues that affect the product’s design or use. Define any safety certifications that must be satisfied.>

## Security Requirements

<Specify any requirements regarding security or privacy issues surrounding use of the product or protection of the data used or created by the product. Define any user identity authentication requirements. Refer to any external policies or regulations containing security issues that affect the product. Define any security or privacy certifications that must be satisfied.>

## Software Quality Attributes

<Specify any additional quality characteristics for the product that will be important to either the customers or the developers. Some to consider are: adaptability, availability, correctness, flexibility, interoperability, maintainability, portability, reliability, reusability, robustness, testability, and usability. Write these to be specific, quantitative, and verifiable when possible. At the least, clarify the relative preferences for various attributes, such as ease of use over ease of learning.>

# Other Requirements

<Define any other requirements not covered elsewhere in the SRS. This might include database requirements, internationalization requirements, legal requirements, reuse objectives for the project, and so on. Add any new sections that are pertinent to the project.>

Appendix A: Glossary

<Define all the terms necessary to properly interpret the SRS, including acronyms and abbreviations. You may wish to build a separate glossary that spans multiple projects or the entire organization, and just include terms specific to a single project in each SRS.>

Appendix B: Analysis Models

<Optionally, include any pertinent analysis models, such as data flow diagrams, class diagrams, state-transition diagrams, or entity-relationship diagrams.>

Appendix C: Issues List

< This is a dynamic list of the open requirements issues that remain to be resolved, including TBDs, pending decisions, information that is needed, conflicts awaiting resolution, and the like.>