Deliverable #1 Template : Software Requirement Specification (SRS)

SE 3A04: Software Design II – Large System Design

Tutorial Number: T03
Group Number: G4
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IMPORTANT NOTES

- Be sure to include all sections of the template in your document regardless whether you have something to write for each or not

    - If you do not have anything to write in a section, indicate this by the *N/A*, *void*, *none*, etc.

- Uniquely number each of your requirements for easy identification and cross-referencing

- Highlight terms that are defined in Section 1.3 (**Definitions, Acronyms, and Abbreviations**) with **bold**, *italic* or <u>underline</u>

- For Deliverable 1, please highlight, in some fashion, all (you may have more than one) creative and innovative features. Your creative and innovative features will generally be described in Section 2.2 (**Product Functions**), but it will depend on the type of creative or innovative features you are including.

1 Introduction

- Provide an overview of the document/SRS.

1.1 Purpose

- Specify the purpose of the SRS.

- Specify the intended audience for the SRS.

1.2 Scope

- Identify the software product(s) to be produced, and name each (e.g., Host DBMS, Report Generator, etc.)

- Explain what the software product(s) will do (and, if necessary, also state what they will not do).

- Describe the application of the software being specified, including relevant benefits, objectives, and goals.

1.3 Definitions, Acronyms, and Abbreviations

- Provide the definitions of all terms, acronyms, and abbreviations required to properly interpret the SRS.

- This should be in alphabetical order.

1.4 References

- Provide a complete list of all documents referenced elsewhere in the SRS.

- Identify each document by title, report number (if applicable), date, and publishing organization.

- Specify the sources from which the references can be obtained.

- Order this list in some sensible manner (alphabetical by author, or something else that makes more sense).

1.5 Overview

- Describe what the remainder of the document/SRS contains.
  (e.g. "Section 2 discusses...Section 3...")

2 Overall Product Description

- This section should describe the general factors that affect the product and its requirements.

- It does not state specific requirements.

- It provides a *background* for those requirements and makes them easier to understand.

2.1 Product Perspective

- Put the product into perspective with other related products, i.e., context

- If the product is independent and totally self-contained, it should be stated here

- If the SRS defines a product that is a component of a larger system, then this subsection should relate the requirements of that larger system to the functionality of the software being developed. Identify interfaces between that larger system and the software to be developed.

- A block diagram showing the major components of the larger system, interconnections, and external interfaces can be helpful

2.2 Product Functions

- Provide a *summary* of the major functions that the software will perform.

  - **Example**: An SRS for an accounting program may use this part to address customer account maintenance, customer statement, and invoice preparation without mentioning the vast amount of detail that each of those functions requires.

- Functions should be organized in a way that makes the list of functions understandable to the customer or to anyone else reading the document for the first time

- Present the functions in a list format - each item should be one function, with a brief description of it

- Textual or graphical methods can be used to show the different functions and their relationships

  - Such a diagram is not intended to show a design of a product, but simply shows the logical relationships among variables

2.3 User Characteristics

The app is designed to be user-friendly and require minimal effort resulting in the following User qualifications and expectations:

1 Education Level: Basic Reading Skills

- The User is expected to have basic reading skills to navigate the app. With such qualifications the User will have limited capability with the application. However, with basic literary skills, the User will be able to utilize all possible functions of the application.

2 Experience: Limited Video Game Experience

- The application does require Users to have very limited knowledge of the video game they wish to identify. This enables the app to be able to determine the video game the User is looking for.

3 The app expects Users to be able to navigate and use basic smartphone features, thereby allowing seamless application usage.

2.4 Constraints

- Provide a general description of any constraints that will limit the developer's options

2.5 Assumptions and Dependencies

- List any assumptions you made in interpreting what the software being developed is aiming to achieve

- List any other assumptions you made that, if it fails to hold, could require you to change the requirements

  - **Example**: An assumption may be that a specific operating system will be available on the hardware designated for the software product. If, in fact, the operating system is not available, the SRS would then have to change accordingly.

2.6 Apportioning of Requirements

- Identify requirements that may be delayed until future versions of the system

3 Use Case Diagram

- Provide the use case diagram for the system being developed.

- You do not need to provide the textual description of any of the use cases here (these will be specified under "Highlights of Functional Requirements").

4 Highlights of Functional Requirements

- Specify all use cases (or other scenarios triggered by other events), organized by Business Event.

- For each Business Event, show the scenario from every Viewpoint. You should have the same set of Viewpoints across all Business Events. If a Viewpoint doesn't participate, write N/A so we know you considered it still. You can choose how to present this - keep in mind it should be easy to follow.

- At the end, combine them all into a Global Scenario.

- Your focus should be on what the system needs to do, not how to do it. Specify it in enough detail that it clearly specifies what needs to be accomplished, but not so detailed that you start programming or making design decisions.

- Keep the length of each use case (Global Scenario) manageable. If it's getting too long, split into sub-cases.

- You are *not* specifying a complete and consistent set of functional requirements here. (i.e. you are providing them in the form of use cases/global scenarios, not a refined list). For the purpose of this project, you do not need to reduce them to a list; the global scenarios format is all you need.

- Red text below is just to highlight where you need to insert a scenario - don't actually write it all in red.

Main Business Events: List out all the main business events you are presenting. If you sub-divided into smaller ones, you don't need to include the smaller ones in this list.

Viewpoints: List out all the viewpoints you will be considering.

Interpretation: Specify any liberties you took in interpreting business events, if necessary.

BE1. User Requests Idenfiication
   Pre-Condition: User has created an account.

VP1. User
Main Success Scenario:

1. User opens the app and logs in (see BE6).
2. System provides the following options as a menu:
   - ID a Game
   - View ID History
   - View Account Profile
3. User selects "ID a Game".
4. System provides option to upload an image of the gameplay from their gallery, or take a picture.
5. User selects the option to take a picture.
6. System opens the native Camera app and prompts the user to take a picture.
7. User takes a picture.
8. System uploads the picture and provides option to provide the following game details:
   - Release Year
   - Game Producer
   - Genre
9. User enters the relevant game details.
10. System provides option to record and upload audio of in-game character voice lines.
11. User records their own voice or game audio.
12. System asks for confirmation from user and provides option to submit the provided data.
13. User confirms and selects "Submit".
14. System determines an identification and reports it to the user alongside the following options:
    - Share the result
    - Leave feedback on the app's identification
    - Visit a website where the game may be purchased
    - View recommendations for other games
    - Exit to the menu
15. User selects the option to exit.

Secondary Scenarios:

5i. User selects the option to upload an image
   5i.1. System opens native photos app and prompts user to select photo
   5i.2. User selects photo
   5i.3. System uploads the picture and provides option to provide the following game details
      - Release Year
      - Game Producer
      - Game
   5i.4 User enters the relevant game details
   5i.5 System provides option to record and upload audio of in-game character voice lines.
   5i.6 User records their own voice or game audio
   5i.7 System asks for confirmation from user and provides option to submit the provided data
   5i.8 User confirms and selects "Submit".
   5i.9 System determines an identification and reports it to the user alongside the following options:
      - Share the result

- Leave feedback on the app's identification
- Visit a website where the game may be purchased
- View recommendations for other games
- Exit to the menu

    5i.10 User selects the option to exit

  5ii. User does not upload an image and proceeds to next page

    5ii.1. System provides option to input the following game details
- Release Year
- Game Producer
- Game

    5ii.2. User does not input any relevant game details

    5ii.3. System provides option to record and upload audio of in-game character voice lines

    5ii.4. User does not record or upload any game relevant audio recordings

    5ii.5. System asks for confirmation from user and provides option to submit the provided data

    5ii.6. User confirms and selects "Submit"

    5ii.7. System is unable to identify game and has empty results

    5ii.8. System displays the options to exit or retry

    5ii.9. User selects the option to exit

  9i. User does not input any relevant game details

  11i. User does not record or upload game audio

  15i. User selects the share option

    15i.1. System prompts User with popup with multiple methods to share results (email, text, save to photos, etc.)

    15i.2. User selects desired method of sharing

    15i.3 System displays possible contacts to share game identification details to based on method of sharing selected

    15i.4 User selects desired contact

    15i.5 System removes popup from screen

    15i.6 User selects the option to exit

VP2. Marketing Team

15. System checks the type of account the user currently holds; if the user holds a Standard account, System displays an advertisement regarding the benefits of Premium accounts and lists pricing.

VP3. Advertisers

14. System checks the type of account the user currently holds; if the user holds a Standard account, System displays a generic advertisement while the identification is determined.

VP4. Game Companies & Developers

14. System reports to the relevant game company that one of their products has been identified via the system.

VP5. Customer Support

i. N/A.

VP6. Account Security

i. N/A.

Global Scenario:

1. User opens the app and logs in (see BE6).
2. System provides the following options as a menu:
   - ID a Game
   - View ID History
   - View Account Profile
3. User selects "ID a Game".
4. System provides option to upload an image of the gameplay from their gallery, or take a picture.
5. User selects the option to take a picture.
6. System opens the native Camera app and prompts the user to take a picture.
7. User takes a picture.
8. System uploads the picture and provides option to provide the following game details:
   - Release Year
   - Game Producer
   - Genre
9. User enters the relevant game details.
10. System provides option to record and upload audio of in-game character voice lines.
11. User records their own voice or game audio.
12. System asks for confirmation from user and provides option to submit the provided data.
13. User confirms and selects "Submit".
14. System determines an identification and reports it to the user alongside the following options:
    - Share the result
    - Leave feedback on the app's identification
    - Visit a website where the game may be purchased
    - View recommendations for other games
    - Exit to the menu
15. System reports to the relevant game company that one of their products has been identified via the system.
16. System checks the type of account the user currently holds; if the user holds a Standard account, System displays a generic advertisement while the identification is determined.
17. System checks the type of account the user currently holds; if the user holds a Standard account, System displays an advertisement regarding the benefits of Premium accounts and lists pricing.
18. User selects the option to exit.

BE2. Game Recommendation

VP1. User

Main Success Scenario:

1. User clicks "Submit" after identifying a game (see BE1)
2. System determines an identification and reports it to the user alongside the following options:
   - Share the result
   - Leave feedback on the app's identification

- Visit a website where the game may be purchased
- View recommendations for other games
- Exit to the menu

3. User selects the option to view recommendations for other games
4. Systems prompts user with page containing recommended games
5. User browses through recommended games provided by System
6. User goes back to option menu
7. User selects the option to exit

Secondary Scenarios:

2.i System is unable to identify game and has empty results

    2i.1. System displays the option to exit or retry

    2i.2. User selects the option to exit

VP2. Marketing Team

7. System checks the type of account the user currently holds; if the user holds a Standard account, System displays an advertisement regarding the benefits of Premium accounts and lists pricing.

VP3. Advertisers

3. System checks the type of account the user currently holds; if the user holds a Standard account, System displays a generic advertisement while the identification is determined.

VP4. Game Companies & Developers

3. System reports to the relevant game company that one of their products has been identified via the system.
6. System reports to the relevant game company if their product is being viewed.

VP5. Customer Support

i. N/A.

VP6. Account Security

i. N/A.

Global Scenario:

1. User clicks "Submit" after identifying a game (see BE1)
2. System determines an identification and reports it to the user alongside the following options:
   - Share the result
   - Leave feedback on the app's identification
   - Visit a website where the game may be purchased
   - View recommendations for other games
   - Exit to the menu
3. System reports to the relevant game company that one of their products has been identified via the system.
4. System checks the type of account the user currently holds; if the user holds a Standard account, System displays a generic advertisement while the identification is determined.

5. User selects the option to view recommendations for other games

6. Systems prompts user with page containing recommended games

7. User browses through recommended games provided by System

8. System reports to the relevant game company if their product is being viewed.

9. User goes back to option menu

10. System checks the type of account the user currently holds; if the user holds a Standard account, System displays an advertisement regarding the benefits of Premium accounts and lists pricing.

11. User selects the option to exit

BE3. Login
Precondition: The user has a stable WiFi connection and has opened the app and already has an accoutn

VP1. User
Main Success Scenario:

1. User clicks on the **Login** button
2. System prompts user to enter:
   - The valid email associated with the account they are trying to login to
   - The valid password associated with the account
3. User enters required details and clicks on the **Login** button
4. System verifies the login details
   - System searches for email in the database
   - System retrieves and compares the stored hashed password
5. System successfully authenticates user and grants access if credentials match
6. User is redirected to home screen

Secondary Scenarios:

4.i Internal system or network error

  4.i.1 System encounters failure when trying to communicate with database

  4.i.2 System notifies user with message "Error: Unable to process request at this time. Please try again later"

5.i User not Found

  5.i.1 System recognizes that Email does not exist in the User Database

  5.i.2 System notifies user that the email is not associated with an account

5.ii Passwords do not match

  5.ii.1 System recognizes that passwords do not match

  5.ii.2 System notifies user and prompts user to enter and re-enter password

VP2. Viewpoint Name #2
Insert Scenario Here

Global Scenario:
Insert Scenario Here

BE4. Follow Link to Purchase Game #10
Pre-Condition: User has created an account, has logged in, has successfully identified a game, but has not returned to the menu.

VP1. User
Main Success Scenario:

1. User selects 'Visit a website where the game may be purchased'.

2. System opens native internet browser and navigates to a stored website where the game can be purchased by the user.

3. User returns to the system after interacting with the website.

4. System reports the previous identification alongside the following options:
   - Share the result
   - Leave feedback on the app's identification
   - Visit a website where the game may be purchased
   - View recommendations for other games
   - Exit to the menu

5. User selects the option to exit.

Secondary Scenarios:

2i. System does not have a relevant website stored.

    2i.1 System reports to user that a website to purchase the game could not be found.

    2i.2 Follow Link to Purchase Game failed.

2ii. System fails to open native internet browser.

    2ii.1 System reports to user that the native internet browser could not be launched.

    2ii.2 Follow Link to Purchase Game failed.

VP2. Marketing Team
N/A

VP3. Advertisers
N/A

VP4. Game Companies & Developers

2. System reports to user if there is currently a discount on the game.

VP5. Customer Support

2i.1 System reports to user that the website could not be found, which could be due to either a technical issue or the system may not have a link. System reminds user that previously identified games can be viewed in their Browsing History, and to contact Customer Support if issues persist.

2ii.1 System reports to user that the system could not open their native internet browser, to try again, and to contact Customer Support if issues persist.

VP6. Account Security

2. System verifies validity and security of the stored link, reporting to the user if the link appears compromised.

Global Scenario:
Main Success Scenario:

1. User selects 'Visit a website where the game may be purchased'.

2. System prompts user about any discounts currently occuring for the game in question, before opening native internet browser and navigating to a stored website where the game can be purchased by the user.

3. User returns to the system after interacting with the website.

4. System reports the previous identification alongside the following options:
   - Share the result
   - Leave feedback on the app's identification

- Visit a website where the game may be purchased
- View recommendations for other games
- Exit to the menu

5. User selects the option to exit.

Secondary Scenarios:

2i. System does not have a relevant website stored.

  2i.1 System reports to user that the website could not be found, which could be due to either a technical issue or the system may not have a link. System reminds user that previously identified games can be viewed in their Browsing History, and to contact Customer Support if issues persist.

2ii. System fails to open native internet browser.

  2ii.1 System reports to user that the system could not open their native internet browser, to try again, and to contact Customer Support if issues persist.

BE5. Edit Account
Pre-Condition: User has created an account.

VP1. User
Main Success Scenario:

1. User opens the app and logs in (see BE6).
2. System provides the following options as a menu:
   - ID a Game
   - View ID History
   - View Account Profile
3. User selects "View Account Profile".
4. System displays Profile details, as well as the option to edit account details.
5. User selects "Edit Account Details".
6. System asks user to provide current account login information as confirmation.
7. User provides the requested information.
8. System allows user to edit the corresponding details:
   - Username
   - Password
   - App Permissions
9. User edits relevant details and submits to the system.
10. System updates the user's account information to the provided information.

Secondary Scenarios:

7i. User enters incorrect login information.

7i.1 System prompts user to re-enter information a maximum of three times before not allowing them to edit their account for one day.

9i User provides invalid account details.

9i.1 System rejects the submitted information.

9i.2 Edit Account failed.

10i. System is unable to update the user's account information due to server issues.

10i.1 Edit Account failed.

VP2. Marketing Team
N/A

VP3. Advertisers
N/A

VP4. Game Companies & Developers
N/A

VP5. Customer Support

7i.1 System should notify the user that they have entered incorrect information.

7i.2 Upon reaching maximum login attempts, System should notify the user of this fact, in addition to notifying them they will not be able to edit their account details for one day.

9i.1 System should notify the user of the mistake made, and list the conditions of proper account details input.

10i. System should notify the user of current server status, suggest they try again later, and offer to the user to contact customer support if errors persist.

VP6. Account Security

7i.1 Upon reaching maximum login attempts, System should send a notification to the email associated with the account as a warning, including the timestamp of the attempts.

9. System sends an email containing a code to the email associated with the account, and prompts user to enter the code before updates to their account can be made.

9.1 User enters the code.

Global Scenario:
Pre-Condition: User has created an account.
Main Success Scenario:

1. User opens the app and logs in (see BE6).

2. System provides the following options as a menu:
   - ID a Game
   - View ID History
   - View Account Profile

3. User selects "View Account Profile".

4. System displays Profile details, as well as the option to edit account details.

5. User selects "Edit Account Details".

6. System asks user to provide current account login information as confirmation.

7. User provides the requested information.

8. System allows user to edit the corresponding details:
   - Username
   - Password
   - App Permissions

9. User edits relevant details and submits to the system.

10. System sends an email containing a code to the email associated with the account, and prompts user to enter the code before updates to their account can be made. '

11. User enters the code.

12. System updates the user's account information to the provided information.

Secondary Scenarios:

7i. User enters incorrect login information.

7i.1 System notifies user that they have entered incorrect login information, and prompts them to re-enter information a maximum of three times before notifying and disallowing them to edit their account for one day.

7i.2 Upon reaching maximum login attempts, System should send a notification to the email associated with the account as a warning, including the timestamp of the attempts.

  9i User provides invalid account details.

9i.1 System rejects the submitted information, notifying the user of their mistake and reminding them of account details input guidelines.

10i. System fails to send email with code; System prompts user to try to edit their account later due to server issues.

12i. System is unable to update the user's account information due to server issues, and notifies the user of the current server status. The System suggests the user tries to edit their account later, and offers they contact customer support if issues persist.

BE6. Create Account
Precondition: The user has a stable WiFi connection and has opened the app

VP1. User
Main Success Scenario:

1. User clicks on the **Sign Up** button
2. System prompts user to enter:
   - A valid email
   - A valid password
   - the password again to confirm that they match
3. User enters required details and clicks on the **Create Account** button
4. If all inputs are valid:
   - The system stores the details in the database
   - The account is successfully created
   - The system displays a success message, and the user is redirected to the login screen

Secondary Scenarios:

4.i Email and Password are not valid

  4.i.1 System recognizes that Email and Password are not valid

  4.i.2 System notifies user about invalidity and prompts user to enter a valid email and password

4.ii Passwords do not match

  4.ii.1 System recognizes that passwords do not match

  4.ii.2 System notifies user and prompts user to enter and re-enter password

4.iii Email address is already associated with an account

  4.iii.1 System recognizes that the email address already exists in database

  4.iii.2 System notifies user about existing email address

4.iv System fails to store user details due to server issues

  4.iv.1 System recognizes storing user details failed and that servers are down

  4.iv.2 System notifies user with the message: "Error: Failed to create account due to server issues".

VP2. Viewpoint Name #2
Insert Scenario Here

Global Scenario:
Insert Scenario Here

5 Non-Functional Requirements

- For each non-functional requirement, provide a justification/rationale for it.
  Example:
  SC1. *The device should not explode in a customer's pocket.*
  Rationale: Other companies have had issues with the batteries they used in their phones randomly exploding [insert citation]. This causes a safety issue, as the phone is often carried in a person's hand or pocket.

- If you need to make a guess because you couldn't really talk to stakeholders, you can say "We imagined stakeholders would want...because..."

- Each requirement should have a unique label/number for it.

- In the list below, if a particular section doesn't apply, just write N/A so we know you considered it.

5.1 Look and Feel Requirements

5.1.1 Appearance Requirements

LF-A1.

5.1.2 Style Requirements

LF-S1.

5.2 Usability and Humanity Requirements

5.2.1 Ease of Use Requirements

UH-EOU1.

5.2.2 Personalization and Internationalization Requirements

UH-PI1.

5.2.3 Learning Requirements

UH-L1.

5.2.4 Understandability and Politeness Requirements

UH-UP1.

5.2.5 Accessibility Requirements

UH-A1.

5.3 Performance Requirements

5.3.1 Speed and Latency Requirements

PR-SL1.

5.3.2 Safety-Critical Requirements

PR-SC1.

5.3.3 Precision or Accuracy Requirements

PR-PA1.

5.3.4 Reliability and Availability Requirements

PR-RA1.

5.3.5 Robustness or Fault-Tolerance Requirements

PR-RFT1.

5.3.6 Capacity Requirements

PR-C1.

5.3.7 Scalability or Extensibility Requirements

PR-SE1.

5.3.8 Longevity Requirements

PR-L1.

5.4 Operational and Environmental Requirements

5.4.1 Expected Physical Environment

OE-EPE1.

5.4.2 Requirements for Interfacing with Adjacent Systems

OE-IA1.

5.4.3 Productization Requirements

OE-P1.

5.4.4 Release Requirements

OE-R1.

5.5 Maintainability and Support Requirements

5.5.1 Maintenance Requirements

MS-M1.

5.5.2 Supportability Requirements

MS-S1.

5.5.3 Adaptability Requirements

MS-A1.

5.6 Security Requirements

5.6.1 Access Requirements

SR-AC1.

5.6.2 Integrity Requirements

SR-INT1.

5.6.3 Privacy Requirements

SR-P1.

5.6.4 Audit Requirements

SR-AU1.

5.6.5 Immunity Requirements

SR-IM1.

5.7 Cultural and Political Requirements

5.7.1 Cultural Requirements

CP-C1.

5.7.2 Political Requirements

CP-P1.

5.8 Legal Requirements

5.8.1 Compliance Requirements

LR-COMP1.

5.8.2 Standards Requirements

LR-STD1.

6 Innovative Features

As our chosen innovative feature, we decided upon offering recommendations for other games after an identification. This would not only benefit users, who would find more games in a similar style to their liking, but also presents an opportunity for the companies to advertise other games in their catalog. These recommendations could also be tailored to the user, based on their previous identifications. This may lead to more users using the app to find recommendations, and increased profits from game companies whose games are frequently identified. Below is a list of other innovative features we developed.

- Sending a link to a website where the identified game may be purchased

- The ability to view a list of previous identifications

- The option to send feedback to the games' developers of games the user has played

- The ability to rate games that the user has played

- Rating the app's identification ability (similar to Google Maps "How did I do today?")

- Different features for Premium / Standard accounts, such as improved recommendations and removal of ads

A   Division of Labour

Include a Division of Labour sheet which indicates the contributions of each team member. This sheet must be signed by all team members.