

Software Requirements Specification for Software Engineering: subtitle describing software

Team #22, TeleHealth Insights

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Contents

1	Purpose of the Project	vi
1.1	User Business	vi
1.2	Goals of the Project	vi
2	Stakeholders	vi
2.1	Client	vi
2.2	Customer	vi
2.3	Other Stakeholders	vi
2.4	Hands-On Users of the Project	vi
2.5	Personas	vi
2.6	Priorities Assigned to Users	vi
2.7	User Participation	vii
2.8	Maintenance Users and Service Technicians	vii
3	Mandated Constraints	vii
3.1	Solution Constraints	vii
3.2	Implementation Environment of the Current System	vii
3.3	Partner or Collaborative Applications	vii
3.4	Off-the-Shelf Software	vii
3.5	Anticipated Workplace Environment	vii
3.6	Schedule Constraints	vii
3.7	Budget Constraints	vii
3.8	Enterprise Constraints	viii
4	Naming Conventions and Terminology	viii
4.1	Glossary of All Terms, Including Acronyms, Used by Stakeholders involved in the Project	viii
5	Relevant Facts And Assumptions	viii
5.1	Relevant Facts	viii
5.2	Business Rules	viii
5.3	Assumptions	viii
6	The Scope of the Work	viii
6.1	The Current Situation	viii
6.2	The Context of the Work	viii
6.3	Work Partitioning	ix

6.4	Specifying a Business Use Case (BUC)	ix
7	Business Data Model and Data Dictionary	ix
7.1	Business Data Model	ix
7.2	Data Dictionary	ix
8	The Scope of the Product	ix
8.1	Product Boundary	ix
8.2	Product Use Case Table	ix
8.3	Individual Product Use Cases (PUC's)	ix
9	Functional Requirements	ix
9.1	Authentication	ix
9.2	System Setup	x
9.3	User Interactions and Question Handling	x
9.4	Data Collection and Storage	x
9.5	Video and Audio Data Analysis	xi
9.6	Data Processing and Display	xii
10	Look and Feel Requirements	xiii
10.1	Appearance Requirements	xiii
10.2	Style Requirements	xiii
11	Usability and Humanity Requirements	xiii
11.1	Ease of Use Requirements	xiii
11.2	Personalization and Internationalization Requirements	xiii
11.3	Learning Requirements	xiv
11.4	Understandability and Politeness Requirements	xiv
11.5	Accessibility Requirements	xiv
12	Performance Requirements	xiv
12.1	Speed and Latency Requirements	xiv
12.2	Safety-Critical Requirements	xiv
12.3	Precision or Accuracy Requirements	xiv
12.4	Robustness or Fault-Tolerance Requirements	xiv
12.5	Capacity Requirements	xiv
12.6	Scalability or Extensibility Requirements	xiv
12.7	Longevity Requirements	xv

13 Operational and Environmental Requirements	xv
13.1 Expected Physical Environment	xv
13.2 Wider Environment Requirements	xv
13.3 Requirements for Interfacing with Adjacent Systems	xv
13.4 Productization Requirements	xv
13.5 Release Requirements	xv
14 Maintainability and Support Requirements	xv
14.1 Maintenance Requirements	xv
14.2 Supportability Requirements	xv
14.3 Adaptability Requirements	xvi
15 Security Requirements	xvi
15.1 Access Requirements	xvi
15.2 Integrity Requirements	xvi
15.3 Privacy Requirements	xvi
15.4 Audit Requirements	xvi
15.5 Immunity Requirements	xvi
16 Cultural Requirements	xvi
16.1 Cultural Requirements	xvi
17 Compliance Requirements	xvi
17.1 Legal Requirements	xvi
17.2 Standards Compliance Requirements	xvii
18 Open Issues	xvii
19 Off-the-Shelf Solutions	xvii
19.1 Ready-Made Products	xvii
19.2 Reusable Components	xvii
19.3 Products That Can Be Copied	xvii
20 New Problems	xvii
20.1 Effects on the Current Environment	xvii
20.2 Effects on the Installed Systems	xvii
20.3 Potential User Problems	xvii
20.4 Limitations in the Anticipated Implementation Environment That May Inhibit the New Product	xviii

20.5 Follow-Up Problems	xviii
21 Tasks	xviii
21.1 Project Planning	xviii
21.2 Planning of the Development Phases	xviii
22 Migration to the New Product	xviii
22.1 Requirements for Migration to the New Product	xviii
22.2 Data That Has to be Modified or Translated for the New System	xviii
23 Costs	xviii
24 User Documentation and Training	xix
24.1 User Documentation Requirements	xix
24.2 Training Requirements	xix
25 Waiting Room	xix
26 Ideas for Solution	xix

Revision History

Date	Version	Notes
Date 1	1.0	Notes
Date 2	1.1	Notes

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9 Functional Requirements

9.1 Authentication

A1: Description.

Insert formal Specification

Rationale: Insert Rational
Fit criterion: Insert criterion here

9.2 System Setup

SS1: Description.
Insert formal Specification
Rationale: Insert Rational
Fit criterion: Insert criterion here

9.3 User Interactions and Question Handling

UIQH1: Description.
Insert formal Specification
Rationale: Insert Rational
Fit criterion: Insert criterion here

9.4 Data Collection and Storage

DCS1: The database shall store multimedia files including video, audio, and JSON format files for each session.

Insert formal Specification

Rationale: These file types are necessary to capture the full scope of the speech-language assessment, including patient responses and the structured data associated with each session (e.g., flagged occurrences, timestamps).

Fit criterion: The system must successfully store and retrieve at least 1GB of video, audio, and JSON data per session without data corruption.

DCS2: The database shall record the video, audio, flagged occurrences (e.g., errors or critical moments during the assessment), and timestamps for each question asked during the assessment.

Insert formal Specification

Rationale: Storing flagged occurrences and timestamps lets clinicians perform detailed analysis of patient responses and enables them to review specific moments of interest efficiently.

Fit criterion: The database shall include video and audio files for 100 percent of assessment sessions, and each recording must have flagged occurrences and timestamps associated with every question asked, retrievable via query.

DSC3: The system shall not store any personally identifiable textual information (e.g., patient name, address, or medical record number) in the database.

Insert formal Specification

Rationale: To maintain privacy and ensure compliance with data protection regulations such as HIPAA, identifying textual information must be excluded from storage in the database.

Fit criterion: ??.

DSC4: The database shall group all stored data by a unique user identifier to ensure data can be linked to specific users without storing identifiable information.

Insert formal Specification

Rationale: Using a unique user identifier allows for data organization and retrieval by patient without compromising patient privacy, supporting the requirement for anonymized data storage.

Fit criterion: The system must assign a unique identifier to every user and confirm through testing that all session data is properly grouped and retrievable under that identifier, with no misassociated data.

DSC5: Description.

Insert formal Specification

Rationale: Insert Rational

Fit criterion: Insert criterion here

9.5 Video and Audio Data Analysis

VADA1: Description.

Insert formal Specification

Rationale: Insert Rational

Fit criterion: Insert criterion here

VADA2: The analysis model shall have access to the video recordings of each session for the purpose of processing and analyzing patient speech patterns and behavior.

Insert formal Specification

Rationale: The video data contains essential visual and auditory information

that the model needs to analyze in order to assess speech-related disturbances and non-verbal cues.

Fit criterion: Insert criterion here

9.6 Data Processing and Display

DPD1: The system shall retrieve processed assessment results from the database for report generation.

Insert formal Specification

Rationale: Inorder to generate reports, the system must access and extract the necessary data from the database, ensuring that all relevant assessment information is included.

Fit criterion: The system shall successfully retrieve all assessment data without errors within 5 seconds of a query being made.

DPD2: The system shall automatically generate a comprehensive report based on the retrieved assessment data, including flagged occurrences, timestamps, and patient performance metrics.

Insert formal Specification

Rationale: Automatically generating a report provides a streamlined process for clinicians to review the patient's performance, saving time on manual data compilation.

Fit criterion: The report must include 100% of the required data for each session (video, audio, flagged disturbances, timestamps), and be generated within 10 seconds of the request.

DPD3: The system shall display the generated report in a user-friendly format, accessible through the platform's interface.

Insert formal Specification

Rationale: Clinicians need to be able to easily view and interpret the report to assess patient progress and determine next steps for therapy.

Fit criterion: The report must be displayed within the clinician's dashboard, formatted with charts and tables where applicable, and fully load within 3 seconds.

DPD4: The system shall store the generated report in the database, linked

to the corresponding patient's unique user identifier.

Insert formal Specification

Rationale: Storing the report ensures that clinicians can access previous assessment results, enabling them to track patient progress over time.

Fit criterion: The report must be stored in the database with a unique identifier and timestamp, and be retrievable for at least 5 years after creation.

DPD5: Clinicians shall be able to securely access previously generated reports from the database at any time.

Insert formal Specification

Rationale: Clinicians need on-demand access to reports to monitor progress and make informed treatment decisions during follow-up sessions.

Fit criterion: Clinicians must be able to access 100% of stored reports within 3 seconds via a secure, role-based access system.

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Insert your content here.

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Appendix — Reflection

The information in this section will be used to evaluate the team members on the graduate attribute of Lifelong Learning. Please answer the following questions:

1. What knowledge and skills will the team collectively need to acquire to successfully complete this capstone project? Examples of possible knowledge to acquire include domain specific knowledge from the domain of your application, or software engineering knowledge, mechatronics knowledge or computer science knowledge. Skills may be related to technology, or writing, or presentation, or team management, etc. You should look to identify at least one item for each team member.
2. For each of the knowledge areas and skills identified in the previous question, what are at least two approaches to acquiring the knowledge or mastering the skill? Of the identified approaches, which will each team member pursue, and why did they make this choice?