

Software Requirements Document^{1,2}

– A Template –

Requirements form the bridge between business objectives and software implementation. They serve as the foundation for all design, development process, testing, and documentation activities. Clear, testable requirements are crucial to building software that meets stakeholder needs.

The following template is rather “general”, in that not every SRD will have all the sections herein, so they could be left out of a given SRD. However, they still might be included for completeness (indicating “not applicable” or some such) so that the reviewer/customer knows you’ve at least considered them.]

1. Introduction and Purpose

A general description of the system under development (SUD) and its intended usage/purpose.

- This project is a resume grading/rating project, powered by artificial intelligence. The user can provide an input resume and a prompt which can be a job description or a list of criteria (like a rubric) and the system will generate a rating based on the provided input.

1.1 Acronyms, Terms and References

List acronyms, terms and references used in the SRD.

¹ https://insights.sei.cmu.edu/documents/3021/2006_017_001_22987.pdf

² <https://www.computer.org/resources/software-requirements-specifications>

Acronym	Meaning
SRD	Software Requirements Document
SUD	System Under Development
AI	Artificial Intelligence
UI	User interface
UX	User experience
API	Application Programming Interface
HTTPS	HyperText Transfer Protocol Secure
REST	Representational State Transfer
CSS	Cascading Style Sheets
PDF	Portable Document Format
JSON	JavaScript Object Notation

Term	Definition
Frontend	Web user interface program
Backend	Server side/database program

Reference	Source

2. Business Objectives

Define the business objectives driving creation of the SUD. These may or may not be stated formally as requirements. However, at a minimum, defining these objectives provides the basis for everything else.

- Not applicable.

3. User Personas or Roles

Define the categories of users and/or the roles they play in the eventual end system.

- [SRD_Role_0001] The user is a job applicant seeking resume feedback when compared to a given job description.

4. Feature List

Define the high-level features of the SUD.

- [SRD_Feature_0001] The users can upload a resume and provide an input prompt and receive an AI generated output.
- [SRD_Feature_0002] The users can view a demo of an example generated response.
- [SRD_Feature_0003] The users can upload resumes only in PDF format.

5. Use Cases³

Define the allowed/typical user interactions with the eventual end system, including success & failure cases, exceptions, etc.

- [SRD_UseCase_0001] A user can upload a resume and job description and receive a rating of the uploaded resume.
- [SRD_UseCase_0002] A user can upload a resume and a rubric of criteria and receive a rating of the uploaded resume.
- [SRD_UseCase_0003] In the case of OpenAI being down, the system shall prompt the user that they should try again later.
- [SRD_UseCase_0004] The system will only accept English language.
- [SRD_UseCase_0005] In the case of a user reaching the rate limit, an AI call shall not be made,
- [SRD_UseCase_0006] In the case of a user reaching the rate limit, an error message shall be displayed.

³ https://en.wikipedia.org/wiki/Use_case

6. User Requirements⁴

Define end-user expectations as requirements.

- [SRD_UserReq_0001] The user shall be able to upload a resume for analysis.
- [SRD_UserReq_0002] The user shall be able to input a job description for comparison.
- [SRD_UserReq_0003] The user shall receive feedback comparing their resume to the provided job description.
- [SRD_UserReq_0004] The user shall receive ratings allowing them to identify areas of strength and weakness.

7. Functional Requirements⁵

Define the functional requirements of the SUD.

- [SRD_FuncReq_0001] User shall be able to upload PDF resume file.
- [SRD_FuncReq_0002] User shall be able to input job description into text box.
- [SRD_FuncReq_0003] The system shall extract all text from the PDF resume.
- [SRD_FuncReq_0004] The system shall call AI to compare resume against the given job description.
- [SRD_FuncReq_0005] The system shall generate a total resume score (0-100) compared to the given job description.
- [SRD_FuncReq_0006] The system shall generate subdivisions of the resume based on the list of criteria in the given job description.
- [SRD_FuncReq_0007] The system shall rate (0-10) the criteria subdivision based on the list of criteria in the given job description.
- [SRD_FuncReq_0008] The system shall suggest areas that are in need of improvement.
- [SRD_FuncReq_0009] The system shall list the strength of the resume.

⁴ <https://perfval.com/technical-discussion/user-requirements/>

⁵ https://en.wikipedia.org/wiki/Functional_requirement

- [SRD_FuncReq_0010] The system shall grade the resume's grammar and spelling on a scale of 0 to 10.
- [SRD_FuncReq_0011] The system shall suggest grammar corrections in the resume.
- [SRD_FuncReq_0012] The system shall disallow uploads of types that are not PDF.
- [SRD_FuncReq_0013] The backend system shall ignore the format of the PDF and focus strictly on the textual content when given to the AI grader.
- [SRD_FuncReq_0014] The system shall prevent users from grading more than 10 resumes ratings in a single hour time frame (rate limit, 10/hr).
- [SRD_FuncReq_0015] The system shall display any errors that may occur in the process.
- [SRD_FuncReq_0016] The system shall not keep any previous generations.
- [SRD_FuncReq_0017] The system shall not allow users to view or restore past generations.
- [SRD_FuncReq_0018] The system shall allow a user to download their response as a JSON file.
- [SRD_FuncReq_0019] The system shall use the OpenAI GPT5 Mini AI model.
- [SRD_FuncReq_0020] The system shall return an error if the AI API takes more than 2 minutes to execute.
- [SRD_FuncReq_0021] The system shall display a static demo which represents the exact same UI that a user would see when they generate an output.

8. Nonfunctional Requirements⁶

Define the set of nonfunctional requirements of the SUD.

- [SRD_NonFuncReq_0001] The system shall return an output in under 2 minutes when OpenAI is called.

⁶ https://en.wikipedia.org/wiki/Non-functional_requirement

- [SRD_NonFuncReq_0002] The system shall not take more than 1 second on average for web UI interface requests (excluding the calls to the OpenAI API).
- [SRD_NonFuncReq_0003] The system shall have an uptime of over 95%.
- [SRD_NonFuncReq_0004] The system shall not expose secrets or keys. i.e., OpenAI API keys.
- [SRD_NonFuncReq_0005] The system shall not expose hardware server ports on the host system.
- [SRD_NonFuncReq_0006] When the system is given the exact same inputs, the final rating percentage should fall within a range of +/- 10.
- [SRD_NonFuncReq_0007] When the system is given a poorly written resume, the output should reflect a poor score in the grammar/spelling category.
- [SRD_NonFuncReq_0008] When the system is given a resume that is “obviously” irrelevant to the prompt, the score should be rated at the low bound of the range.
- [SRD_NonFuncReq_0009] When the system is given a resume that is “obviously” relevant to the prompt, the score should be rated at the high bound of the range.
- [SRD_NonFuncReq_0010] When the system is given a resume with an injected AI prompt to influence scoring, the system will flag and ignore the prompt in grading.
- [SRD_NonFuncReq_0011] The system shall allow at least one user at a time.

9. Interface Requirements⁷

Define the set of interface requirements of the SUD.

- [SRD_InterfaceReq_0001] The system interface shall allow a user to upload a resume document.

⁷ <https://argondigital.com/resource/whitepapers/everything-you-wanted-to-know-about-interface-requirements/>

- [SRD_InterfaceReq_0002] The system interface shall only accept PDF documents.
- [SRD_InterfaceReq_0003] The system interface shall allow a user to input a textual prompt.
- [SRD_InterfaceReq_0004] The system interface shall display a preview of the uploaded resume as an embedded document.
- [SRD_InterfaceReq_0005] The system interface shall display a numerical output in the form of a percentage.
- [SRD_InterfaceReq_0006] The system interface shall display a list of criteria the resume was graded with and a score of 0 to 10.
- [SRD_InterfaceReq_0007] The system interface shall display an overall summary of the rating.
- [SRD_InterfaceReq_0008] The system interface shall display a list of resume strengths.
- [SRD_InterfaceReq_0009] The system interface shall display a list of resume weaknesses.
- [SRD_InterfaceReq_0010] The system interface shall display a rating of grammar and spelling errors.
- [SRD_InterfaceReq_0011] The system interface shall display a loading spinner while the system generates a response.
- [SRD_InterfaceReq_0012] The system interface shall allow bidirectional navigation between the home page and the grading page.
- [SRD_InterfaceReq_0013] The system interface shall allow bidirectional navigation between the home page and the demo page.
- [SRD_InterfaceReq_0014] The system interface shall display a positive (between 70 and 100) graded result on the demo page.
- [SRD_InterfaceReq_0015] The system interface shall display errors in a persistent manner (not toasts or popups, static displays).

10. Performance Requirements⁸

Define the set of performance requirements of the SUD.

⁸ <https://www.ibm.com/docs/en/aix/7.2?topic=implementation-performance-requirements-documentation>

- [SRD_PerfReq_0001] The system shall return an output in under 2 minutes when OpenAI is called.
- [SRD_PerfReq_0002] The system shall have a responsive web UI.
- [SRD_PerfReq_0003] The system shall not take more than 1 second on average for web UI interface requests (excluding the calls to the OpenAI API).

11. Availability Requirements⁹

Define the set of availability requirements of the SUD.

- [SRD_AvailReq_0001] The system shall have an uptime of over 95%.

12. Safety Requirements¹⁰

Define the set of safety requirements of the SUD.

- No safety requirements are application to this product.

13. Security Requirements¹¹

Define the set of security requirements of the SUD.

- [SRD_SecReq_0001] The system shall not expose secrets or keys. i.e., OpenAI API keys.
- [SRD_SecReq_0002] The system shall not expose hardware server ports on the host system.
- [SRD_SecReq_0003] The system shall use a reverse proxy to expose the web interface.
- [SRD_SecReq_0004] The system shall implement a rate limit of 10 requests per hour.

⁹ <https://requirements.com/Content/What-is/what-are-availability-requirements>

¹⁰ [Need a good reference here.](#)

¹¹ <https://requirements.com/Content/What-is/what-are-security-requirements-2>

- [SRD_SecReq_0005] The backend system shall only accept requests from the frontend system (CORS).
- [SRD_SecReq_0006] The system shall use device sending IP to impose the rate limit. This will impose a limitation on users that share IP's. Such as NATs or Corps.
- [SRD_SecReq_0007] The system shall not sanitize the user's input at any point. Security is not a concern for this pet project.
- [SRD_SecReq_0008] The system shall not require authentication, all requests will be anonymous.

14. Design and Implementation Constraints¹²

Define any design & implementation constraints placed on the SUD.

- [SRD_DesignConstraint_0001] The system shall have two separate modules, one for the backend and one for the web user interface.
- [SRD_DesignConstraint_0002] The backend system shall be written in a compiled language, such as Go.
- [SRD_DesignConstraint_0003] The frontend system shall be written in a typescript framework, such as React.
- [SRD_DesignConstraint_0004] The frontend system shall be styled using vanilla CSS.
- [SRD_DesignConstraint_0005] The systems shall communicate via HTTPS using common REST principles.
- [SRD_DesignConstraint_0006] The system shall use a reverse proxy (Cloudflare tunnel) to expose the web interface.

15. External System Requirements¹³

Define the set of external system requirements of the SUD.

¹² Need a good reference here.

¹³ Need a good reference here.

- [SRD_ExtSysReq_0001] The system shall be hosted on personal hardware systems.
- [SRD_ExtSysReq_0002] The system shall be configurable and deployable remotely.

16. Quality Assurance Requirements¹⁴

Define the set of quality assurance requirements of the SUD.

- [SRD_QualAssurReq_0001] When the system is given the exact same inputs, the final rating percentage should fall within a range of +/- 10.
- [SRD_QualAssurReq_0002] When the system is given a poorly written resume, the output should reflect a poor score in the grammar/spelling category.
- [SRD_QualAssurReq_0003] When the system is given a resume that is unrelated to the prompt, the score should be rated at the low bound of the range.
- [SRD_QualAssurReq_0004] When the system is given a resume that is related to the prompt, the score should be rated at the high bound of the range.
- [SRD_QualAssurReq_0005] When the system is given a resume with an injected AI prompt to influence scoring, the system will flag and ignore the prompt in grading.
- [SRD_QualAssurReq_0006] When the system is given too many requests from the same IP within the defined time (rate limit), the system should return an error and not execute an AI call.

17. Documentation Requirements

Define the list of documents required with delivery of the SUD.

- [SRD_DocReq_0001] The system shall provide user documentation explaining how to input resumes and job descriptions.

¹⁴ https://soma.larc.nasa.gov/stp/dynamic/pdf_files/NASA-STD-87398B%20SoftwareAssuranceSafety.pdf

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- [SRD_DocReq_0002] The system shall provide user documentation explaining how to interpret AI feedback results.
- [SRD_DocReq_0003] The system shall provide user documentation including a disclaimer use of AI grading.

18. Trace Tags

List the trace tags defined in the SRD.

- Trace tags defined in content above.
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Appendix

Requirements Analysis & Review¹⁵

Requirements analysis is the process of examining requirements to improve quality, uncover issues, and gain a deeper understanding of what stakeholders want and need. Why do we analyze requirements? It serves several important purposes:

- *Validate completeness – Ensure all necessary capabilities are captured.*
- *Remove ambiguity – Refine vague, unclear requirements.*
- *Check consistency – Identify conflicting or contradictory requirements.*
- *Assess feasibility – Determine if requirements are realistic and achievable.*
- *Prioritize implementation – Understand relative importance and urgency of each requirement.*
- *Estimate effort – Gauge work needed to satisfy requirements.*
- *Guide design – Derive technical implications and decisions from requirements.*

Analyzing requirements reduces risk by catching problems early when they are easiest to fix. It also sets the stage for developers to build the right solution.

There were many duplicated requirements with similar expectations; those have been reduced. Some requirements were too vague, and those have since been adjusted. Another issue includes the frequent use of subject terms, which have been replaced with more objective terms. Many of the requirements allow for levels of flexibility; this is by design and will allow development to take place in a manner supportive of the team's abilities. These requirements do not gauge effort; however, with the class being laid out the way it is, the required effort is somewhat defined for us.

The iterative review process of this Software Requirements Document took place over many days, and hence the final review is pretty short, due to the preliminary review knocking out most of the issues.

¹⁵ See the companion sample SRD review checklist.