

CazzoKnit
Context, Requirements and System Specification
V.1.0.0

Project Name: CazzoKnit
Project Creator: Cassandra Flur, CazzoKid
Created On: 2024-10-30
State: IN PROGRESS

Context specification

Scope

Technology is rapidly expanding, and with the help of generative AI, the need and accessibility of coding is at an all time high. While the digital world is having this antithesis, some feel the 'old world' of crafting is on the decline. Why sit and read for hours, when apps, such as Tiktok and Youtube, deliver the context and lessons of the book in minutes? Same goes for manual crafts, such as knitting.

This project aims to combine the two worlds of coding and manual crafting into a program that will aid the user in crafting knitting and crocheting projects.

Goal and Objectives

The system of CazzoKnit will fulfill the following goals:

1. Offer a central platform that offers the user counters, written plans, personal reviews, pattern creation and stitch converters.
2. Associate each project with counters, patterns, stitch converters and material counts.

As a user of CazzoKnit you will be able to:

- See your personal projects, their counters, material, patterns
- Finalize your project with a review, feedback and photos of the final product
- Create your own pattern using a grid feature, stitch counts and colors.
- Have a easy stitch counter that tallies, take into account increase and decreases as well as stitch counts – making it easy for you to see exactly where you did what
- Add comments to the stitch counter to explain deviations from the patterns, hardships etc.
- Save multiple projects and their specific details

This project will entail a Frontend, showing counters and pattern creation; An API, backend; a database that stores details about every project. This will primarily be a desktop application but may be expanded according to version requirements.

Requirements Specification

Versions and features

The breakdown of the essential features according to each version of CazzoKnit. Each version contains several features and aims to incrementally deliver all features in time.

Version	Features / Components
V1.0: MVP	Project dashboard, counters, Project CRUD, Database setup, Basic frontend,
V1.5: Extended features	Pattern creation (GRID feature), counter comments and enhancement, Review and feedback, responsive and fluent frontend
V2.0: Advanced features	Pattern library, export projects? Mobile integration (react native), performance enhancement,
V3.0: Future enhancement and scaling	AI help with patterns and scaling,

Priorizations

The requirements of this project are on a four-tier scale, using the muSCoW approach:

- **MUST HAVE:** Project release must have these planned features
- **SHOULD HAVE:** vital long term; not vital but adds significant value
- **COULD HAVE:** Nice to have in future releases, smaller impact
- **WISH HAVE:** No real impact, get back to when you have time

Functional requirements

The versions can be broken down according to these requirements:

1.0 Requirements:

ID	Requirement	Priority	Version
R1	As a user, I want to create projects, delete and edit them, so I can have total control over my knitting	MUST	1.0

ID	RIUC1
Primary Actor	End user
Preconditions	The user is on the project dashboard page and is logged in
Main Success Scenario	<ol style="list-style-type: none">1. The user clicks the “Create Project” button and enters details for the project (name, description, etc.-)2. The project is saved in the system and displayed on the dashboard3. The user can click on the project to edit details, and any changes are saved upon submission.4. The user clicks “Delete” to remove the project from the system. If the user confirms deletion, the project is permanently deleted.
End Conditions	The project has been successfully created, edited or deleted, and the user is returned to their dashboard.
Alternative Scenarios	1.B: If the user does not enter a name for the project, the system will not create the project. 4.B: If the user tries to delete a project with ongoing counters or tasks, prompt an additional warning to the user.

ID	Requirement	Priority	Version
R2	As a user, I want a dashboard that displays all of my projects	MUST	1.0

ID	R2UC1
Primary Actor	End user
Preconditions	The user is on the project dashboard page and is logged in
Main Success Scenario	<ol style="list-style-type: none"> 1. When the user is on the dashboard page, the system loads all of the user's projects, displaying each project's name, status and details 2. The user can click on a project to view more details (counters, patterns ...) or to edit it.
End Conditions	The user sees an updated list of their projects
Alternative Scenarios	1.B: If no project exists, the dashboard should display a message: "No projects found ... etc. "

ID	Requirement	Priority	Version
R3	As a user, I want to have a counter that I can increment/decrement according to my rounds	MUST	1.0

ID	R3UC1
Primary Actor	End user
Preconditions	The user is logged into project detail view and has a project selected.
Main Success Scenario	<ol style="list-style-type: none"> 1. The user accesses the counter section of a project. 2. The counter will initially display the number of stitched/rounds the user has tracked thus far. 3. The user clicks the increment button or decrement button to affect the counter. 4. The new counter value is updated and saved automatically.
End Conditions	The counter is updated and saved.
Alternative Scenarios	1.B: The decrement button is disables when counter is zero. 1.C: The counter has a maximum of a long value.

ID	Requirement	Priority	Version
R4	As a user, I want everything to be saved so I can work over multiple sessions	MUST	1.0

ID	R4UC1
Primary Actor	End user
Preconditions	The user is logged in, has a project open and has made changes.
Main Success Scenario	<ol style="list-style-type: none"> 1. The user makes changed to the project (counter, pattern, details). 2. The system automatically saves these changes in real-time or when the user navigates away from the page. 3. The user logs out and logs back in later 4. Upon return, show all previous changes
End Conditions	All project details changes are saves and loaded correctly on return.
Alternative Scenarios	1.B: If the site crashes, changes are perhaps saves locally and synced. 1.C: If there is an error saving the changes, display that to the user.

ID	Requirement	Priority	Version
R5	As a user, I want to have stitch converters that allow me to convert mm	MUST	1.0

ID	R5UC1
Primary Actor	End user
Preconditions	The user is logged in and on the “Converter” Page.
Main Success Scenario	<ol style="list-style-type: none"> 1. The uer accesses the converter feature 2. The user inputs a stitch size in EU(mm) size in the conversion field. 3. When both previous and after values have been submitted, system displays a stitch size for the selected unit, cm in after stitches.
End Conditions	All relevant information about converted mm value is displayed.
Alternative Scenarios	2.B: If the user enters an invalid number, system displays an error. 2.C: If both values have not been submitted, conversion button is not available.

1.5 Requirements:

ID	Requirement	Priority	Version
R6	As a user, I want to make my own patterns using a grid mode, with colors and row counters	MUST	1.5

ID	R6UC1
Primary Actor	End user
Preconditions	The user is logged in and on the pattern creation page.
Main Success Scenario	<ol style="list-style-type: none"> 1. The user navigates to the pattern creation section from the project dashboard 2. The system presents the user with a blank grid interface 10x10 space. 3. The user can color individual grids by selecting a color on the side, using HEX colorwheel, and clicking on the grid square. 4. The user can add rows on both diagonals by pressing “+” at the top and side of the grid. 5. The user can save patterns with colors, grid layout and counters and import them into projects in each project detail. 6. The patterns are saved universally in the pattern page. The user can edit or delete these at any time.
End Conditions	The custom pattern with the grid layout, colors and row counters are saved and can be imported .
Alternative Scenarios	<p>3.B: If the user has not selected any color, the default color is white and every grid is automatically white on start.</p> <p>2.B: If the user tries to exit a new pattern without saving it, prompt the user with a warning that any changes will be lost.</p>

ID	Requirement	Priority	Version
R7	As a user, I want to comment in my counters to document changes	SHOULD	1.5
R8	As a user, I want to be able to comment on my projects, leave reviews on finished work.	COULD	1.5
R9	As a user, I want the interface to be interactable and usable across all screens.	SHOULD	1.5

2.0 Requirements:

ID	Requirement	Priority	Version
R10	As a user, I want to be able to use this application on desktop and mobile devices (Android)	SHOULD	2.0
R11	As a user, I want a collective pattern library that I can collect my patterns in	COULD	2.0
R12	As a user, I want to export my work and patterns so I can work independently of the website.	COULD	2.0

3.0 Requirements:

ID	Requirement	Priority	Version
R13	As a user, I wish to have a chatbot that I can suggest and ask things of during my work	WISH	3.0
R14	As a user, I want a scalable and good performing site	WISH	3.0

See also these non-functional requirements:

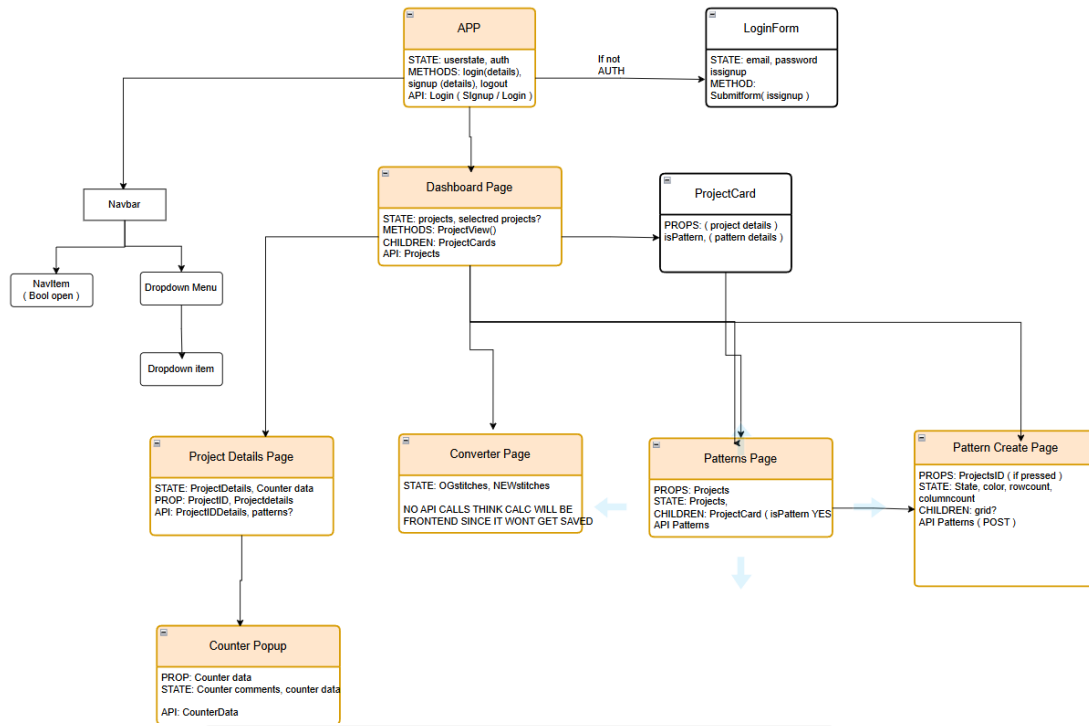
ID	Requirement	Priority	Description
NFR1	Performance	MUST	The application should load dashboard and patterns within 2 seconds, on desktop and mobile
NFR2	Security	WISH	Data should be kept from leaking, but no personal details except for knitting will be present
NFR3	Usability	MUST	Must be usable for older people with little-to-no experience with similar applications
NFR4	Compatibility	SHOULD	Should be available on most browsers, but will only be available on Android

System Design

System architecture

Frontend

The frontend is realized as a cluster of react components,



Backend

Data Model

