



SHIV NADAR UNIVERSITY

CSD301 : SOFTWARE ENGINEERING PROJECT

SOFTWARE REQUIREMENT SPECIFICATION DOCUMENT

BanQ

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Problem Statement

With a fast paced environment and multiple options, it has become extremely necessary for college students to effectively manage their personal finances. The primary problem one faces while trying to get a hold of their finance is the lack of a ledger that tells them details of their monthly expenses. While budgeting apps exist, they are not tailored to a college campus use case and hence become hard to use on an everyday. One can not save what one cannot measure and hence it becomes imperative to develop a solution that helps track one's expenses, record money borrowed and manages one's finances in an easy to use and quick to update manner.

In SNU, we face the same issue in our campus ecosphere where we lose track of how much money we spend at the C&D atrium or at the Mini Mart. We as students, are also budget conscious and often split the money with our friends which becomes a hassle to keep track of. So we felt the need for a customised SNU-centric budgeting application that would provide a solution to this problem for students and staff alike.

1. Introduction

BanQ is a web app designed for the SNU community to help them manage their expenses and keep a track of their money. BanQ aims to establish itself as the go to app for the student community in order for them to effectively manage their monthly budgets. BanQ has three primary functionalities - firstly, it enables users to log in their expenses with a SME specific interface. Secondly, it allows the users to channelise their budgets and lastly allows seamless splitting of bills across users. The idea is to empower the students with the knowledge of their spendings and enable them to save as much money as possible. We also aim to streamline the consumer experience on campus.

1.1 Purpose

This SRS defines the User Interface, Frontend and Backend of the BanQ Mobile - App version 1.0. This document is intended for the following group of people:-

- Developers for the purpose of maintenance and new releases of the software.
- BanQ Administrators
- Documentation writers.
- Testers.

1.2 Intended Audience

The target audience of the mobile application will be the student, faculty and resident community of Shiv Nadar University with a primary aim to focus on students wishing to manage their personal finances and spendings. The application development will also include interactions with the various service providers and vendors on campus in order for them to be listed on the platform.

1.3 Scope

This document applies to BanQ Mobile-App version 1.0. Through this software, we aim to build a mobile app for BanQ to use. It will be a live project that allows users to manage their expenses, channelise their budgets and split bills. We will also try to incorporate money saving

recommendations and tips as an additional feature. A social media like interface may also be developed in order to not only build a community around personal finance but also empower features like bill splitting.

1.4 Definitions, Acronyms and Abbreviations

BanQ	An upcoming personal finance app with the aim of simplifying budgeting for the SNU community
SNU	Shiv Nadar University
Mobile-app	Mobile Application

1.5 Overview

The SRS provides a holistic idea of the mobile application touching upon the use cases, target audience, user interface and the overall flow of the application. Further, the document also analyzes the application through various standard techniques like the use of Data Flow Diagrams.

Section 1.0 Discussed the purpose and scope of the software

Section 2.0 Describes the overall functionalities and constraints of the software and the user characteristics

Section 3.0 Details all the requirements needed to design the software

Section 4.0 Describes the features provided by the system software

2. Overall Description

The idea is to create an application that can be accessed by the user at any time in order to have a quick overview of their personal finance and also at the same time have an option to get detailed insights into the same. The entire application will be hosted on industry standard cloud hosting platforms and the database will be protected using standard encryption methods.

2.1 Product Perspective

- BanQ primarily consists of 3 functional components.
- The main functionality being tracking the user's expenditure according to their set budget in SNU.
- Another important aspect of the app is that it allows the user to set budget goals and gives them a detailed overview of their budget plans.
- Another unique functionality is the Split option which allows the user to keep track of how much money the user's friends owe the user.
- This Software uses a Cloud Database and will be available as a mobile app (APK).

2.2 Product Functions

The major functions that the BanQ mobile app will perform are -

User Side

Tab 1 - Expenditure Tracker

It showcases a list of shops in SNU where Students often spend money. Each shop will have its range of menu along with the corresponding prices. On the press of a button, the amount against the item will be deducted from your budget

- **Buy Item** - The user can select the item and deduct its price from their budget.
- **Add Item** - The user can add items not already available in the menu of a shop.

Tab 2 - Budget Manager

Displays the transactions made, the leftover budget in each of the categories the user divided their budget into and the overall budget for the month will be available

- **View Budget** - The overall leftover budget along with leftover budgets in each of the categories made by the users will be displayed here.
- **Change Budget** - The users can change their allocated budget and it will immediately be reflected
- **Check History** - All the purchases of the users along with their timestamps will be displayed here.

- **Revert a Change** - The user can revert back the amount of an item if they accidentally debited it from their budget from the history

Tab 3 - Split

Will allow the user to send notifications to people who've borrowed money from them to remind them about repayment.

- **Check Borrowed/Owed Money** - The users will be able to see the money they borrowed/owe from others.

Tab 4 - User's Profile

- **Check Profile** - The user can check and edit their profile here.
- **Notify Borrowers** - The users will be able to send a notification to the people who've borrowed money from them.

2.3 Security Features

The app does not share data of the users financials with any third party or any other user. All sensitive information like login details and passwords are encrypted using industrial methods.

2.4 User Characteristics

The user need not possess any technical background or undergo special training in order to use the app as the interface will be familiar and easy to use. The different users which will be using this software are –

- **Students** – The SNU students will be the target customer base of this mobile app.
- **SNU Faculty** – The Professors and admin staff of SNU also form a good portion of the customer base.
- **Admin** – Management, maintenance and testing.

2.5 Constraints

- Database Capacity

At the onset we will be relying on development versions of either Firebase or MongoDB noSQL databases. As the app generates more users and expands, a shift to industry production level cloud databases will be made.

- Online Connection

The application will not store any data locally and as such must be connected to the internet at all times for all transactions to be recorded.

3. External Interface Requirements

3.1 User Interface Requirements

- After successfully logging in, the user is presented with 4 tab options that navigate to their respective pages.
- In the expenditure tracker tab, a list of the different shops and outlets will be displayed along with some of the most commonly bought items on SNU. There will be an add button allowing the user to select the item.
- In the budget tab, the user will be presented with 4 buttons in order to edit and their budget.
- In the split tab, there will be an option for the user to add other users and add the required nomination against their names and a notify button that sends a reminder to the borrowers.
- The user tab will have buttons and text boxes where the user can edit his information and save changes.
- A navigation bar will be present on top of the page which allows users to switch tabs with ease.

3.2 Hardware Interface Requirements

- The user should have an Android mobile device with an active internet connection.

4. System Features

a. Real-time Budget updation

Any purchases update the database in real-time and the changes get reflected throughout all tabs immediately.

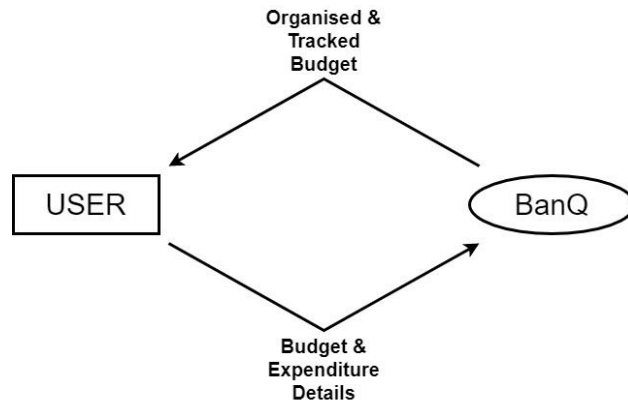
a. Comprehensive maintenance of user's transactions

All the transactions of the user are sequentially maintained and made available readily.

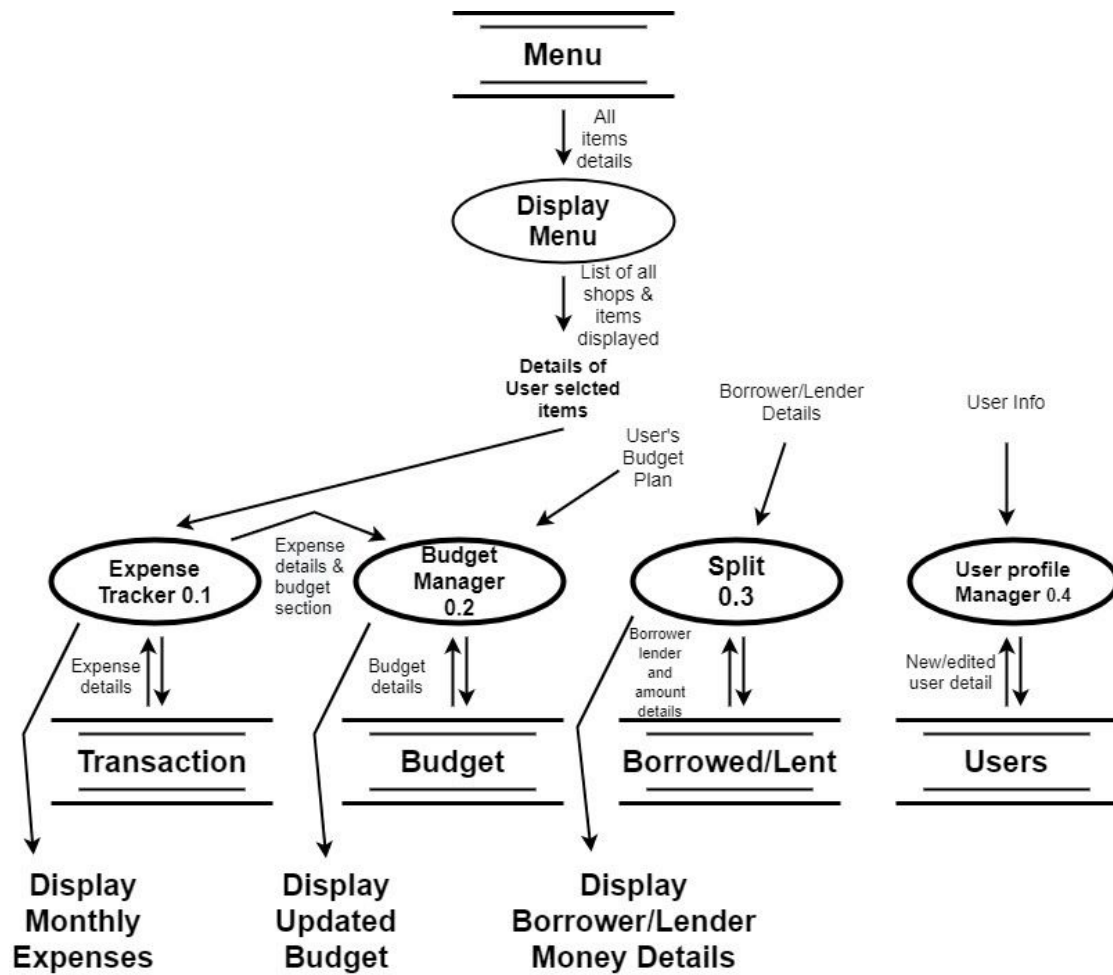
5. Data Flow Diagram

Data flow diagrams give an overview of the various data operations happening within the application. The graphical representation gives an accurate description of the input, processing and the eventual output of data.

Here, we have represented Level 0, Level 1 and Level 2 DFD diagrams. The functionalities that the BanQ application offered have been well broken down in the diagrams which clearly represents the modularization of the different functionalities and the data flow between them. We can also see the interaction of the high level functions with the different aspects of the database.



Level 0



Level 1

