Non-Functional Requirements Checklist

Beverage Booker

Version Information

Version	Date	Description	Author
1.0	12/04/20	First version of the vision document for Beverage Booker - Submitted for LCOM.	Jacob Kennedy
2.0	21/06/20	Appended document to remove reference to Table Booking and Event Booking as they no longer fit the scope of the project. Fixed incorrect closing times to represent a more realistic cafe. Submitted for LCAM.	Jacob Kennedy

Priority Key:

Smaller number = higher priority.

Larger number = lower priority.

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Security	Is user information stored? Are there standards in passwords? Is money involved in the system? Are there any levels of authority required?	User information for the cafe manager is stored. This would be a username and a password allowing them to login to the app to add/update/delete menu items. This data will need to be protected through encryption. Information for customers is also stored if they choose to have an account, information will include: email, password, name, and student card - all this information will require encryption. Customers that choose guests will simply enter a name to represent their account. All users will require encryption when it comes to payment. There will be standards of passwords so that a password is not easily guessed. This will be enforced through the common 8 characters, 1 number required, 1 capital letter required. Payment mechanisms may be present in the mobile version, this data will need to be protected through encryption.	Protects users personal information. Ensures users have secure passwords. Ensures only authorised people can access specific things on the system.	Usability is impaired as levels of access will have to be implemented making it harder to use, adding extra steps in front of ordering (user sign in or guest takes a toll on usability). Implementation will take longer, and complexity will increase. Encryption, login, database for user information.	Encryption of personal data, e.g. username, password, payment information, name, student card. They system disallows certain things in password entry e.g. < 8 characters long, missing number, missing capital. Authorisation through restriction of access to certain areas. E.g. a customer will not be able to update the menu items however a cafe manager can.	3/12

		There are levels of authority present in the system to prevent the wrong people seeing personal information of customers. Only authorised personnel will be able to access specific information.				

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Audit	Do orders need to be tracked? What aspects of the order need to be tracked?	Orders will require tracking so the customer can be given the rough estimate of when it will be ready. The order status will also be updated. Transactions also need to be tracked in those orders. The aspects that should be tracked are time or preperation, location, date, account, order number, payment status.	Ability to know what user ordered what. able to keep track of history of transactions. Ability to update member accounts with the order. E.g. order history and increment free coffee cards. Allows for authenticity of order by having a user attached to it.	Increased data storage requirements. Implementation will take longer, and complexity will increase. Data will have to be stored, member accounts will have to be updated.	Update account order history with new order. Add ability to see order and status and other information. Databases will have to be used for this.	5/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Performance	Is there any response time requirement after user input? Is there a start-up or shutdown time?	For the mobile version, it should take no longer than 2 seconds for the user to cycle to the next page after completing that field. E.g. On the mobile version the user finalises what their coffee will have in it and click continue which in less than 2 seconds they are looking at food items they can add to their order. For other things such as updating member order history they are lower priority as the user does not see this happening and can take longer, however 3 seconds is desirable. Start-up time is 7 AM. Shutdown time is 4 PM. The system is not required to be on permanently as the cafe is not preparing orders at all hours of the day.	Increased ease of use and efficiency while creating an order. Decrease response time while performing tasks. Increase in usability overall. Utilise café opening and closing times.	Implementation will take longer, and complexity will increase. Maintaining the 2 second rule will be a challenge throughout the duration of development.	Maintain efficient code. (Minimise complexity.) Maximise communication between system and client for timely system response to user input.	8/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Capacity	How many accounts will the system support? How much data does the system need to store? How far back would information be kept?	As this is based in a university café it is safe to say that it is possible that 3,000 or more people could create accounts for the café. Therefore, a database will require enough space to support that kind of number. The system will have to store: email, password, payment information, order history, student card, name. It is safe to say that information would have to be kept for a maximum of 8 years.	Having data in one place allows for easy access to information that is needed. Having more storage then needed allows for lenience of growth in the amount of people having their data saved. History of orders and other information. Recovery data.	Paying for databases and storage. Cost can vary depending on the size of storage device. Implementation will take longer, and complexity will increase. Implementing databases and storage systems.	Buying a storage device that can be expanded and may itself be larger than the capacity needed allows for safe growth with no gradual increase in cost.	9/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Availability	What are the opening hours of the café? Is 24/7 availability required? Is there a difference between the availability within the mobile app?	The opening hours of the café will be assumed to be 7 AM to 4 PM (as per high traffic on campus). Highly unlikely it is open on weekends. The system does not need to be available until when the café is open to when it is shut. The admin portion of the app should be available 24/7 as this is where an administrator will update/delete/add to the menu. Whereas the customer part of the app is what the user will use to order therefore this mobile platform will only need to be available during opening hours.	This will allow users to access the system when the café opens. Allows parts of the system to possibly be shut off during closed times. Allows users with administrative access to update and access the app anytime of the day.	Implementation will take longer, and complexity will increase. Creating access points of differing types on the app (customer login and administrator login)	Creating the app that allows administrators to access at any point to update menu items, discounts and other pieces of information. Create the app to allow access during opening hours.	2/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Reliability	How often can the system go down? How long can it be down? Can a part of the system go down without taking the rest of it down?	Realistically the system should be able to go down no more than 3 times a year. The times it goes down should coincide with the café being closed and late at night or early in the morning (low traffic hours). For maintenance of the system it should only be down for no more than 20 mins. This should be done out of hours while the café is closed. Due to the system being split in 2 (admin login and customer login) if one component goes down the other should stay up. e.g. the admin area going down shouldn't affect the ordering mechanism.	Not having much downtime increases user' reliability in the system. Allows for updating during downtime. Reliable even if a component is taken down.	Downtime can cause loss of business if occurring during peak hours. Could take more time implementing and become more complex to maintain components autonomy.	Maintain a localised system to ensure independence from other branches. Utilise the café being closed to update or take down the system.	4/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Integrity	Is it important to ensure users enter data correctly into the system? Is it important to control duplicate members?	It is important that customers enter data correctly because many things such as receiving emails will rely on customers entering the correct email. For users to access their accounts it will require a valid username and password. It is also important that an administrator enters their information correctly to be able to access the admin portion of the mobile app to update information. It is important to control duplicate members as it may cause problems in the system in that if the same email is used it could send the email twice or not at all. So, an email should only be able to be used once for either a member account or for an order.	Saves space in storage as no duplicates can be created. Ensures all data entered is valid and correct.	Implementation will take longer, and complexity will increase. Making sure the system can deal with duplicates, verification mechanisms for logins and placing orders.	A checker that makes sure data entered by the customer is valid and correct. This will include emails, passwords and payment information. A reader that checks all existing emails tethered to members' accounts to make sure there are no duplicate emails being used.	6/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Recovery	What is the recovery method in case of a crash? How is retained data to be recovered? How often is data backed-up? How long will it take to restore a previous version of the system?	The system will recover using stored back-ups. Retained data is recovered through these stored back-ups. This data should consistently be backed-up as it is required to maintain current data. Restoring a previous version of the system should take no longer then 5-10 mins.	What would otherwise be devastating to the system is far less so where the system is able to restore to a previous version, losing no data.	It will take time for the system to recover. Implementation will take longer, and complexity will increase. A recovery system will have to be created to support the system. Could affect performance having the system constantly backing up.	Utilise back-up files.	10/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Compatibility	What can it run on (be accessed by)?	The system should be able to run on mobile phones and should be accessible via mobile access.	Customers can access the system via mobile. Administrators can access and update information on the app platform.	Implementation will take longer, and complexity will increase. Supports mobile access.	Create an app for mobile that can be accessed via different devices. Create a mobile app that can be accessed via different versions of phone.	7/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Maintainability	Are there any guidelines that are needed to be followed in collecting user data? Is maintenance carried out by 3rd parties? What is the rate of maintenance?	While collecting data from the user such as email and passwords the system must adhere to privacy laws set out by the country. Maintenance will be carried out by the development team. Maintenance will be conducted as required.	The system adheres to all laws thus there will be no problems in the future. Through maintenance any updates to privacy laws and such can be adhered to by the system. Also allows the system to consistently be updated in stability.	Implementation will take longer, and complexity will increase. Research into privacy laws will have to be conducted by the development team. Having maintenance done throughout its deployment will come at a monetary cost.	Ensure that the system is in compliance of Australia privacy laws in collection of user information. Implement a maintenance mechanism	11/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Usability	What usability requirements are there? Do members have different requirements than normal users? Who is the intended user? Is there an impairment assistance feature?	The mobile app should be simplistic and easy to use. Allowing users using mobile to skip the login process by selecting the guest option. the mobile app should be able to utilise touchscreens. It should be easy for users to create an account via an email and entering a password and username. Accounts will have access to other aspects of the system such as a history of orders and student card utilisation. Intended users are on campus university students. A button that can assist people with impairments by making buttons larger and other things.	Usability of the system is increased for all users. Increases system efficiency. Multi Language support should be an option. Allows more accessibility using impairment assistance features.	Implementation will take longer, and complexity will increase. Must keep UI and other aspects very simple whilst also managing to implement all intended aspects, also allowing multiple language as well as implementing an impairment assistance feature.	Consistency in interactions and terminology on the mobile app. Implement an easy to use, multilanguage system that allows anyone to use it and is easily accessible on mobile. During development allow for updatable buttons to allow for an impairment assistance feature.	1/12

NFR	Question	Answer	Benefit	Impact Costs	Strategy of Implementation	Priority
Documentation	Is a user manual required for this system?	A user manual should be constructed and readily available for the mobile version. This manual should utilise imagery to allow the simplest form of explanation of the system.	Allows users to understand how to operate and use all aspects of the system and to troubleshoot if they are experiencing difficulties.	Implementation will take longer, and complexity will increase. Creating a simple user manual to help explain all aspects of the system for the mobile version.	Create a user manual to help those customers that are having trouble using the system with easy to follow steps and how the system operates. It should be available for the mobile platform. E.g. as a (?) button that opens the manual.	12/12

Prioritisation of NFRs

Priority 1 - Usability

Beverage Booker is a system to be implemented to give a university cafe an online presence that will allow patrons to add/delete items from a cart, pay for their order, receive an estimated time of preparation, create an account or proceed as guest, and enter a user name and password. The system should be designed so that any customer, regardless of technical capabilities, can use the system and find it simple and easy to use. This means that any UI a user interacts with on the mobile app should be very simple with very few buttons and allows those users having difficulty using the system to open a user manual if they require assistance. If a user is having difficulty navigating the mobile app they should be able to use an option that makes buttons and images larger to assist in navigation. If the system is not usable it will discourage people from using the system due to their poor experience.

Priority 2 - Availability

For the system to work properly it must be available. If it is not available it can prevent orders from going through, payment mechanisms to fail, and login failures. Users may experience delays or poor services and cause them to not use the system anymore. While the system is available the user will be able to create their accounts, place orders, pay for those orders, and be given an estimated amount of time for their order to be ready.

Priority 3 - Security

Information regarding users will be collected and saved which should be handled according to the relevant privacy policies and laws. Information will have a level of access to protect users information and make sure no one can access what they are not supposed to e.g. customer 1 cannot see the account information as customer 2 and neither can update the menu items on the app but manager 1 can. Without security, a customer's sensitive information could be a risk.

Priority 4 - Reliability

The system is to coincide with face-to-face orders. If the system is not reliable enough then users' trust in it will deteriorate and result in the system not being used (meaning the time spent developing it is voided) and could also lead to loss of customers.

Priority 5 - Audit

Orders are the items that will be processed through the system and tether to names and accounts, therefore they need to be tracked as users will need to know the status of said order and they also should be tracked due to the system utilisation of payment so that customers can look back on them (order history). Transactions are also crucial to track

Priority 6 - Integrity

Data integrity is important because some data entered by the user will be very sensitive such as payment methods, emails, password and other things therefore the system should be able to check to make sure all data entered is correct and valid. The system should also prevent the creation of duplicate accounts to manage the integrity of the data stored. If integrity isn't maintained it could cause problems to accounts and user experience and could cause users to lose interest in the system and could cost the cafe business.

Priority 7 - Compatibility

Compatibility is important as the system should be compatible with mobile apps as they are the target platforms for said system. Compatibility should be looked at through versions of systems too e.g. modern android version. If compatibility isn't covered then there can be problems where a mobile will not/cannot load certain assets of the system e.g. images. Also compatibility on mobile should be covered because if the system isn't made to work on current versions of android it could lead to problems with unexpected crashes, data not being sent (failure to make accounts or place order) and can impact the systems trustworthiness negatively.

Priority 8 - Performance

Performance is important as the system will have to perform well if it is to be used. If the app is slow and unresponsive it can negatively impact the usability and efficiency of the system deterring people from using it.

Priority 9 - Capacity

The system should meet certain aspects of capacity to run effectively. If it does not meet the requirements then it can cause the system to run slow if too many people are accessing it at once or even cause it to crash, causing people to not be able to use it potentially losing business as people may be deterred from using it.

Priority 10 - Recovery

Recovery is important because if any critical defects occur it could mean total loss of data, using back ups means that even if the system does go down it is able to be reverted to a previously functional state meaning that data loss will be very minimal and also that the system won't be down for long.

Priority 11 - Maintainability

For maintainability to be effective all guidelines and laws should be considered and accommodated. This is especially important as the system is intended to collect user data e.g. username and password. failure to adhere to laws and policies can cause legal issues and possibly legal action toward the business the system is a part of.

Priority 12 - Documentation

Documentation is important as there may be users having issues. Thus a user manual should be created to assist those having difficulties operating the system. Failure to make a user manual can cause people that are having issues to not know how to use the system and thus lose business for the company.