



Overview

Booked is a library based in the centre of Bath and has been providing book services to local residents since 1957. Due to a declining interest in book loans, the library was due to shut down earlier this year. However, a small group of volunteers have decided to take over the operation of the library and begun to run a range of activities in the library alongside its continued book loan services. They hope to turn Booked into a hub for community activities, and to bring in a range of instructors and facilitators to introduce new activities to Bath.

The lead volunteer, Ms Jekyll, has reviewed the procedures currently in place to book out the library and found them to be paper-based. A diary, kept at the front desk of the library during opening hours, is used to record bookings for the communal spaces. However, some of the facilitators coming in from outside Bath have reported difficulties accessing the diary, or getting to Booked and finding that an activity is already taking place. Volunteers also report that the diary can go missing, or that there can be confusion regarding which activities are booked.

The volunteers have decided that the library should transition to a digital system that allows volunteers and facilitators to manage bookings online, as well as to support other routine operations at the library.

Proposed Solution

The volunteers are looking for a solution to replace the current paper-based booking system. They are concerned about on-site security, so would prefer an externally hosted service rather than protecting and maintaining on-site hardware.

The software should allow volunteers and activity facilitators to book time slots for activities outside of the library opening hours (09:30 – 12:30; 13:00 – 17:00). Some of these activities are sign-up only, so members of the community will need some way to register and reserve a place. Volunteers should also be able to delete and edit bookings.

In addition, the volunteers would like to move the library's book loaning scheme online. The software should be integrated with the booking system so that they have a "one stop shop" for the library. They also think that linking activities to related books would be a good way to increase the number of loans in the library.

Requirements

Your software engineering team has also conducted requirement elicitation activities and generated the following set of functional and non-functional requirements from interviews with the clients. However, they have not generated FR4: “The system shall support book loans”.

R#. Requirement description.

Functional Requirements

FR1 The system shall allow users to register and use an account.

FR1.1 Accounts shall require relevant information.

FR1.1.1 An account shall have a first name.

FR1.1.2 An account shall have a surname.

FR1.1.3 An account shall have an e-mail address.

FR1.1.3.1 The system shall check for and not allow duplicate e-mail addresses when registering.

FR1.1.3.2 The system shall display an error message to users if an e-mail address is already in use.

FR1.1.3.3 The system should prompt the user to login if attempting to register with an e-mail address that is already in use.

FR1.1.4 An account shall have an address.

R.1.1.4.1 An address shall have an address line.

FR1.1.4.2 An address shall have a city.

FR1.1.4.3 An address shall have a postcode.

FR1.1.5 An account shall have a password.

FR1.2 Accounts shall be given a unique membership number.

FR1.3 The system shall require users to login to use its booking features.

FR1.3.1 The system shall require an e-mail address OR membership number to login.

FR1.3.2 The system shall require a password to login.

FR1.3.3 The system shall allow users to reset a password by sending an e-mail to their registered e-mail address.

FR2 Users shall be given appropriate roles.

FR2.1 Lead Volunteers shall be able to assign roles to users.

FR2.1.1 Lead Volunteers shall be able to assign multiple roles to users.

FR2.2 Lead Volunteers shall be able to assign the Volunteer role to a user.

FR2.2.1 Lead Volunteers shall inherit the permissions of the Volunteer role.

FR2.3 Lead Volunteers shall be able to assign the Facilitator role to a user.

FR2.4 Lead Volunteers shall be able to assign the Member role to a user.

FR3 The system shall be able to support activity bookings.

FR3.1 The system shall allow permitted users to create a booking.

FR3.1.1 Facilitators shall be able to create a booking.

FR3.1.2 Volunteers shall be able to create a booking.

FR3.1.3 A booking shall require relevant information.

FR3.1.3.1 A booking shall have an activity name.

FR3.1.3.2 A booking shall have an activity date.

FR3.1.3.3 A booking shall have an activity time.

FR3.1.3.4 A booking shall have an activity location.

FR3.1.3.5 A booking shall have an activity facilitator.

FR3.1.3.6 A booking shall have a list of registered members.

FR3.1.3.7 A booking shall have a maximum number of attendees.

FR3.1.4 The system shall not allow a booking to be made if the location is in use at the selected time.

FR3.2 The system shall allow permitted users to edit a booking.

FR3.2.1 Volunteers shall be able to edit a booking.

FR3.3 The system shall allow permitted users to delete a booking.

FR3.3.1 Volunteers shall be able to delete a booking.

FR3.3.2 Registered members should be e-mailed when a booking is deleted.

FR3.4 Bookings shall only be made for times outside of the library opening hours.

FR3.4.1 Bookings that are made for times during the library opening hours shall receive an error message.

FR3.5 The system shall allow Members to register for an activity.

FR3.5.1 The system shall display a list of bookings to Members.

FR3.5.1.1 The system shall display a list of bookings sorted by date (upcoming listed first)

FR3.5.2 The system shall allow a Member to register for a selected activity.

FR3.5.2.1 The system should not allow a Member to register for an activity if they are already registered for another activity at the same time.

FR3.5.2.2 A confirmation dialogue should be presented to the Member to confirm registration.

FR3.5.2.3 An e-mail should be sent to the Member when registration is complete.

FR3.5.2.4 An e-mail should be sent to the Facilitator when registration is complete.

FR3.5.2.5 The system should not allow a Member to register for an activity if there are no more places available.

FR4 The system shall support book loans.

FR4.1

Non-Functional Requirements

NFR1 User passwords shall be secure.

NFR1.1 Passwords shall contain 6-9 characters.

NFR1.2 Passwords shall contain at least one number.

NFR1.3 Users shall be required to change password once every 12 months.

NFR2 The system should show users an up-to-date list of activities.

NFR2.1 The system should refresh its list of activities at least every 5 minutes.

NFR2.2 The system should refresh the number of available spaces on an activity at least every 10 seconds.

NFR3 The system should be reliable.

NFR3.1 The system should be available at least 23 hours a day.

NFR3.2 Any downtime to the system should be limited to the hours between 00:00 and 06:00 GMT.

NFR4 The system should be usable.

NFR4.1 75% of users should be able to register for an activity in under 2 minutes.

NFR4.2 Tooltips should be available for every user interface widget.

NFR4.3 Help messages should be available on every page.

NFR5 The system should be portable.

NFR5.1 The system should be available on multiple platforms.

NFR5.1.1 The system should be available on Windows versions 7 onwards.

NFR5.1.2 The system should be available on iOS versions 11 onwards.

NFR5.1.3 The system should be available on Android versions 5.0 onwards.

NFR5.2 The system should be written in a universally available language.