|  |
| --- |
|  |
| Men’s Shed Web Application  SOC09109 2022-3 TR2 001 - Group Project |
| |  |  |  | | --- | --- | --- | | SOC09109 2022-3 TR2 001 - Group Project 109 | 2/4/13 | SOC09109 | |

Table of Contents

[Project Description 2](#_Toc126835269)

[Men's Shed Narrative 2](#_Toc126835270)

[Dunfermline Men’s Shed Objective 2](#_Toc126835271)

[The Project 2](#_Toc126835272)

[Initial Consultation 3](#_Toc126835273)

[MoSCoW Prioritisation 4](#_Toc126835274)

[Expected Cost and Duration 6](#_Toc126835275)

[Requirements and Quality Expectations 6](#_Toc126835276)

[Security Considerations During Development 7](#_Toc126835277)

[Stakeholder List 8](#_Toc126835278)

# Project Description

## Men's Shed Narrative

The Men’s Shed organisation is a national charity, both in Scotland and the wider UK. It is a place where men meet, talk, mend, play, and create. There are group activities that are like garden shed activities. Most significantly, they're pleasant, alleviate loneliness isolation and offer support for peers. Each Shed is made up of diverse groups of people from different social, economic, and educational backgrounds. The common theme is a safe environment for men to meet and be creative and engaged in worthwhile projects and activities.

Each Shed, at their inception, develops independently. The communities they serve donate tools and equipment to the project; consequently, each Shed has an array of tools, equipment, and board games for the members to use which is extremely diverse.

## Dunfermline Men’s Shed Objective

The committee of the Dunfermline Men’s Shed aspires to create a comprehensive and engaging resource for their community. Their Shed environment is limited in space which, presently, compromises their ability to engage more than 4-5 people at a time on site. The Shed has access to some additional facilities and is keen to attract additional members and promote diverse activities. They already have small guitar and computer groups. As part of their aspirations, the intended application should provide a platform upon which they can build as the need arises.

## The Project

This project will attempt to provide a user-friendly Web-application. To help users identify resources (Tools, Equipment, Games and literature) that they can reserve for use in their individual projects or activities.

The features of the application requested include the following:

* The app should provide borrowing/reserving features. This shows when something is in use and when it will be available again. This requires the following database and app features:
* Data administrator portal
* Add/update/retire resources.
* User registration Resource calendar
* Resource status (e.g., Physical Library items still to be audited with pictures, ISBN digits). Mobile Power Tools tested and audited.
* The software should be adaptable.
* The Shed workshop should be bookable for 15 minutes. The Shed and activity determine the maximum time. **Deliverables**
* Design and implementation of the system back-end (including the database)
* Design and implementation of the app, which should run at least on Android and desktop devices.
* Source code
* Documentation as appropriate

## Initial Consultation

From the meeting on the 2nd February 2023 between the Men’s Shed (MS) primary contacts, a selection of the committee and Napier’s Student Project Team (PT) representatives.

The MS representatives highlighted their vision for the Dunfermline association, their long-term objectives and aspirations. The MS team want to build an exemplar of a modern adaptive association embracing the wider community and diverse interests such as a computer club, guitar club and workshop facilities as well as a lending library for the many tools, books, games, videos and publications that have been donated by the people of the community at large.

The proposed application is a tool for both the members to use and the management of the organisation to track the donated equipment and manage that equipment including the facility at large.

The PT had to highlight to MS the module learning objective of the PT and the timeframe that is available to produce both a worthwhile cause and an in-depth application proposal. The reality of the project is that the exercise needs to be done over a trimester and that the PT members will have other learning and assignments to achieve during the same time allocation.

All this being said a clear way forward emerged from the conversation. Thinking of the bigger picture and the great ideas the MS have, the PT suggested that as a team our limited time would be better spent on creating a foundational framework that could be developed further by subsequent student project teams. There are many different visions for the project as a whole which could be developed upon, manifesting all of these however is not feasible within the time frame allowed.

Agreement then was confined to the following list.

1. Core application with:
   1. User interface
   2. Database
   3. Administrator’s access to maintain data.
   4. Administrator’s user interface.

The MS will provide the following items to assist with the development of the application:

1. Management’s personal information for the administrator’s access (The data is similar to that of the members however in order to comply with existing GDPR regulations this is limited to management’s personal information at the time being as no permissions have yet been sought to use members’ information)
2. A sample spreadsheet with tools and images to display as being available for use. (Please note that many of the tools have H&S requirements for PAT testing, servicing and safety instruction. These must be visible in the display of available requirements to use. There should also be a way for the administrator to remove the item if it is not useable for whatever reason. In addition to H&S requirements, there is also a training requirement for more dangerous tools and equipment. The membership is diverse, and some members have been identified as having mental health issues. For safety, the MS management team wish to be able to restrict this type of equipment on a discretionary basis.)

## MoSCoW Prioritisation

DSDM Atern is an agile methodology that defines a useful technique for prioritisation which can be used to control the overall scope of a project and to control iterative development.

DSDM Atern refers to a prototyping cycle as a timebox which it defines as a period of time with a fixed duration. This means that time is not a flexible quantity and missing deadlines is not permitted in a DSDM Atern project. Likewise, DSDM Atern insists that the budget for a project is also fixed and that the cost of a project must not increase over time. The three dimensions of time, cost and scope are sometimes referred to as the iron triangle and together they define the output of the project. In many projects the scope of the project - the list of features - is the fixed dimension, and time and cost are flexible. However, this can lead to missed deadlines and cost over-runs. Because DSDM Atern fixes time and cost the only other source of flexibility is in the project scope.

The Iron Triangle

Chart, line chart

Description automatically generated

In order to allow flexibility in scope DSDM Atern uses the MoSCoW prioritisation technique. This is a four-level scheme which is applied to the requirements that will be attempted during a timebox. The four priority levels are described in the table below.

|  |  |
| --- | --- |
| Label | Interpretation |
| M | Must-have items are essential for the product or for the business case of the project |
| S | Should-have items are not essential, but are nevertheless important for the quality of the finished product |
| C | Could-have items are features which would be nice to have, but which would not compromise the overall quality if they were missing |
| W | Won't-have items are not included in the current scope - this final category is more important than it first appears |

## Expected Cost and Duration

{Also mention the source of these constraints: Are they internal preferences, or contractual obligations? How flexible and negotiable are they? How would changes to the duration and cost of the project impact the business?}

## Requirements and Quality Expectations

{Make sure you focus on major requirements and quality expectations, and not on the functions, feature, or scope characteristics that can satisfy those requirements. The latter belong to the Deliverables Map.}

## Security Considerations During Development

The Dunfermline Men’s Shed is an organisation that exists to provide a safe and healthy space for its members to gather, socialise, work together and take part in a number of different activities and interests. The organisation does not engage in political activity nor holds any beliefs that are commonly interpreted as inflammatory/extreme and as such is extremely unlikely to have a heightened risk of being targeted above and beyond the traditional threats of existing on the modern internet.

The main assets to be considered in the context of security for this application development project are the members personal information and the application itself.

As members personal data will be stored on the application/database this brings GDPR into play, all reasonable steps must be taken during the development of the application to ensure the security, integrity and availability of the members personal details at all times.

Member information should be encrypted with a suitable encryption algorithm in all data states at rest, in-transit and where possible in-use as well. An appropriate cipher suite should be used for client-application to server communications.

Passwords should be stored using a secure hashing algorithm (not md5 or sha-1) and not stored in plain-text.

During development of the application there are particular areas to focus on with regards to keeping the application secure.

Due to a SQL database/web front-end setup strict input-validation will be key, enforcing strict input-validation at both the client-side of the application and server-side will reduce many risks from command-injection, buffer-overflow attacks and the old but still possible SQL injection attacks.

Development of the application should include functionality to redirect incoming HTTP traffic to an HTTPS secure connection, this should be done automatically behind the scenes to provide the security benefits without confusing or placing the responsibility onto the user.

Appropriate secure headers should be used in order to mitigate the risks from cross-site scripting attacks and clickjacking.

A password policy should be enforced for the users on the app so that they are using relatively secure passwords for their accounts for example minimum of 8-chars with a mix of upper and lower-case and/or special characters. Rate-limiting the amount of unsuccessful login attempts to 3-5 is recommended as well, this is to reduce the risks from brute-force/dictionary attacks against user accounts.

## Stakeholder List

{List all the stakeholders (people who have an interest in the project and can impact it), and extra information when needed (e.g., their reporting requirements). Get back to this document and update it as soon as you identify a new stakeholder.}