Durham University
Experience Durham

Durham University Community Engagement Project (CEP)
Project Initiation Document

The CEP community groups and charities are linked with a team of students who will work with the group on a specific I.T. related project between October 2016 and February 2017.

This document is not legally binding but is designed to clearly identify the roles and expectations of each party, together with agreed timescales and deliverables.

1. Overview and justification for the Project (Statement of Work)

This project aims to develop a system for the Fram Scouts, a non-profit organization, to help them monitor subscription payments from their members. Non-profit organizations tend to have financial pressures, and have limited funds to spend on improving their current systems; however, this system is necessary, as the Fram Scouts have numerous records of members stored digitally. Especially for an organization managed by volunteers, it is a difficult process to monitor payments manually from each of these members every month. Although the client is familiar with carrying out this task, the other staff members of the organization may not be, and the client cannot be expected to monitor the payments from these members each month alone; therefore, a software system is required to fulfill this role, and streamline the process. The client already has a system in place for this purpose, but this system requires improvement.

Each of the subscription payments received by the organization can be tracked through a bank statement, which is sent to the organization in the form of a CSV that may have overlapping records. The bank statements also include other irrelevant Standing Orders (SO), and each SO may be of a different amount, due to the discounts applied to members with siblings. The current system, which runs on a website, requires a manual match to be made for each Standing Order (SO) received by the organization. As such, improvements will be made to this system to have an automated matching system (requires manual checking to ensure accuracy of data), but it would still include an option to manually match payments to members, particularly for those whose information on the system is incomplete. The system will also be improved to save any matches made so that the information can be used for autocompletion in the future.

As the subscription payments are made at random times throughout the month, which makes them hard to keep track of, the improved system aims to make the monitoring of incoming payments more accurate. Improvements shall be made to the feature that indicates if a child has not yet paid to make it more responsive. Integration with an e-mail service will continue to be maintained, allowing the client to chase for subscription payments easily. A feature will also be added to the system which allows for information in the database to be added/updated, as

some members pay by cash based on the activities that they attend, and the current system does not allow for this information to be logged easily.

For gift aid reasons, the system should show the legacy data of subscriptions made by each scout on-screen, but continue to store any previous data in its database. All of the data stored by the system will be stored securely, as it may contain sensitive information; particularly as the data stored may be used to identify specific individuals who are members of the organization.

Any improvements made to the system will be built upon more modern technology, i.e. using the latest version of JavaScript along with upgraded PHP scripts, so that the system's performance can be improved.
Backwards-compatibility will also be supported throughout the system; any improvements made will only replace certain parts of the current system, allowing the client's current main website and database to be maintained.

The system will be made more user-friendly, such that the process of monitoring and checking these subscriptions can be completed more quickly, especially by staff members who are unfamiliar with the system. This will allow the volunteers to spend less time on the administrative work, and more on the activities run by the organization. With improvements made to the system, the system can ultimately be made more maintainable.

2. Proposed goals for the Project (scope)

Each month, the scouts of 1st Framwellgate Moor Scout Group pay by standing order into the treasury. To monitor and check whether each scout has paid their subscription fees each month, a system that is able to match the standing order records with the corresponding scout in the Fram Scouts database must be developed.

A system currently exists which performs this task; however, the design of this system leads to long wait times for the client and the matching algorithm in use can often fail, resulting in the client having to manually match the scouts to the Standing Orders (SO). The goal of the project is to redesign this system in an attempt to improve the overall user experience. This will be achieved by firstly restructuring this system in order to significantly decrease the waiting time for the client and, secondly, trying to improve the matching algorithm used by the system, which will ideally reduce the number of manual matches the client must make. The system will automatically match scouts to their payments; any matches that the system can be sure are correct will be instantly displayed to the client in the form of a table, any matches that are uncertain, however, will result in the client being prompted to manually input the correct matching. Any manual matches will then be saved to a separate database that can then be used by the autocompletion feature, to enable manual matches made to persist.

The system will be integrated into the client's pre-existing website as an additional page. To do this, an interface must be designed to allow the client to interact with the system, the design will ideally closely match that of the other pages already present in the client's website and will be simple enough to allow any member of staff to use the system, regardless of technological experience. This interface, which will come with a user authentication mechanism, will allow the system's

database to be added to/modified by the client in a convenient way, as this functionality has been specifically requested by the client. As the website already exists we should be able to create an interface that matches the styling of the existing pages without designing any additional logos or layouts; matching the colour scheme and structure of the current pages should therefore be sufficient.

The developed system should be one that is maintainable for future years. Therefore, the system will be structured and developed in such a way that it can be understood by a third party. Clear and concise error reporting will be provided, and all implementations will be made in an architecture (e.g. programming language, server OS) that is familiar to the client so that the client can continue to maintain and manage the system after it has been delivered.

3. Outline any obvious risks the project may come across and how you could mitigate.

The Fram Scouts server stores personal information on each member of the scouts, the proposed system will be running on this server and will have access to all of this information; an obvious risk is therefore that the system may provide access to this information to a user who is not authenticated to have such access, which is especially important as a large proportion of the scouts will be children. In order to mitigate this risk, the proposed system will be developed using fake information of the same format as the real information, and will not be given full access to the real information until testing has been carried out and everyone involved is satisfied with the level of security the system provides.

Another risk that the project may come across is that the system may cause the Fram Scouts to lose income. Each match that the system fails to detect between the standing orders and the scout members could result in a member not paying their subscription and this going undetected. Due to the content of the information available to the system, it will be difficult to ensure 100% accuracy of the matching between members and standing orders; however, the developers will do their best to address this risk by iteratively improving and testing the matching algorithm until the performance of the system is sufficient to be deployed.

There are also risks in implementing an automated matching system. Bugs in the system may cause incorrect matches to be made, which will then be automatically stored within the system. To reduce the probability of this happening, the matching algorithm would be tested rigorously throughout the development process.

4. Proposed deliverables (include timescales)

Milestones	Deliverables	Date
Completion of UI & UX (HTML & CSS) of console interface	A completed console interface with its final designs	10/01/17
Matching algorithm that is able to match scouts to incoming payments	Initial matching algorithm demonstration	10/01/17
Integration of matching algorithm into console interface	A prototype of the system	23/01/17

Completed database for storing any previous matches made	A tested database, which updates automatically whenever a match is made	23/01/17
A complete system	Integration testing demonstration	06/02/17
A refined and optimized system	The completed system	20/02/17

5. Proposed Roles, Responsibilities, Authority and Approval

Charlie Criswell: cs-seg2@durham.ac.uk; charlie.criswell@googlemail.com

Charlie is the client's main point-of-contact with regard to the development of the proposed system. He will also be responsible for the user experience (UX) design and for creating the user interface (UI). As such, he leads the front-end team in coding up the UI.

Tom Preston

Tom (P) will be responsible for the creation and optimization of the matching algorithm, along with its implementation in the project. He will be working alongside Lee Yeomans.

Lee Yeomans

Lee will also be responsible for the creation and optimization of the matching algorithm, plus its implementation in the project, alongside Tom (P).

Emma Davis

Emma will be responsible for the design of the database structure that will store previous matches so that it can be used by the autocompletion feature. She is then responsible for creating and implementing the database. Emma will also be cooperating closely with Tom (W), communicating the needs of the back-end to the front-end team.

Tom Whittaker

Tom (W) is responsible for implementing the user interface, along with helping the team working on the matching algorithm in its design. Tom (W) will also be working closely with Emma, communicating the needs of the front-end team directly to the back end.

Sara Chen

Sara will be responsible for combining the front-end with the back-end, and for integrating the two. This includes integrating the frameworks being used, as well as creating interfaces, the user authentication method, and any data conversion mechanisms necessary. Sara will also be helping Emma with the backend.

The stakeholders involved with this project include:

- The development team
- The main person who is responsible for the Fram Scout Group website, i.e. the client
- The Fram Scout Group's management/administrative team

The development team is responsible for the design, creation and implementation of the project. The team will be working closely with the person responsible for the Fram Scout Group website when it comes to integrating the project onto the site. The Fram Scout Group's management/administrative team will communicate their

needs and expectations to the development team, so that a clear idea of the product that they would like to receive at the end of the project can be formed. For the proposed system to be developed, the Fram Scouts would have to provide the current structure of their database, the format of its entries, and a sample of the CSV files that they receive from the bank.

The individual responsible for the decisions made on the client's end is John Little, who has the authority to sign off the project charter for the Fram Scout Group.

Client (John Little)
I/we confirm that this document is an accurate representation of our expectations as clients for this project and that no additional tasks or requirements will be added. We understand that the students will not be able to provide additional input or support after 20th February 2017.

Signed JOHN

Print name JOHN LITTLE

Date 9/12/2016

Student Team
(Charlie Criswell, Lee Yeomans, Tom Preston, Tom Whittaker, Emma Davis, Sara Chen)
I/we confirm that this document is an accurate representation of our understanding of our client's expectations for this project and that no additional tasks or requirements will be added. We understand that this project must be complete and signed off by the client by 20th February 2017.

Signed T Preston

Print name CHARLIE CRISWELL TOM PRESTON SARA CHEN LEE YEOMANS

Date 09/12/2016

TOM WHITTAKER

EMMA DAVIS