**COMP 3059 – Capstone Project I**

**Software Requirements Analysis and Design Assignment**

This assignment is an overview to gather the software needs with requirements analysis and help to proceed with the design.

The requirements analysis helps to break down functional and nonfunctional requirements to a basic design view to provide a clear system development process framework. It involves various entities, including business, stakeholders and technology requirements.

The design is the activity following requirements specification and before programming. Software design usually involves problem solving and planning a software solution.

To work on this assignment you could use the references and a sample template given below. The sample template can be customised to suit the nature of your project.

Reference Readings/Example:

<http://www.uacg.bg/filebank/acadstaff/userfiles/publ_bg_397_SDP_activities_and_steps.pdf>

[www.cse.msu.edu/~chengb/RE-491/Papers/SRSExample-webapp.doc](http://www.cse.msu.edu/~chengb/RE-491/Papers/SRSExample-webapp.doc)

Reference template:

[www.tricity.wsu.edu/~mckinnon/cpts322/cpts322-srs-v1.doc](http://www.tricity.wsu.edu/~mckinnon/cpts322/cpts322-srs-v1.doc)

# 1.0 Introduction

## Purpose

The system aims to tackle 2 major ends: user-end and administrator-end. The objective of the user-end is that the system will provide the capability for users to donate. In addition to donation, users will have access to all information about church services and events as well as recordings of every service that happened. On the other hand, the objective of the administrator-end is to make the website easy to maintain and update. It should be able track and record any donation from the users and updatable anytime administrators want to do.

## Scope

*In Scope*

* A user-friendly, responsive and cost-effective web application that can be maintained and configured easily by the church administrators. The product will be displayed responsively in over 90% of devices. This will allow end-users to access the web application from any types of devices with the best display quality
* Announcing upcoming events and services, donation. These features will help the church attendees know which events take place on what date. In addition to that, people can also make donations to the church using the system.
* Admin management feature. Chairman and administrators will be able to update and edit any components of the page according to their needs and likes. This will make the maintenance job costs less time and effort.

*Out of Scope*

* The system will not have the feature for either signing up or logging in.
* The web application will not ask for any credential information from the users for any functionalities except for donation.

# System Overview

## Project Perspective

The main objective of this project is to turn an existing website to a web application for a church called Greenhills Christian Fellowship. This new web application will be re-designed to be responsive on various types of devices and consist of some additional features that the church requires to have.

*Reference to the current website*: <https://www.gcftoronto.com/>

## System Context

There are two major issues that the new system have to solve efficiently which are user interface and internal maintenance. For the first problem, the resulting software will be implemented to be responsive in wide range types of devices such as desktops with multiple screen ratios like 13-inch, 14-inch, etc and mobiles with different screen’s dimensions and orientation. On the other hand, the final product offers administrators abilities to monitors and track every single event/service announcement or donations that have been made by users using the website and reports to administrators with detailed information for future references such as what time the activity has been done, which user has done it, etc. The product provides ability for administrators to change and update any parts of the application according to their likes and needs

## General Constraints

There are two constraints that may impact the manner in which the software is to be implemented. Complex features may require extending the deadlines to be completed and reviewing the old website resources takes time to fully matched the business logic and vision.

## Assumptions and Dependencies

* *Assumptions*
  + Project Owner will provide extra funding to the project whenever it requests after taking consideration of the necessity and possibility of the request.
  + The deadlines of the project can be extended.
  + Web applications will be created using Wordpress and its plug-ins to create a responsive and secure website.
  + All content such as about-us information, images, data and databases are available for the new application.
  + SFTP, SSH, WP-CLI will be used to defend from cyberattacks and minimize security issues.
* *Dependencies*
  + Project funding, functionalities and features will be reviewed and approved by the GCF chairman and Project Supervisor according to every project request.
  + In case of extending the deadline, the GCF chairman will consider the possibility to make the extension based on the current work progress.
  + Every team member will have different work stations which makes the code and other related softwares dependent on personal work stations.
  + Time and availability of each member is different so that everyone has to agree to have meetings on specific days.

## 3.0 Functional Requirements

This section describes specific features of the software project. If desired, some requirements may be specified in the use-case format and listed in the Use Cases Section.

### 3.1 <Functional Requirement or Feature #1>

* Introduction
* Inputs
* Processing
* Outputs

...

## 3.2 Use Cases

### 3.2.1 Use Case #1 ...

### 3.2.2 Use Case #2 ...

**3.3 Data Modelling and Analysis**

* Normalized Data Model Diagram
* Activity Diagrams
* Sequence Diagrams
* UML Class Diagram

**3.4 Process Modelling**

* Data Flow Diagram

## 4.0 Non-Functional Requirements

The non-functional requirements for a system are typically constraints on the functional requirements – that is, not what the system does, but how it does it (e.g. how quickly, how efficiently, how easily from the user’s perspective, etc.).

### Non-functional requirements may exist for any of the following attributes – Performance, Reliability, Availability, Security, Maintainability, Portability.

Often these requirements must be achieved at a system-wide level rather than at a unit level. State the requirements in the following sections in measurable terms (e.g., 95% of transactions shall be processed in less than a second, system downtime may not exceed 1 minute per day, etc).

## 5.0 Logical Database Requirements

The database that the group will be using is from the website itself (WordPress). The stakeholders may ask us to change it or add a new one that would meet their liking, but as of now it's not finalized yet. There are no talks of using a specific database.

## 

## 6.0 Other Requirements

Additional requirements will further be discussed with the stakeholders. It may be subject to change during the development stage of the project.

**7.0 Approval**

The signatures below indicate their approval of the contents of this document.

| Project Role | Name | Signature | Date |
| --- | --- | --- | --- |
| Team Member | Phoenix Armand Ani | Phoenix Armand Ani | November 7, 2022 |
| Team Member | Jacob Solano | Jacob Solano | November 7, 2022 |
| Team Member | Do Huynh | Do Huynh | November 7, 2022 |
| Team Member | Minh Nhat Vo | Minh Nhat Vo | November 7, 2022 |