



Software Requirement Specification

Ver 1.3

Sheepdog Defense Group

Revision History

Date	Version	Description	Author
15/Feb/19	1.0	Initial Draft	Hayden Southworth
25/Apr/19	1.1	Update format and correction. Add data dictionary.	Phong Nguyen
29/Apr/19	1.2	Update table of contents, sections 4, 5, and 6	Hayden Southworth
6/May/19	1.3	Update report	Phong Nguyen

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Software Requirements Specification

1. Introduction

1.1 Purpose

This SRS describes the functional and nonfunctional requirements for software release 1.0 of the Sheepdog Defense Group Website. This document is intended to be used the members of the project team who will implement and verify the correct functionality of the system. Unless otherwise noted, all requirements specified here are committed for release 1.0.

1.2 Intended Audience and Reading Suggestions

The intended audience for this document is the website admin, Sheepdog group members, and future developers that may work on maintain or update the website.

1.3 Product Scope

The new Sheepdog Defense Group website will allow customers to sign-up for a wide variety of self-defense and firearms training courses, purchase Sheepdog merchandise from an online store, and to request consultations for threat assessments. The site will also allow the administrator to create classes offered to the public, manage requested consultations and merchandise orders, as well as create logins for his guards and upload employment documents. Each of these guards will have the ability to login-in to manage their profile, view important church documents and information. A more detailed description of the motivation of this project is available in the Vision Document [1].

1.4 Definitions, Acronyms, and Abbreviations

See Glossary [2]

1.5 References

[1] Vision Document - [link](#)

[2] Glossary - [link](#)

1.6 Overview

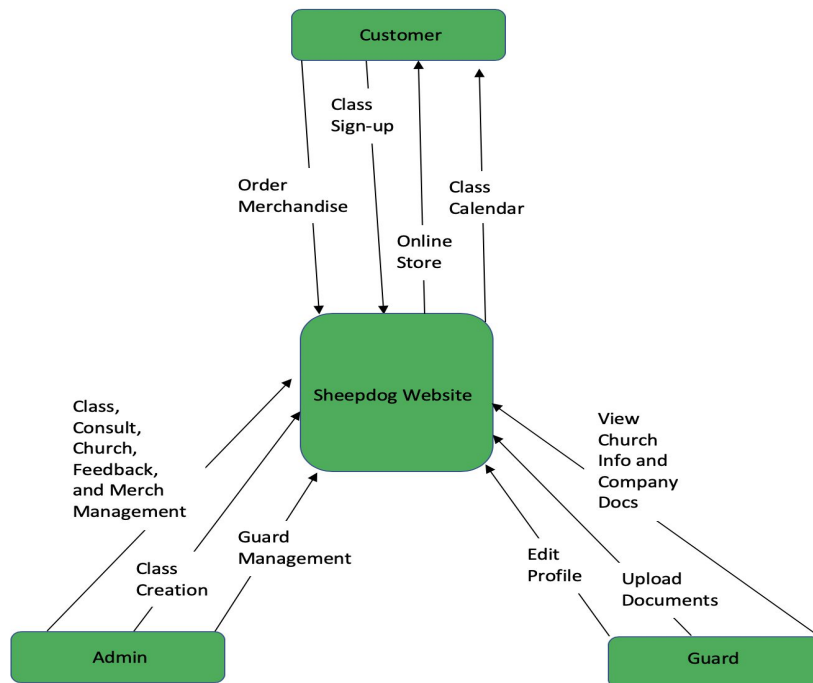
The remainder of this SRS document includes a general overview of the Site and its users, followed by a more detailed description of the use cases. It will then provide detailed as to the data requirements for the Site as well as any external requirements or attributes associated with the Site.

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2. Overall Description

2.1 Product Perspective

The Sheepdog Defense Group Website is a new web interface that replaces the current site used by Sheepdog Defense Group. The following diagram illustrates the external entities and system interfaces for the release. The system is expected to be fully functional upon release, ultimately providing Sheepdog Defense Group with all of the required features.



2.2 User Classes and Characteristics

User Class	Description
Customer	<i>A Customer is a member of the public who wants to learn self-defense by taking a variety of courses taught by trained professionals. There are an unlimited number of customers who will have access to this site however, Sheepdog Defense Group is based locally in Fort Worth and thus services a majority of local customers. These customers are expected to visit the site at least once when they sign-up and to learn about the services. A very small amount are expected back as repeat customers.</i>
Guard	<i>The Guards are a group of about 60 individuals who receive firearms training and medical training by Sheepdog Defense Group and then return to their respective Church to defend it. Most of the guards will be provided with a user manual to explain the different functionalities they are allowed including viewing church information, the company portal, editing their profile, and uploading documents.</i>
Administrator	<i>The Administrator is the owner of the company who establishes all of the classes that are offered, adds the merchandise into the online store, manages his guards profiles. He will also have access to a list of all customers who have sign-up for his classes, everyone who has requested a consult, provided feedback, and ordered merchandise.</i>

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2.3 Operating Environment

- OE-1: The Sheepdog Website shall operate correctly with the following web browsers: Windows IE, Firefox, Google Chrome, and Safari
- OE-2: The Sheepdog Website shall operate on a Heroku Dyno running the current approved production web servers for a Ruby on Rails application, Puma.
- OE-3: The Sheepdog Website shall permit user access from anywhere in the world using anytype of internet connection; and by Android, iOS, and Windows smartphones and tables.

2.4 Design and Implementation Constraints

- CO-1: The system's design, code, and maintenance documentation shall conform to the Ruby on Rails Development Documentation for Version 5.2.3 [[Ruby On Rails](#)]
- CO-2: The system shall use the current version of PostgreSQL, while supporting up to two earlier version releases. Currently those include Version 11 as the current, and support for Versions 10 and 9
- CO-3: All HTML code shall conform to the HTML 5.0 standard
- CO-4: All Cascading Style Sheets shall use the latest version of Bootstrap, Version 4
- CO-5: All Javascript and JQuery shall use the latest versions, 9 and 3.4 respectively

2.5 Assumptions and Dependencies

- DE-1: The email functionality of the SDG site depends on a gmail account. If that account were to ever be deactivated or attacked, the email functionality would cease until we could update the site with a new email account and password
- DE-2: The operation of the class sign-up and merchandise orders depends on charges being processed through Stripe payment system. If Stripe were to go down, then we would lose the ability for customers to perform those actions until it is brought back up.

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3. Specific Requirements

3.1 UC 01: Customer Signs-up for Class

Brief Description:

This use case allows the customer to sign up for an available class.

Primary Actor: Customer**Level:** User Level**Stakeholders and Interests:****Preconditions:** None**Postconditions:** The customer will be added onto the class roster.**Trigger:** The customer clicks on a button to sign-up for a class.**Main Success Scenario:**

1. The customer selects a class to sign-up for.
2. The customer enters name, email, phone number, and payment amount.
3. The customer enters their payment information to the billing system.
4. The system verifies customer information.
5. The billing system verifies customer payment information.
6. The system places that customer onto the class roster.
7. The system notifies the customer that the sign-up is complete by email.

Extensions:

5a. Invalid payment information

- 5a1. The billing system indicates that one or more payment information field is invalid.
- 5a2. The customer enters correct information.
- 5a3. Returns to main success scenario step 3.

4a. Invalid Customer Information

- 4a1. The system indicates that the customer information entered is invalid.
- 4a2. The customer enters any missing or invalid information.
- 4a3. The system returns to the main success scenario.

Priority: High**Secondary Actors:** Billing System**Special Requirements:**

Each class has a minimum sign-up of eight people. The maximum number of a class ranges from 12-20 people.

Open Issues:

3.2 UC 02: Customer Purchase Merchandise

Brief Description:

This use case allows the customer to purchase items from the online store.

Primary Actor: Customer

Level: User Level

Stakeholders and Interests:

Preconditions: The customer must have at least 1 item in their cart.

Postconditions: The order information is stored and the admin is notified that an order has been placed.

Trigger: The customer indicates that they want to checkout

Main Success Scenario:

1. The customer chooses a merchandise.
2. The customer enters the amount of merchandise.
3. The system confirms selected merchandise has been added to cart.
4. The customer initiates checkout.
5. The customer enters name, shipping address, and email.
6. The customer enters payment information.
7. The system verifies the information.
8. The billing system verifies payment information.
9. The system confirms with customer that purchase is complete.

Extensions:

4a. The customer adds more merchandise

4a1. The customer returns to merchandise page.

4a2. Returns to main success scenario step 1.

4b. The customer changes merchandise amount

4b1. The customer updates the amount.

4b2. The system confirms the amount is updated.

4b3. Returns to main success scenario step 4.

7a. Invalid Customer Information

7a1. The system indicates that the customer information entered was invalid.

7a2. The customer enters any missing or invalid information.

7a3. The system returns to the main success scenario.

8a. Invalid Payment Information

8a1. The billing system indicates that the customer payment information entered was invalid.

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8a2. The customer enters any missing or invalid information.

8a3. The billing system verifies payment information and returns to the system.

Priority: Low

Secondary Actors: Billing System

Special Requirements:

Open Issues:

3.3 UC 03: Customer Requests Consult

Brief Description:

This use case allow the customer to request a consultation, where Sheepdog Defense Group will travel to the Church or School which requested it to assess potential threats and set up reaction plans as well as train a safety team.

Primary Actor: Customer

Level: User Level

Stakeholders and Interests:

Preconditions: None

Postconditions: The consult information is stored in the database and the admin is notified of the request.

Trigger: The customer indicates that they want to request a consult.

Main Success Scenario:

1. The customer indicates that they want to request a consultation.
2. The customer enters name, phone number, email, address, and a description of their problem.
3. The system verifies the information.
4. The system confirms with customer that the request is complete.
5. The system notifies the admin of the request.

Extensions:

2a. Invalid Customer Information

2a1. The system indicates that the customer information entered was invalid.

2a2. The customer enters any missing or invalid information.

2a3. The system returns to the main success scenario.

Priority: Low

Secondary Actors: None

Special Requirements:

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Open Issues:

3.4 UC 04: Customer Provides Feedback

Brief Description:

This use case allows a customer who has participated in a class to provide feedback.

Primary Actor: Customer

Level: User Level

Stakeholders and Interests:

Preconditions: None

Postconditions: The customer feedback is logged in the system.

Trigger: The customer indicates that they want to provide feedback.

Main Success Scenario:

1. The customer indicates that they want to provide feedback.
2. The customer enters date, name, location, phone number, email, comments, and share permission as well as answers to questions regarding their experience..
3. The system verifies the information.
4. The system confirms with customer that their feedback has been received..

Extensions:

3a. Invalid Customer Information

3a1. The system indicates that the customer information entered was invalid.

3a2. The customer enters any missing or invalid information.

3a3. The system returns to the main success scenario.

Priority: Low

Secondary Actors: None

Special Requirements:

Open Issues:

3.5 UC 05: Admin Creates Class

Brief Description:

This use case allow the admin of the website to create new defense classes that customers have the ability to sign-up for.

Primary Actor: Admin

Level: User Level

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Stakeholders and Interests:**Preconditions:** Admin must be logged in.**Postconditions:** The new class is logged in the system and the interactive calendar is updated.**Trigger:** The admin selects that he wants to create a new class.**Main Success Scenario:**

1. The admin indicates that they want to create a new class on the calendar.
2. The admin enters name, description, start date, end date, and price for a class.
3. The system verifies the information.
4. The system adds the class to the calendar.

Extensions:

3a. Invalid Class Information

- 3a1. The system indicates that the admin has entered class information that is invalid.
- 3a2. The admin re-enters any missing or invalid information.
- 3a3. The system returns to the main success scenario.

Priority: High**Secondary Actors:** None**Special Requirements:****Open Issues:**

3.6 UC06: Update Merchandise List

Brief Description:

This use case allows Admin to update merchandise list in the system.

Primary Actor: Admin**Level:** User Level**Stakeholders and Interests:****Preconditions:** The Admin has logged into the Admin account.**Postconditions:** The item information is added to the database and the item appears in the online store**Trigger:** The use case begins when the Admin indicates they want to update the Merchandise List.**Main Success Scenario:**

1. The admin indicated they want add a new item.
2. The admin provides the item's information (name, price, description) and picture.
3. The system verifies the information.
4. The system confirms the merchandise has been added to the merchandise list.

Extensions:

- 1a. The admin modifies merchandise
 - 1a1. The admin selects a merchandise
 - 1a2. Returns to main success scenario step 2.
- 1b. The admin removes merchandise
 - 1b1. The admin selects a merchandise
 - 1b2. The admin removes the merchandise
 - 1b2. The system confirms the merchandise has been removed.
- 3a. Invalid Information:
 - 3a1. The system indicated that the information entered is invalid.
 - 3a2. The admin corrects the invalid information.
 - 3a3. The system returns to the main success scenario.

Priority:

Secondary Actors: no secondary actor is required

Special Requirements:**Open Issues:**

3.7 UC07: Admin Create Login

Brief Description:

This use case allows Admin to create login account for his guards.

Primary Actor: Admin

Level: User Level

Stakeholders and Interests:

Preconditions: The Admin has logged onto the Admin account.

Postconditions: The database is updated with new user account.

Trigger: The use case begins when the Admin indicates the creation of a new guard account with the guard's name, email address and password.

Main Success Scenario:

- 1. The Admin enters Guard's name, email address and password.
- 2. The system saves account to the database.
- 3. The system sends an email to the guard with login information.

Extensions:

- 1a. Invalid Information
 - 1a1. The system indicates that the entered information is invalid
 - 1a2. The Admin fixes all invalid information
 - 1a3. The system returns to the main success scenario

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1b. Optional Functionality

1b1. The Admin uploads new guard's documents.

1b2. The Admin approves the new account to become Admin account.

Priority: High

Secondary Actors: no secondary actor is required

Special Requirements:

Open Issues:

3.8 UC08: Admin Verifies Gun License Change

Brief Description:

This use case allows a Guard to request a change to his gun license.

Primary Actor: Admin

Level:

Stakeholders and Interests:

Preconditions: Admin must be logged in.

Postconditions: Guard's gun license status must be Approved.

Trigger:

Main Success Scenario:

1. The Admin opens list of users.
2. The Admin selects a user with unapproved gun license.
3. The Admin approves gun license.
4. The Guard gun license status changes to Approved.

Extensions:

2a. Admin un-approves gun license

2a1. The Admin selects a guard with approved gun license.

2a2. The Admin un-approves gun license.

2a3. The Guard gun license status changes to Not Approved.

Priority: Medium

Secondary Actors: None

Special Requirements:

The Guard must perform his proficiency with a gun to an authorized personnel After that, guard can notify the Admin and waits for approval for the license change.

Open Issues:

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3.9 UC09: Guard Modify Information

Brief Description:

This use case allows a guard to enter and modify their personal information.

Primary Actor:

Guard

Level: User Level

Stakeholders and Interests:

Preconditions:

The guard must first be logged in.

Postconditions:

The guards new information will be updated in the system.

Trigger:

Guard edits personal information.

Main Success Scenario:

1. The guard goes to Edit page.
2. The guard updates the personal information.
3. The system verifies the information.
4. The system saves changes to the database and notifies the Admin.

Extensions:

3a - Gun License Updated

1. The system notifies the Admin with gun license changes.
2. The Admin reviews changes in Admin page.
 - a. The admin accepts gun license number
 - i. The Admin checks the Approve box..
 - b. The admin denies gun license number.
 - i. The Admin contacts the guard to make changes..
3. The system returns to normal flow.

4a - Guard Invalid Information

1. The system indicates that not all required information was entered.
2. The user enters missing information.
3. The system returns to normal flow.

Priority: Medium

Secondary Actors: None

Special Requirements:

Open Issues:

3.10 UC 10: Guard Upload Documents

Brief Description:

This use case allows a guard to upload their documentation

Primary Actor: Guard

Level: User Level

Stakeholders and Interests:

Preconditions: Guard must be logged in

Postconditions: The uploaded document will be added to the database and will be displayed on the guards profile page

Trigger: The guard indicated that they want to upload a document

Main Success Scenario:

1. The guard clicks to upload a PDF file.
2. The system displays a document finder.
3. The guard selects one or multiple files they want to upload.
4. The system uploads the file to AWS.
5. The system reloads profile page displaying the new document.

Extensions:

3a. Invalid File Type

- 3a1. The system indicates that the selected file type was invalid.
- 3a2. The guard enters a file of the desired type.
- 3a3. The system returns to the main success scenario.

4a. File Size Too Large

- 4a1. The system indicated that the selected file size was too large.
- 4a2. The guard enters a file within the desired file size limits.
- 4a3. The system returns to the main success scenario.

Priority: Medium

Secondary Actors: None

Special Requirements:

The maximum file size allowed by the system is 25 MB, in PDF format.

Open Issues:

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3.11 UC 11: Church Upload Documents

Brief Description:

This use case allows a church to upload their documentation

Primary Actor: Guard

Level: User Level

Stakeholders and Interests:

Preconditions: User must be logged in, User must belong to the selected church

Postconditions: The uploaded document will be added to the database and will be displayed on the church's profile page

Trigger: The user indicated that they want to upload a document

Main Success Scenario:

1. The user clicks to upload a file.
2. The system displays a document finder.
3. The user selects the file they want to upload.
4. The system notifies the upload was successful.
5. The system reloads profile page displaying the new document.

Extensions:

3a. Invalid File Type

- 3a1. The system indicates that the selected file type was invalid.
- 3a2. The user enters a file of the desired type.
- 3a3. The system returns to the main success scenario.

4a. File Size Too Large

- 4a1. The system indicated that the selected file size was too large.
- 4a2. The user enters a file within the desired file size limits.
- 4a3. The system returns to the main success scenario.

Priority: Medium

Secondary Actors: None

Special Requirements:

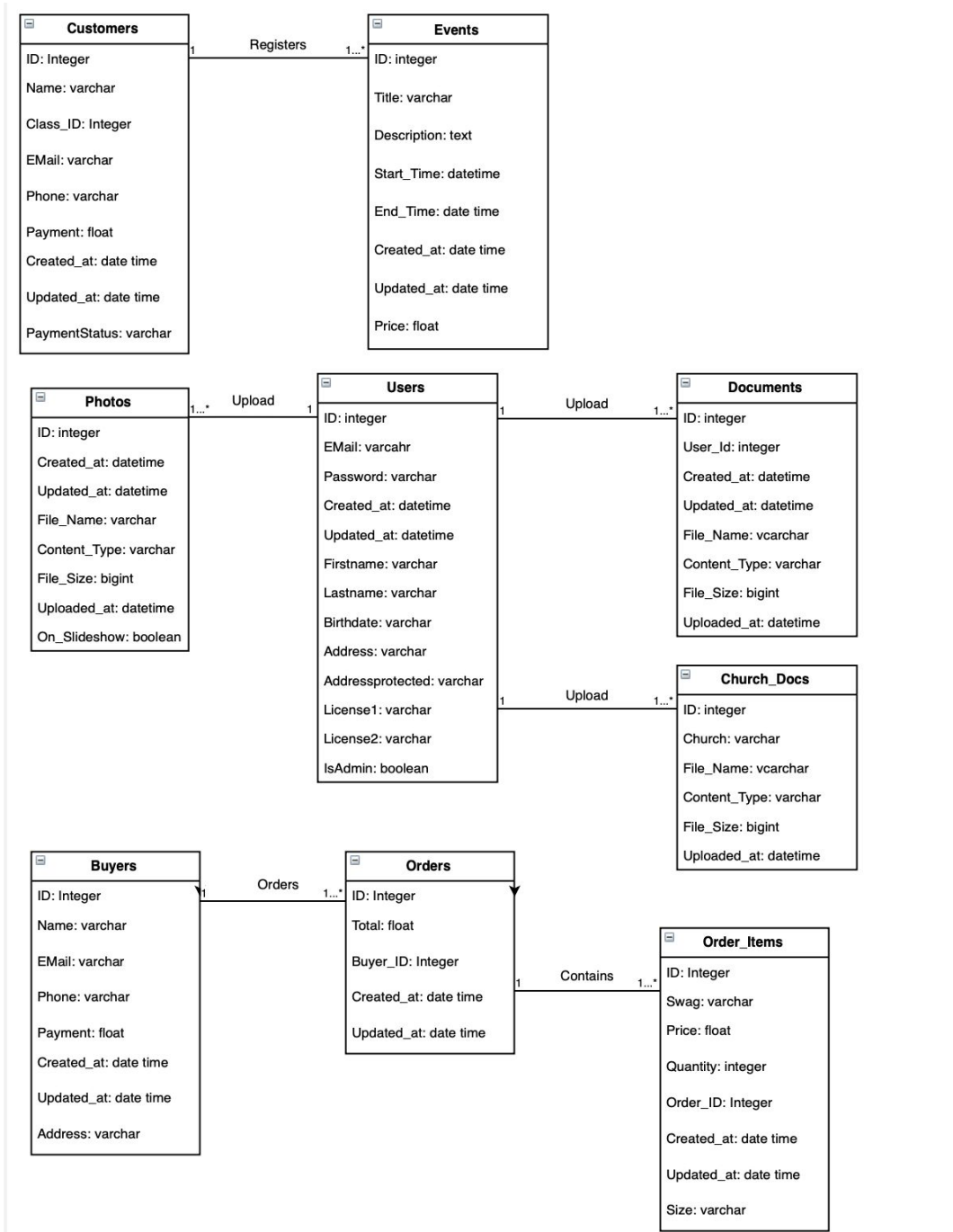
The maximum file size allowed by the system is 25 MB.

Open Issues:

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4. Data Requirements

4.1 Logical Data Model



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4.2 Data Dictionary

Data element	Description	Composition or data type	Length	Values
Buyer name	Name of the person who makes a merchandise order	Alphabetic		
Buyer email	Email of the person who makes a merchandise order	Alphanumeric		@ and . allowed
Buyer phone	Phone number of the person who makes a merchandise order	Numeric		- allowed
Buyer payment	Payment of the person who makes a merchandise order	Float		
Buyer address	Shipping address of the person who makes a merchandise order	Alphanumeric		, allowed
Order total	Total price of a merchandise order	Float		
Order buyer id	ID of buyer whose this merchandise order belongs to	Integer		
Order item swag	Name of an ordered merchandise	Alphabetic		
Order item price	Price of an ordered merchandise	Float		
Order item order id	ID of order whose this order item belongs to	Integer		
Consult name	Name of the person who requests consultation	Alphabetic		
Consult email	Email of the person who requests consultation	Alphanumeric		@ and . allowed
Consult phone	Phone number of the person who requests consultation	Numeric		- allowed
Consult description	Description of the consultation request	Text		
Customer name	Name of the person who signs up for a class	Alphabetic		
Customer class id	Class id of the person who signs up for a class	Integer		

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Customer email	Email of the person who signs up for a class	Alphanumeric		@ and . allowed
Customer phone	Phone number of the person who signs up for a class	Numeric		- allowed
Customer payment	Payment amount of the person who signs up for a class	Float		
Customer payment status	Payment status of the person who signs up for a class	PAID, PARTIAL, UNPAID, GUEST		
Event title	Name of a class	Alphanumeric		
Even description	Description of a class	Alphanumeric		
Event start time	Start time of a class	ISO 8601		
Event end time	End time of a class	ISO 8601		
Event price	Price of a class	Float		
Instructor name	Name of an instructor	Alphabetic		
Instructor role	Role of an instructor	Text		
Instructor bio	Bio of an instructor	Text		
Instructor picture	Picture of an instructor	png, jpeg, jpg, gif		
Photo image	Picture in photo gallery	png, jpeg, jpg, gif		
Photo on slideshow	Determine whether the photo is show on slideshow on homepage	TRUE, FALSE		
Swag name	Name of a merchandise	Alphanumeric		
Swag description	Description of a merchandise	Text		
Swag price	Price of a merchandise	Float		
Swag image	Picture of a merchandise	png, jpeg, jpg, gif		
Swag has size	Determine whether user can select size for merchandise	TRUE, FALSE		
User ID	Unique ID of a registered user	Integer		
User Email	Email address of the registered user	Alphanumeric		@ and . allowed

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User Password	Password of a registered user	Alphanumeric		
User FirstName	The First name of a registered user	Alphabetic		
User LastName	The Last name of a registered user	Alphabetic		
User Birthdate	The birthdate of a registered user	Alphanumeric		/ allowed
User Phone	The phone number of the registered user	Alphanumeric		- allowed
User Address	The home address of a registered user	Alphanumeric		
User AddressProtected	The address of where the Users church is located	Alphanumeric		
User License1	The make, model, serial number, and caliber of a gun	Alphanumeric		All special characters allowed
User License2	The make, model, serial number, and caliber of a gun	Alphanumeric		All special characters allowed
User IsAdmin	Determines whether or not a user has access to administrative features	Boolean		
Church ID	The unique ID of a protected church	Integer		
Church Name	The name of a protected Church	Alphabetic		
Church Address	The address of a protected Church	Alphanumeric		
Church Calendar	The public URL of the google calendar associated with the protected church	Alphanumeric		
Feedback ID	The unique ID of a customer feedback	Integer		
Feedback FirstName	The first name of the customer providing the feedback	Alphabetic		
Feedback LastName	The last name of the customer providing the feedback	Alphabetic		
Feedback Date	The date in which the feedback was left	ISO 8601		

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Feedback Location	The location of the class the customer is providing feedback for	Alphanumeric		
Feedback Phone	The phone number of the customer providing the feedback	Alphanumeric		- allowed
Feedback Email	The email address of the customer providing the feedback	Alphanumeric		@ and . allowed
Feedback Comment	The comments that are left by the customer providing the feedback	Alphabetic		
Feedback Share	Asking the customer if it is ok if SDG shares their comments on social media	Yes or No		
File	The file that is attached or uploaded by a registered User	.pdf, word document		

4.3 Reports

Reports for Sheepdog Defense Group include:

1. Class list
2. Class roster
3. Merchandise orders
4. Consultation requests
5. Feedback
6. Churches
7. Instructor list

Report ID	
Report Title	Class List
Report Purpose	Show users list of classes that are on the calendar.=
Priority	High
Report Users	Customer, Admin
Data Sources	Classes created by the Admin
Frequency and Disposition	Report is generated when a user access events/index. Data is static
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table

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Header and Footer	None
Report Body	Report body contains class id (if user is admin user), class title, class description, class price, class start time, class end time, show, edit, and delete (if user is admin user)
End-of-Report Indicator	None
Interactivity	Admin user can open, edit, or delete class
Security Access Restrictions	Anyone can see class list. Only admin user can see class id, open, edit, or delete class

Report ID	
Report Title	Customer List
Report Purpose	Show the admin list of registered users
Priority	Medium
Report Users	Admin
Data Sources	Registered customers
Frequency and Disposition	Report is generated when the admin opens the link to Customer List
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains name, registered class id, class name, email address, phone number, payment amount, and payment status of the customer
End-of-Report Indicator	None
Interactivity	Admin can edit or delete customer
Security Access Restrictions	Only Admin user can access

Report ID	
Report Title	Consultation Request List

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Report Purpose	Show the admin pending consultation request
Priority	High
Report Users	Admin
Data Sources	Consultation requests from customer
Frequency and Disposition	Report is generated when the admin open the link to consultation request list
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains name, email address, phone number of the person who made the request, and a description
End-of-Report Indicator	None
Interactivity	Admin can edit or delete request
Security Access Restrictions	Only admin can access

Report ID	
Report Title	Merchandise Order List
Report Purpose	Show pending merchandise order
Priority	High
Report Users	Admin
Data Sources	Merchandise order made by customers
Frequency and Disposition	Report is generated when the admin opens the link to merchandise order list
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains id, name, phone number, email address, and payment of the customer

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End-of-Report Indicator	None
Interactivity	Admin can open to see detail, edit, or delete the order
Security Access Restrictions	Only admin can access

Report ID	
Report Title	Feedback List
Report Purpose	Show the admin list of feedback from customers
Priority	Low
Report Users	Admin
Data Sources	Feedback sent by the customers
Frequency and Disposition	Report is generated when admin opens the link to feedback page
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains first and last name, date, email address, phone number, address, comment, and permission to share from the customer
End-of-Report Indicator	None
Interactivity	Admin can delete feedback
Security Access Restrictions	Only admin can access

Report ID	
Report Title	Instructor List
Report Purpose	Show the list of instructors featured on Instructor page
Priority	Medium
Report Users	Admin, Customer
Data Sources	Instructor added by admin

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Frequency and Disposition	Report is generated when a user open the instructor page
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains name, role, bio for anyone and instructor id for admin
End-of-Report Indicator	None
Interactivity	Admin can edit or delete instructor
Security Access Restrictions	Anyone can see. Only admin can edit or delete

Report ID	
Report Title	Churches List
Report Purpose	Show the list of all the churches that are under Sheepdogs protection
Priority	Medium
Report Users	Admin
Data Sources	Churches add by the admin
Frequency and Disposition	Report is generated when a admin opens the churches page
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains name, location, and address on the church
End-of-Report Indicator	None
Interactivity	Admin can edit or delete a church
Security Access Restrictions	Only admin can edit or delete

Report ID	
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Report Title	User List
Report Purpose	Show the list of all user accounts
Priority	High
Report Users	Admin
Data Sources	Guard user added by the Admin
Frequency and Disposition	Report is generated when a admin opens user page
Latency	Complete report must be displayed to user within 3 seconds after it is requested
Visual Layout	Table
Header and Footer	None
Report Body	Report body contains first name, last name, documents, license 1, license 2, approved status, admin privilege, and avatar.
End-of-Report Indicator	None
Interactivity	Admin can edit or delete user
Security Access Restrictions	Only admin can see, edit or delete

4.4 Data Acquisition, Integrity, retention, and disposal

DI-1: The system shall retain all information related to classes, customers, orders, consultations, feedback, and users until the administrator decides to remove them from the system.

5. External Interface Requirements

5.1 User Interfaces

- A navigation bar appears on every screen of the user interface. The navigation bar includes links to the home page, the training pages, the consulting request form, the photo gallery, the online store, the about us page, and the contact us page.
- For users with an SDG account, the navigation bar also include a login button. When a user is logged in, the login button will be displayed as a user profile link with dropdown options to go to their profile, edit their profile, and log out.
- There is field validation for the class sign-up form, contact us form, and user edit profile form
- Every page is displayed with a header describing what that page is about.
- The main color scheme of the site is what is called Sheepdog Green, something that is the specific color associated with Sheepdog Defense Group, and has red as a secondary color.
- Every page is mobile friendly, and the navigation bar will be minimized when the screen size is minimized

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and all pages adjust accordingly.

5.2 Software Interfaces

SI-1: Customer Payment System

The SDG Site shall communicate with the Stripe Payment API to pass credit card information and verification information for the following features:

SI-1.1: To allow a customer to sign-up for a offered training class.

SI-1.2: To allow a customer to pay for any merchandise they select from the online store.

SI-2: User Document Upload System

The SDG Site shall communicate with an Amazon S3 bucket for file and image storage for the following features:

SI-2.1: To allow a regular user to upload pdfs and avatar images for their profiles.

SI-2.2: To allow an admin user to upload pdfs for any number of the sites users.

SI-2.3: To allow a regular or admin user to upload pdfs and word documents for a church location.

SI-2.4: To allow an admin user to upload documents on to the company portal.

SI-3: Data Storage

The SDG Site shall communicate with a Heroku PostgreSQL server for all data storage for the site including:

SI-3.1: To allow an administrator to store information for new class, registered customers, merchandise orders, requested consultation, feedback, instructors, offered merchandise, and protected churches

5.3 Hardware Interfaces

Since our project is not an embedded system, there are no hardware interfaces.

5.4 Communications Interfaces

CI-1: The SDG site shall send a confirmation email (based on provided form information) to the Customer to confirm successful class sign-up, successful consultation requests,, and successful merchandise orders.

CI-2: The SDG site shall send a notification email (based on submitted forms) to the Administrator to inform him on any new requested consultations, merchandise orders, or contact us forms filled out.

CI-3: The SDG site uses a secure SSL certificate to encrypt all traffic communicated over our site

CI-4: The SDG site requires a unique access code associated with each form on the site in order for that submission to be authenticated with the PostgreSQL server

6. Quality Attributes

6.1 Usability

- It should take no more than 1 hour to successfully train all regular users on their main features of editing profile, uploading documents, and viewing church information.
- It should take no more than 2 hours to successfully train all administrative users on all of their main features including: class creating, user creation, church creation, merchandise creation, instructor creation, edit offered classes, edit church, edit instructor, view merchandise orders, view feedback, view consultations, and view class roster.
- It should take no more than 5 minutes to successfully register for a class and receive the confirmation email

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- Once all items for purchase have been added to their cart for checkout, it should take no more than 5 minutes to successfully submit payment and receive the confirmation email for the order.

6.2 Reliability

AVL-1: The SDG site shall be available at least 99% of the time between 12:00 A.M. and 11:59 P.M. as the server performs twice daily restarts, at 6 A.M. and 6 P.M., which take down the site for approximately 5 minutes total. Comment resolved

AVL-2: The SDG site shall stop errors from disrupting the system and display to the user error pages for internal service errors (Error 500), page not found errors (Error 404), and unacceptable errors (Error 422)

AVL-3: The SDG site is hosted on Heroku which implements a automatic service for its servers. This means that if a server experiences an event which were to cause a shutdown, Heroku will automatically start another server to replace the one that experience the issue. The restart process typically takes less than 5 minutes.

6.3 Performance

PER-1: The SDG site has an average response time of 40ms and an average maximum response time of 167ms

PER-2: The SDG site has a average throughput of less than one request per second, with an average maximum throughput of 5 requests per second.

PER-3: The SDG site uses an average of 430 MB of RAM with maximum useage of 512 MB. When the maximum is hit, the Heroku server will begin to use SWAP memory rather than RAM. While this doesn't shut down your site, it does decrease the response time.

6.4 Security

SEC-1: All web requests on the SDG site are protected and encrypted using a secured SSL certificate.

SEC-2: Stripe is secured and encrypted by also using a SSL certificate, meaning that any communication between SDG and Stripe is secured and encrypted

SEC-3: All registered users shall be required to login to the site to access their profiles and access church and company information. After a user logs in, they are presented with an alert specifying that everything they see behind the login is private.

SEC-4: Only administrative users have access to the features for creating a class, adding a new church, adding a new instructor, view merchandise orders, viewing requested consultations, and viewing feedback.

SEC-5: Only the super admin has access to the Admin Portal, which is where the admin can add new users and edit user information.

SEC-6: The SDG site shall allow non-registered users to access only the pages not secured behind the login. If they attempt to access a page they are not allowed access to, they will simply be redirected to the home page.

6.5 Safety

SAF-1: Since the user profiles may contain access to documents that contain sensitive personal information, they are secured behind a login system.

SAF-2: Since the site also contains sensitive information regarding the location and times of church meetings and pastor locations, this information is also secured behind the login and is only

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accessible to approved users.