Scheduling Your Horizons
one student at a time

Software Requirements Specification

Version 3.0

April 12, 2017

Revision Signatures

By signing the following, the team member asserts that he/she has read the entire document and has, to the best of his knowledge, found the information contained herein to be accurate, relevant, and free of typographical error.

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Revision History

The following is a history of document revisions

Version	Changes	Date
1.0	Initial Draft	11/04/16
1.1	Use Case and Interface Prototype Updates	12/01/16
2.0	Overhaul	02/09/17
3.0	Final Editing	04/12/17

Table of Contents

1 Introduction

1.1 Purpose
The purpose of this document is to record, in natural language, both the System and User Requirements of the Project.

1.2 Intended Audience
The intended audience of this document is the development team members, the faculty advisors, and the clients at Texas Wesleyan University (TxWes).

1.3 Scope
The scope of this Project, Scheduling Your Horizons (SYH), consists of requirements gathering, application description, environment and system configuration, application creation, and application testing.

1.4 References
- Hardcopy Forms and Reports (**Appendix H**)
- Django Documentation: https://docs.djangoproject.com/en/1.10/
- Docker Documentation: https://docs.docker.com/
- Introduction to Algorithms by Cormen et al.
- Introduction to Evolutionary Algorithm by Xinjie Yu and Mitsuo Gen
- Constraint Networks: Techniques and Algorithms by Christophe Lecoutre

1.5 Overview
The Overall Description (Section 2) gives the Project Background, the high-level Product Functional Requirements, a description of User Characteristics, and the Assumptions and Dependencies of the software.

The System Functional Requirements (Section 3) describes the Functional Requirements that the system shall provide.

The System Non-functional Requirements (Section 4) contains the product, organizational, and external requirements of the system.

The External Interface Requirements (Section 5) describes the requirements of the User Interfaces, the Hardware Interfaces, the Software Interfaces, and the Communication Interfaces.

The System Architecture (Section 6) describes the architecture of the Python Django application, the Apache Server, the client side web application, and the MySQL database.

The Glossary (Section 7) defines all the acronyms, technical, and project-specific language used within the document.

The <u>Appendices</u> (Sections 8-17) provide detailed and exact descriptions of a variety of aspects of the software.

The <u>Use Case Models</u> (Appendix A) provides all the use case models with the associated diagrams and tables for our system.

The <u>Signup Requirements</u> (Appendix B) describes in detail the requirements of the Signup subsystem.

The <u>Reporting Requirements</u> (Appendix C) describes in detail the requirements of the Reporting subsystem.

The <u>Scheduling Requirements</u> (Appendix D) describes in detail the requirements of the Scheduling subsystem.

The <u>Administrator Requirements</u> (Appendix E) describes in detail the required capabilities of an Administrator in our system.

The <u>Error Handling</u> (Appendix F) describes in detail all error handling for the system.

The <u>User Interface Prototypes/Wireframes/Sketches</u> (Appendix G) provides screenshots of the prototypes of the user interface of our system.

The <u>Resources </u>(Appendix H) provides scans of all forms and reports provided by TxWes from the prior system.

2   Overall Description

2.1 Project Background

Expanding Your Horizons Network (EYHN) is a 501(c)3 nonprofit organization dedicated to providing gateway STEM (Science, Technology, Engineering, and Math) experiences to middle and high school girls that spark interest in STEM activities and careers. EYHN accomplishes this through role-model led conferences with hands on STEM activities and workshops.

These conferences are hosted by various organizations across the country. In Fort Worth, an annual EYHN conference is hosted by Texas Wesleyan University (TxWes). Each year this conference hosts hundreds of student participants and requires dozens of leaders, volunteers, and presenters. Handling a conference this large requires significant organization effort, with a bulk of pre-conference administrative work going to registering participants and creating a good schedule for the event. In previous years, organizers at TxWes used a scheduling and registration system created by TCU students in 2005. However, this program is out of date and no longer useable, and a replacement is necessary.

This project, Scheduling Your Horizons (SYH), shall create a replacement system for TxWes that allows TxWes organizers to register participants and generate a schedule for the conference. It aims to do so in a modern, user-friendly manner, with an emphasis on platform independence and maintainability to extend the lifespan of the application.

2.2 Product Functional Requirements

Below are the high-level Functional Requirements for SYH. Each is explained in greater detail in this documentation.

- The System shall provide online access to registration for all Participants and shall handle the storage, retrieval, and manipulation of all registration information (**Appendix B**).
- The System shall provide Administrators with the ability to edit data (**Appendix E**).
- The System shall provide an online interface that allows Organizers to generate and modify reports based on registration information (**Appendix C**).
- The System shall provide Organizers with an online interface for generating and modifying a conference schedule. This schedule shall conform to a set of constraints and optimizations (**Appendix D**).

2.3 User Characteristics

- Participants

    Participants, referenced throughout this document as "Participants," consist of all users who actively participate in the conference. They consist of the following:
    - Student – The system shall allow students with minimal technical knowledge to register themselves via a web portal.
    - Presenter – The system shall allow presenters with minimal technical knowledge to register themselves via a web portal.
    - Adult – The system shall allow adults with minimal technical knowledge to register themselves via a web portal.
    - Group Leader – The system shall allow group leaders with minimal technical knowledge to register themselves via a web portal.

- Organizers

    Organizers, referenced throughout this document as "Organizers," are those users tasked with organizing the conference and handle the generation of reports and schedules.
    - The System shall allow Organizers with minimal technical knowledge to generate and edit the schedule via a web portal.
    - The System shall allow Organizers with minimal technical knowledge to generate and download reports via a web portal.
- Administrators

    Administrators, referenced throughout the document as "Administrators," consist of a select few semi-technically capable individuals with privileged access to the System.

2.4 Assumptions and Dependencies

- We assume the Participants, Organizers, and Administrators have access to a computer with an internet connection.
- We assume Administrators will have moderate technical skills.
- We assume Organizers will have limited to no technical skills.
- We assume Participants will have limited to no technical skills.

3   System Functional Requirements

   This section describes an overview of the Functional Requirements of the system. These are the required operations the system must be able to perform. It is broken down into four sections, each corresponding to a logical sub-system of the Application.

- <u>Signup System</u> - The subsystem used by Participants to sign up for the event.
- <u>Reporting System</u> – The subsystem used by Organizers to generate reports and manipulate the schedule.
- <u>Scheduling System</u> – The subsystem used by Organizers to run the scheduling algorithm to generate a schedule for the event.
- <u>Administration System</u> – The subsystem used by Administrators to modify data and administer the System.

3.1 Signup System

- The Signup System shall not provide all necessary information about the yearly event, such as the date and time of the event, the location of the event, or a description of the event. Users of the System are expected to already have some knowledge of the event from either TxWes fliers or on TxWes's website.

- The Signup System shall provide web forms allowing all Participants to register for the event, and in some cases, cancel their registration. It will also allow Organizers to register information about Schools. See **Appendix B** for complete descriptions of the information required in the forms for each Participant.

- The Signup System shall email pertinent confirmation information to Participants after they register. See **Appendix B** for descriptions of the required information provided by confirmation emails for each of the Participants.

- The Signup System shall allow Students to cancel their registration at any time using a link provided to them in their confirmation email. See **Appendix B** for a complete description of the Student Cancellation functionality.
- Participants shall be able to use the Signup system without logging in or presenting credentials, except for Student Cancellation.
- The Signup System shall not allow Duplicate Entries and shall provide Participants with acknowledgement if it believes a registration to be a duplicate. See **Appendix B** for the definition of a duplicate entry for each of the Participants.

- Organizers shall be able to use a web form to add Schools to the list of participating schools. See **Appendix B** for a description of required School fields.

3.2 Reporting System

- Organizers shall be able to generate all required reports through an online interface. The titles of the required reports are listed below. For a full description of these reports see **Appendix C**. These reports are based on the physical reports used in previous years, which can be found in **Appendix H**.
    - Event Schedule
    - T-shirt Count by Size
    - Presentations by Group
    - Workshop Equipment Needs
    - Name Tags
    - Students Reports
        - Students by name
        - Students by school
        - Students by group
    - Individual Group Schedule
    - Adult Participants by Name
    - Group Leader Volunteers by Name

- The Reporting System shall be accessible only through login credentials (Username and Password).

- The Reporting System shall allow Organizers to email generated reports to participants. For a full description of report emailing see **Appendix B**.

- Reports shall be generated in downloadable CSV (Comma Separated Value) and DOCX (Word) formats as appropriate.

3.3 Scheduling System

- The Scheduling System shall group Students following specific scheduling constraints. See **Appendix D** for a complete description of Group Constraints. The Scheduling System shall then schedule these groups into 4 Workshops with the goal of finding a near-optimal schedule. See **Appendix D** for a complete description of Schedule Scoring.

- The Scheduling System shall allow for the User to input variables that affect how the schedule is generated.

- After a schedule is generated, the schedule shall be available from the Reporting System and from the Scheduling System.

- The Scheduling System shall provide Organizers with the ability to manually manipulate groups after the generation of a schedule.
    - See **Appendix D** for a full description of Manual Schedule Manipulation.

3.4 Administration System

- The Administration System shall provide Administrators with the ability to enter and edit data pertaining to schools, topics, students, and other associated data. See **Appendix E** for a full description of required Administrator capabilities.
- The Administration System shall require a username and password login to access. See **Appendix E** for a description of Administrator Login.

4   System Non-functional Requirements

4.1 Total System Requirements

4.1.1 Product Requirements
- All use cases shall require a reasonably competent user less than 10 minutes to complete.
- The System shall use Cross-Site Request Forgery (CSRF) tokens to prevent cross-site scripting attempts on all pages.
- All pages shall be available from mobile phone and tablets, as well as desktop and laptop computers.
- All Javascript, HTML, and CSS files sent shall be minimized.

4.1.2 Organizational Requirements
- All web application interfaces shall be compatible on Google Chrome, Microsoft Internet Explorer, Mozilla Firefox, and Apple Safari browsers.
- All web application interfaces shall be accessible from anywhere with an internet connection.

4.1.3 External Requirements
- The system shall mitigate threats from malicious programs, actors, and bots.
- The system shall have layered protection for keeping all user-information confidential.

4.2 Signup Non-Functional Requirements

4.2.1 Product Requirements
- All forms shall be able to be completed by the user within 10 minutes.
- The signup system shall be 100% available starting from February 1st until 5 days after the event.
- The system shall allow input of associated EYH data, up to 76GB of available hard disk space.
- The system shall validate all input from the users for system security.
    - For a full description of Input Validation see **Appendix B**.

4.2.2 Organizational Requirements
- Users shall have continuous access to the internet while interacting with the system.
- Users shall not be required to input any payment information.

4.3 Report Functional Requirements

4.3.1 Product Requirements
- The system shall generate all reports in less than 30 seconds after the request is made.

4.3.2 Organizational Requirements
- The system shall be available in full by March 24th at the latest.

4.4 Scheduling Non-Functional Requirements

4.4.1 Product Requirements
- The Scheduling system shall generate the schedule in less than 10 seconds after the request is made.
- The database shall be updated to reflect a schedule only after the User has approved it. See **Appendix D** for a description of Schedule Saving.

4.4.2 Organizational Requirements
- The system shall utilize an algorithm that prioritizes student's top-choices for EYH topics.

5 External Interface Requirements

5.1 User Interfaces
- The user shall interface with web forms, utilized by a common internet browser.
- The user shall also require access to the internet.
- The User Interface shall share the stylistic "look-and-feel" contained in TxWes's webpages.
- The User Interface shall always present only the minimum number of functional units (textboxes, checkboxes, etc.) required.

5.2 Hardware Interfaces
- The user shall use modern hardware such as desktop computers, laptops, smartphones, or tablets.

5.3 Software Interfaces
- The software interfaces shall be HTML compatible, by a common web browser, such as Chrome, Firefox, Internet Explorer, Edge, or Safari.

5.4 Communication Interfaces
- The user interfaces shall be communicated via hardware or virtual keyboards, and a mouse or trackpad.

6   System Architecture

The system architecture consists of 4 major components:

- Python Django Application: The module, written in Python, which contains all backend logic of the system
- Apache Server: HTTP Server which handles receiving and serving webpages
- Client Side Web App: The user interface into the system, running HTML/CSS/JavaScript
- MySQL/MariaDB Database: The relational database storing all data required by the system
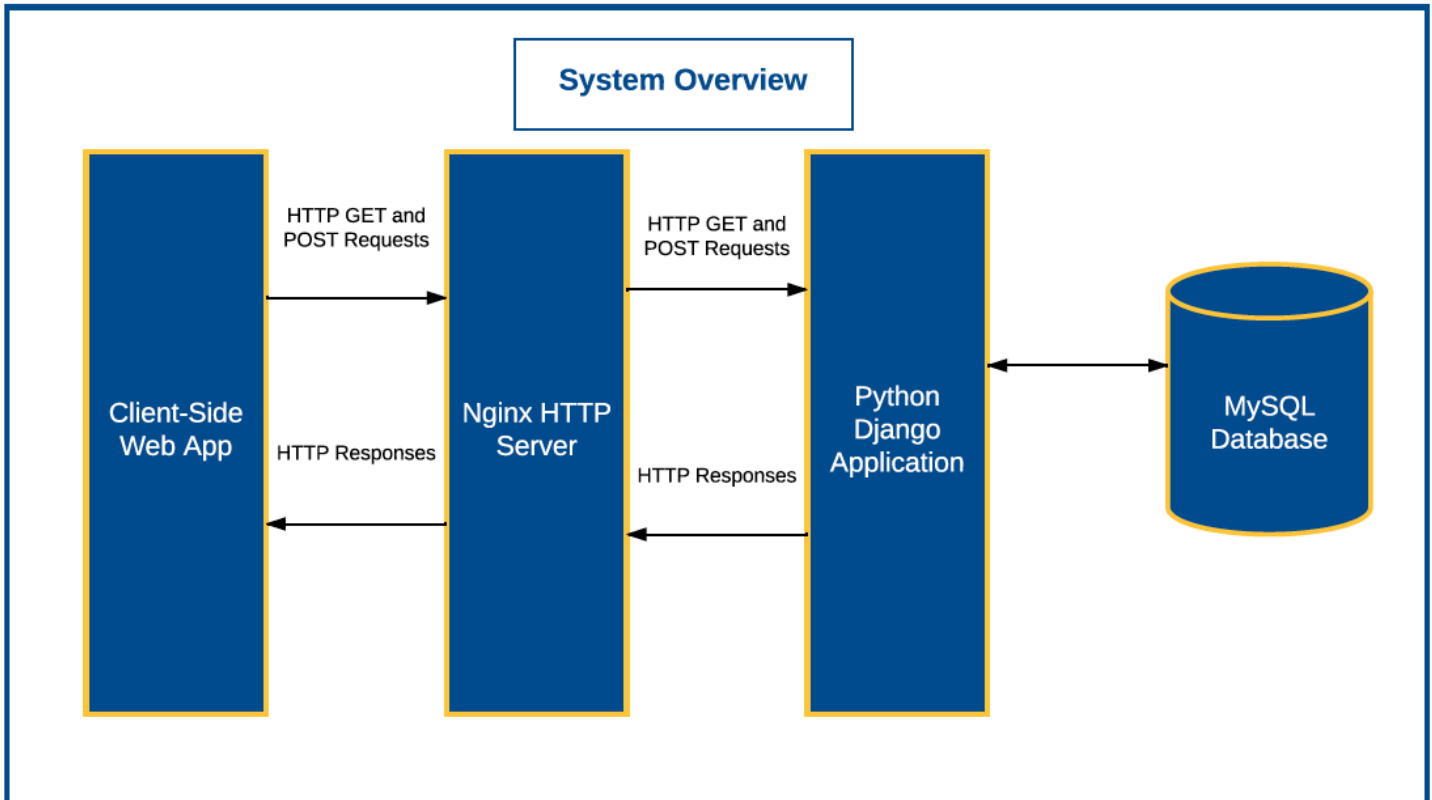
6.1 Python Django Application

The Django Application makes up the bulk of the logic of the system. Shown below is its interaction with the Signup, Scheduling, and Report Generation submodules. Each of these are called "Applications" in a Django system.

HTTP Requests are routed from the high-level URL down to the required Application, which then passes it on to an appropriate View Handler. These View Handlers contain the bulk of backend logic (outside of the Scheduling Library). Each handles a different web page and are logically separated based on use cases (**Appendix A**).

The View Handlers interact primarily with the Models, which are an interface into the MySQL/MariaDB database. The Scheduling Application will also make use of a Scheduling Library, accessed as a pip-installable Python package.
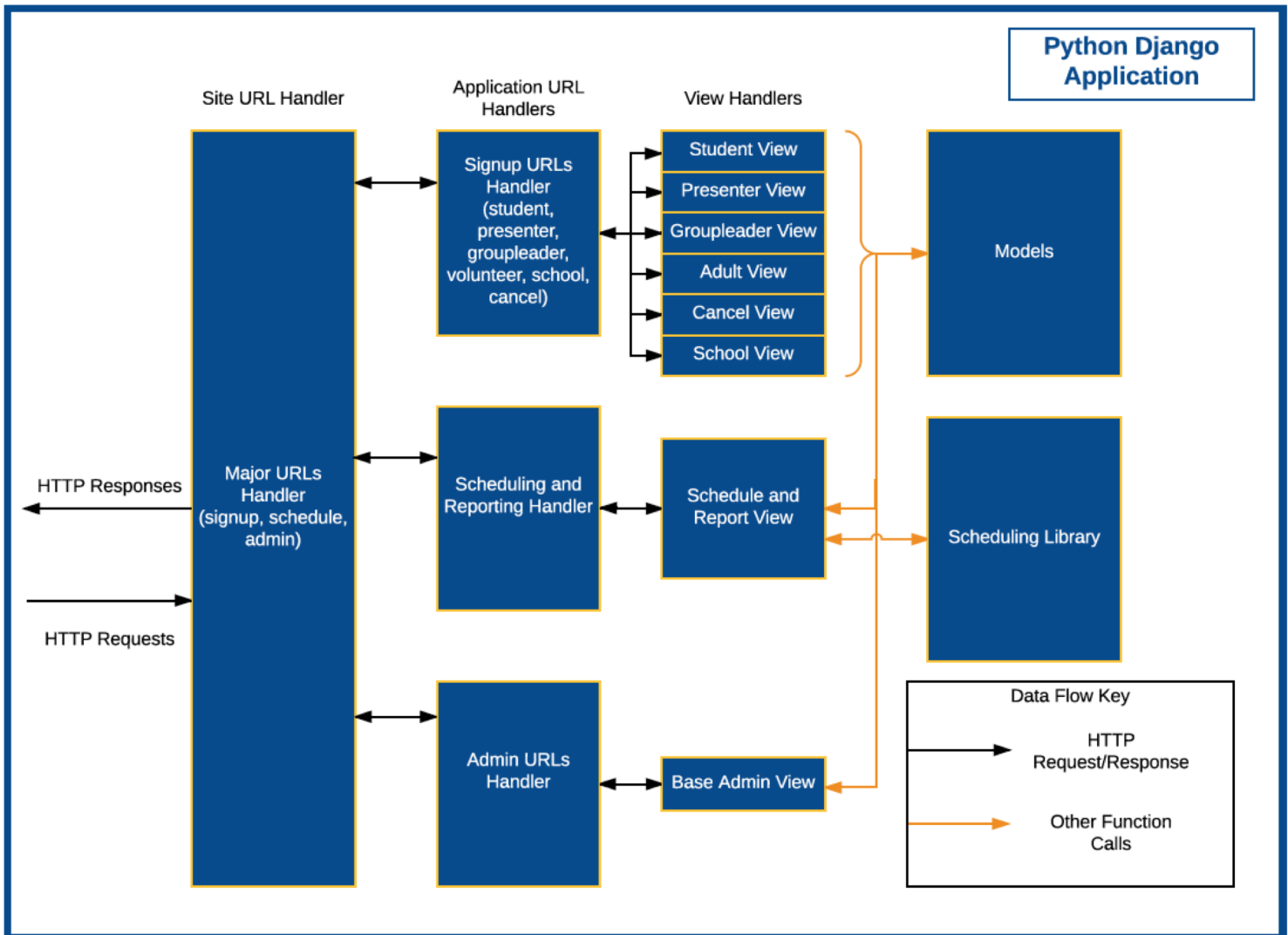
6.2 Client Side Web App

The Client Side Web App is the user's interface into the system. It consists of HTML, CSS, and Javascript rendered on a user's web browser. It interacts with the system through HTTP GET and POST requests. In general, GET requests are used to receive pages from the server, and POST requests are used to send information about user input to the server.
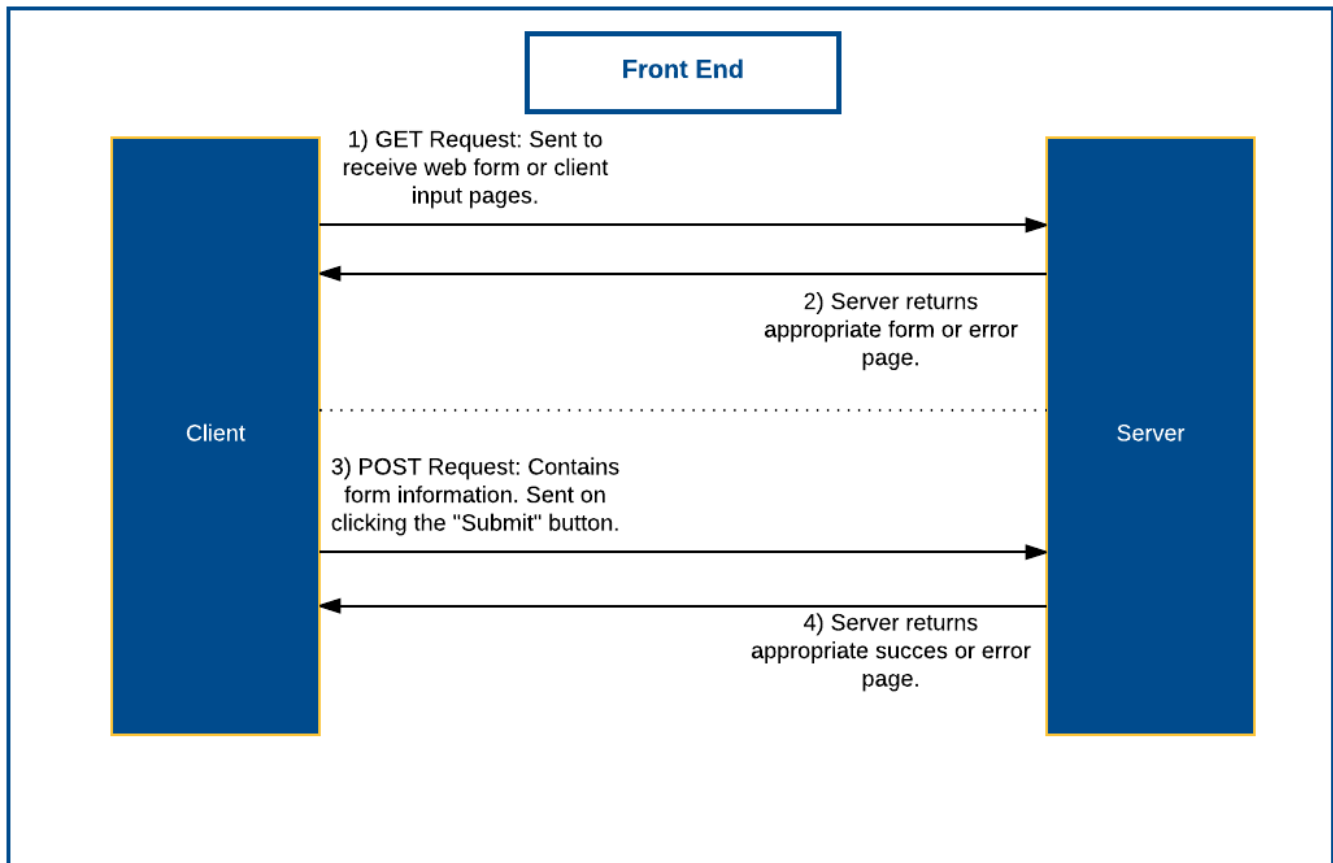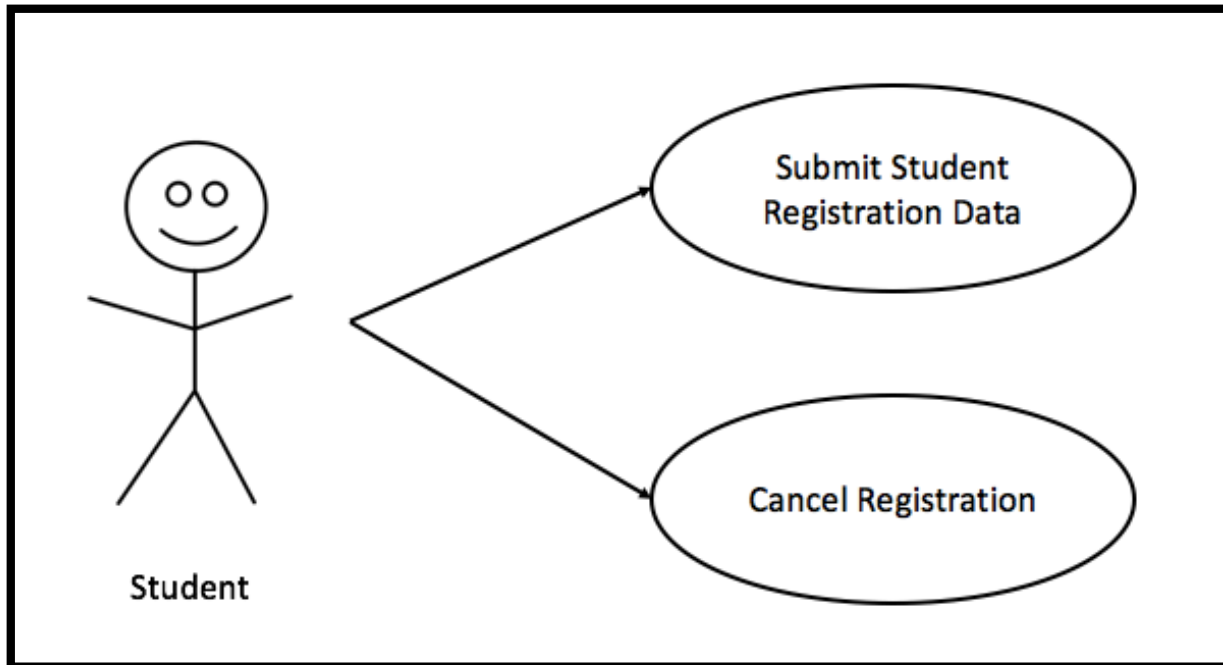
7 Glossary of Terms

Acronym	Phrase / Definition
EYHN	Acronym for "Expanding Your Horizons Network", which is the national organization that conducts conferences for young women interested in STEM fields.
STEM	Acronym for "Science Technology Engineering and Math".
SYH	Acronym for "Scheduling Your Horizons", which is the name of the Project.
TCU	Acronym for "Texas Christian University".
TxWes	Acronym for "Texas Wesleyan University".

8   Appendix A: Use Case Models

8.1   Use Case Model 1: Student

Submit Student Registration Data	
Actor	Student
Description	Student fills out the student submission online form and submits it
Data	Found in **Appendix B**.
Preconditions	Student must have gained access to the student submission page
Triggers	Student selects the "Submit" button
Course of Events	• Navigate to the student submission page. • Fill out the student submission form and click the submit button. • The data entered will be transferred to the database • Email confirming the submission will be sent to the student.
Exceptions	• If student is already registered, the student will be redirected to a page indicating this and will not be entered into the database. • If registration is closed, the student will be redirected to a page indicating this and will not be entered into the database.
Post Conditions	Student information will be loaded into the database along with workshop topic preferences.

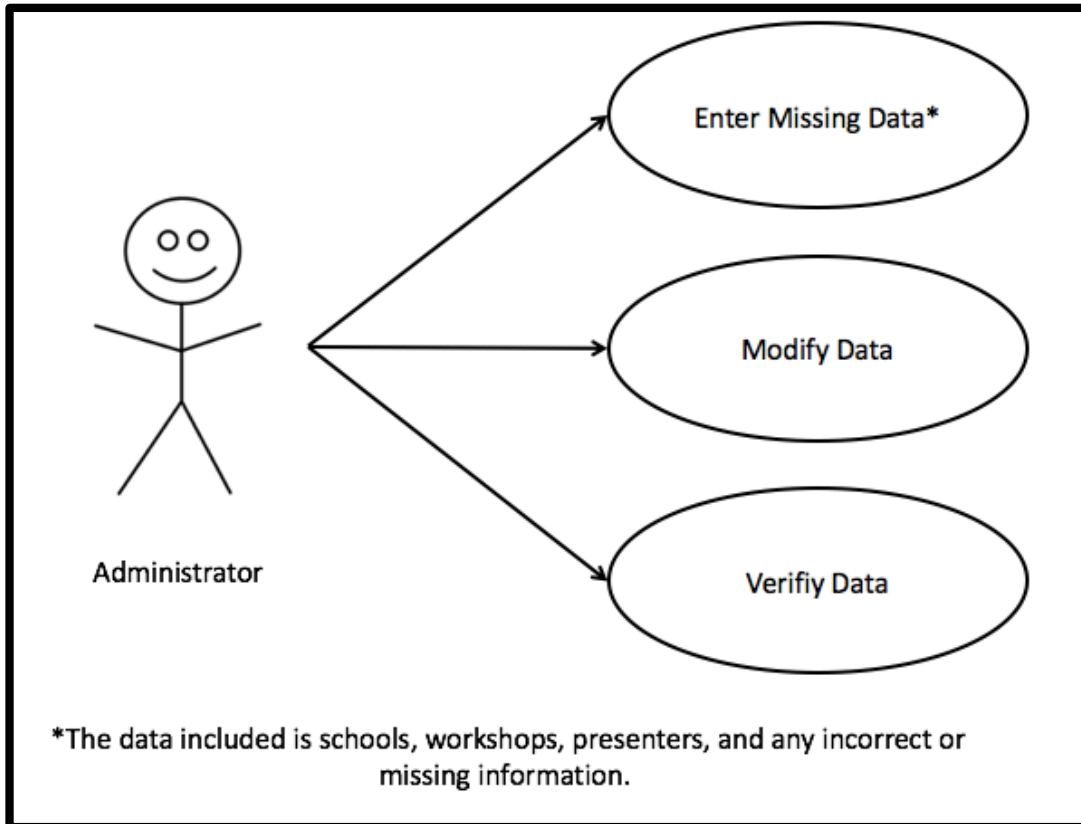| Cancel Registration	
Actor	Student
Description	Student cancels their registration for the EYH event.
Data	"Cancel my Registration" or "No, Do Not Cancel", indicating whether the Student wishes to cancel or not.
Preconditions	Student receives an email with the confirmation of their registration.
Triggers	Student clicks "Cancel my Registration" button.
Course of Events	- Students clicks on the cancel my registration link provided in the confirmation email. - They are navigated to a unique cancellation link. - The student will click the "Cancel my Registration" button. - Cancellation column in the database will indicate that the student has cancelled their registration. - Student receives cancelled confirmation email.
Exceptions	Students who have not registered during the current year cannot cancel.
Post Conditions	Cancellation column in the student table of the database will indicate that the Student has cancelled their registration.

8.2 Use Case Model 2: Organizer
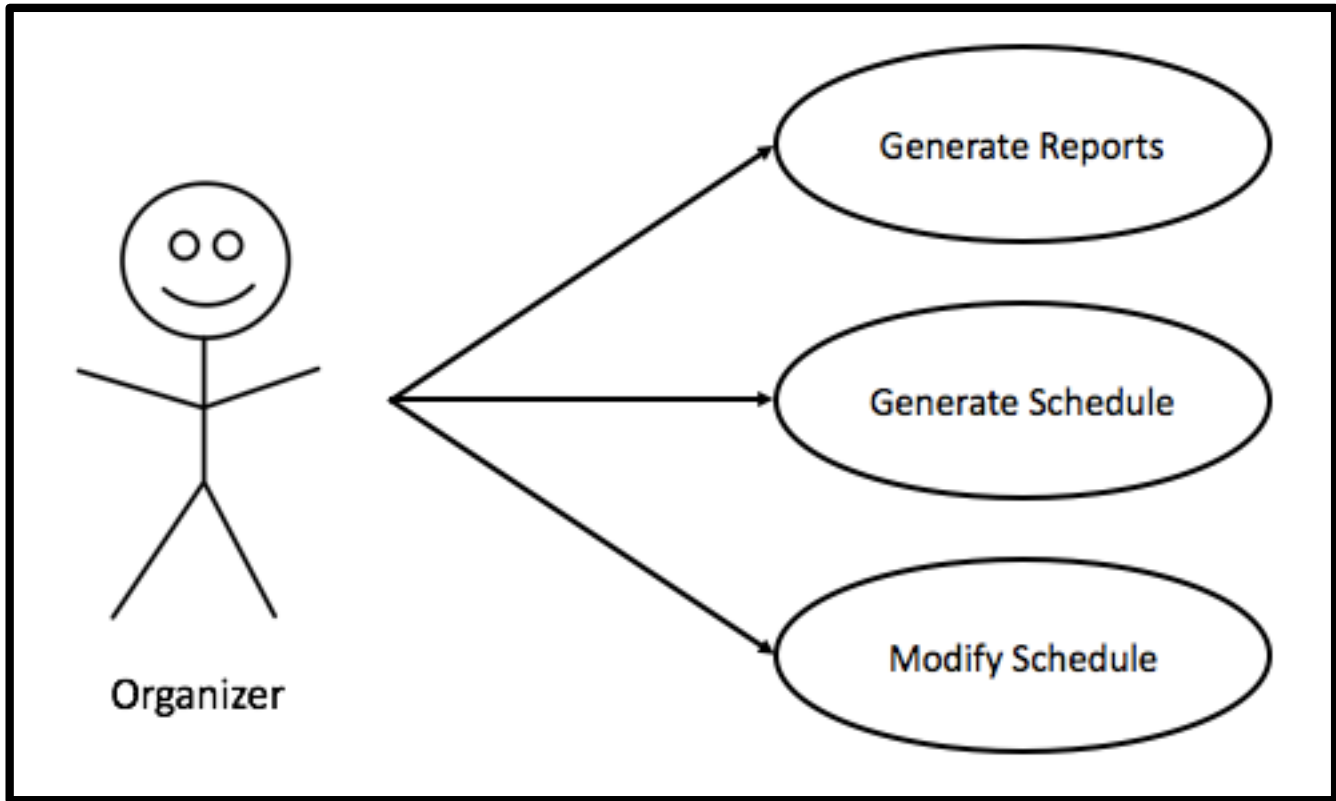
Generate Reports	
Actor	Organizer
Description	The selected reports are created in a CSV format and downloaded to the Organizer's computer.
Data	Reports described in **Appendix C**
Preconditions	Organizer must log in to the site and navigate to the schedule generation page.
Triggers	Organizer selects the "Generate Reports" button in "Reports" tab and "Print" in the "Scheduler" tab.
Course of Events	• Organizer selects the "Reports" tab. • Organizer selects the reports they would like to create • Organizer clicks the "Generate Reports" button. • The reports will be created in the CSV format and downloaded to the Organizer's computer.
Exceptions	Organizer does not have a login and must create one.
Post Conditions	Reports will be created in a CSV or DOCX format.

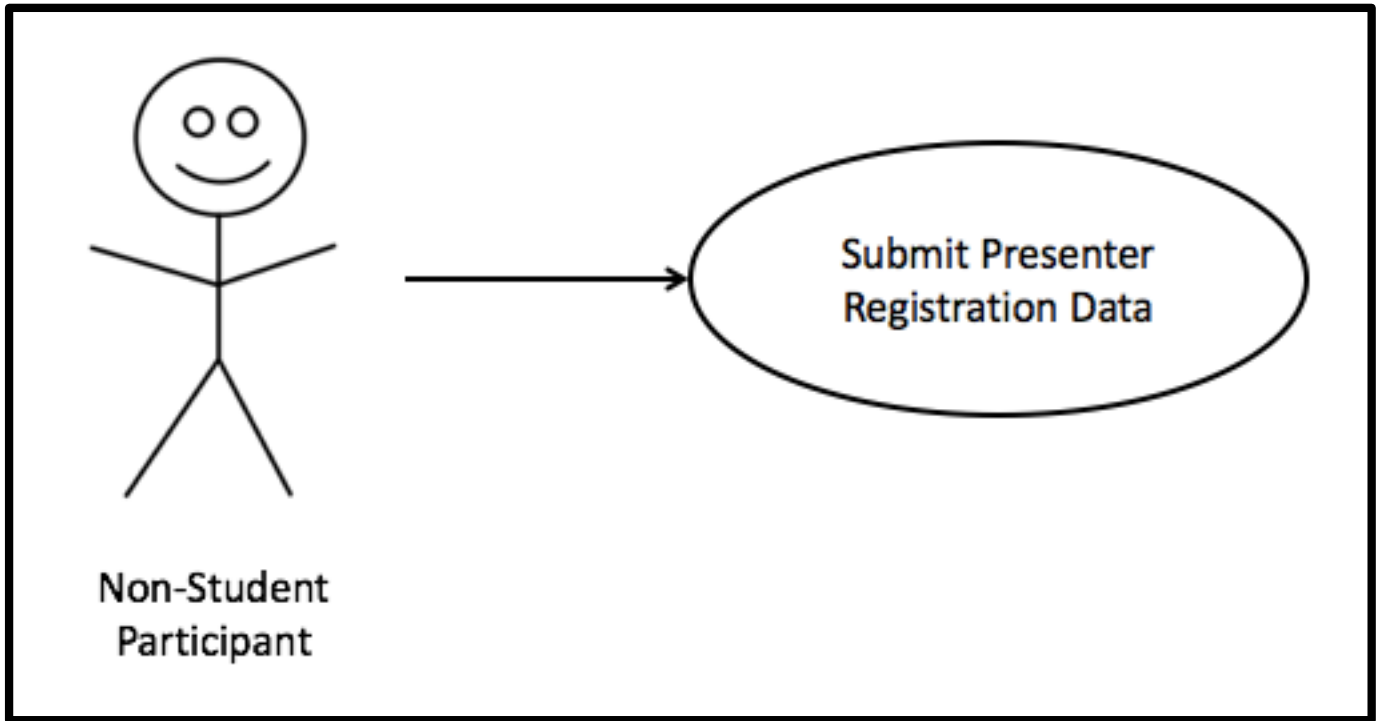| Generate Schedule	
Actor	Organizer
Description	The scheduling algorithm is run and displayed on the schedule generation page.
Data	Schedule described in **Appendix C**
Preconditions	Organizer must log in to the site and navigate to the schedule generation page.
Triggers	Organizer selects the "Generate New" button in the "Scheduler" tab.
Course of Events	- Organizer selects the "Scheduler" tab. - Organizer selects "Generate New" button. - Schedule is generated and displayed above the "Generate New" button.
Exceptions	Organizer does not have a login and must create one.
Post Conditions	Reports will be created in a CSV or DOCX format.

Modify Schedule	
Actor	Organizer
Description	The Organizer adds custom modification to the static schedule to move, add, or remove a student to the schedule.
Data	Schedule described in **Appendix C**
Preconditions	Organizer must log in to the site and navigate to the schedule generation page.
Triggers	Organizer selects the "Modify" button in the "Scheduler" tab.

Course of Events	• Organizer selects the "Scheduler" tab.
	• Organizer selects "Modify" button.
	• Organizer selects the "Move Student From One Group To Another" button or the "Add/Remove Student From Schedule" button.
	• If the "Move Student From One Group To Another" button is selected, the Organizer will select a student to move and a group to move the student to then selects the "Move Student" button.
	• If the "Add/Remove Student From Schedule" button is selected, the Organizer selects either "Add" or "Remove."
	    o If "Add" is selected, the Organizer will type the first and last name of the student to add and the group to add the student to. The Organizer will select the "Add Student" button.
	    o If "Remove" is selected, the Organizer will select the student to remove and select the "Remove Student" button.

Exceptions	Organizer does not have a login and must create one.
Post Conditions	Reports will be created in a CSV or DOCX format.

8.3 Use Case Model 3: Administrator

*The data included is schools, workshops, presenters, and any incorrect or missing information.

Enter Missing Data	
Actor	Administrator
Description	Administrator enters any missing information from online submissions.
Data	All data in database
Preconditions	Administrator has logged into the site and navigated to the page with the missing data.
Triggers	Administrator logs in to view and edit missing data.
Course of Events	• Administrator logs in. • Administrator views reports and database to find missing data. • Administrator can edit any data in any table. • Administrator logs off.
Exceptions	The administrator does not have a login and must create one.
Post Conditions	Data is updated and saved in the database.

Modify Data	
Actor	Administrator
Description	Administrator modifies any information from online submissions.
Data	All data in database
Preconditions	Administrator has logged into the site and navigated to the page with the data.
Triggers	Administrator logs in.
Course of Events	• Administrator logs in. • Administrator views reports and database to find incorrect data. • Administrator can edit any data in any table. • Administrator logs off.
Exceptions	The administrator does not have a login and must create one.
Post Conditions	Data is updated and saved in the database.

Verify Data	
Actor	Administrator
Description	Administrator verifies any information from online submissions.
Data	All data in database
Preconditions	Administrator has logged into the site and navigated to the page with the data.
Triggers	Administrator logs in.
Course of Events	• Administrator logs in. • Administrator views reports and database to find data. • Administrator can edit any data in any table. • Administrator logs off.
Exceptions	The administrator does not have a login and must create one.
Post Conditions	Data is updated and saved in the database.

8.4 Use Case Model 4: Non-Student Participant

Submit Non-Student Participant Registration Data	
Actor	Non-Student Participant
Description	Non-Student Participant fills out the group leader submission online form and submits it.
Data	Found in **Appendix B**.
Preconditions	Non-Student Participant must have gained access to the presenter submission page.
Triggers	Non-Student Participant selects the "Submit" button.
Course of Events	• Navigate to the specific Non-Student Participant submission page. • Fill out the group leader submission form and click the submit button. • The data entered will be transferred to the database • Email confirming the submission will be sent to the group leader.
Exceptions	• If the Non-Student Participant is already registered, they will receive a triggered message indicating this and will not be entered into the database. • If registration is closed, the Non-Student Participant will be redirected to a page indicating this and will not be entered into the database.
Post Conditions	Non-Student Participant information will be loaded into the database in the group leader table.

9 Appendix B: Signup Requirements

Appendix B describes in detail the requirements of the Signup subsystem.

9.1 Participant Field Requirements

9.1.1 Signup Student Fields

The following are the fields contained in the Student submission. All fields are required unless otherwise specified.

- First Name
- Last Name
- Street Address
- City
- State
- Zip Code
- Email Address
- Current Grade
- T-Shirt Size
- Attended Conference Last Year
- Girl Scout Troop
    - Not Required
- School
- Math or Science Teacher
- Workshop Preferences
    - The Student shall select both a First and Second preference of Topic from two dropdown lists.
    - The Student shall not be able to select the same Topic for both First and Second choice, unless both choices are "No Preference".
    - The Topic dropdowns shall be populated from the database.

9.1.2 Signup Presenter Fields

The following are the fields contained in the Presenter submission. All fields are required unless otherwise specified.

- First Name
- Last Name
- Job Title or Department
- Employer or University
- Mailing Address
- City
- State
- Zip
- Cell Phone
- Office Phone
- Extension
- Email Address
- Attending This Year
  - o The Presenter shall check this box if they are attending this year
  - o All fields following this will be hidden if the check box is not selected
  - o When check box is selected, the Primary Presenter check box and Time Slot radio buttons will display
  - o As seen in the diagram to the right
- Primary Presenter
  - o The Presenter shall select yes or no from the radio buttons
  - o When yes is selected, all remaining fields will be displayed
  - o As seen in the diagram to the right
- Student or Adult workshop
- Workshop Title
- General Topic
- Workshop Description
- Lab Needed
- Computer Needed
- Workshop Equipment Needs
- T-Shirt Size
- Timeslot Selection
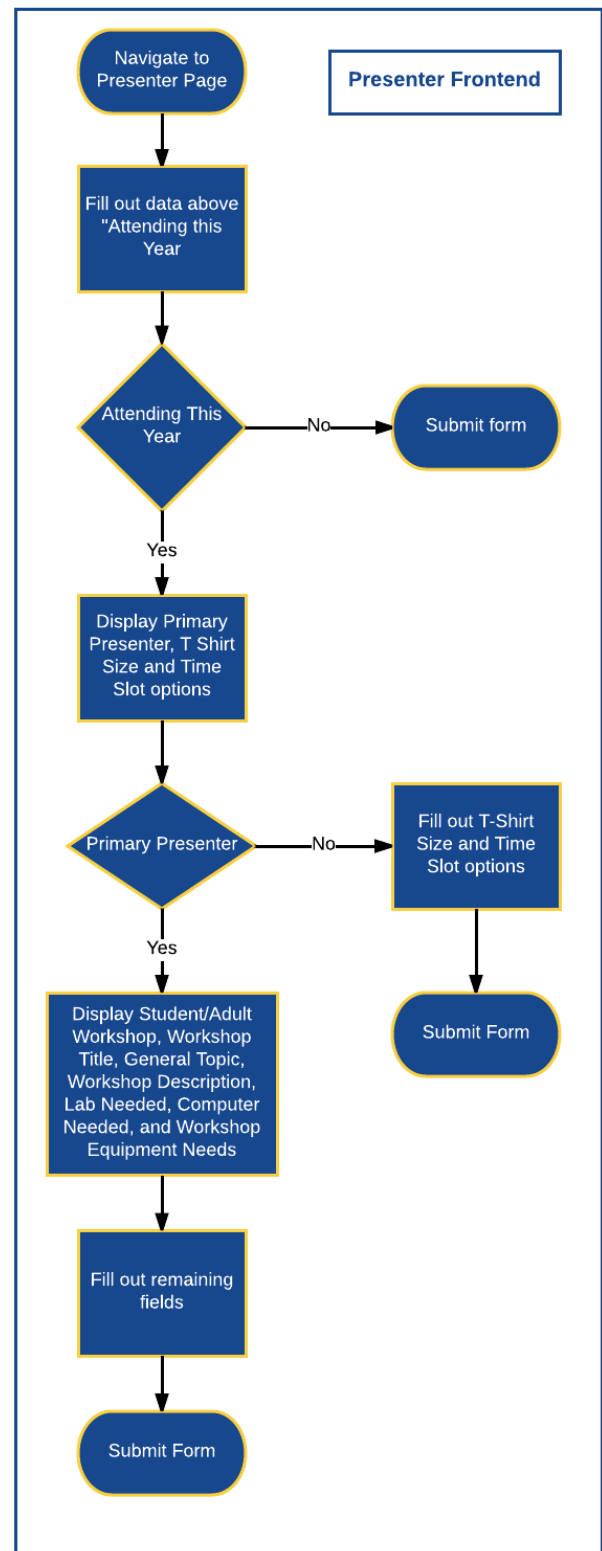
9.1.3 Signup Adult Participant

The following are the fields contained in the Adult submission. All fields are required unless otherwise specified.

- First Name
- Last Name
- Home Address
- City
- State
- Zip
- Email Address
- School
- T-Shirt Size
- Parent
- Teacher
- Girl Scout Troop Leader

9.1.4 Signup Group Leader

The following are the fields contained in the Group Leader submission. All fields are required unless otherwise specified.

- First Name
- Last Name
- Home Address
- City
- State
- Zip
- Email Address
- School
- T-Shirt Size
- Available Times
    - All Day
    - 9:00 am – 12 noon
    - 12 noon – 3:00 pm

9.1.5 Signup School

- Name

9.1.6 Student Cancellation

- Students shall be able to cancel their registration online using a unique link that shall be sent to them in their confirmation email.
- The Cancellation page shall contain two simple buttons, one to confirm cancellation, and one to not cancel.
- Confirming student cancellation shall redirect to a Cancellation Confirmation page, which shall contain instructions on whom to contact to un-cancel.
- Reversing a Cancellation shall only be done through the Administrator portal.
- The button indicating the Student will be canceled shall be labeled "Yes, Cancel Registration"

9.2 Field Validation

All required fields in all forms shall have both front-end and back-end validation. This section describes the rules and constraints that must apply to different fields, which are then confirmed on both the front and back ends.

9.2.1 Fields Used for Multiple Participants

- All required fields in all forms shall have front-end and back-end validation.
- All fields in all forms shall be validated for length on both the front and back end to ensure the data can fit in the database.
- All fields that should be present when the back end receives a POST request from a form shall be validated before processing the request. If a field in the POST request is missing the server shall redirect to the error page. See **Appendix F** for information on Error Handling.
- First and Last Name fields shall consist of all Unicode characters.
- All City input fields shall consist of Unicode characters and shall be longer than 1 character.
- All State input fields shall be selected from a dropdown or similar menu, and shall spell out the entire name of the state (e.g "Texas").
- All Zip input shall consist of digits 0-9 only and be 5 digits long.
- Email addresses shall be of the format X@Y.Z, where X, Y, and Z consist of standard alphanumeric characters. They shall be evaluated by the regex expression {R}.
- T-Shirt Size shall be a choice between Small (S), Medium (M), Large (L), X-Large (XL), and XX-Large (XXL).

9.2.2 Student Fields

- Current Grade shall be either "7th" or "8th" and the Student must select one of these options before submitting their registration.
- Attended Conference Last Year shall be either "Yes" or "No" and the Student must select one and only one of these options before submitting their registration.
- Girl Scout Troop is not required, and shall only be validated on the back end to ensure the size is small enough to fit into the database.
- Schools shall be presented in a dropdown list format and the Student shall be able to select their School from the list.
- Schools are populated dynamically from the Database.
- If a Student's School is not in the Database (and therefore the dropdown list), the Student shall be able to select 'Other', and then input the name of their School. Then the School shall be added to the database. If the School entered is already in the database, a new School shall not be generated and the Student shall be associated with the School already in the database.

9.3 Confirmation Emails

9.3.1 Student Confirmation

Student Confirmation emails shall contain the following:

- Information about how to send in student registration money.
- Time and Location of the event.
- Tentative schedule of the event.
- Cancellation link.
- Link to TxWes Maps page.

9.3.2 Presenter Confirmation

Presenter Confirmation emails shall contain the following:

- Date and location of the event.
- Link to TxWes Maps page.
- Time slot the presenter signed up for.

9.3.3 Group Leader Confirmation

Group Leader confirmation emails shall contain the following:

- Date of the event.
- Time slot signed up for.
- Link to TxWes Maps page.
- Link to TxWes Expanding Your Horizons homepage.

9.3.4 Adult Volunteer Confirmation

Adult Participant confirmation emails shall contain the following:

- Date of the event.
- How to send in their registration fee.
- Check in time.
- Link to TxWes Maps page.
- Link to TxWes Expanding Your Horizons homepage.

9.4 Duplicate Entries

9.4.1 Student

Duplicates for Student registration shall be determined by the following fields:

- First Name
- Last Name
- Address
- Zip Code
- Email
- Grade

9.4.2 Presenter

Duplicates for Presenter registration shall be determined by the following fields:

- First Name
- Last Name
- Email

9.4.3 Group Leader

Duplicates for Group Leader registration shall be determined by the following fields:

- First Name
- Last Name
- Email

9.4.4 Adult

Duplicates for Adult registration shall be determined by the following fields:

- First Name
- Last Name
- Email

10 Appendix C: Reporting Requirements

10.1 Required Report Descriptions

Report Data	
Schedule	Demonstrates the location of a group at a given time throughout the day including the group number, the presenter's name, the presenter's topic, and lab or computer lab for that given time
T-shirt Sizes Report	List of the different T-Shirt sizes along with a count of the number of participants requesting each size.
List of Groups Report	List of all Students including their first and last name ordered by group with the group size and group number
Workshop Equipment Needs Report	List of all workshops with its topic, primary Presenter, lab and computer needs, and any other requirements input by the Presenter. Based on the report in **Appendix H**.
Name Tags Report	Name of all Participants created on .docx files. They shall be separated out into the categories "Students", "Group Leader", "Parents", "Presenter", "Adult", and "Teacher". The name tags of the other presenters shall contain the corresponding category beneath their name (e.g "Group Leader" under Group Leader name tags.)
List of Students by Last Name Report	List of all Students including their first and last names, school, and registration date. Based on the report in **Appendix H**.
List of Students by School Report	Includes Student's first and last names and school ordered by school.
List of Students by Group Report	List of all students including their first and last names, group, and school ordered by their group assignment. Based on the report in **Appendix H**.
List of Parents Report	List of Parents that have registered through the Adult Volunteer form.
List of Teachers Report	List of Teachers who have registered through the Adult Volunteer form.
List of Group Leaders Report	List of Group Leaders who have registered with empty spaces for Organizers to assign each leader to a group. Based on the report in **Appendix H**.
Presenters	The last name, first name, workshop title, timeslot, primary presenter status, and t-shirt size of all Presenters registered.
Adult Participant	The last name, first name, and t-shirt size of all adult participants registered through the adult form.

10.2 Report Generation Requirements

- There shall be one tab specifically for report generation.
- If a Schedule for this Year hasn't been generated, then the area the Schedule would normally be in shall be empty and the reports that require schedule information shall be empty.
- Each report shall be specified with a check box that the Organizer can select. Then, when the Organizer choses to print reports, only the reports selected shall be generated.
- All reports except the nametag reports shall be in a .csv format. The nametag reports shall be in a .docx format for printing.
- All reports shall be delivered together in a .zip archive.

11 Appendix D: Scheduling Requirements

11.1 Group Constraints
- The size of the group shall be determined by the total number of students divided by the total number of groups plus or minus 2
  - Plus 2 shall be the maximum number of students.
  - Minus 2 shall be the minimum number of students.
- The number of groups shall depend on the minimum number of presenters currently assigned to a specific time slot.
- Each group must attend four workshops.

11.2 Schedule Scoring
- For each student who is not assigned their first or second choice, the algorithm shall be given 1 point.
  - The lower the number of points is the better the algorithm performed.

11.3 Manual Schedule Manipulation
- The schedule shall allow students to be moved from one group to another group.
- The schedule shall allow a student to be added to a group.
- The schedule shall allow a student to be removed from the schedule.

11.4 Saving Schedules
- The schedule shall be saved after each generation until a new schedule has been generated.
- The schedule shall be saved after any changes have been made.
- The schedule shall be saved when navigating away from the web page.

12 Appendix E: Administration Requirements

12.1 Django Admin Panel
- The Administrative system shall require login credentials.
- The admin panel shall allow sorting of data in the following ways:
  - Name
    - First
    - Last
  - Class Preference
  - Registration date
  - Schools
  - Address

12.2 Add Information to Database
- The admin panel shall have a form for the admin to enter data for the following items into the database:
  - Students
  - Presenters
  - Schools
  - Volunteers
  - Group leaders
  - Presentation Topics
  - Workshops
  - Adult Participants
  - Users to the admin panel

12.3 Modify Data in the Database
- The admin panel shall allow the admin to delete entries in the database.
- The admin panel shall allow the admin to move students to different groups.
- The admin panel shall allow all fields of each participant to be changed.

13 Appendix F: Error Handling

13.1 General System Error Handling

- If any User attempts to visit a URL that doesn't map to a system, then the User shall be redirected to a 404-error page displaying the message "Error 404: It looks like we don't have what you're looking for! Perhaps you typed in the link wrong?"
- All server errors that go uncaught shall result in a 500-error page displaying the message "Error 500: There has been an error on the server side! We are working hard to fix it, please try again later."

13.2 Signup System Error Handling

- Errors encountered on Signup forms for all Participants shall result in redirection to a custom Google Form that contains all the information available in the regular form. This ensures that even if there is a server error, a participant shall still be able to sign up.

14 Appendix G: User Interface Prototypes/Wireframes/Sketches

14.1 Student Registration Form

35

The student registration form allows students to manually register themselves for the TxWes EYH program. It includes basic personal information along with their first and second choices of workshops and their shirt size.

14.2 Adult Volunteer Registration Form

Select all that apply:

☐   Parent of one or more student attendees

☐   Teacher of one or more student attendees

☑   Girl Scout Troop Leader

Adults and teachers DO NOT attend student workshops!

All adult registrants will attend workshops and will also be requried to volunteer and assist in general activities (refreshments, T-shirt/certificate distribution, etc.)

Make checks payable to Expanding Your Horizons.
Mail check to:

Expanding Your Horizons
Texas Wesleyan University
1201 Wesleyan St.
Fort Worth, TX 76105

*Note: No refunds

Submit

The adult volunteer registration form allows adult volunteers to register themselves to volunteer for the TxWes EYH program. Input shall include basic personal information, shirt size, and check boxes that indicate any relationships with any participating students.

14.3 Presenter Registration Form
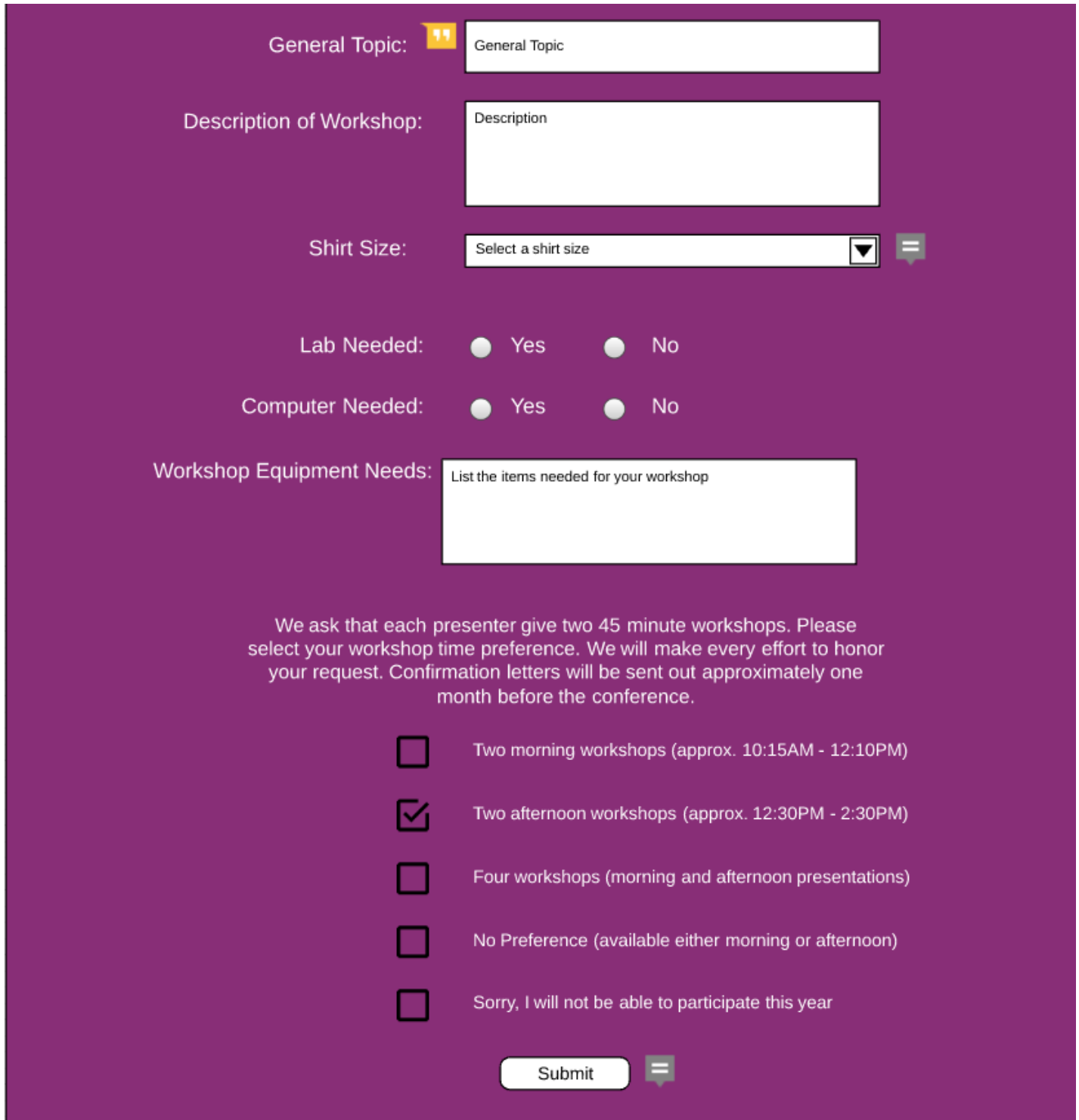
General Topic: `"` | General Topic

Description of Workshop: | Description

Shirt Size: | Select a shirt size ▼ ≡

Lab Needed: ⚪ Yes ⚪ No

Computer Needed: ⚪ Yes ⚪ No

Workshop Equipment Needs: | List the items needed for your workshop

We ask that each presenter give two 45 minute workshops. Please select your workshop time preference. We will make every effort to honor your request. Confirmation letters will be sent out approximately one month before the conference.

☐ Two morning workshops (approx. 10:15AM - 12:10PM)

☑ Two afternoon workshops (approx. 12:30PM - 2:30PM)

☐ Four workshops (morning and afternoon presentations)

☐ No Preference (available either morning or afternoon)

☐ Sorry, I will not be able to participate this year

Submit ≡

The presenter registration form allows presenters to register themselves for the TxWes EYH program. Inputs shall include basic personal information, shirt size, and information about their workshop.

14.4 Schedule Generation
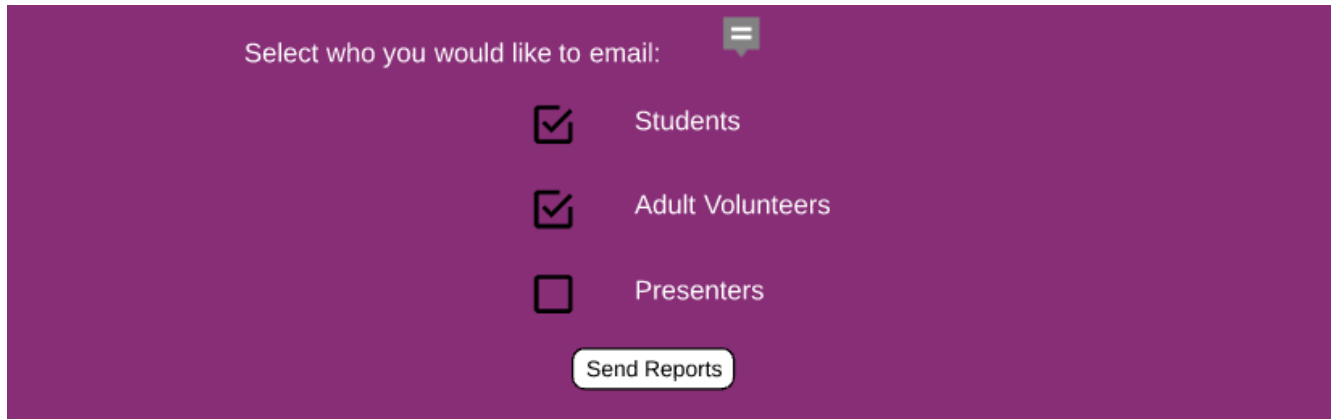
Select who you would like to email:

☑   Students

☑   Adult Volunteers

☐   Presenters

Send Reports

    The schedule generation page shall allow the user to generate certain reports on demand, print the reports, and email the reports.

14.5 School Info Form

The school information form allows for new schools to be entered into our database for students to choose from.
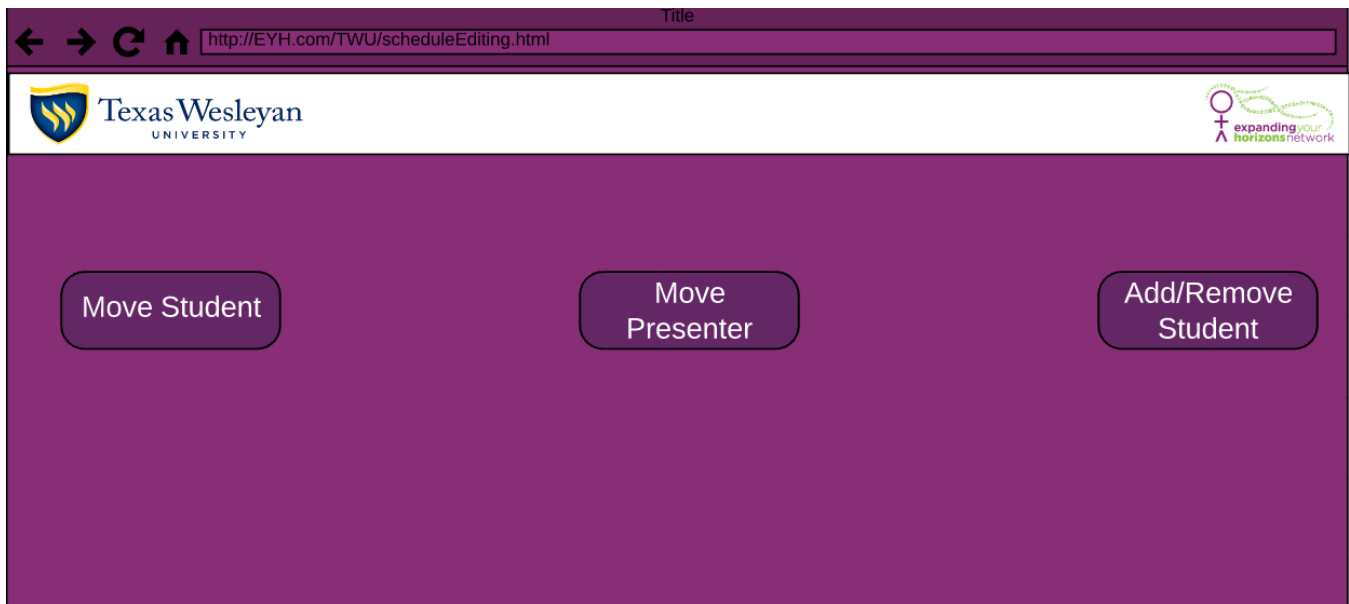
14.6 Cancellation Dialog
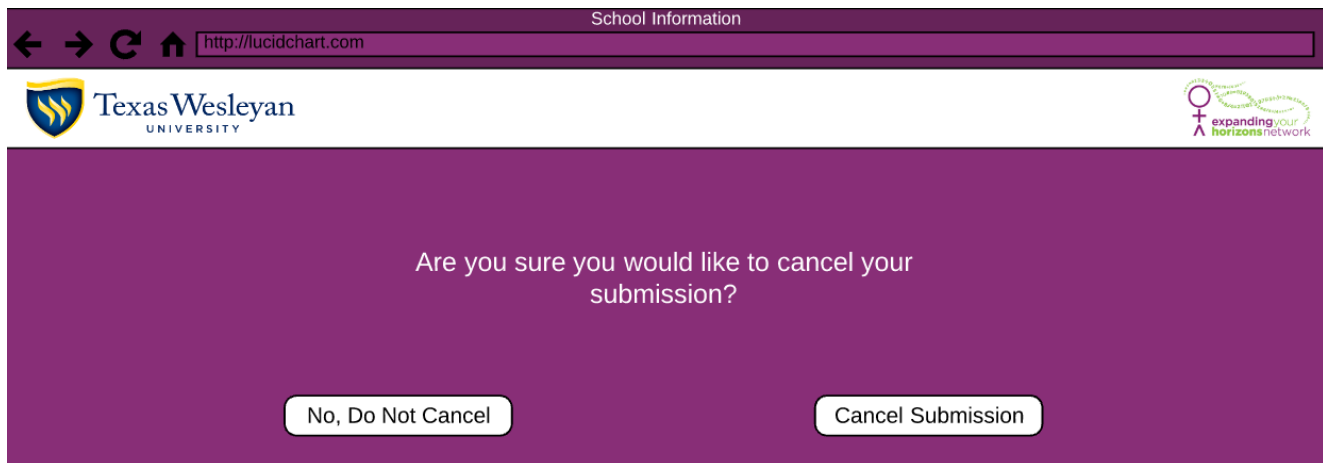
This dialog shall appear when the user follows a unique "cancel" link in their confirmation email and allows them to cancel their registration.

14.7 Schedule Editing Form

Upon loading the schedule editing form, the user shall choose between three options: move student, move presenter, and add/remove student. The user shall then be redirected to the appropriate form for their action.
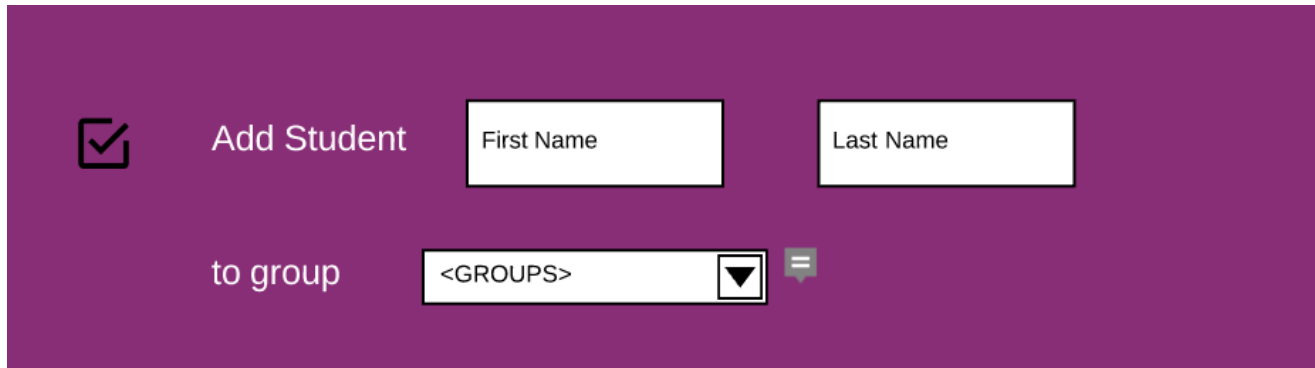

The move student form allows the user to move a student from one group to another through manual input. The schedule will become static at this point and can only be manipulated manually.

The move presenter form allows the user to move a presenter from one presentation to another through manual input. The schedule will become static at this point and can only be manipulated manually.

The add student form allows the user to add a student to a particular group through manual input. The schedule will become static at this point and can only be manipulated manually.

15 Appendix H: Resources

15.1 Hardcopy Forms

Student Registration Form
$5 Registration Fee * Note: No Refunds

Registration Deadline: March 11th! ! !

Space is limited, so register early! Registration confirmation will be sent to your home address the week of the conference.

Please print your name and address clearly.

Student Registration (PRINT)
LAST NAME

FIRST NAME

HOME ADDRESS

CITY   ZIP

SCHOOL

SCIENCE or MATH TEACHER (NAME)

What grade are you in?   □ 7   □ 8

Did you attend this conference last year? □ Yes   □ No

Girl Scout Troop Number [   ] (If applicable)

Workshop Number:
    1st Choice: [   ]   2nd Choice: [   ]

T-Shirt Size: □ S □ M □ L □ XL □ XXL
(Must attend to receive t-shirt)

_____
Student Signature   Date

_____
Parent Signature   Date

Make checks payable to Expanding Your Horizons.
Students may return registration to their science or math teacher or mail form and check to:
Expanding Your Horizons
Texas Wesleyan University

Adult Registration Form
$5 Registration Fee * Note: No Refunds

Registration Deadline: March 11th! ! !

Parent and teacher participation is important to the success of the conference. Thank you for making the day special for participants!

Adult Registration (PRINT)
LAST NAME

FIRST NAME

HOME ADDRESS

CITY   ZIP

SCHOOL (IF APPLICABLE)

□ Parent of one or more student attendees
□ Teacher of one or more student attendees
□ Girl Scout Troop Leader

Adults and teachers DO NOT attend student workshops!

All Adult Registrants will attend workshops and will also be required to volunteer and assist in general activities (refreshments, T-shirt/certificate distributor, etc.)

T-Shirt Size: □ S □ M □ L □ XL □ XXL

Make checks payable to Expanding Your Horizons.
Mail registration form and check to:
Expanding Your Horizons
Texas Wesleyan University
1201 Wesleyan St.
Fort Worth, TX 76105

15.2 Hardcopy Reports

15.2.1   Group List

Group List

GroupID	LastName	FirstName
1		
	Aguilar	Saira
	Barrioo	Emily
	Engebretson	Hannah
	Estrada	Madeline
	Gonzalez	Vanessa
	Hilburn-Shukers	Brazie
	Huynh	Diana
	Nicholas Payne	Zoe
	Oropeza	Lauren
	Pereyra	Jacqueline
	Shumate	Erin
	Terrones	Alejandra
	Torres	Natalie
	Turner	Samara
Group Size:	14	

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15.2.2   Students by Last Name

LastName	FirstName	Street	City	State	Zip	Attendee
Albright	Mandi	6304 Beetle	Watauga	tx	76148	☑
Bullock	Shirley	3815 Twincreek Rd.	Arlington	tx	76015	☑
Chandler	Kendra	1800 Foxbury Dr.	Euless	tx	76040	☑
Davis	Marivel	150 Country Vista Circle	Burleson	tx	76028	☑
Deutsch	Elizabeth	1200 CR 904	Joshua	tx	76058	☐
Farris	Clint	806 Ridgeway	Joshua	tx	76058	☑
Fernandez	Melissa	Rose 913	Crowley	tx	76036	☑
Hamilton	Rebecca	3705 Cr 805	Cleburne	tx	76031	☐
Hudspeth	Alisha	2942 Greenway Dr.	Burleson	tx	76028	☐
Jackson	Lisa	1119 Avatar Dr.	Grand Prairie	tx	75052	☑
Johnson	Day	505 Glenwood Dr.	Burleson	tx	76028	☑
Kearney	Cynthia	8356 Bowspirit	Hurst	tx	76053	☐
Kirkland	Virginia	3500 Timberline Dr #114	Grapevine	tx	76051	☑
Lewis	Carrie	1500 Lasierra Rd.	Fort Worth	tx	76134	☑
Lupercio	Carmen	1009 W Arlington	Fort Worth	tx	76110	☑
Mankel	Richard	2609 Lakeside Dr.	Burleson	tx	76028	☑

Handwritten note next to "Bullock": Bollock

Tuesday, April 05, 2016   **Page 1 of 3**

15.2.3 List of Group Leaders by Last Name

GROUP LEADERS

#	LAST	FIRST	TUESDAY MEETING	GROUP	T-SHIRT	SATURDAY
1	Ahumada 4B	Luz		1		
2	Askew	Jasmun	Jasmun Askew			
3	Averyt	Ashlie	Ashlie Averyt			
4	Butt	Naila				
5	Cabbril teacher	Barbara				
6	Ceballos 4B	Grecia		2		
7	Christ	Toria				
8	Clark	Brook				
9	Clark	Danielle				
10	Coronado 4B	Sandra		3		
11	Couey	Rebecca	Rebecca Couey			
12	Davis	Kathy	✓			
13	Esquivel	Elsa	Elsequivel			
14	Flores 4B	Alondra		4		
15	Freeman 4B	Janeisha		5		
16	Fulton	Audra	✓			
17	Gilchrist	Christine				
18	Gilchrist	Victoria				
19	Gonzalez 4B	Brenda		6		
20	Gray teacher	Kathryn				
21	Hafford	Jackie				
22	Hall	Aretha B.				
23	Hambley	Rachel				
24	Herrera 4B	Vanessa		7		
25	Hoover	Deborah				
26	Jimenez 4B	Nereida		8		
27	Johnson	Rachel	✓	leaves at noon		
28	Jolly	Mary				
29	Kelly 4B	Brianisha		9		
30	Lewis	Chelsey	Chelsey Lewis → leaves 1 p m			
31	Martinez	Rebecca	✓			
32	Nguyen	Tran	✓			
33	Nuñez attended	Ursula	Ursula Nuñez			
34	Piña	Jessica	Jessica Piña			
35	Price	Terri	✓			
36	Rayford	DeVontee	✓			
37	Robinson	Nikkina	??			
38	Rodriguez	Diana	Diana Rodriguez			
39	Rodriguez	Jackie	Jackie Rodriguez			
40	Rodriguez	Jessica	Jessica Rodriguez			
41	Romero 4B	Stephanie		10		
42	Rosser	Rene	Rene Rosser			
43	Schneider	Sandra	Sandra Schneider			
44	Wallact	Domika				
45	Woods 4B	Dalana		11		
46	Woods Tch P	Joy Melody	Joy Melody	10 12		
	Barraza	Debra				Tim Johnson #21

15.2.4   Workshop Equipment Needs Report

KEPORT

Workshop Equipment Needs

WorkshopTitle		Lab	Computer	Instructions	AM	PM
Slime: The Polymer!	Presentais (name, 1° for sort, etc)	☑	☐	311	☑	☑
Magical Mathematics		☐	☐	Overhead projector (or similar equipment), chalk or mar	☑	☐
Box City		☐	☐ ??	Audiovisual, tables, pencil sharpener	☑	☐
Women in Dentistry		☐	☑	Electrical outlets, screen and computer to play PowerPoi	☑	☐
The Doctor is In... the Library		☐	☑	Projector with computer; group desks for girls to work in	☑	☐
Suture Skills and What's Your Diagnosis		☐	☐	tables, chairs, good lighting, electrical outlets	☑	☐
Plants with a Past: Fossils Hold Clues to Ancient Climat		☐	☐ ?		☑	☐
Physics: A Peek into the Nano-World Kay bittler		☑	☑	Lab space, audiovisual, large tables, electrical outlets	☑	☐
Diagnosis Detectives		☑	☐	Overhead projector, lab space, sink	☑	☐
Let's Shine- Want a Bright Future?	→	☐	☐	DVD player, TV-large	☑	☑
Nurse Anesthesia		☐	☐		☑	☑
Not Just For Geeks		☐	☐	Overhead projector, small group tables and chairs	☑	☐
Designing Paper Airplanes		☐	☑	Classroom with a computer/projector, close enough to ta	☑	☐
Catching Babies		☐	☑	Tables, projector/computer	☑	☑
Cinderella syndrome		☐	☐	SbT - McF 111	☑	☐
Sun, Moon, and Shadow Dance		☐	☑	Computer with projector, large tables	☑	☑

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15.2.5   Student Group Program Schedule
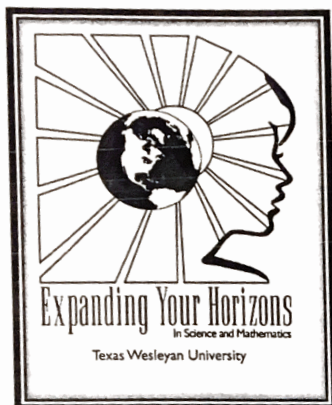
Expanding Your Horizons in Science & Mathematics

April 13, 2013

Group: 22

Expanding Your Horizons
In Science and Mathematics
Texas Wesleyan University

Program Schedule

Time	Event	Location
9:00 am	**Registration**	Sid Richardson Center
9:30	**Welcome** "Chemistry Magic Show"	Sid Richardson Gym
10:30	**Slime! The Polymer** Loraine S. Dieckmann	McF 311
11:25	**Engineers – We Hook It Up!** Becky Bittle	McF 207
12:10 pm	**Pizza Lunch**	Sid Richardson Gym
12:50	**Diagnosis Detectives** Brenda Garris	McF 201
1:45	**Low Temperature Physics** Maria Salgueiro	McF 106
2:30 pm	**Finale**	Sid Richardson Gym

15.2.6   Adult Program Schedule