ISDS 4125
SPRING 2024

LAIT

Lauren Bergeron - Ben Davidson
Matt Herbert - Travis Starkey

PRESENTED TO:
Dr. Sonja Wiley

APRIL 22, 2024

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MEET THE TEAM

Ben Davidson

Ben is a senior ISDS major, and has a passion for data science and analytics. As project manager, Ben is responsible for orchestrating team meetings and ensuring all material is turned in on time.

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Travis Starkey

Travis is a senior ISDS major. He has a strong inclination for Cybersecurity, Database Administration, and Data Analytics. As a Technical Specialist, Travis will be responsible for leveraging his expertise in these areas to optimize our technological tools, systems, and solutions. As well as provide ongoing maintenance and support.

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MEET THE TEAM

Lauren Bergeron

Lauren is a senior ISDS major. Lauren is responsible for providing relevant research to guide the project.

lberg32@lsu.edu | 256-702-7349

Matt Herbert

Matt is a senior ISDS major with a minor in analytics. He is responsible for gathering, storage, and retrieving the companies' data. As DBA he will also ensure the data is secure and available for usage.

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EXECUTIVE SUMMARY

LAIT is working with Christ the King church to increase efficiency during the marriage preparation process. This will be accomplished by creating a system able to keep track of what paperwork needs to be done and what has been completed. Another key feature will be the capability to send update emails to members within the church.

Currently, the church uses manual checklists and word of mouth to communicate how far along a couple is during the marriage process. We hope to accomplish two main goals with our initiative, to increase organization and simplify the process of marriage.

SYSTEMS REQUEST

Project Sponser:

Fr. Mathew Dunn Christ the King Pastor

Business Need:

To implement a digital checklist for each couple undergoing the marriage preparation process, along with email notifications to monitor completed and outstanding tasks.

Business Value:

This system will increase organization and efficiency for the organization. It will aid in verifying all required tasks during the marriage preparation process are completed and done so on time.

Business Requirements:

The digital checklist must be user friendly and intuitive to use. It must also be accessible to several staff members. The email reminders must be automated and accurate.

Special Issues or Contraints:

- All of the documents they collect contains sensitive information.
- The implementation of the system may be challenging as some individuals in the organization may not be tech savvy.
- Diocese may require physical copies of files.

WORK PLAN

TASK ID	TASK NAME	ASSIGNED TO	START DATE	END DATE	STATUS
1	Planning	All	1/23/2024	TBD	Open
1.1	Team Formation	All	1/23/2024	1/30/2024	Closed
1.2	Team Formation Document	All	1/23/2024	2/5/2024	Closed
1.3	Interview	Lauren	2/14/2024	3/3/2024	Closed
1.4	Systems Request	Lauren	2/14/2024	3/3/2024	Closed
1.5	Interview Summary	Lauren Bergeron, Ben Davidson	2/14/2024	3/3/2024	Closed
2	Deliverable 1	All	3/3/2024	3/24/2024	Closed
2.1	Executive Summary	Lauren Bergeron	3/3/2024	3/24/2024	Closed
2.2	Use Cases	Travis, Lauren	3/3/2024	3/24/2024	Closed
2.3	Feasibility Analysis	Ben	3/3/2024	3/24/2024	Closed
2.4	Requirements Definition	Matt	3/19/2024	3/24/2024	Closed

WORK PLAN

TASK ID	TASK NAME	ASSIGNED TO	START DATE	END DATE	STATUS
3	Process Model	All	3/19/2024	3/24/2024	Closed
3.1	Data Model	Ben	3/19/2024	3/24/2024	Closed
3.2	Feasibility analysis	All	3/19/2024	3/24/2024	Closed
4	Prototype	Travis, Matt	3/19/2024	4/05/24	Closed
4.1	Apply Logos	Lauren	4/01/24	4/05/24	Closed
4.2	Refine Prototypes	Travis, Matt	4/06/24	4/05/24	Closed
4.3	Beta Testing	Travis, Matt	4/06/24	4/05/24	Closed
5	Train Users	Lauren	TBD	-	Open
5.1	Integration with Systems	Travis, Matt	TBD	-	Open
6	Deliverable 2	All	4/06/24	4/22/24	Closed
7	Deliverable 3	All	TBD	-	Open

FEASIBILITY ANALYSIS

Economic Feasibility

- Christ the King should not have to pay anything for operation of our system.
- Automating emails and the pre -marriage checklist will save the organization time and money.

Technical Feasibility

- None of the technology being deployed is very complicated to use, normal users could use it without much learning.
- This is a relatively small project, and not too many parts of the organization are being touched.
- We will create a custom interface to administer our solution.

Organizational Feasibility

- This project is risk free, and the potential upside could save hours a week.
- The interface will be very simple, so volunteers will be able to easily understand the technology.
- Will stand alone from the other It systems, integration is easy.

REQUIREMENTS DEFINITION

Functional Requirements

1. Process-oriented
   - The system must send emails to key members about updates on pre-marriage documents.
   - The system should allow certain users to receive a checklist of the progress using an email address.
2. Information-oriented
   - The system must contain tasks needed for marriage preparation.
   - The system should contain a task bar with how far marriages are along.
   - The system should have a key identifier of couples to quickly find the couple.

Non-Functional Requirements

1. Operational
   - The systems should run on windows devices.
   - The system should be able to be accessed on mobile devices.
2. Performance
   - The database should be updated instantly.
   - The data should be available 24 hours a day.
   - The system should be able to scale and hold large amounts of data.
3. Security
   - Top level management should have access to the information.
   - Anyone close to overseeing marriage should have access to detailed information.
4. Cultural and Political
   - Information should be in compliance with data protection policies.

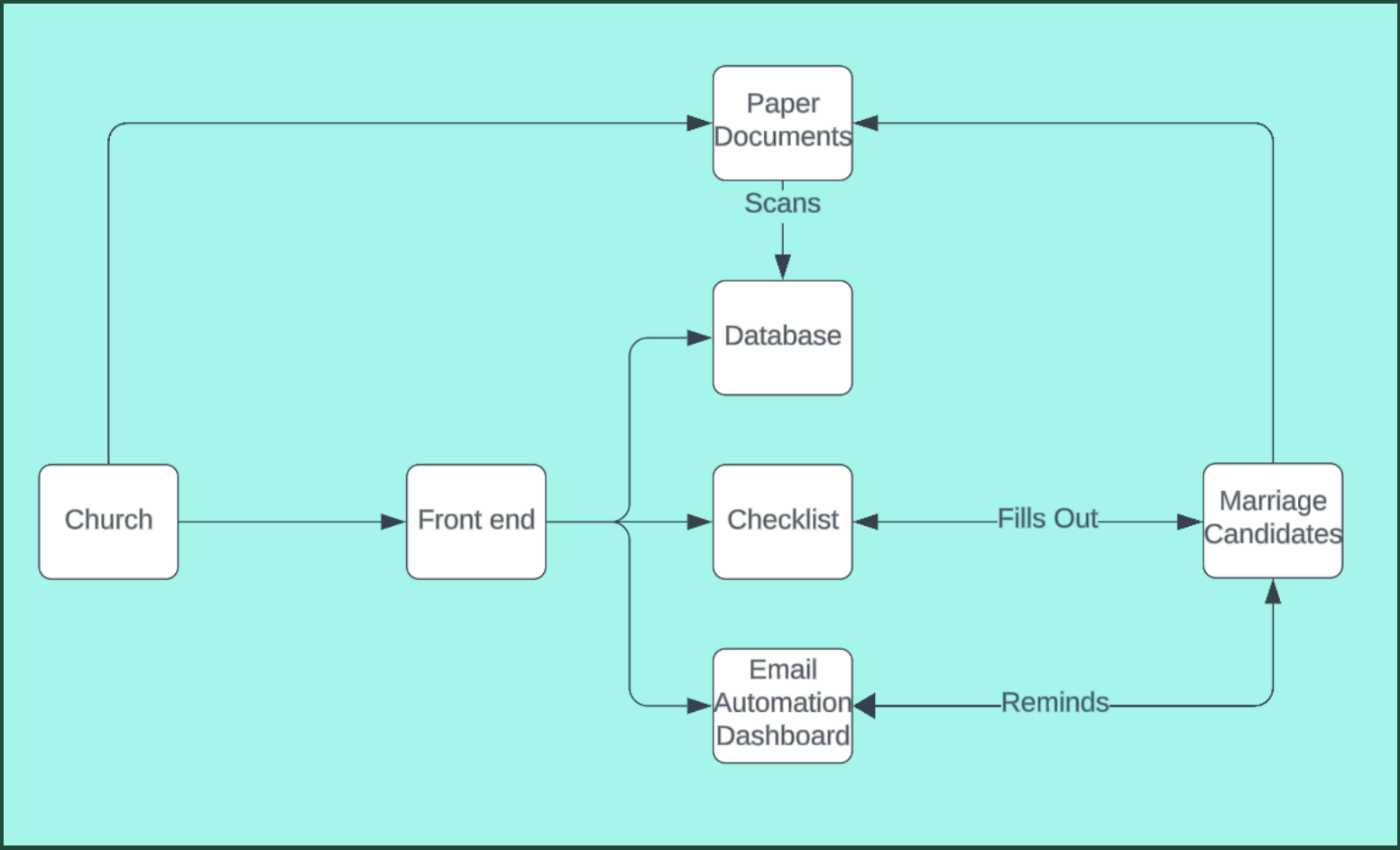
USE CASE

Use Case Name: Pastor checks off completed task on to-do list	ID: 1	Priority: High
Actor: Pastor		
Description: Pastor marks a task on the marriage preparation as completed.		
Trigger: A marriage canidate has submitted a file to the church office.		
Type: Temporal		
Preconditions: 1. Pastor is authenticated when he logs into account. 2. The system is online and functioning.		
Normal Course: 1. Pastor logs into website. 2. Pastor opens the couple's profile. 3. Pastor checks off that task has been completed.		
Post Conditions: 1. Task status is complete. 2. Pastor is notified through automated email that task has been completed. 3. Pastor is notified through automated email what task still require attention.		

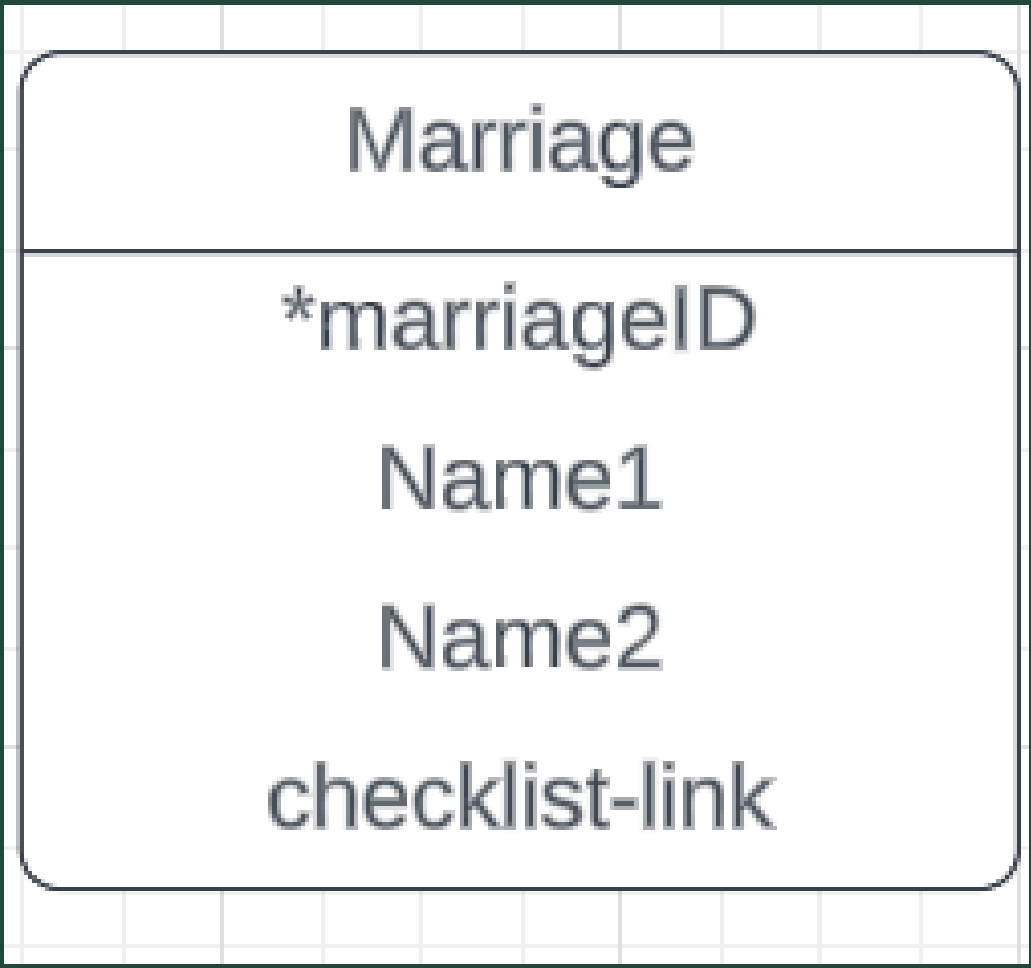
USE CASE

Use Case Name: Storing Marriage Files	ID: 2	Priority: High
Actor: Church Staff Member		
Description: A staff member will store marriage files in the database for digital record-keeping.		
Trigger: A designated staff member receives the marriage files.		
Type: External		
Preconditions: 1. Marriage preparation files are received from couples preparing for marriage. 2. Designated church staff members have access to the files and the database system.		
Normal Course: 1. The designated staff member receives marriage files from couples. 2. The staff member verifies the completeness and accuracy of the files. 3. The staff member uploads the digital copies of the files into the database system. 4. The staff member ensures that all necessary information is accurately recorded in the database. 5. Once stored in the database, the staff member confirms successful storage and ensures the security of the digital records.		
Post Conditions: 1. Marriage files are securely stored in the database system. 2. Digital copies of the files are accessible for reference and retrieval by authorized personnel. 3. Any paper documents may be securely archived or disposed of according to the church's document retention policies.		

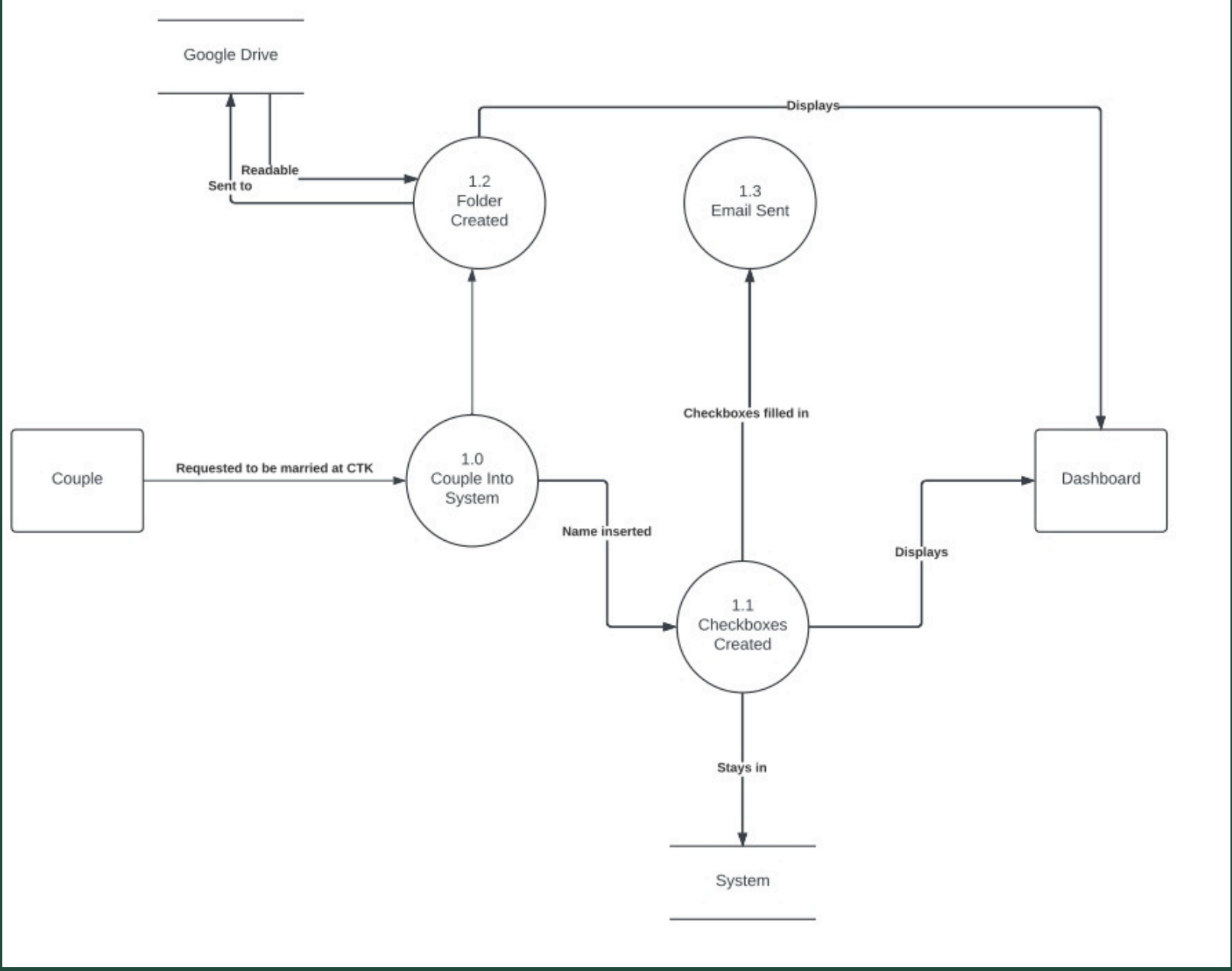
PROCESS MODEL



OLD DATA MODEL



Process & Data Model of To-Be-System



CRUD Matrix

	Fetch Couple Data	Create User Data
CoupleID	R	C
CoupleName	R	C
Question 1	R	U
Question 2	R	U
Question 3	R	U
Question 4	R	U
Question 5	R	U

**All Diagrams in this document have been validated, balanced, and normalized to ensure proper flow of data.

Alternative Matrix

Evaluation Criteria	Importance (Wgt)	Alternative 1: Custom Google	Score (1-5)	Weighted Score	Alternative 2: Purchase Hubspot CRM	Score (1-5)	Weighted Score
Technical Issues							
Ease of Use	25	Spreadsheet format	5	125	Fairly easy to use	4	100
Ability to Customize	10	Tailored to client	4	40	Premade design	2	20
Functionalities	10	Offers extensions	4	40	Offers email	5	50
Economic Issues							
Cost of Implementing	15	No startup cost	5	75	Fee to Start	1	15
Save Money	10	Save longterm	4	40	Pay more	3	30
Organizational Issues							
Friendly User Interface	10	Customize design	4	40	Premade design	3	30
Standalone Project	5	Not integrated	5	25	Need integration	3	15
Easy to Learn	15	Semi Difficult	3	45	Not user friendly	3	45
Total	100			430			305

Architecture Design

Database: All couples scanned documents will be stored in their respective folders inside of Google Drive (document management system).

Security: Google drive and sheets have heavy access controls, 2FA, 2 forms of encryption, audits and logs, and data loss prevention. All of these security measures will be used.

Temporary Storage (suggested): Folder on local system in order to temporarily place scanned documents that will be uploaded to a couples folder in google drive. It can be deleted once uploaded to the drive

Digitizing paper documents: Access to printer/scanner. In order to scan papers and put them in PDF format.

Dashboard: Google Sheets will serve as the dashboard. This is where the checklist, links to folders, progress bar, and couples status is located.

Scripts: Google apps script is an extension within Google Sheets. This allows us to automate task and to execute certain functions within Google Sheets.

Hardware & Software Specifications

Operating System:

- Windows 10 and Up
- iOS

Special Software:

- Google Drive
- Google Sheets

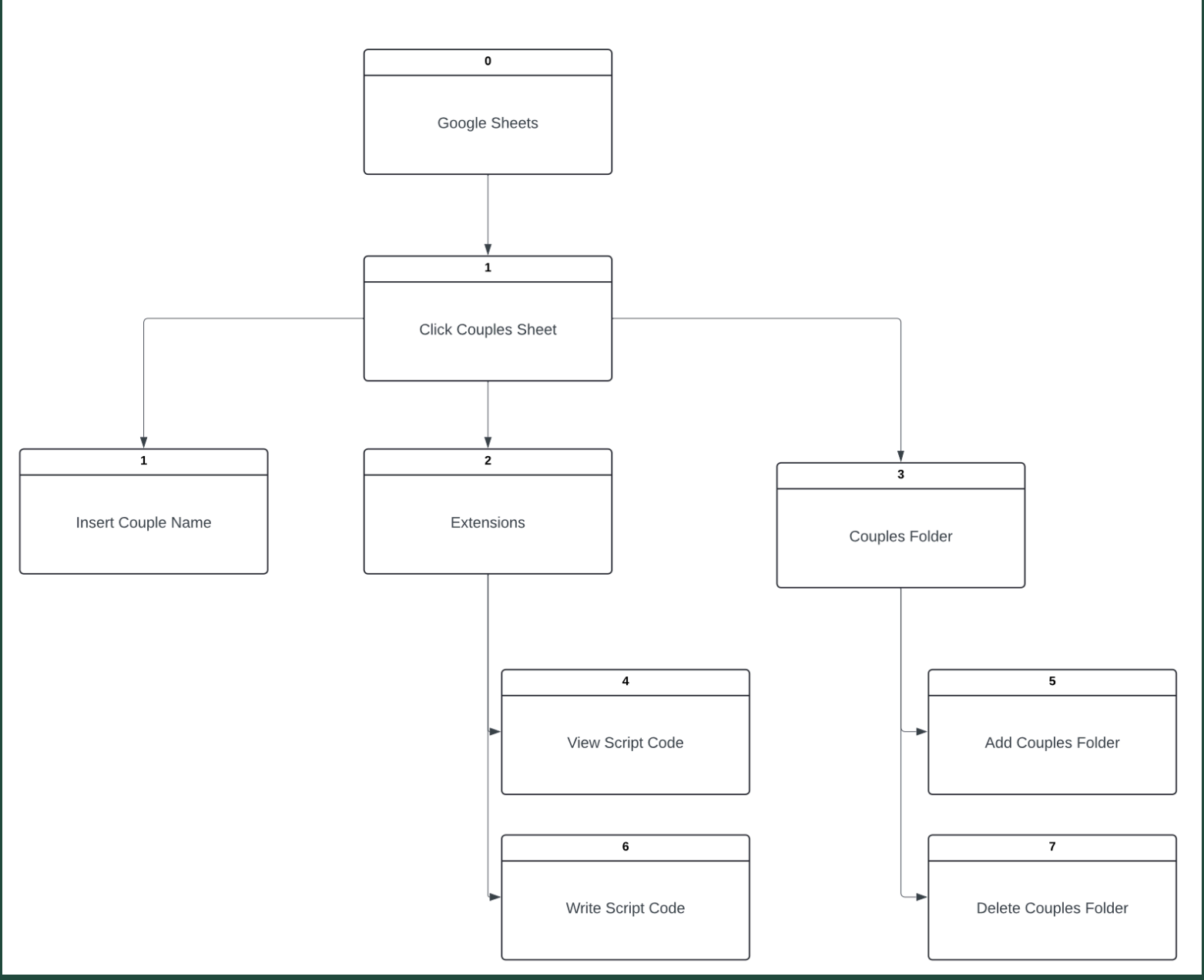
Hardware:

- Intel i3-13100 or greater
- 1 GB RAM
- 500 GB Storage Device

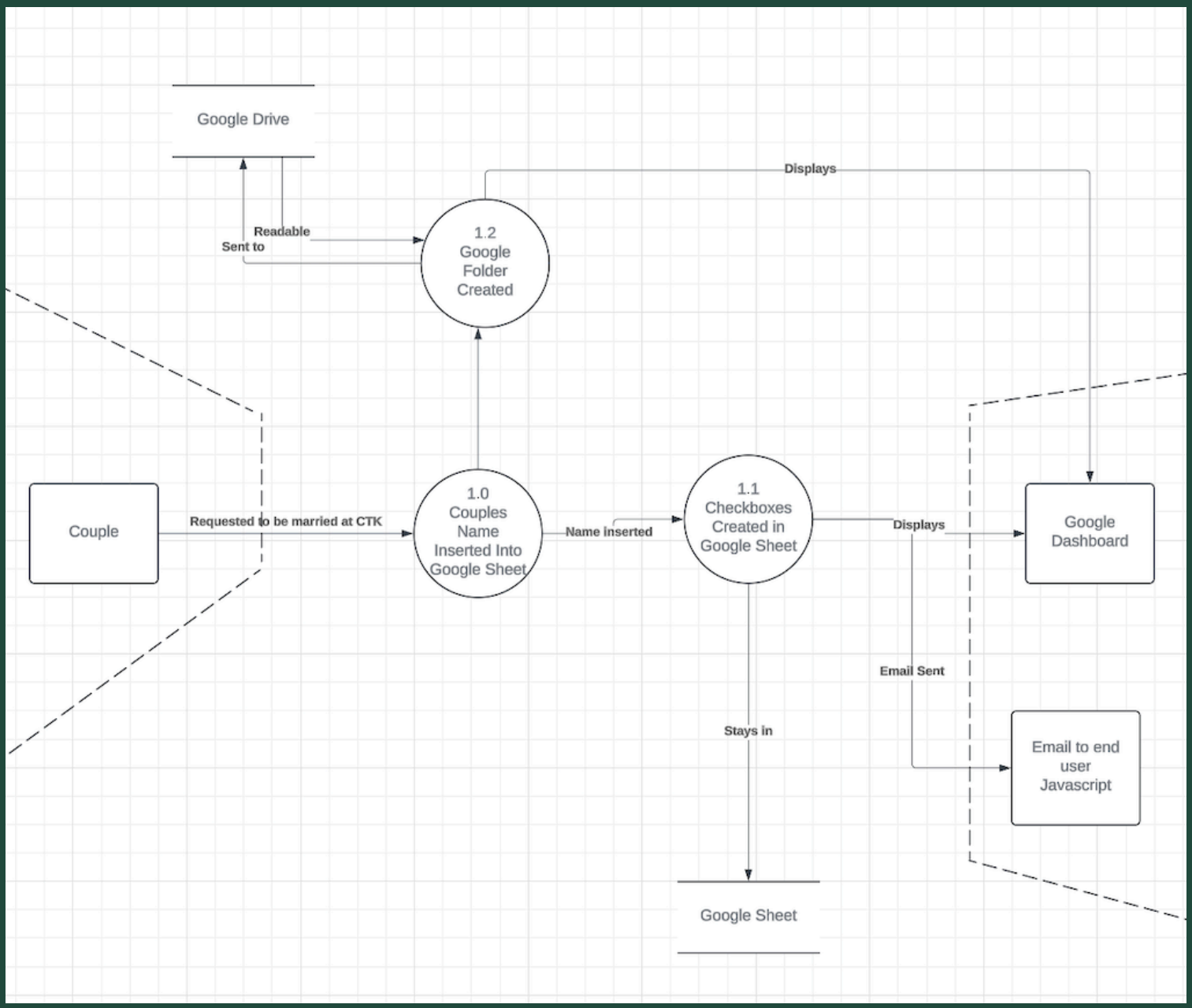
Network:

- Reliable internet connection to stay connected to the Google Cloud

Interface Design

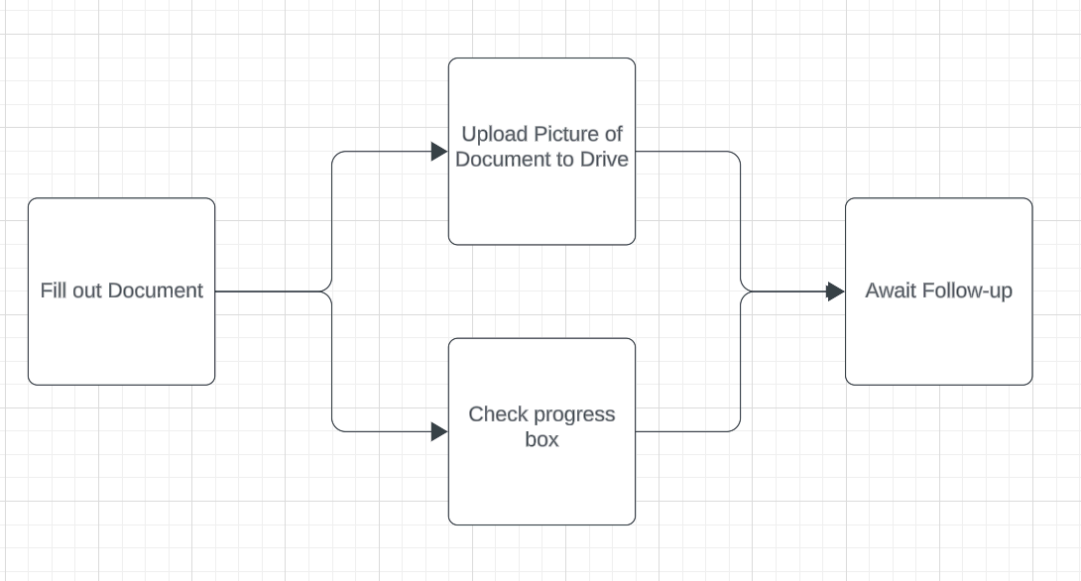


Physical Process Model

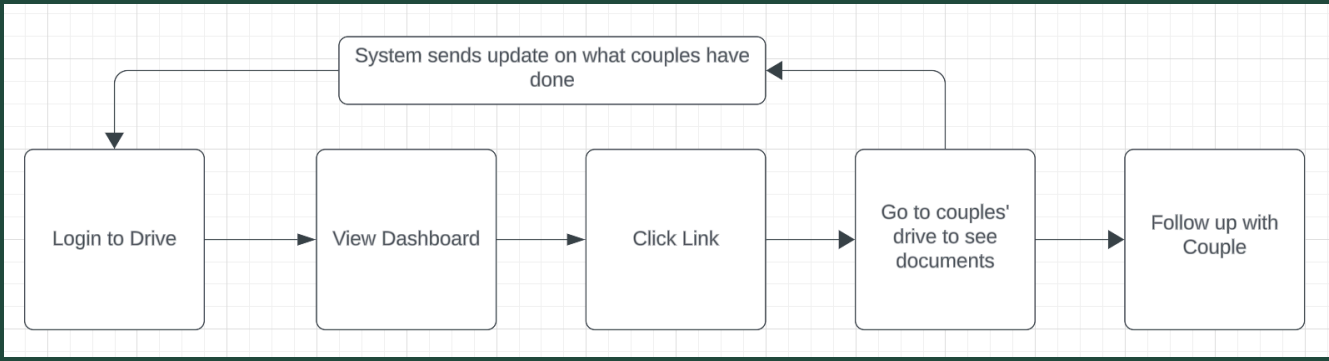


Structure Chart

Couples' End



Church End



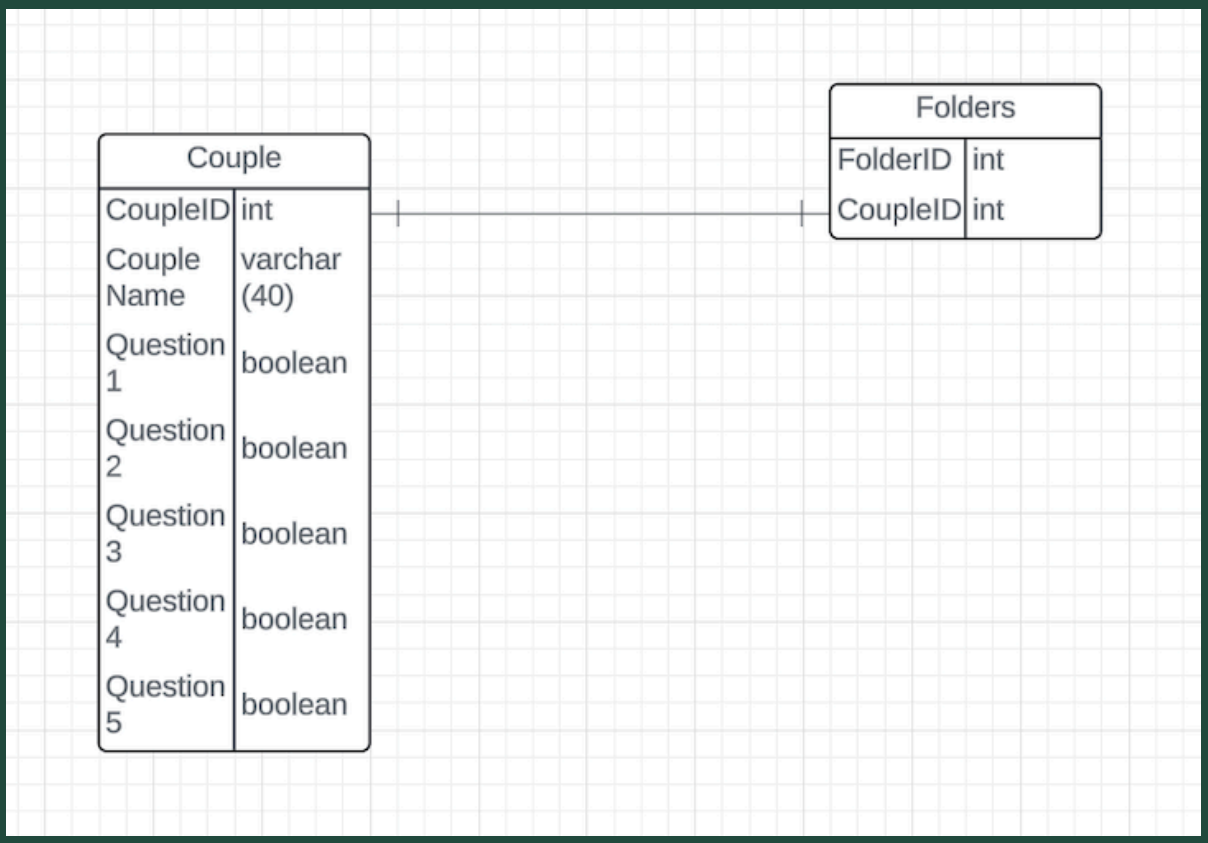
Program Design Specifications

The programming language used was JavaScript. We used Google Apps Script to automate task and to execute functions within google sheets. App Script is an extension within sheets. There are 3 files in the Apps Script extension with comments written in our code explaining each section for future programmers. More information on these files are located in appendix 2.

Dashboard

Input	Output
Insert couple's names in column A	Checkboxes populate in the corresponding row. Default incomplete status for column L for that row until all boxes are checked.
Checking boxes	Progress bar will increase. When all boxes are checked off, the status column L will change to complete in that corresponding row. There is conditional formatting to also make the entire row turn green once complete.
Paste Couple's Google Drive folder link in Column	Now once you click the link it will take you directly to that couple's folder where all of there scanned documents will be stored. Now you will be able to view documents or upload more.
Editing a name	If you made a typo for a couple's name, you can edit it without the content changing in that row
Deleting a couple from a row	When you delete a couple out of a row the boxes in that row will clear out and the status will return to incomplete.

Physical Data Model



Couple (CoupleID, Couple Name, Question 1, Question 2, etc.)

- Holds the couples information from dashboard

Folders (FolderID, CoupleID)

- Information regarding the folders created

Data Storage Design

Couple's Name	Question 1	Question 2
Mary & Scott	TRUE	TRUE
James & Rebecca	TRUE	TRUE
Michael & Reese	FALSE	FALSE

Database Type: Relational

Storage Size: 15 GB

FolderID	Couple's Name
1	Mary & Scott
2	James & Rebecca
3	Michael & Reese

ADA Formatting Compliance

LAIT is committed to implementing a system that accessible for all users in accordance to the ADA Formatting Guidelines. By using the Web Content Accessibility Guidelines (WCAG 2.1), we were able to track our systems features to make sure they meet the applicable success criteria.

Screenshots

Couples Names	Put your Wedding Date on a Church Calendar	Set your Rehearsal Date	Baptismal Certificate	COMPLETED ALL TASK	Documentation Folder Links	Progress Bar
Mike L & Rebecca R	☑	☑	☑	Complete	Mike L & Rebecca R	
Stephanie M & Jack H	☑	☑	☑	Complete	Stephanie M & Jack H	
LeBron J & Savannah J	☑	☑	☑	Complete	LeBron J & Savannah J	
Jake R & Ella K	☐	☐	☐	Incomplete	Jake R & Ella K	
Jeffrey M & Jasmine K	☐	☐	☐	Incomplete	Jeffrey M & Jasmine K	

Marriage Preparation Checklist Update Inbox ×

C [redacted]@gmail.com

to me

Dear Pastor,

The following couples have NOT completed all tasks:

Jake R & Ella K
Jeffrey M & Jasmine K

Please follow up with them.

Sincerely,
Your Church

Shared with me › Christ the King Docume...

Type | People | Modified

Name	Owner	Last modified	File size
Jake R & Ella K	[redacted]	1:58 AM me	—
Jeffrey M & Jasmine K	me	1:58 AM me	—
LeBron J & Savannah J	me	1:57 AM me	—
Mike L & Rebecca R	[redacted]	1:57 AM me	—
Place Holder	me	1:56 AM me	—
Stephanie M & Jack H	me	1:57 AM me	—

APPENDIX 1: INTERVIEW SUMMARY

Person Interviewed:
Fr. Mathew Dunn

Interviewer:
Lauren Bergeron

Purpose of Interview:

1) To gain an understanding of the data that they currently store and interact with.
2) Determine how the system they would like to be put into place would function.
3) Determine how the desired system will add value to their organization.

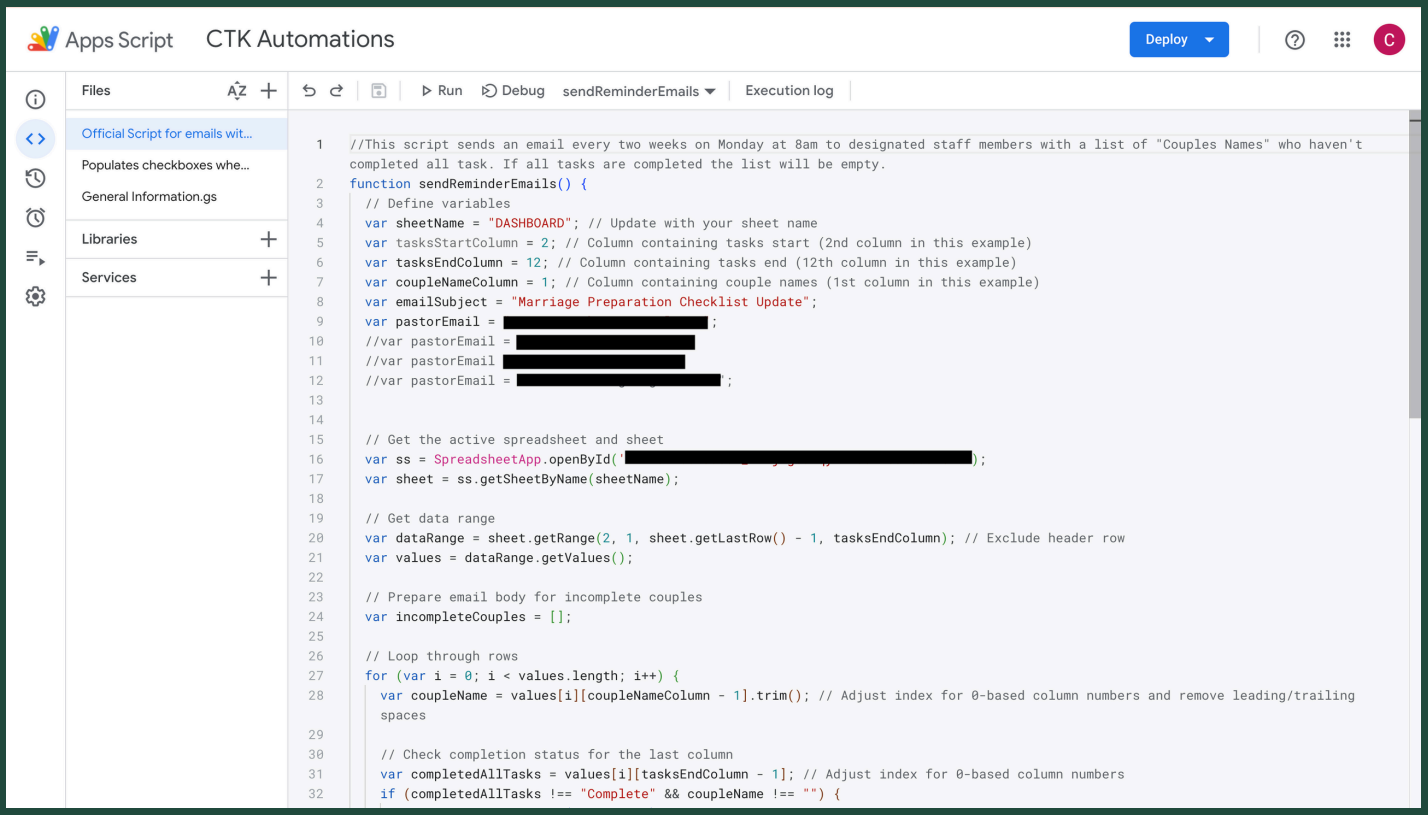
Summary of Interview:

Father Mathew discussed the existing methodologies employed for storing, managing tasks, and documentation required for marriage preparation. A challenge they encounter is monitoring what has already been accomplished and what tasks need to be completed. There are several individuals who access and update this information making this process more difficult. Fr. Mathew's primary goal is to have a virtual checklist that can be accessed and interacted with by multiple individuals. Additionally, he expressed a desire for automated email reminders sent to him delineating both completed and outstanding tasks. A secondary goal of the system, if time allows, involves the digitization and storage of files within the system.

Open Items:

- Determine exact timeline for email notifications
- Aquire detailed marriage preparation checklist
- Discuss timeline for implementing system
- Explore feasibility for digitizing files

APPENDIX 2: Code



File #1: This script sends an email every two weeks on Monday at 8am to designated staff members with a list of "Couples Names" who haven't completed all task. If all tasks are completed the list will be empty. Fetches data from the dashboard from columns 1-12 and process what couples have a status of complete or incomplete for completed all task.

File #2: This script populates checkboxes in the corresponding row where couple's names are added. Allows edits to a name in a row without changing the content in that row. Changes status in Column L to complete or incomplete for the corresponding row when all boxes are checked. The default status when all boxes are not checked is incomplete. If a name is completely deleted from Column A "Couples Names" the checks from checkboxes will clear and Column A status will return to incomplete. Dont worry, since there will be no name in that corresponding row there wont be a name provided in the email until it is filled again. That row is null until filled again.

File #3: General Information: There are 979 rows in this Dashboard. Christ the King averages about 12 marriages a year. This means that they can get 82 years of use out of this Dashboard.