

Will be following this example for high level design

<https://pythonalgos.com/2021/12/14/how-to-create-a-high-level-design-document/>

High level design notes: I understand that in its current state it is hard to read. It will be very hard to read, unless the general document is descoped. I can explain more if needed, essentially just details entry points, front end views, and the back end that these interact with. In order to complete this holistically, we need to decide which features we are ultimately keeping.

Media Mementos

MM1 User Story^[17]: Attach Media

As an authenticated user I can attach 0-3 media files to an LLI^[3], to personalize my experience of accomplishing the LLI^[3].

Effort Points - 100 points

Complexity Level - Medium

User Input

Required Input

- Media File(s)
 - Must be a .jpg or .png file for image
 - Must be a .mp4 file for video
 - File must be less than 50MB
 - The total capacity for media attached to an LLI^[3] must be below 50MB
 - The total capacity for media attached to all LLIs^[3] must not exceed 1GB
 - Not nullable

App Permissions

- Permission: Read and Write

- Scope: LLI^[3]

Target Audience - All authenticated normal user

Pre-conditions

1. The user is registered
2. The user is authenticated
3. The authenticated user selects an LLI^[3] to attach media to

Success Outcome(s) -

- Media files are saved to the persistent data store
- Media files are related to the selected LLI^[3] in the relational database
- All inputs meets validation requirements in User Input section
- Media files belong to the types of files specified in the input
- Media files fits the file sizes specified in input
- The media files are saved within 3 seconds
- A message saying “Media has been successfully attached” is displayed, if the medias are successfully attached
- The upload media operation is logged to the persistent data store
- The following is included in the log:
 - Timestamp
 - When the upload media operation is started
 - When the upload media operation has completed
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Success)
 - Log type (View)
 - Log message: “Upload media operation completed successfully”

Failure Outcome(s) -

- Media files are not saved to the persistent data store, a message stating “Media upload failed” is displayed to the user
- Media files are not attached to the selected LLI^[3], a message stating “Media upload failed” is displayed to the user
- All inputs do not meets validation requirements in User Input section, a message stating “Invalid files” is displayed to the user
- Media files do not belong to the types of files specified in the input, a message stating “Invalid filetype(s)” is displayed to the user
- Media files do not fits the file sizes specified in input, a message stating “Invalid file size” is displayed to the user
- The media files are not saved within 3 seconds
- A message saying the medias are successfully attached is not displayed, if the medias are successfully attached
- The user attaching media files is not logged in the persistent data store, this will not stop the user from interacting with the system
- The operation is logged, but the log does not accurately depict any of the following:
 - Timestamp
 - When the recommendation engine operation is started
 - When the recommendation engine operation encountered an error
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Failure)
 - Log type (View)
 - Log message: “Media upload encountered an error...”, along with information identifying the error

MM2 User Story^[17]: View Media

As an authenticated user, I can view a media memento that I have uploaded into my LLIs^[3], allowing me to come back to personal media.

Effort Points - 75

Complexity Level - Medium

App Permissions

- Permission: Read
- Scope: LLI^[3]

Target Audience - All authenticated normal user

Pre-conditions

1. The user is registered
2. The user is authenticated
3. The authenticated user selects an LLI^[3]

Success Outcomes

- A media attached to a LLI^[3] is displayed to the user
- The media displayed is a file that belongs to the LLI^[3]
- The media appears within 3 seconds
- The user viewing media files is logged in the persistent data store
- The following is included in the log:
 - Timestamp
 - When the view media file(s) operation is started
 - When the view media file(s) operation has completed
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Success)
 - Log type (View)
 - Log message: "A user has viewed their media files"

Failure Outcomes

- A media attached to a LLIs^[3] is not displayed to the user, a message stating: “LLI view is unavailable” is displayed to the user
- The media displayed is not a file that belongs to the LLI^[3]
- The media does not appear within 3 seconds, a message stating: “LLI view is unavailable” is displayed to the user
- The user viewing media files operation is not logged in the persistent data store
- Any of the following is inaccurate in the failure log:
 - Timestamp
 - When the view media file(s) operation is started
 - When the view media file(s) operation encounters an error
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Failure)
 - Log type (View)
 - Log message: “A user has failed to view their media”

MM3 User Story^[17]: Delete Media

As an authenticated user, I can delete one stored media memento file at a time on an LLI^[3], granting me full control over my media mementos.

Effort Points - 75 points

Complexity Level - Low

App Permissions

- Permission: Delete
- Scope: LLI^[3]

Target Audience - All authenticated normal users

Pre-conditions -

1. The user is registered
2. The user is authenticated
3. The authenticated user has uploaded media to their selected LLI^[3]

Success Outcome(s) -

- The media file is deleted from the persistent data store
- The media file is deleted from the LLI^[3]
- The media file is deleted within 3 seconds
- A message saying that the media file was successfully deleted is displayed to the user
- The user deleting a media file is logged in the persistent data store
- The following is included in the log:
 - Timestamp
 - When the delete media file operation is started
 - When the delete media file) operation has completed
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Success)
 - Log type (View)
 - Log message: "A user has deleted a media file"

Failure Outcome(s) -

- The media file is not deleted from the persistent data store, a message stating "Media failed to be deleted" is displayed.
- The media file is not deleted from the LLI^[3], a message stating "Media failed to be deleted" is displayed.
- The media file is not deleted within 3 seconds, a message stating "Media failed to be deleted" is displayed, and the deletion operation is aborted
- A message saying that the media file was successfully deleted is not displayed to the user, if the media file was successfully deleted
- The user deleting a media file is not logged in the persistent data store

- Any of the following is not accurately depicted in the log:
 - Timestamp
 - When the delete media file operation is started
 - When the delete media file) operation has completed
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Failure)
 - Log type (View)
 - Log message: “A user attempted to delete a media file”, along with information detailing as much as possible about the error

LLI Recommendation Engine^[4]

RE1 User Story^[17]: Get LLI^[3] Recommendation

As an authenticated user, I can use the recommendation engine to have 5 LLI^[3] recommended to me based on scores generated from only survey results and past LLI^[3] to view.

Effort Points (hours) - 200

Complexity Level - High

App Permissions

- Permission: Read and Write
- Scope: All Lifelog User's Public LLI

Target Audience - All authenticated normal user(s)

Pre-conditions -

1. The user is registered
2. The user is authenticated

3. The authenticated user has completed the user form^[16]
4. The authenticated user is on the “Recommendation Engine” view

Success Outcomes

- Recommended LLI^[3] title must be an alphanumeric string of characters of length 1-50, not null
- Recommended LLI^[3] must belong to at least one of ten LLI^[3] categories
 - The valid category/categories are “Mental Health^[5]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”
- Recommended LLIs^[3] title and status must exist together as an item in the persistent datastore of public LLI^[3]
- The 5 recommended LLI^[3] will be of correct categories, meaning:
 - 2 LLIs^[3] will have the category of the user’s highest rated category according to category’s score
 - 1 LLI^[3] will have the category of the most common category in public user’s LLI^[3]
 - 1 LLI^[3] will have the category of the second highest scoring category
 - 1 LLI^[3] will have the category of any category excluding the 2 highest scoring categories
- A LLI^[3] of a category is not recommended if the category’s score is below 2
- A LLI^[3] is not recommended if an LLI^[3] with the same title has been set as complete by the user, within a year from today's date
- 5 LLI^[3] are pulled from the persistent data store
- 5 LLI^[3] are recommended within 3 seconds
- A message saying something went wrong with the recommendation engine is displayed to the user, if error occurs
- The recommendation engine operation is logged to the persistent data store
- The following is included in the log:
 - Timestamp
 - When the recommendation engine operation is started

- When the recommendation engine operation has completed
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
- Log level (Success)
- Log type (View)
- Log message: “Recommendation engine accurately provided a user with 5 recommendations”

Failure Outcomes

- Recommended LLI^[3] title is not an alphanumeric string of characters of length 1-50
- Recommended LLI^[3] does not belong to at least one of ten LLI^[3] categories
- Recommended LLIs^[3] title and status do not exist together in an item in the persistent datastore of public LLI^[3]
- A LLI^[3] is recommended if an LLI^[3] with the same title has been set as complete by the user within a year from today's date
- The recommended LLI^[3] are the correct LLI^[3] to recommend, meaning their categories do not follow any of these rules:
 - 2 LLIs^[3] will have the category of the user's highest rated category according to category's score
 - 1 LLIs^[3] will have the category of the most common category in public user's LLI^[3]
 - 1 LLIs^[3] will have the category of the second highest scoring category
 - 1 LLIs^[3] will have the category of any category excluding the 2 highest scoring categories
- A LLI^[3] is recommended with a category scoring lower than 2
- 5 LLI^[3] are not pulled from the persistent data store
- 5 LLI^[3] are not recommended within 3 seconds
- A message saying something went wrong with the recommendation engine is not displayed to the user, if any error occurs with the recommendation process

- The LLI^[3] recommendation operation is not logged to the persistent data store
- The operation is logged, but the log does not accurately depict any of the following:
 - Timestamp
 - When the recommendation engine operation is started
 - When the recommendation engine operation encountered an error
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Failure)
 - Log type (View)
 - Log message: “Recommendation engine encountered an error...”, alone with information identifying the error

RE2 User story^[17]: Add Recommended LLI^[3]

As an authorized user, I can add as many LLI^[3] as I want that are recommended by RE1 to my account, saving them as a personal goal.

Effort Points (hours) - 100

Complexity Level - Medium

User Input

The user can modify parts of the LLI recommended by RE1, these are the validation requirements for those modifications on the existing recommended LLI

Optional Input

- Modification of LLI^[3] title
 - Must only contain alphanumeric values

- Must be between 1-50 characters long
 - Default value is the title of the referenced LLI^[3]
 - Not Nullable
- Category/Categories of LLI^[3]
 - The valid options are “Mental Health^[5]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”
 - Default value is the category of the referenced LLI^[3]
 - Not nullable
- Description of LLI^[3]
 - Must consist only of alphanumeric values between 0-200 characters long
 - Default value is null
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - Default to “Active”
 - Not nullable
- Visibility of LLI^[3]
 - The valid options are “Public, Private”
 - Default to “Public”
 - Not nullable
- Deadline of LLI^[3]
 - Must be a valid date in the format MM/DD/YYYY
 - The date must be between 01/01/1900 AD and 12/31/2100 AD
 - Default deadline is null
- Cost of LLI^[3]
 - Must be a numerical value greater or equal to 0
 - Default cost is null

Pre-conditions -

1. The user is registered

2. The user is authenticated
3. The authenticated user has completed the user form^[16]
4. The authenticated user has activated the recommendation engine

App Permissions

- Permission: Write
- Scope: Lifelog User's LLI

Target Audience - All authenticated normal users

Success Outcomes

- A new LLI^[3] is saved to the persistent data store with accurate information
- The new LLI^[3] is accurately associated with the authenticated user's account in the relational database
- All inputs meets validation requirements in User Input section
- The LLI^[3] is saved within 3 seconds
- A message saying the LLI^[3] had been added to the user account is displayed, if the LLI was added to the user account
- A message saying the LLI^[3] failed to be added to the user account is displayed, if the LLI failed to be added to the user account
- The add recommendation LLI^[3] operation is logged in the persistent data store
- The operation is logged, but the log does not accurately depict any of the following:
 - Timestamp
 - When adding the recommended LLI started
 - When adding the recommended LLI concludes
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Success)
 - Log type (View)
 - Log message: accurate info detailing the successful addition of the

recommended LLI

Failure Outcomes

- The LLI^[3] the user selects are not saved to the persistent data store
- A input do not meet validation requirements in User Input section
- The user is not informed that their LLI^[3] has been added
- A message saying the LLI^[3] had been added to the user account is not displayed, if the LLI was added to the user account
- A message saying “the LLI^[3] failed to be added” is not displayed, if the LLI failed to be added to the user account
- The add recommended LLI^[3] operation is not logged in the persistent data store
- The operation is logged, but the log does not accurately depict any of the following:
 - Timestamp
 - When adding the recommended LLI started
 - When adding the recommended LLI encountered an error
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to PST
 - Log level (Failure)
 - Log type (View)
 - Log message: “Recommendation engine encountered an error adding LLI”, along with information identifying the point of failure

System Observability

Logging

Internally track Lifelog's events with vital information about the events, for system inspection

Effort Points (Hour) - 100

Complexity Level - Low

App Permissions

- Permission : Write
- Scope : The entire Lifelog system

Valid Log Data

- The logs will include a PST timestamp
- Timestamp will be in YYYY-MM-DD-hh-mm-ss format
- Logs will include a log level, valid levels include:
 - Success - record successes
 - Debug - for system debugging
 - Warning - concerning events
 - Error - critical events/failures
- Logs will include a log type, valid types include:
 - View
 - Business?
 - Server?
 - Data?
 - Persistent Data Store
- Logs will include details, valid details include any significant info to the log like:
 - What process led to the log
 - If the system or a user initiated the process
 - Etc

Pre-conditions

1. Persistent data store is active
2. Persistent data store is accessible
3. Persistent data store has space for the log entry to be saved

Success Outcome(s)

- Lifelog's system events are logged accurately within 3 seconds
- Lifelog's system failure events are logged accurately in 3 seconds

- User's successful activity is logged accurately in 3 seconds
- User's unsuccessful activity is logged accurately in 3 seconds
- Log is saved to the persistent data store
- Log is immutable

Failure Outcome(s)

- Lifelog's system events are logged in longer than 3 seconds
- Lifelog's system events are not logged
- User's successful activity is not logged within 3 seconds
- User's successful activity fails to be logged
- Logging stops users from utilizing the system in any way
- The logging process completes, but the log is not saved to the persistent data store: The system should not go offline in this case
- The logging process completes, but any of the log information is not accurate.

This includes:

- Timestamp
- Level
- Type
- Details
- The logging process failure results in the system going offline
- Saved logs are mutable

Archiving

Purpose

Offload system logs to conserve internal assets

Scope

Encompasses all system logs

Effort Points (Hour) - 25

Complexity Level - Low

Pre-conditions

1. Persistent data store active

2. Persistent data store accessible by Archival functionality
3. Archive has capacity to store archivable logs.

Success Outcome(s)

- Archive functionality starts at 12:00am PST
- Archive functionality executes on the first day of the month
- Logs 30 days or older are saved to archive location
- Archived logs are removed from the persistent data store
- Archival process completes within 60 seconds of start
- Successful archival operations are logged, adhering to logging rules

Failure Outcome(s)

- Archival process not logged
- Archive functionality did not start at 12:00am PST
- Archive functionality did not start on the first of the month
- Archive functionality started, but did not archive all archivable logs
- Archive functionality started, but did not remove archived logs from the persistent data store
- Archive functionality started, but did not compress logs
- Archive functionality did not complete within 60 seconds of the operations starting
- Archive failure log does not follow logging rules
- A message that an error occurred
- If this archival fails and the system goes offline