

Lifelog Item (LLI) Management

LLI1 User Story^[17]: Create LLI^[3]

As an authenticated user, I can create one LLI^[3] at a time to track my life change progress.

Effort Points (Hour) - 100 points

Complexity Scale: Medium

User Input

Required Input

- Title of LLI^[3]
 - Must only contains alphanumeric values between 1-50 characters long
 - The value is not nullable
- Category/Categories of LLI^[3]
 - The valid options are “Mental Health^[5]”, “Mental Health^[5]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”
 - The option is not nullable

Optional Input

- Description of LLI^[3]
 - Must consist only of alphanumeric values between 0-200 characters long
 - Default to null
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - The option is not nullable

- Default to “Active”
- Visibility of LLI^[3]
 - The valid options are “Public”, “Private”
 - The option is not nullable
 - Default to “Public”
- Deadline of LLI^[3]
 - Must be a valid date in the format MM/DD/YYYY
 - The date must be between 01/01/1900 and 12/31/2100
 - Default to null
- Cost of LLI^[3]
 - Must be a numerical value greater or equal to \$0 USD
 - The unit of the cost is USD
 - Cost cannot be non-integers
 - Cost cannot exceed \$1 million USD
 - Default to null
- Recurrence
 - The valid options are “On”, “Off”
 - The default option is “Off”
 - The option is not nullable
- Recurrence Frequency
 - This input is only showed if the Recurrence option is “On”
 - The valid options are “Weekly”, “Monthly”, “Yearly”
 - If the Recurrence option is “Off”, the option is null
 - If the Recurrence option is “On”, the default option is “Monthly”
 - If the Recurrence option is “On”, the option is not nullable

App Permissions -

- Permission: 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 is in the LLI^[3] Management view

Success Outcomes

- All inputs meets validation requirements in User Input section
- The LLI title and category must not match the title and category of a LLI that the user has completed within one year prior to the current date
- The new LLI^[3] is saved to the persistent data store within 3 seconds of the creation confirmation
- The new LLI^[3] is added to the authenticated user's account in the relational database
- "The LLI is successfully created." is displayed to the user, if the LLI^[3] has been created in the persistent data store
- The LLI^[3] creation operation is logged in the persistent data store, when the LLI is saved to the persistent data store
- The log includes the following:
 - Timestamp
 - When the LLI creation form is saved in the persistent datastore
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: "The LLI is successfully created."

Failure Outcomes

Every failure outcome's log will have it's "Timestamp" field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- All inputs do not meet validation requirements in the User Input section.
 1. The title of LLI does not contain only alphanumeric values between 1-50 characters long . In this case, “The LLI title must only contain alphanumeric values between 1-50 characters long, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI title is invalid.”
 2. The category/categories of the LLI is not one or more options specified in the User Input. In this case, “The LLI category must be valid, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI category is invalid.”
 3. The description of the LLI does not contain only alphanumeric values between 1-200 characters long . In this case, “The LLI description must only contain alphanumeric values between 1-200 characters long, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI description is invalid.”
 4. The status of LLI is not “Active”, “Completed”, or “Postponed”. In this case, “The LLI status must be either “Active”, “Completed”, or “Postponed”, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI status is invalid.”

5. The status of the LLI is not “Active”, “Completed”, or “Postponed”. In this case, “The LLI status must be either “Active”, “Completed”, or “Postponed”, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI status is invalid.”
6. The visibility of the LLI is not “Public” or “Private”. In this case, “The LLI visibility must be either “Public” or “Private”, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI visibility is invalid.”
7. The deadline of the LLI is not between 01/01/1900 and 12/31/2100. In this case, “The LLI deadline must be between 01/01/1900 and 12/31/2100, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI deadline is invalid.”
8. The cost of the LLI is not a numerical value greater or equal to \$0 USD, “The LLI cost must be a numerical value greater or equal to \$0 USD, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI cost is invalid.”
9. The occurrence of the LLI is not “On” or “Off”. In this case, “The LLI occurrence must be either “On” or “Off”, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI occurrence is invalid."
10. The occurrence frequency of the LLI is not "Weekly", "Monthly", or "Yearly". In this case, "The LLI occurrence frequency must be "Weekly", "Monthly", or "Yearly", please try again." is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI occurrence is invalid."
11. If any of the non-nullable options is null, and the user tries to submit, "This option must not be empty" is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The non-nullable LLI input is null."
- The LLI title and category match the title and category of a LLI that the user has completed within one year prior to the current date. In this case, "You have completed this LLI within the past year. You can not recreate the same LLI within a year. Please try again later." is displayed to the user. The LLI is not saved to the persistent data store. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data Store
 - Log Message: "The LLI title and category matches the title and category of a LLI that the user has completed within one year prior to the current date."
 - The new LLI^[3] is not saved to the relational database. In this case, "The LLI fails to save" is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR

- Log Category: Persistent Data Store
 - Log Message: "LLI's failed to save into the persistent data store."
- The new LLI^[3] is not saved to the relational database within 3 seconds but is saved within 5 seconds of the creation confirmation. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "Operation exceeded time frame."
- The new LLI^[3] is not saved to the relational database within 5 seconds. In this case, "Operation took too long. Please try again later." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "Operation took too long."
- The new LLI^[3] is not added to the authenticated user's account in the persistent data store. In this case, "The LLI failed to save to the user's account" is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "The LLI failed to save to the user's account in the persistent data store."
- The LLI^[3] creation operation is not logged in the persistent data store, when the LLI is saved to the persistent data store
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "The LLI creation operation was not recorded to the persistent data store."

- The LLI^[3] creation operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

LLI2 User Story^[17]: View LLIs^[3]

As an authenticated user, I can view my LLIs through the LLI Management view to stay focused on my life change journey.

Effort Points (Hour) - 100 points

Complexity Scale: Medium

App Permissions

- Permission: View
- 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 is in the LLI^[3] Management view

Success Outcome(s)

- All LLIs are loaded in the LLI Management view within 3 seconds of the user loading the view
- Each individual LLI item must contain the following:
 - LLI^[3] title
 - Must only contain alphanumeric values
 - Must be between 1-50 characters long
 - The value is not nullable
 - Category/Categories of LLI^[3]
 - The valid options are “Mental Health^[6]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”

- The option is not nullable
- Description of LLI^[3]
 - Must consist only of alphanumeric values between 0-200 characters long
 - The value is nullable
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - The option is not nullable
- Visibility of LLI^[3]
 - The valid options are “Public, Private”
 - The option is 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 and 12/31/2100
 - The option is nullable
- Cost of LLI^[3]
 - Must be a numerical value greater or equal to \$0 USD
 - The unit of the cost is USD
 - Cost cannot be non-integers
 - Cost cannot exceed \$1 million USD
- Recurrence
 - The valid options are “On”, “Off”
 - The option is not nullable
- Recurrence Frequency
 - This input is only showed if the Recurrence option is “On”
 - The valid options are “Weekly”, “Monthly”, “Yearly”
 - If the Recurrence option is “Off”, the option is null
 - If the Recurrence option is “On”, the default option is “Monthly”
 - If the Recurrence option is “On”, the option is not nullable
- An option to edit the details
- The data in each LLI item must accurately reflect the data of that LLI in the

persistent data store

- If there is a failure in navigating, loading, or rendering the view, the system must not crash
- When the user visits the LLI Management view, the action must be logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the user enters the view
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: View
 - Log Message: "User enters the LLI Management view."

Failure Outcome(s)

Every failure outcome's log will have it's "Timestamp" field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- All LLIs are not loaded in the LLI Management view. In this case, "The LLI Management view is not available. Please try again later." is displayed to the user. The user is redirected back to the previous page. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: View
 - Log Message: "The LLI Management view failed to load."
- All LLIs are not loaded in the LLI Management view within 3 seconds but are loaded within 5 seconds. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "Operation exceeded time frame."

- All LLIs are not loaded in the LLI Management view within 5 seconds. In this case, “Operation took too long. Please try again later.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “Operation took too long.”
- Each individual LLI item does not contain all the details listed in the Success Outcome(s)
- The data in each LLI item must accurately reflect the data of that LLI in the persistent data store
- When the user visits the LLI Management view, the action is not logged in the persistent data store
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The LLI Management view access was not recorded to the persistent data store.”
- When the user visits the LLI Management view, the action is logged in the persistent data store, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

LLI3 User Story^[17]: Delete LLI^[3]

As an authenticated user, I can delete one LLI^[3] at a time to remove a prospective life change, to stay focused on my personally attainable LLI^[3]

Effort Points (Hour) - 100 points

Complexity Scale: Medium

App Permissions

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

Target Audience - All authenticated Normal User

Pre-conditions

4. The user is registered
5. The user is authenticated
6. The authenticated user is in the LLI^[3] Management view

Success Outcome(s)

- The LLI^[3] is removed from the persistent data store within 3 seconds of the user initializing the delete action.
- The LLI^[3] is removed from the authenticated user's account in the persistent data store
- "The LLI is successfully deleted" is displayed to the user, if the LLI^[3] has been deleted
- The delete operation is logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the LLI is deleted from the persistent data store
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format

- Timestamp is recorded relative to UTC
- Log Level: Info
- Log Category: Persistent Data Store
- Log Message: “The LLI is successfully deleted.”

Failure Outcome(s)

Every failure outcome’s log will have it’s “Timestamp” field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- The LLI^[3] is not removed from the persistent data store. In this case, “The LLI is not successfully deleted.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “The LLI failed to be deleted from the persistent data store.”
- The LLI^[3] is not removed from the persistent data store within 3 seconds but is removed within 5 seconds of the deletion confirmation. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “Operation exceeded time frame.”
- The LLI^[3] is not removed from the persistent data store within 5 seconds. In this case, “Operation took too long. Please try again later.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “Operation took too long.”
- The LLI^[3] is not removed from the authenticated user’s account in the persistent data store. In this case, “The LLI is not successfully deleted from the user’s account.” is displayed to the user. The system will attempt to

asynchronously log the following:

- Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “The LLI failed to be deleted from the user’s account in the persistent data store.”
- The LLI delete operation is not logged in the persistent data store, if the LLI is deleted from the persistent data store
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The LLI delete operation was not recorded to the persistent data store.”
 - The LLI^[3] delete operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

LLI4 User Story^[17]: Edit LLI^[3]

As an authenticated user, I can edit one LLI^[3] at a time to manage my life change details, ensuring my goal setting is accurate.

Effort Points (Hour) - 50

Complexity Scale: Medium

User Input

Optional Input

- LLI^[3] title
 - Must only contain alphanumeric values
 - Must be between 1-50 characters long
 - The value is not nullable
 - Default value is current title
- 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]”
 - The option is not nullable
 - Default value is the current category/categories
- Description of LLI^[3]
 - Must consist only of alphanumeric values between 0-200 characters long
 - The value is nullable
 - Default value is the current description
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - The option is not nullable
 - Default value is the current status
- Visibility of LLI^[3]

- The valid options are “Public, Private”
- The option is not nullable
- Default value is the current visibility
- Deadline of LLI^[3]
 - Must be a valid date in the format MM/DD/YYYY
 - The date must be between 01/01/1900 and 12/31/2100
 - The option is nullable
 - Default value is the current deadline
- Cost of LLI^[3]
 - Must be a numerical value greater or equal to \$0 USD
 - The unit of the cost is USD
 - Cost cannot be non-integers
 - Cost cannot exceed \$1 million USD
 - Default cost is the current cost
- Recurrence
 - The valid options are “On”, “Off”
 - The default option is “Off”
 - The option is not nullable
- Recurrence Frequency
 - This input is only showed if the Recurrence option is “On”
 - The valid options are “Weekly”, “Monthly”, “Yearly”
 - If the Recurrence option is “Off”, the option is null
 - If the Recurrence option is “On”, the default option is “Monthly”
 - If the Recurrence option is “On”, the option is not nullable

App Permissions

- Permission: 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 is in the LLI^[3] Management view

Success Outcome(s)

- All inputs meets validation requirements in User Input section
- The LLI title and category must not match the title and category of a LLI that the user has completed within one year prior to the current date
- Changes to the LLI^[3] attributes are reflected in the persistent data store accurately within 3 seconds of the user initializing the change action
- “The LLI is successfully updated” is displayed to the user, if the LLI details are changed
- The edit operation is logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the changes to the LLI are saved to the persistent data store
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: “The LLI is successfully edited”

Failure Outcome(s)

Every failure outcome’s log will have it’s “Timestamp” field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- All inputs do not meet validation requirements in the User Input section.
 1. The title of LLI does not contain only alphanumeric values between 1-50 characters long . In this case, “The LLI title must only contain alphanumeric values between 1-50 characters long, please try again.” is

displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI title is invalid."
2. The category/categories of the LLI is not one or more options specified in the User Input. In this case, "The LLI category must be valid, please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI category is invalid."
 3. The description of the LLI does not contain only alphanumeric values between 1-200 characters long . In this case, "The LLI description must only contain alphanumeric values between 1-200 characters long, please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI description is invalid."
 4. The status of LLI is not "Active", "Completed", or "Postponed". In this case, "The LLI status must be either "Active", "Completed", or "Postponed", please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI status is invalid."
 5. The status of the LLI is not "Active", "Completed", or "Postponed". In this case, "The LLI status must be either "Active", "Completed", or "Postponed", please try again." is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI status is invalid."
6. The visibility of the LLI is not "Public" or "Private". In this case, "The LLI visibility must be either "Public" or "Private", please try again." is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI visibility is invalid."
7. The deadline of the LLI is not between 01/01/1900 and 12/31/2100. In this case, "The LLI deadline must be between 01/01/1900 and 12/31/2100, please try again." is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI deadline is invalid."
8. The cost of the LLI is not a numerical value greater or equal to \$0 USD, "The LLI cost must be a numerical value greater or equal to \$0 USD, please try again." is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI cost is invalid."
9. The occurrence of the LLI is not "On" or "Off". In this case, "The LLI occurrence must be either "On" or "Off", please try again." is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI occurrence is invalid."
10. The occurrence frequency of the LLI is not "Weekly", "Monthly", or

“Yearly”. In this case, “The LLI occurrence frequency must be “Weekly”, “Monthly”, or “Yearly”, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
- Log Category: Data
- Log Message: “The LLI occurrence is invalid.”

11. If any of the non-nullable options is null, and the user tries to submit, “This option must not be empty” is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
- Log Category: Data
- Log Message: “The non-nullable LLI input is null.”

- The LLI title and category match the title and category of a LLI that the user has completed within one year prior to the current date. In this case, “You have completed this LLI within the past year. You can not recreate the same LLI within a year. Please try again later.” is displayed to the user. The LLI is not saved to the persistent data store. The system will attempt to asynchronously log the following:

- Log Level: Warning
- Log Category: Persistent Data Store
- Log Message: “The LLI title and category match the title and category of a LLI that the user has completed within one year prior to the current date.”

- Changes to the LLI^[3] attributes are not reflected in the persistent data store accurately. In this case, “The LLI failed to update.” is displayed to the user. The LLI instance in the data store should not be changed. The system will attempt to asynchronously log the following:

- Log Level: ERROR
- Log Category: Persistent Data Store
- Log Message: “The LLI edits failed to be saved to the persistent data store.”

- Changes to the LLI^[3] attributes are not reflected in the persistent data store accurately within 3 seconds but are reflected accurately within 5 seconds of the edit confirmation. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "Operation exceeded time frame."
- Changes to the LLI^[3] attributes are not reflected in the persistent data store accurately within 5 seconds. In this case, "Operation took too long. Please try again later." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "Operation took too long."
- The LLI edit operation is not logged in the persistent data store, if the edit are made to the LLI in the persistent data store
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "The LLI edit operation was not recorded to the persistent data store."
- The LLI^[3] edit operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

LLI5 User Story^[17]: Filter LLIs^[3]

As an authenticated user, I can filter through the LLIs^[3] attached to my account using their attributes to categorize my life changing goals.

Effort Points (Hour) - 100

Complexity Scale: Medium

User Input

Optional Input

- 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]”
 - There can be multiple categories selected at the same time
 - The option is nullable. When the option is null, all the categories are selected
 - Default value is null
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - There can be multiple statuses selected at the same time
 - The option is nullable. When the option is null, all the statuses are selected
 - Default value is null
- Visibility of LLI^[3]
 - The valid options are “Public”, “Private”
 - There can be multiple visibilities selected at the same time
 - The option is nullable. When the option is null, all the visibilities are selected
 - Default value is the null

App Permissions

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

Target Audience - All authenticated Normal User

Pre-conditions

4. The user is registered
5. The user is authenticated
6. The authenticated user is in the LLI^[3] Management view

Success Outcome(s)

- The default filter is that all the filter options are null
- All inputs meets validation requirements in User Input section
- The filter results are sorted in the ascending order of the date created of the LLIs
- All LLIs matching the filters are displayed to the user
- All matching LLIs are displayed to the user within 3 seconds
- Each individual matching LLI must contain the following:
 - LLI^[3] title
 - Must only contain alphanumeric values
 - Must be between 1-50 characters long
 - The value is not nullable
 - Category/Categories of LLI^[3]
 - The valid options are “Mental Health^[6]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”
 - The option is not nullable
 - Description of LLI^[3]
 - Must consist only of alphanumeric values between 0-200 characters long

- The value is nullable
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - The option is not nullable
- Visibility of LLI^[3]
 - The valid options are “Public, Private”
 - The option is 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 and 12/31/2100
 - The option is nullable
- Cost of LLI^[3]
 - Must be a numerical value greater or equal to \$0 USD
 - The unit of the cost is USD
 - Cost cannot be non-integers
 - Cost cannot exceed \$1 million USD
- Recurrence
 - The valid options are “On”, “Off”
 - The option is not nullable
- Recurrence Frequency
 - This input is only showed if the Recurrence option is “On”
 - The valid options are “Weekly”, “Monthly”, “Yearly”
 - If the Recurrence option is “Off”, the option is null
 - If the Recurrence option is “On”, the default option is “Monthly”
 - If the Recurrence option is “On”, the option is not nullable
- An option to edit the details
- The data in each matching LLI item must accurately reflect the data of that LLI in the persistent data store
- The filter operation is logged in the persistent data store
- The log includes the following:
 - Timestamp

- When the user searches for the LLIs
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
- Log Level: Info
- Log Category: Persistent Data Store
- Log Message: "LLI filter is successful."

Failure Outcome(s)

Every failure outcome's log will have its "Timestamp" field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- The default filter is not that all the filter options are null. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: View
 - Log Message: "The default filter is wrong."
- All inputs do not meet validation requirements in the User Input section. In this case, "The filter selections are invalid, please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "The filter options are invalid."
- The filter results are not sorted in the ascending order of the date created of the LLIs. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: View
 - Log Message: "The filter results are sorted incorrectly."
- All LLIs matching the filter options are not displayed to the user. In this case, "Failed to get all LLIs from the filter. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR

- Log Category: Persistent Data Store
 - Log Message: "All LLIs matching the filter options are not displayed to the user."
- No LLI is found with the filter options. In this case, "No LLI found. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "The filter options do not match any LLI attached to the user."
- All matching LLIs are not displayed to the user within 3 seconds but within 5 seconds. In this case, the system will attempt to asynchronously log the following. The matching LLIs are displayed
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "Operation exceeded time frame."
- All matching LLIs are not displayed to the user within 5 seconds. In this case, "The operation took too long. Please try again later." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "The LLI filter operation took too long."
- Each individual matching LLI item does not contain all the details listed in the Success Outcome(s)
- The data in each matching LLI item does not accurately reflect the data of that LLI in the persistent data store
- The LLI filter operation is not logged in the persistent data store
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning

- Log Category: Persistent Data Store
 - Log Message: “The LLI filter operation was not recorded to the persistent data store.”
- The LLI^[3] filter operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

LLI6 User Story^[17]: Search LLIs^[3]

As an authenticated user, I can search for any LLIs^[3] attached to my account using their title to quickly find my life changing goals.

Effort Points (Hour) - 150

Complexity Scale: Medium

User Input

Required Input

- LLI^[3] title
 - Must only contain alphanumeric values
 - Must be between 1-50 characters long
 - The value is not nullable

App Permissions

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

Target Audience - All authenticated Normal User

Pre-conditions

7. The user is registered
8. The user is authenticated
9. The authenticated user is in the LLI^[3] Management view

Success Outcome(s)

- The input meets the validation requirements in User Input section
- All LLIs with the title containing the input are displayed to the user
- All matching LLIs are displayed to the user within 3 seconds
- Each individual matching LLI must contain the following:

- LLI^[3] title
 - Must only contain alphanumeric values
 - Must be between 1-50 characters long
 - The value is 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]”
 - The option is not nullable
- Description of LLI^[3]
 - Must consist only of alphanumeric values between 0-200 characters long
 - The value is nullable
- Status of LLI^[3]
 - The valid options are “Active”, “Completed”, “Postponed”
 - The option is not nullable
- Visibility of LLI^[3]
 - The valid options are “Public, Private”
 - The option is 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 and 12/31/2100
 - The option is nullable
- Cost of LLI^[3]
 - Must be a numerical value greater or equal to \$0 USD
 - The unit of the cost is USD
 - Cost cannot be non-integers
 - Cost cannot exceed \$1 million USD
- Recurrence
 - The valid options are “On”, “Off”
 - The option is not nullable

- Recurrence Frequency
 - This input is only showed if the Recurrence option is “On”
 - The valid options are “Weekly”, “Monthly”, “Yearly”
 - If the Recurrence option is “Off”, the option is null
 - If the Recurrence option is “On”, the default option is “Monthly”
 - If the Recurrence option is “On”, the option is not nullable
- An option to edit the details
- The data in each matching LLI item must accurately reflect the data of that LLI in the persistent data store
- The search operation is logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the user searches for the LLIs
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: “LLI search is successful”

Failure Outcome(s)

Every failure outcome’s log will have it’s “Timestamp” field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- All inputs do not meet validation requirements in the User Input section. In this case, “The search query is invalid, please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The search query is invalid.”
- All LLIs with the title containing the input are not displayed to the user. In this

case, “Failed to get all LLIs from the search. Please try again.” is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “All LLIs matching the search query are not displayed to the user.”
- No LLI is found with the search query. In this case, “No LLI found. Please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The search query does not match any LLI attached to the user.”
- All matching LLIs are not displayed to the user within 3 seconds but within 5 seconds. In this case, the system will attempt to asynchronously log the following. The matching LLIs are displayed
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “Operation exceeded time frame.”
- All matching LLIs are not displayed to the user within 5 seconds. In this case, “The search took too long. Please try again later.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “The LLI search operation took too long.”
- Each individual matching LLI item does not contain all the details listed in the Success Outcome(s)
- The data in each matching LLI item does not accurately reflect the data of that LLI in the persistent data store
- The LLI search operation is not logged in the persistent data store
 1. The amount of logs in the persistent data store does not increase by at

least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The LLI search operation was not recorded to the persistent data store.”
- The LLI^[3] search operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

User Form

LLU1 User Story^[17]: Create User Form^[16]

As an authenticated user, upon my first sign-in, I can rank the 10 categories of LLI^[3] in order of preference to personalize my recommendation engine's recommendations.

Effort Points (Hour) - 50 points

Complexity Scale: Medium

User Input

Required Input

- Rankings of the following categories in relation to each other:
 - The categories to be ranked are “Mental Health^[5]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”
- Each category must have a unique ranking
- The rank for a category must be a numerical value between 1-10
- The ranking for a category is not nullable

App Permissions

- Permission: Read and Write
- Scope: Lifelog User Account

Target Audience - Authenticated Normal User logging in for the first time

Pre-conditions

1. The user is registered
2. The user is authenticated
3. The authenticated user is signed in for the first time

Success Outcome(s)

- All inputs meets validation requirements in User Input section
- The user rankings are saved in the persistent data store within 3 seconds of the form submission
- The user rankings are added to the user's account in the persistent data store
- "The User Form is successfully saved." is displayed to the user, if the rankings are successfully saved
- The create operation of the user form is saved to the persistent datastore
- The log includes the following:
 - Timestamp
 - When the User Form is saved to the data store
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: "User Form successfully created."

Failure Outcome(s)

Every failure outcome's log will have it's "Timestamp" field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- All inputs do not meet validation requirements in the User Input section
 1. The user inputs a rank to a category that is already assigned to another category. In this case, "Ranking must be unique. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI rankings are not unique."
 2. The user inputs a rank that is not between 1 and 10. In this case, "Ranking must be between 1 and 10. Please try again." is displayed to the

user. The system will attempt to asynchronously log the following:

- Log Level: Warning
- Log Category: Data
- Log Message: "The LLI rankings are not in range."

3. The user leaves a rank empty and tries to submit. In this case, "Ranking must not be empty. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
- Log Category: Data
- Log Message: "The LLI rankings are null."

- The user rankings are not saved in the persistent data store. In this case, a message is displayed saying "The User Form failed to save, please try again later or contact system administrator.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "The User Form failed to save to the persistent data store."
- The user rankings are not added to the user's account in the persistent data store. In this case, a message is displayed saying "The User Form failed to save, please try again later or contact system administrator.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "The User Form failed to save to the user's account in the persistent data store."
- The user rankings are not saved in the persistent data store within 3 seconds but are saved within 5 seconds of the User Form submission. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "Operation exceeded time frame."

- The user rankings are not saved in the persistent data store within 5 seconds. In this case, “Operation took too long. Please try again later.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “Operation took too long.”
- The User Form completion operation is not logged in the persistent data store, if the User Form is successfully created for the user in the persistent data store
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The User Form completion operation was not recorded to the persistent data store.”
- The User Form completion operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

LLU2 User Story^[17]: Edit User Form^[16]

As an authenticated user, I can edit my rankings of the 10 categories of LLI in my User Form to tailor the application recommendation to my need

Effort Points (Hour) - 50 points

Complexity Scale: Medium

User Input

Optional Input

- Rankings of the following categories in relation to each other:
 - The categories to be ranked are “Mental Health^[5]”, “Physical Health^[6]”, “Outdoor^[7]”, “Sport^[8]”, “Art^[9]”, “Hobby^[10]”, “Thrill^[11]”, “Travel^[12]”, “Volunteering^[13]”, and “Food^[14]”
- Each category must have a unique ranking
- The rank for a category must be a numerical value between 1-10
- The default value for a rank of a LLI is the current rank of that LLI
- The ranking for a category is not nullable

App Permissions

- Permission: Read and Write
- Scope: Lifelog User Account

Target Audience - All authenticated Normal User

Pre-conditions

1. The user is registered
2. The user is authenticated
3. The authenticated user is in the User Profile view

Success Outcome(s)

- All inputs meets validation requirements in User Input section
- Changes to the User Form, if any, are saved in the persistent data store accurately
- “User Form successfully saved.” is displayed to the user if the User Form is successfully updated
- Changes to the User Form, if any, are saved in the data store within 3 seconds
- The User Form edit operation is logged in the data store
- The log includes the following:
 - Timestamp
 - When the User Form changes are saved to the data store
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: “User Form successfully edited.”

Failure Outcome(s)

Every failure outcome’s log will have it’s “Timestamp” field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- All inputs do not meet validation requirements in the User Input section
 1. The user inputs a rank to a category that is already assigned to another category. In this case, “Ranking must be unique. Please try again.” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The LLI rankings are not unique.”
 2. The user inputs a rank that is not between 1 and 10. In this case, “Ranking must be between 1 and 10. Please try again.” is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI rankings are not in range."
- 3. The user leaves a rank empty and tries to submit. In this case, "Ranking must not be empty. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The LLI rankings are null."
- Changes to the User Form, if any, are not saved in the persistent data store accurately. In this case, a message is displayed saying "User Form failed to save. Please try again.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "The User Form failed to save to the user's account in the persistent data store."
- Changes to the User Form, if any, are not saved in the persistent data store accurately within 3 seconds but are saved within 5 seconds. In this case, the system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "Operation exceeded time frame."
- Changes to the User Form, if any, are not saved in the persistent data store accurately within 5 seconds. In this case, "Operation took too long. Please try again later." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: "Operation took too long."
- The User Form edit operation is not logged in the persistent data store, if the

User Form is successfully edited in the persistent data store

1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: "The User Form edit operation was not recorded to the persistent data store."
- The User Form edit operation is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

Security

A1 User Story: Authentication

As an unauthenticated user, I can attempt to authenticate my account to be identified as a registered user of the system.

Effort Points (Hour) - 100 points

Complexity Scale: Medium

User Input

Required Input

- Valid security credentials consist of a valid username and valid time-based one-time password (OTP)
- Username
 - The username is the user's email
 - Must be in the [xxxxx@xxxx.xxx](#) format
 - Must not be in used by any other Lifelog account
 - Is not nullable
- OTP is defined in NIST SP 800-63b section 5.1.4.1
 - OTP is changed upon every successful use
 - OTP expires every 2 minutes
 - OTP must be at minimum 8 characters
 - Valid characters will consist of the following:
 - a-z
 - A-Z
 - 0-9
 - Is not nullable

App Permissions

- Permission: Write
- Scope: Any unauthenticated user attempting to use the system can attempt to authenticate

Target Audience - Unauthenticated Anonymous Users

Pre-conditions

1. Users must not already have an active authenticated session with the system on the current device, otherwise authentication is not possible.
2. Users must be on Login view or attempting to access a protected resource as defined in Authorization

Success Outcome(s)

- The system requires the user to authenticate
- The user submits valid security credentials as defined in the User Input section
- The user is automatically navigated to the home view upon successful authentication
- If user is already authenticated, the user should not be able to reach Login view or login functionality
- The authentication attempt is logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the user is successfully authenticated
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: "User authentication successful."

Failure Outcome(s)

Every failure outcome's log will have it's "Timestamp" field filled in with a

timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- The user does not submit valid security credentials as defined in the User Input section
 1. The email is not in the [xxxx@xxxx.xxx](#) format. In this case, “Email must be in the [xxxx@xxxx.xxx](#) format. Please try again.”. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The email is not in the correct format.”
 2. The OTP is less than 8 characters long. In this case, “OTP must be at least 8 characters long. Please try again.”. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The OTP is too short.”
 3. The OTP contains a character that is outside the scope defined in the User Input. In this case, “OTP must only contain alphanumeric characters. Please try again.”. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The OTP contains invalid characters.”
 4. The user leaves one of the fields blank. In this case, “This field must not be empty” is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: “The OTP contains empty fields.”
- The system does not send OTP email. In this case, “OTP email send failed.” is displayed. The system will attempt to asynchronously log the following:

- Log Level: ERROR
 - Log Category: Business
 - Log Message: "OTP email send failed."
- The system sends an invalid OTP. In this case, "Invalid OTP used. Please request a new OTP." is displayed. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid OTP used. Please request a new OTP."
- Upon successful authentication, the user is not automatically navigated to the home view
- Upon successful authentication, the user is automatically navigated to a view that is not the home view
- The user submits the credentials for a disabled account. In this case, there is a message saying "Account is disabled. Perform account recovery first or contact system administrator.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid Credential. User Account is disabled."
- The user submits invalid credentials. In this case, there should be a message saying "Invalid security credentials provided. Retry again or contact system administrator.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid Credential."
- The authentication attempt is not logged in the persistent data store, if the user successfully authenticate their account
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The authentication attempt was not recorded to the persistent data store.”
- The authentication attempt is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

Authorization

A mechanism for restricting access to protected resources (e.g. functionalities, data, and views) of Lifelog to only valid users

Effort Points (Hour) - 50 points

Complexity Scale: Medium

App Permissions

- Permission: Read
- Scope: Any user attempting to use the system

Target Audience - Authenticated Users

Pre-conditions

1. User must be authenticated to enforce user-specific restrictions
2. User account must be active (not disabled)

Success Outcome(s)

- The operation and timestamp of each unauthorized access will be recorded by the system
- The system must prevent unauthorized users from viewing, modifying or deleting any protected data (scalar or aggregate data)
- The system must prevent unauthorized users from executing any protected functionality
- The system must prevent unauthorized users from viewing or interacting with any protected views
- Any user access modifications should be active upon the next successful authentication by user
- Access is granted when the user attempts to access a protected functionality within authorization scope

- Access is granted to perform read operations when the user attempts to access protected data within authorization scope.
- Access is granted to perform write operations when the user attempts to modify protected data within authorization scope
- Access is granted to the view when the user attempts to access protected views within authorization scope
- System failures from this feature must not result in the system going offline
- The authorization attempt is logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the user is successfully authorized
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
 - Log Level: Info
 - Log Category: Persistent Data Store
 - Log Message: “User authorization successful.”

Failure Outcome(s)

Every failure outcome’s log will have it’s “Timestamp” field filled in with a timestamp of when the outcome is encountered, in YYYY-MM-DD-hh-mm-ss format, relative to UTC

- Unauthorized access is not recorded by system when authorization fails. In this case, the system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: “Unauthorized access failed to be recorded by the system.”
- User attempts to access a protected functionality outside of authorization scope. In this case, access is denied and a system message is displayed saying “Unauthorized access.”. The system will attempt to asynchronously log the following:
 - Log Level: ERROR

- Log Category: Business
 - Log Message: "Unauthorized access to protected functionality attempted by the user."
- User attempts to access protected data outside of authorization scope. In this case, access is denied and a system message is displayed saying "Unauthorized access to data.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Unauthorized access to protected data attempted by the user."
- User attempts to modify protected data outside of authorization scope. In this case, access is denied and a system message is displayed saying "Unauthorized access to data.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Unauthorized access to modify attempted by the user."
- User attempts to access protected views outside of authorization scope. In this case, access is denied and a system message is displayed saying "Unauthorized access to view". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Unauthorized access to view attempted by the user."
- User attempts to access protected views within authorization scope, but contains protected data that is not within read scope. Access is granted to the view. Upon completion of automatic navigation to view, a system message is displayed saying "Unauthorized access to data.", with protected data not visible within the view. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Unauthorized access to read attempted by the user."

- User attempts to access protected views within authorization scope, but contains protected data that is not within write scope. Access is granted to the view. Upon completion of automatic navigation to view, protected data is visible within the view. Attempts to modify the data will result in a system message saying “Unauthorized access to data.”. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: “Unauthorized access to view attempted by the user.”
- The authorization attempt is not logged in the persistent data store, if the user successfully authorized their account
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The authorization attempt was not recorded to the persistent data store.”
- The authorization attempt is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

R1 User Story: Register Normal User Account

As an unregistered user, I can register for a Normal User account to begin my life change journey.

Effort Points (Hour) - 100 points

Complexity Scale: Medium

User Input

Required Input

- Email
 - Minimum of 3 characters
 - ii. Must be in the format: [xxxxx@xxxx.xxx](#)
 - iii. a-z (case insensitive)
 - iv. 0-9
 - v. May have special characters
 - .
 - -
 - Must not be in used by any other accounts
 - User must confirm email address within 2-hours to complete registration
 - The value is not nullable
- Birth date
 - Valid date of births begins January 1st, 1970 and ends at current date
 - The value is not nullable
- Zip Code
 - Must be a valid 5 digit zip code within LA County, see Data Source
 - The value is not nullable

Data Source

Origin

- External

Type

- Snapshot

Details

- Link:
https://geohub.lacity.org/datasets/71b2fed2c1f24fc8850f5b7f8d2a320a_26/
- The link contains a downloadable CSV of all zip codes within LA County, this will be stored in the persistent data store

AuthN

- None, publicly available data

App Permissions

- Permission: Write
- Scope: Lifelog User Account

Target Audience - Unauthenticated Anonymous Users

Pre-conditions

1. The user must not have an active authenticated session on the application
2. The user is on the Sign Up View

Success Outcome(s)

- All inputs meets validation requirements in the User Input section
- After confirming the email address, a system message is displayed to the user saying “Registration complete for [email address].” within 3 seconds of confirmation completion. The user is automatically navigated to the home view
- User must not have access to Registration View if currently authenticated
- All user accounts must be stored in a persistent data store
- The registration attempt is logged in the persistent data store
- The log includes the following:
 - Timestamp

- When the user account is successfully registered
 - Timestamp will be in YYYY-MM-DD-hh-mm-ss format
 - Timestamp is recorded relative to UTC
- Log Level: Info
- Log Category: Persistent Data Store
- Log Message: "User registration successful."

Failure Outcome(s)

- All inputs do not meet validation requirements in the User Input section.
 1. The email is not in the [xxxx@xxxx.xxx](#) format. In this case, "Email must be in the [xxxx@xxxx.xxx](#) format. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The email is not in the correct format."
 2. The email is shorter than 3 characters. In this case, "Email must be at least 3 characters long. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The email is too short."
 3. The email contains a character that is not in the scope defined in User Input. In this case, "The email must contain only alphanumeric values and '.' or '-'. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The email is too short."
 4. The date of birth is not a date between January 1st, 1970 and the current date. In this case, "The date of birth must be between January 1st, 1970 and the current date. Please try again." is displayed to the user. The

system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Data
 - Log Message: "The birth date is invalid."
5. The zip code is not a valid zip code within LA County. In this case, "The zip code must be a valid zip code within LA County. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The zip code is invalid."
6. If any of the options is null, and the user tries to submit, "This option must not be empty" is displayed to the user. The system will attempt to asynchronously log the following:
- Log Level: Warning
 - Log Category: Data
 - Log Message: "The non-nullable option is null."
- Confirmation email is not sent to the user. In this case, the system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Confirmation email is not sent to the user."
 - User completes confirmation after 2 hours. In this case, a system message is displayed saying "Confirmation time period has expired. Register again or contact the system administrator.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Confirmation time period has expired."
 - User registers with an invalid email. In this case, a system message is displayed saying "Invalid email provided. Retry again or contact system administrator".

The system will attempt to asynchronously log the following:

- Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid email provided."
- User registers with an invalid date of birth. In this case, a system message is displayed saying "Invalid date of birth provided. Must be within 1/1/1970 to [current date]". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid date of birth provided."
- User registers with an invalid zip code. In this case, a system message is displayed saying "Invalid zip code provided. Must be a valid zip code within California.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid zip code provided."
- User completes confirmation within 2 hours, but the system was unable to assign a system-wide username using the user's email. In this case, a system message is displayed saying "Unable to assign username using this email address. Retry again or contact system administrator.". Account is not created. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Fail to assign username using the user email address."
- User completes confirmation within 2 hours, and the system was able to assign a system-wide username using the user's email, but it took longer than 3 seconds. User Account is created. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Operation exceeded time frame."

- The new user account is not saved in the persistent data store. In this case, “Registration failed. Retry again or contact system administrator.” is displayed. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “The new user account is not saved to the persistent data store.”
- The registration attempt is not logged in the persistent data store, if the user successfully registered their account
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The registration attempt was not recorded to the persistent data store.”
- The registration attempt is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

R2 User Story: Register Admin Account

As the Root Admin, I can register an Admin account to help me monitor the Lifelog application.

Effort Points (Hour) - 100 points

Complexity Scale: Medium

User Input

Required Input

- Email
 - Minimum of 3 characters
 - ii. Must be in the format: [xxxxx@xxxx.xxx](#)
 - iii. a-z (case insensitive)
 - iv. 0-9
 - v. May have special characters
 - .
 - -
 - Must not be in used by any other accounts
 - User must confirm email address within 2-hours to complete registration
 - The value is not nullable
- Birth date
 - Valid date of births begins January 1st, 1970 and ends at current date
 - The value is not nullable
- Zip Code
 - Must be a valid 5 digit zip code within LA County, see Data Source
 - The value is not nullable

Data Source

Origin

- External

Type

- Snapshot

Details

- Link:
https://geohub.lacity.org/datasets/71b2fed2c1f24fc8850f5b7f8d2a320a_26/
- The link contains a downloadable CSV of all zip codes within LA County, this will be stored in the persistent data store

AuthN

- None, publicly available data

App Permissions

- Permission: Write
- Scope: Lifelog User Account

Target Audience - Unauthenticated Anonymous Users

Pre-conditions

1. The user must be authorized as the Root Admin
2. The Root Admin is on the Admin Console View

Success Outcome(s)

- All inputs meet validation requirements in the User Input section
- After confirming the email address, a system message is displayed to the user saying “Admin registration complete for [email address].” within 3 seconds of confirmation completion. The user is automatically navigated to the home view
- All user accounts must be stored in a persistent data store
- The registration attempt is logged in the persistent data store
- The log includes the following:
 - Timestamp
 - When the user account is successfully registered

- Timestamp will be in YYYY-MM-DD-hh-mm-ss format
- Timestamp is recorded relative to UTC
- Log Level: Info
- Log Category: Persistent Data Store
- Log Message: "Admin registration successful."

Failure Outcome(s)

- All inputs do not meet validation requirements in the User Input section.
 1. The email is not in the [xxxx@xxxx.xxx](#) format. In this case, "Email must be in the [xxxx@xxxx.xxx](#) format. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The email is not in the correct format."
 2. The email is shorter than 3 characters. In this case, "Email must be at least 3 characters long. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The email is too short."
 3. The email contains a character that is not in the scope defined in User Input. In this case, "The email must contain only alphanumeric values and '.' or '-'. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The email is too short."
 4. The date of birth is not a date between January 1st, 1970 and the current date. In this case, "The date of birth must be between January 1st, 1970 and the current date. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:

- Log Level: Warning
 - Log Category: Data
 - Log Message: "The birth date is invalid."
- 5. The zip code is not a valid zip code within LA County. In this case, "The zip code must be a valid zip code within LA County. Please try again." is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The zip code is invalid."
- 6. If any of the options is null, and the user tries to submit, "This option must not be empty" is displayed to the user. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Data
 - Log Message: "The non-nullable option is null."
- Confirmation email is not sent to the Root Admin. In this case, the system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Confirmation email is not sent to the user."
- Root Admin completes confirmation after 2 hours. In this case, a system message is displayed saying "Confirmation time period has expired. Register again.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Confirmation time period has expired."
- Root Admin registers the Admin with an invalid email. In this case, a system message is displayed saying "Invalid email provided.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR

- Log Category: Business
 - Log Message: "Invalid email provided."
- Root Admin registers with an invalid date of birth. In this case, a system message is displayed saying "Invalid date of birth provided. Must be within 1/1/1970 to [current date].". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid date of birth provided."
- Root Admin registers the Admin with an invalid zip code. In this case, a system message is displayed saying "Invalid zip code provided. Must be a valid zip code within California.". The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Invalid zip code provided."
- Root Admin completes confirmation for the Admin account within 2 hours, but the system was unable to assign a system-wide username using the user's email. In this case, a system message is displayed saying "Unable to assign username using this email address. Retry again.". Account is not created. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Fail to assign username using the user email address."
- Root admin completes confirmation for the Admin account within 2 hours, and the system was able to assign a system-wide username using the user's email, but it took longer than 3 seconds. User Account is created. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Business
 - Log Message: "Operation exceeded time frame."

- The new admin account is not saved in the persistent data store. In this case, “Admin registration failed. Retry again.” is displayed. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “The new admin account is not saved to the persistent data store.”
- The registration attempt is not logged in the persistent data store, if the Root Admin successfully registered the Admin account
 1. The amount of logs in the persistent data store does not increase by at least 1. The user will be able to continue using the system. The system will attempt to asynchronously log the following:
 - Log Level: Warning
 - Log Category: Persistent Data Store
 - Log Message: “The Admin registration attempt was not recorded to the persistent data store.”
- The registration attempt is logged, but it does not accurately depict any of the following information
 - Timestamp: YYYY-MM-DD-hh-mm-ss format, relative to UTC
 - Log Level: Info, Debug, Warning, or Error
 - Log Category: View, Business, Server, Data, or Persistent Data Store
 - Log Message: Context about where the log is coming from

User Administration

AD1 User Story: Account Deletion

As an authenticated user, I can delete my Lifelog account to remove all my personal data from the application

Effort Points (Hour) - 100 points

Complexity Scale: Medium

App Permissions

- Permission: Delete
- Scope: Any registered Normal User

Target Audience - All authenticated Normal User

Pre-conditions

1. User must have an active authenticated session
2. User must be on account deletion view
3. User has permission to delete account

Success Outcome(s)

- Only an Admin or Root Admin account can delete another admin account
- All personal identifiable information (PII) along with the user account data is permanently deleted from the persistent data store. A system message displays "Account deletion successful". Upon acknowledgment of system message, the user is automatically navigated to the home view
- Account deletion cannot be reversed
- The system must not go offline as the result of failures from this operation

Failure Outcome(s)

- The user tries to delete their account and confirms the action, but the system does not delete both PII data or user account data. In this case, “Account deletion failed” is displayed. The system will attempt to asynchronously log the following:
 - Log Level: ERROR
 - Log Category: Persistent Data Store
 - Log Message: “PII and user account data failed to be deleted.”
- Data is not permanently deleted from the system. In this case, the system should notify an Admin user about the issue.
- A system message is not shown or the wrong message is shown after all PII data and user account data is permanently deleted from the system.
- The user is unable to acknowledge the system message “Account deletion successful” after the successful data deletion.
- The user is not automatically redirected to the home view upon acknowledging the system message

UAD1: Usage Analysis Dashboard

As an authenticated and authorized Admin or Root Admin user, I can view an usage analysis dashboard to monitor Normal User activities on the application.

Effort Points (Hour) - 100 points

Complexity Scale: Medium

App Permissions

- Permission: View
- Scope: Admin and Root Admin User

Target Audience - Admin and Root Admin users

Pre-conditions

1. Persistent data store must be active
2. Persistent data store must be accessible by the system
3. User must have an active authenticated session on the current device
4. User must be on the Usage Analysis Dashboard View
5. User must be an Admin or Root Admin user

Success Outcome(s)

- Only Admin and Root Admin user can access the dashboard
- All data required for the dashboard is successfully fetched from the persistent data store
- The following Key Performance Indicators (KPIs) are displayed
 - The number of success and failed login attempts per month over selected time span (trend chart)
 - The number of success and failed registrations per month over selected time span (trend chart)
 - Top 3 longest page visits in seconds

- Top 3 most used feature
 - Two application specific feature metric
- The KPIs can be displayed with the following time spans
 - 6 months
 - 12 months
 - 24 months
- All KPI data must be automatically refreshed in intervals of 60 seconds
- The view must load within 15 seconds upon completion of navigation.
- System failures from this feature must not result in the system going offline

Failure Outcome(s)

- An Admin or Root Admin user is unable to access the dashboard
- The view does not load within 15 seconds upon accessing the dashboard
- All KPI data are not refreshed every 60 seconds
- KPI data refresh takes longer than 60 seconds