CSCI 3901: Course Project

Milestone 2: Blackbox tests and plan of feature development

Blackbox Tests:

Input Validation

Family Tree:
PersonIdentity addPerson(String name):
- Enter name as empty string, null, or string with only whitespaces.

Boolean recordAttributes(PersonIdentity person, Map<String, String> attributes):
- PersonIdentity object is passed as null.
- Empty, null, or string with only whitespaces provided as key or value in the key-value pairs supplied as attributes.
- Wrong format for fields like date and gender.

Boolean recordNote(PersonIdentity person, String note):
Boolean recordReference(PersonIdentity person, String reference):
- PersonIdentity object is passed as null.
- Reference or Note is provided as empty, null, or string with only whitespaces.

Boolean recordChild(PersonIdentity parent, PersonIdentity child):
- Parent or Child are passed as null.

Boolean recordPartnering(PersonIdentity partner1, PersonIdentity partner2):
- Partner1 or Partner2 are passed as null.

Boolean recordDissolution(PersonIdentity partner1, PersonIdentity partner2):
- Partner1 or Partner2 are passed as null.

Media Archive:
FileIdentifier addMediaFile(String fileLocation):
- fileLocation is provided as empty, null, or string with only whitespaces.

Boolean recordMediaAttributes(FileIdentifier fileIdentifier, Map<String, String> attributes):
- FileIdentifier object is passed as null.
- Empty, null, or string with only whitespaces provided as key or value in the key-value pairs supplied as attributes.
- Wrong format for fields like date.

Boolean peopleInMedia(FileIdentifier fileIdentifier, List<PersonIdentity> people):
- FileIdentifier object is passed as null.
- List containing PersonIdentity object is passed as null.

Boolean tagMedia(FileIdentifier fileIdentifier, String tag):
- FileIdentifier object is passed as null.
- tag is provided as empty, null, or string with only whitespaces.

Reporting:

PersonIdentity findPerson(String name):
FileIdentifier findMediaFile(String name):
- Any of the parameters is provided as empty, null, or string with only whitespaces.

String findName(PersonIdentity id):
String findMediaFile(FileIdentifier fileId):
BiologicalRelation findRelation(PersonIdentity person1, PersonIdentity person2):
List<String> notesAndReferences(PersonIdentity person):
List<FileIdentifier> findBiologicalFamilyMedia(PersonIdentity person)
- Any of the respective objects is passed as null.

Set<PersonIdentity> descendents(PersonIdentity person, Integer generations):
Set ancestores(PersonIdentity person, Integer generations):
- PersonIdentity object is passed as null.
- Generations is provided as a negative integer.

List<FileIdentifier> findIndividualsMedia(Set<PersonIdentitfier> people, String startDate, String endDate):
Set<FileIdentifier> findMediaByTag(String tag , String startDate, String endDate)
- Tag is provided as empty, null or string with only whitespaces.
- Wrong format for date.

Boundary Cases:

- Name of a person, file location, reference for a person, note for a person, the value of an attribute (for person or file), or tag for a file is provided as a 1-character String.
- The Map for attributes is provided as an empty list.
- Date contains at most 2 fields from the day, month, and year.

List findIndividualsMedia(Set<PersonIdentitfier> people, String startDate, String endDate):
Boolean peopleInMedia(FileIdentifier fileIdentifier, List<PersonIdentity> people):
- Set or List of People provided is empty.

Set<PersonIdentity> descendents(PersonIdentity person, Integer generations):

Set ancestors(PersonIdentity person, Integer generations):
- Generations are provided as 0.
- For a person who has no ancestors or descendants.
- For a person who has many ancestors or descendants.

Boolean recordReference(PersonIdentity person, String reference):
- Add reference for a person who has no references.
- Add reference when the person already has multiple references.

Boolean recordNote(PersonIdentity person, String note):
- Add a note for a person who has no notes.
- Add a note when the person already has multiple notes.

Boolean tagMedia(FileIdentifier, fileIdentifier, String tag):
- Add tag for a file that has no tags.
- Add a tag when the file already has multiple tags.

List<String> notesAndReferences(PersonIdentity person):
- For a person who has no notes or references.
- For a person who has multiple notes and references.

Set<FileIdentifier> findMediaByTag(String tag , String startDate, String endDate):
- When no media files exist for the tag or in the given date range.
- When many media files exist for the tag and given date range.

List<FileIdentifier> findIndividualsMedia(Set<PersonIdentity> people, String startDate, String endDate):
- Set or List of People provided is empty.
- When no media files exist for the provided set of people or in the provided date range.
- When many media files exist for the provided set of people and provided date range.

List<FileIdentifier> findBiologicalFamilyMedia(PersonIdentity person):
- No children exist for the provided person.
- Many children with their corresponding images exist for the provided person.
- Many children exist for the provided person but with no images.

Control Flow Cases:

Family Tree
PersonIdentity addPerson(String name):
- Enter duplicate name.

Boolean recordChild(PersonIdentity parent, PersonIdentity child):
- A relationship already exists between parent and child.
- The relationship does not exist between the 2 persons.
- The relationship already exists between the 2 persons, but the roles are reversed, i.e., the child is the parent and the parent is the child.

Boolean recordDissolution(PersonIdentity partner1, PersonIdentity partner2):
Boolean recordPartnering(PersonIdentity partner1, PersonIdentity partner2):
- The relationship already exists between the persons.
- The relationship does not exist between the 2 persons.

FileIdentifier addMediaFile(String fileLocation):
- Add a duplicate file.

Boolean recordMediaAttributes(FileIdentifier fileIdentifier, Map<String, String> attributes):
Boolean peopleInMedia(FileIdentifier fileIdentifier, List<PersonIdentity> people):
- The file does not exist in the database.
- The file exists in the database.

Boolean tagMedia(FileIdentifier, fileIdentifier, String tag):
- The file does not exist in the database.

PersonIdentity findPerson(String name):
- The person exists in the family tree.
- The person does not exist in the family tree.

FileIdentifier findMediaFile(String name):
- The file exists in the database.
- The file does not exist in the database.

BiologicalRelation findRelation(PersonIdentity person1, PersonIdentity person2):
- The 2 persons are related.
- The 2 persons are not related.

Data Flow Cases:

Boolean recordChild(PersonIdentity parent, PersonIdentity child):
- The parent already has a child.
- The child already belongs to another parent.
- The parent has multiple children.

Boolean recordPartnering(PersonIdentity partner1, PersonIdentity partner2):
- One of the partners already has another partner.
- After partner1 and partner2 had a dissolution.

Boolean recordDissolution(PersonIdentity partner1, PersonIdentity partner2):
- When no partnership exists between the people.
- After partner1 and partner2 established a partnership.

Plan of Feature Development

The following image is the Gantt Chart depicting the Plan of Feature Development for the System, including the sub-tasks for each feature.
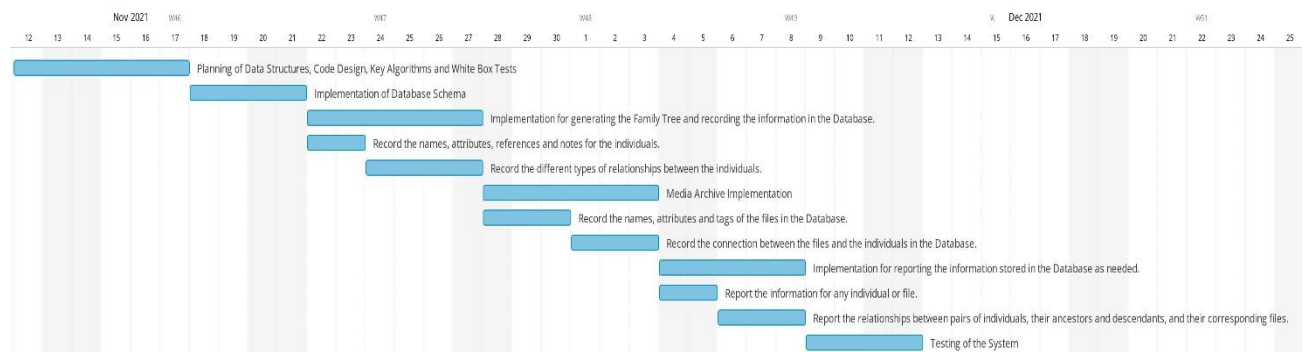

Figure 1. Gantt Chart for Plan of Feature Development

The following table shows the major features to be developed and their estimated date of completion:

Table 1. Plan for Major Features

Feature	Date of Completion
Planning of Data Structures, Code Design, Key Algorithms and White Box Tests	November 17, 2021
Implementation of Database Schema	November 21, 2021
Implementation for generating the Family Tree and recording the information in the Database.	November 27, 2021
Media Archive Implementation	December 3, 2021
Implementation for reporting the information stored in the Database as needed.	December 8, 2021
Testing of the System	December 12, 2021