Rushi Samirbhai Patel   rs397441@dal.ca
B00886157

Final Project

Genealogy Media Integration System

<u>Milestone 2</u>

<u>Black Box Testing:</u>

I have analyzed the below black box tests for Genealogy Media Integration System (GMIS) :

- ❖ **<u>Input Validations</u>**
  1. **PersonIdentity addPerson**
     - Name is null or empty.
     - Name is entered in a format other than String.
     - Name has special characters.

  2. **Boolean recordAttributes**
     - Person object is null.
     - Map object (attributes) is null.

  3. **Boolean recordReference**
     - Person object is null.
     - Reference is null or empty.
     - Reference is entered in a format other than String.
     - Reference has special characters.

  4. **Boolean recordNote**
     - Person object is null.
     - Note is null or empty.
     - Note is entered in a format other than String.
     - Note has special characters.

  5. **Boolean recordChild**
     - Person object (parent) is null.
     - Person object (child) is null.

6. Boolean recordPartnering
- Partner 1 object is null.
- Partner 2 object is null.

7. Boolean recordDissolution
- Partner 1 object is null.
- Partner 2 object is null.

8. FileIdentifier addMediaFile
- Name is null or empty.
- Name is entered in a format other than String.
- Name has special characters.

9. Boolean recordMediaAttributes
- FileIdentifier object is null.
- Map object (attributes) is null.

10. Boolean peopleInMedia
- FileIdentifier object is null.
- List of people is null or empty.

11. Boolean tagMedia
- FileIdentifier object is null.
- Tag is null or empty.
- Tag is entered in a format other than String.
- Tag has special characters.

12. PersonIdentity findPerson
- Name is null or empty.
- Name is entered in a format other than String.
- Name has special characters.

13. FileIdentifier findMediaFile
- Name is null or empty.
- Name is entered in a format other than String.
- Name has special characters.

14. String findName
- PersonIdentity object (id) is null.

15. String findMediaFile
- FileIdentifier object (field) is null.

16. BiologicalRelation findRelation
- Person 1 is null.
- Person 2 is null.

17. Set<PersonIdentity> descendents
- PersonIdentity object (person) is null.
- Generations is null.
- Generations value is less than 0.

18. Set<PersonIdentity> ancestores
- PersonIdentity object (person) is null.
- Generations is null.
- Generations value is less than 0.

19. List<String> notesAndReferences
- PersonIdentity object (person) is null.

20. Set<FileIdentifier> findMediaByTag
- Tag is null or empty.
- Tag is entered in a format other than String.
- Tag has special characters.
- Start date is null or empty.
- Start date is entered in a format other than String.
- Start date has special characters.
- End date is null or empty.
- End date is entered in a format other than String.
- End date has special characters.
- Start date/End date has any other special characters other than backward or forward slash.
- Start date/End date is in the wrong format in YY/MM/DD format.
- Start date/End date has more than 4 digits for the year.
- Start date/End date has 2,3 or 4 digits for the year.
- Start date/End date is empty for one part of the date format.
- Start date/End date has alphabets in the date format.
- Start date/End date has a date greater than or equal to 32.
- Start date/End date has a month greater than or equal to 13.
- Start date/End date has month February and date is 30 or 31.

- Start date/End date has blank spaces in between date format.

21. **Set<FileIdentifier> findMediaByLocation**
- Location is null or empty.
- Location is entered in a format other than String.
- Location has special characters.
- Start date is null or empty.
- Start date is entered in a format other than String.
- Start date has special characters.
- End date is null or empty.
- End date is entered in a format other than String.
- End date has special characters.
- Start date/End date has any other special characters other than backward or forward slash.
- Start date/End date is in the wrong format in YY/MM/DD format.
- Start date/End date has more than 4 digits for the year.
- Start date/End date has 2,3 or 4 digits for the year.
- Start date/End date is empty for one part of the date format.
- Start date/End date has alphabets in the date format.
- Start date/End date has a date greater than or equal to 32.
- Start date/End date has a month greater than or equal to 13.
- Start date/End date has month February and date is 30 or 31.
- Start date/End date has blank spaces in between date format.

22. **List<FileIdentifier> findIndividualsMedia**
- Set of people is null or empty.
- Start date is empty.
- Start date is entered in a format other than String.
- Start date has special characters.
- End date is empty.
- End date is entered in a format other than String.
- End date has special characters.
- Start date/End date has any other special characters other than backward or forward slash.
- Start date/End date is in the wrong format in YY/MM/DD format.
- Start date/End date has more than 4 digits for the year.
- Start date/End date has 2,3 or 4 digits for the year.
- Start date/End date is empty for one part of the date format.
- Start date/End date has alphabets in the date format.
- Start date/End date has a date greater than or equal to 32.

- Start date/End date has a month greater than or equal to 13.
- Start date/End date has month February and date is 30 or 31.
- Start date/End date has blank spaces in between date format.

23. **List<FileIdentifier> findBiologicalFamilyMedia**
- PersonIdentity object (person) is null.r

❖ **Boundary Cases**

1. **PersonIdentity addPerson**
   - Person name has only one character.

2. **Boolean recordAttributes**
   - Person object has null or empty fields.
   - All key value pairs of attributes are null or empty.
   - Some key value pairs of attributes are null.
   - Some key value pairs of attributes are empty.

3. **Boolean recordReference**
   - Person object has null or empty fields.
   - Reference has only one character.

4. **Boolean recordNote**
   - Person object have null or empty fields.
   - Note has only one character.

5. **Boolean recordChild**
   - Person object (parent) has null or empty fields.
   - Person object (child) has null or empty fields.

6. **Boolean recordPartnering**
   - Person object (partner1) has null or empty fields.
   - Person object (partner2) has null or empty fields.

7. **Boolean recordDissolution**
   - Person object (partner1) has null or empty fields.
   - Person object (partner2) has null or empty fields.

8. **FileIdentifier addMediaFile**
   - File location has only one character.
   - File location is in the wrong format.

9. **Boolean recordMediaAttributes**
   - File identifier object has null or empty fields.
   - All key value pairs of attributes are null or empty.
   - Some key value pairs of attributes are null.
   - Some key value pairs of attributes are empty.

10. **Boolean peopleInMedia**
    - File identifier object has null or empty fields.
    - PersonIdentity objects in the list are null or empty for some people.
    - PersonIdentity objects in the list are null or empty for all people.

11. **Boolean tagMedia**
    - File identifier object has null or empty fields.
    - Tag has only one character.

12. **PersonIdentity findPerson**
    - Tag has only one character.

13. **FileIdentifier findMediaFile**
    - Name has only one character.

14. **String findName**
    - PersonIdentity object id has null or empty fields.

15. **String findMediaFile**
    - File identifier object has null or empty fields.

16. **BiologicalRelation findRelation**
    - Person object (person1) has null or empty fields.
    - Person object (person2) has null or empty fields.

17. **Set<PersonIdentity> descendents**
    - PersonIdentity object has null or empty fields.
    - Generations value is equal to 0.

18. **Set<PersonIdentity> ancestores**

- PersonIdentity object has null or empty fields.
- Generations value is equal to 0.

19. List<String> notesAndReferences
- PersonIdentity object has null or empty fields.

20. Set<FileIdentifier> findMediaByTag
- Tag has only one character.
- Start/End date is in MM/DD/YYYY format.
- Start/End date is in DD/MM/YYYY format.

21. Set<FileIdentifier> findMediaByLocation
- Location has only one character.
- Start/End date is in MM/DD/YYYY format.
- Start/End date is in DD/MM/YYYY format.

22. List<FileIdentifier> findIndividualsMedia
- PersonIdentity object in set has null or empty fields.
- Start/End date is in MM/DD/YYYY format.
- Start/End date is in DD/MM/YYYY format.

23. List<FileIdentifier> findBiologicalFamilyMedia
- PersonIdentity object has null or empty fields.

❖ **Control Flow Cases**

1. PersonIdentity addPerson
- Add a person when no people were added.
- Add a person when one person is added.
- Add a person when multiple people are added.
- Add a person with duplicate names.

2. Boolean recordAttributes
- Record attributes when no attributes were recorded.
- Record attributes when one attribute was recorded.
- Record attribute when multiple attributes were recorded.

3. Boolean recordReference
- Record reference when no references were recorded for the person.

- Record reference when one reference was recorded for the person.
- Record reference when multiple references were recorded for the person.
- Record reference when no person is added.
- Record reference when one person is added.
- Record reference when multiple people are added.

4. Boolean recordNote
- Record note when no notes were recorded for the person.
- Record note when one note was recorded for the person.
- Record reference when multiple notes were recorded for the person.
- Record note when no person is added.
- Record note when one person is added.
- Record note when multiple people are added.

5. Boolean recordChild
- Record parent/child relation when no people were added.
- Record parent/child relation when one person is added.
- Record a parent/child relation when multiple people were added.

6. Boolean recordPartnering
- Record partnering relation when no people were added.
- Record partnering relation when one person is added.
- Record a partnering relation when multiple people were added.

7. Boolean recordDissolution
- Record dissolution of a partnering relation when the relation was already made.
- Record dissolution of a partnering relation when the relation was not made.
- Record dissolution of a partnering relation when no people were added.
- Record dissolution of a partnering relation when one person is added.
- Record a dissolution of a partnering relation when multiple people were added.

8. FileIdentifier addMediaFile
- Add a media file when no media files were added.

- Add a media file when only one media file is added.
- Add a media file when multiple media files are added.

9. Boolean recordMediaAttributes
- Record information(attributes) about media file when no information(attributes) is added.
- Record information(attributes) about media file when one information(attributes) is added.
- Record information(attributes) about media file when multiple information(attributes) is added.
- Record information(attributes) about media file when no files are added.
- Record information(attributes) about media file when only one file is added.
- Record information(attributes) about media file when multiple files are added.

10. Boolean peopleInMedia
- Record a set of people in the given file when some people were already recorded.
- Record a set of people in the given file when no people were recorded.
- Record a set of people in the given file when multiple people were recorded.
- Record a set of people in a file when no files are added.
- Record a set of people in a file when only one file is added.
- Record a set of people in a file when multiple files are added.

11. Boolean tagMedia
- Record a tag for a media file when no files are added.
- Record a tag for a media file when only one file is added.
- Record a tag for a media file when multiple files are added.
- Record a tag for a media file when no tags were recorded.
- Record a tag for a media file when only one tag was recorded.
- Record a tag for a media file when multiple tags were recorded.

12. PersonIdentity findPerson
- Find a person when no people were added.
- Find a person when one person was added.
- Find a person when multiple people were added.

13. FileIdentifier findMediaFile
- Find a person when no people were added.
- Find a person when one person was added.
- Find a person when multiple people were added.

14. String findName
- Find the name of an individual when no person was added.
- Find the name of an individual when only one person was added.
- Find the name of an individual when multiple people were added.

15. String findMediaFile
- Locate the file name when no media files are added.
- Locate the file name when only one media file is added.
- Locate the file name when multiple media files are added.

16. BiologicalRelation findRelation
- Report relations of two individuals when no person is added.
- Report relations of two individuals when one person is added.
- Report relations of two individuals when multiple people are added.
- Report relations of two individuals when the relationship was established for the two individuals.
- Report relations of two individuals when the relationship was not established for the two individuals.

17. Set<PersonIdentity> descendents
- Report descendents when no person is added.
- Report descendents when only one person is added.
- Report descendents when multiple people are added.

18. Set<PersonIdentity> ancestores
- Report ancestors when no person is added.
- Report ancestors when only one person is added.
- Report ancestors when multiple people are added.

19. List<String> notesAndReferences
- Fetch notes and references of a person when person is not added.
- Fetch notes and references of a person when the given person is added.
- Fetch notes and references of a person when no person is added.

- Fetch notes and references of a person when only one person is added.
- Fetch notes and references of a person when multiple people are added.

20. Set<FileIdentifier> findMediaByTag
- Fetch media files when no media file was added.
- Fetch media files when only one media file is added.
- Fetch media files when multiple media files are added.
- Fetch media files when no tags were recorded.
- Fetch media files when only one tag is recorded.
- Fetch media files when multiple tags are recorded.

21. Set<FileIdentifier> findMediaByLocation
- Fetch media files when no media file was added.
- Fetch media files when only one media file is added.
- Fetch media files when multiple media files are added.
- Fetch media files when no files were recorded in the given location.

22. List<FileIdentifier> findIndividualsMedia
- Fetch media files when no media file was added.
- Fetch media files when only one media file is added.
- Fetch media files when multiple media files are added.
- Fetch media files when no person is added.
- Fetch media files when only one person is added.
- Fetch media files when multiple people are added.
- Fetch media files when no person is included in the media list.
- Fetch media files when only one person is included in the media list.
- Fetch media files when multiple people are included in the media list.

23. List<FileIdentifier> findBiologicalFamilyMedia
- Fetch media files when no media file was added.
- Fetch media files when only one media file is added.
- Fetch media files when multiple media files are added.
- Fetch media files when no person is added.
- Fetch media files when only one person is added.
- Fetch media files when multiple people are added.

Rushi Samirbhai Patel   rs397441@dal.ca
B00886157

❖ **Data Flow Cases**

1. **Boolean recordChild**
   ● Record parent/child relation when the relation was already made.
   ● Record parent/child relation when the relation was not made.

2. **Boolean recordPartnering**
   ● Record partnering relation when the relation was already made.
   ● Record partnering relation when the relation was not made.

3. **Boolean recordDissolution**
   ● Record dissolution relation when the relation was already made.
   ● Record dissolution relation when the relation was not made.

4. **Set<PersonIdentity> descendents**
   ● Report descendents when the generation value is greater than or equal to 1.

5. **Set<PersonIdentity> ancestores**
   ● Report ancestors when the generation value is greater than or equal to 1.

6. **Set<FileIdentifier> findMediaByTag**
   ● Fetch set of media files when there are no media files linked to the given tag.
   ● Fetch set of media files when there is only one media file linked to the given tag.
   ● Fetch set of media files when there are multiple media files linked to the given tag.
   ● Fetch set of media files when there is no media file linked to the given tag in the specified time interval.
   ● Fetch set of media files when there is only one media file linked to the given tag in the specified time interval.
   ● Fetch set of media files when there are multiple media files linked to the given tag in the specified time interval.

7. **Set<FileIdentifier> findMediaByLocation**
   ● Fetch media files when only one file is recorded in the given location.

- Fetch media files when multiple files are recorded in the given location.
- Fetch set of media files when there is no media file linked to the given location in the specified time interval.
- Fetch set of media files when there is only one media file linked to the given location in the specified time interval.
- Fetch set of media files when there are multiple media files linked to the given location in the specified time interval.

8. List<FileIdentifier> findIndividualsMedia

- Fetch media files when no person is linked with the media in the specified time interval.
- Fetch media files when only one person is linked with the media in the specified time interval.
- Fetch media files when multiple people are linked with the media in the specified time interval.

9. List<FileIdentifier> findBiologicalFamilyMedia

- Fetch media files when there are no children recorded for the given person.
- Fetch media files when there is only one child recorded for the given person.
- Fetch media files when there are multiple children recorded for the given person.

Plan for feature development:

As per my analysis in milestone 1, I have structured my feature development plan in the following manner:

1. **Setup MySql Workbench and create a test schema for the system.**
    - ➔ Planned completion date : November 16, 2021

2. **Develop a class/interface layout and connect with the database.**
    - ➔ Planned completion date : November 18, 2021

Having completed both the above steps, I will move on to develop the features in the given sequence:

Rushi Samirbhai Patel   rs397441@dal.ca
B00886157

1. **Manage the family tree to store data for all the people in the family and connect this data to the database.**
    ➔ Planned completion date : November 20, 2021

2. **Manage the media archive to store data for all the media files and connect this data to the database.**
    ➔ Planned completion date : November 24, 2021

3. **Defining relations and finding biological relations, including calculating generations, nearest common ancestor, degree of cousinship and degree of removal.**
    ➔ Planned completion date : November 28, 2021

4. **Reporting : To fetch the appropriate data from the database based on the method calls (finding a person, finding relations, finding ancestors/descendents, finding media by location/tags).**
    ➔ Planned completion date : December 3, 2021

5. **Perform Testing of the code : Based on the test cases created by me, I would run the tests to check if the system is working as expected.**
    ➔ Planned completion date : December 8, 2021

6. **Code fixing after the tests**
    ➔ Planned completion date : December 10, 2021

7. **Code cleanup and restructuring/organizing the code along with external documentation :**
    ➔ Planned completion date : December 12, 2021

8. **Project submission**
    ➔ Planned completion date : December 13, 2021