

Testing plan:

I have used MainUI.java as a console UI to test my program. Below are the few test cases which have been tested and return null, false, or throw exception on the basis of input and flow of the program.

Test Cases:

- **Input Validation Test:**

Family tree

PersonIdentity addPerson(String name)

1. Null Value for name.
2. Empty string is passed for name.

Boolean recordAttributes(PersonIdentity person, Map<String, String> attributes)

1. Null Value for person.
2. Null Value for attributes map key.
3. Null value for attribute values.
4. Attributes map is empty
5. Key in map does not match column name

Boolean recordReference(PersonIdentity person, String reference)

1. Null value for PersonIdentity person object.
2. Reference is null.
3. Reference is empty.

Boolean recordNote(PersonIdentity person, String note)

1. Null value for PersonIdentity person object.
2. Note is null.
3. Note is empty.

Boolean recordChild(PersonIdentity parent, PersonIdentity child)

1. PersonIdentity Parent object is null.
2. PersonIdentity Child object is null.

Boolean recordPartnering(PersonIdentity partner1, PersonIdentity partner2)

1. PersonIdentity parent1 object is null.
2. PersonIdentity parent2 object is null.

Boolean recordDissolution(PersonIdentity partner1, PersonIdentity partner2)

1. PersonIdentity parent1 object is null.
2. PersonIdentity parent2 object is null.

Media archive

FileIdentifier addMediaFile(String fileLocation)

1. Null value for file location
2. Empty string is passed for file location.

Boolean recordAttributes(FileIdentifier fileIdentifier, Map<String, String> attributes)

1. FileIdentifier fileIdentifier object is null.
2. Null Value for attributes map key.
3. Null value for attribute values.
4. Attributes map is empty
5. Key in map does not match column name

Boolean tagMedia(FileIdentifier, fileIdentifier, String tag)

1. fileIdentifier object is null
2. Tag is null
3. Tag is null

Boolean peopleInMedia(FileIdentifier fileIdentifier, List PersonIdentity>people)

1. List people is empty
2. One object in list people is null.

3. fileIdentifier object is null

Reporting

PersonIdentity findPerson(String name)

1. name is Null
2. name is empty

FileIdentifier findMediaFile(String name)

1. name is Null.
2. Name is empty

String findName(PersonIdentity id)

1. Person Identity id is null

String findName(PersonIdentity id)

1. Person Identity id is null

BiologicalRelation findRelation(PersonIdentity person1, PersonIdentity person2)

1. Person1 object is null
2. Person2 object is null

Set descendants(PersonIdentity person, Integer generations)

1. Person is null
2. Generations is negative
3. Generations is 0.

Set<PersonIdentity> ancestores(PersonIdentity person, Integer generations)

1. Person is null
2. Generations is negative
3. Generations is 0.

List<String> notesAndReferences(PersonIdentity person))

1. Person is null

Set<FileIdentifier> findMediaByTag(String tag , String startDate, String endDate)

1. Tag is empty
2. Tag is null
3. StartDate date is null
4. End date is null
5. Start date is empty
6. End date is null

Set<FileIdentifier> findMediaByLocation(String tag , String startDate, String endDate)

4. Location is empty
5. Location is null
6. StartDate date is null
7. End date is null
8. Start date is empty
9. End date is null

List<FileIdentifier> findIndividualsMedia(Set<PersonIdentity> people, String startDate, String endDate)

1. Set people is empty
2. Any object in people is null
3. StartDate date is null
4. End date is null
5. Start date is empty
6. End date is null

List<FileIdentifier> findBiologicalFamilyMedia(PersonIdentity person)

1. PersonIdentity object person is null

- Boundary Test:

Family tree

PersonIdentity addPerson(String name)

1. 1 character name.

Boolean recordAttributes(PersonIdentity person, Map<String, String> attributes)

1. Key in map attributes is 1 character.
2. Values in map attributes is 1 character

Boolean recordReference(PersonIdentity person, String reference)

1. Reference is 1 character

Boolean recordNote(PersonIdentity person, String note)

1. Note is 1 character

Media archive

FileIdentifier addMediaFile(String fileLocation)

1. 1 character for fileLocation

Boolean recordAttributes(FileIdentifier fileIdentifier, Map<String, String> attributes)

1. Key in map attributes is 1 character.
2. Values in map attributes is 1 character

Boolean tagMedia(FileIdentifier, fileIdentifier, String tag)

1. Tag is 1 character

Boolean peopleInMedia(FileIdentifier fileIdentifier, List PersonIdentity>people)

1. List people contains one object.

Reporting

PersonIdentity findPerson(String name)

1. One character name

FileIdentifier findMediaFile(String name)

1. One character name

Set descendants(PersonIdentity person, Integer generations)

1. Generation is 1.
2. Generations exceed the level of tree.

Set<PersonIdentity> ancestors(PersonIdentity person, Integer generations)

1. Generation is 1.
2. Generations exceed the level of tree

Set<FileIdentifier> findMediaByTag(String tag , String startDate, String endDate)

1. One character tag

Set<FileIdentifier> findMediaByLocation(String Location , String startDate, String endDate)

1. One character location

- **Control Flow Test:**

Family tree

PersonIdentity addPerson(String name)

1. Duplicate person name
2. Person name added when no person already exists
3. Person name added when one person is exists
4. Person name is added when more than one person exists.

Boolean recordAttributes(PersonIdentity person, Map<String, String> attributes)

1. Record attributes for person when no attributes are recorded before.

2. Record attributes for person when one attribute is recorded before.
3. Record attributes for person when multiple attributes are recorded before.

Boolean recordReference(PersonIdentity person, String reference)

1. Record reference when no record exists for the person.
2. Record reference when one record exists for the person.
3. Record reference when multiple record exists for the person.
4. Duplicate reference added.

Boolean recordNote(PersonIdentity person, String note)

1. Record reference when no record exists for the person.
2. Record reference when one record exists for the person.
3. Record reference when multiple record exists for the person.
4. Duplicate note added for the person.

Boolean recordChild(PersonIdentity parent, PersonIdentity child)

1. Record child when parent has one child
2. Record child when parent has no child
3. Record child when parent has multiple children
4. Record child when child has no parent
5. Record child when child has one parent
6. Record child when child has more than one parent
7. Record child when child is ancestor of parent.

Boolean recordPartnering(PersonIdentity partner1, PersonIdentity partner2)

1. Record partnering when partner1 and partner2 are not partnered
2. Record partnering when partner1 and partner2 are partnered one time
3. Record partnering when partner1 is already partnered.
4. Record partnering when partner2 is already partnered.

Boolean recordDissolution(PersonIdentity partner1, PersonIdentity partner2)

1. Record partnering when partner1 and partner2 are not partnered.
2. Record partnering when partner1 and partner2 are dissolved.

3. Record partnering when partner1 and partner 2 are partnered more than once in the table.

Media archive

FileIdentifier addMediaFile(String fileLocation)

1. Duplicate file location
2. Added file location when one file is added
3. Add file location when no file location is added
4. Add file location when more than one file location is added

Boolean recordAttributes(FileIdentifier fileIdentifier, Map<String, String> attributes)

1. Record attributes for person when no attributes are recorded before.
2. Record attributes for person when one attribute is recorded before.
3. Record attributes for person when multiple attributes are recorded before.

Boolean tagMedia(FileIdentifier fileIdentifier, String tag)

1. Record tag when no tag exists for the media
2. Record tag when one tag exists for the media
3. Record reference when multiple tag exists for the media
4. Duplicate tag added for the person.

Boolean peopleInMedia(FileIdentifier fileIdentifier, List PersonIdentity>people)

1. Record people in media when media has no people
2. Record people in media when media has one people
3. Record people in media when media has more than one people

Reporting

PersonIdentity findPerson(String name)

1. Find person when no PersonIdentity object exists.
2. Find person when one PersonIdentity object exists.
3. Find person when multiple PersonIdentity object exists.
4. Find person when two persons with same name exists.

FileIdentifier findMediaFile(String name)

1. Find file when no FileIdentifier object exists.
2. Find person when one FileIdentifier object exists.
3. Find person when multiple FileIdentifier object exists.
4. Find person when two files with same name exists.

BiologicalRelation findRelation(PersonIdentity person1, PersonIdentity person2)

1. Find relation when person1 and person 2 have no common ancestor
2. Find relation when person1 and person 2 have multiple common ancestors.
3. Find relation when person1 and person2 have one common ancestor.

Set descendants(PersonIdentity person, Integer generations)

1. Find descendants when generation is greater than family tree levels known.
2. Find descendants when person has zero descendants.
3. Find descendants when person has one descendant.
4. Find descendants when person has multiple descendant.

Set<PersonIdentity> ancestores(PersonIdentity person, Integer generations)

1. Find ancestors when generation is greater than family tree levels known.
2. Find ancestors when person has zero ancestors.
3. Find ancestors when person has one ancestor.
4. Find ancestors when person has multiple ancestors.

List<String> notesAndReferences(PersonIdentity person))

1. Find notes and references when person has zero notes and references.
2. Find notes and references when person has one note and one reference.
3. Find notes and references when person has multiple notes and multiple references.

Set<FileIdentifier> findMediaByTag(String tag , String startDate, String endDate)

1. Find media by tag when file is associated with zero tag.
2. Find media by tag when file is associated with one tag.

3. Find media by tag when file is associated with multiple tag.
4. Find media by tag when start date is null and end date is not null
5. Find media by tag when end date is null and start date is not null
6. Find media by tag when both start and end date is null
7. Find media by tag when start date and end date are not null
8. Find media by tag when no file identifier exists between start date and end date.
9. Find media by tag when one file identifier exists between start date and end date.
10. Find media by tag when multiple file identifier exists between start date and end date.

Set<FileIdentifier> findMediaByLocation(String tag , String startDate, String endDate)

1. Find media by location when file is associated with zero location.
2. Find media by location when file is associated with one location.
3. Find media by location when file is associated with multiple location.
4. Find media by location when start date is null and end date is not null
5. Find media by location when end date is null and start date is not null
6. Find media by location when both start and end date is null
7. Find media by location when start date and end date are not null
8. Find media by location when no file identifier exists between start date and end date.
9. Find media by location when one file identifier exists between start date and end date.
10. Find media by location when multiple file identifier exists between start date and end date.

List<FileIdentifier> findIndividualsMedia(Set<PersonIdentity> people, String startDate, String endDate)

1. Find media file when start date is null and end date is not null
2. Find media file when end date is null and start date is not null
3. Find media when both start and end date is null
4. Find media when start date and end date are not null
5. Find media when no file identifier exists between start date and end date.
6. Find media when one file identifier exists between start date and end date.

7. Find media when multiple file identifier exists between start date and end date.
8. Find media when all PersonIdentity from people set are in one media file.

List<FileIdentifier>findBiologicalFamilyMedia (PersonIdentity person)

1. Find biological family media when person has zero child
2. Find biological family media when person has one child
3. Find biological family media when person has multiple children