**High level breakdown analysis**

**Problem**

With the abundance of archived and new images and videos present, it's hard to trace links/family relations between media files.

**Required solution**

Create a system that links family tree information with an archive of pictures and metadata.

**Functional requirements**

**A picture containing diagram

Description automatically generated**

**Use case diagram**

**Diagram

Description automatically generated**

* **Use case 1 features: Manage the family tree**
  + Add a person to the family tree database.
  + Record information about an individual in the family tree database.
  + Record a source reference material for the individual.
  + Record a note for the individual.
  + Record a parent/child relation for the individuals.
  + Record a symmetric partnering relation between the individuals.
  + Record a symmetric dissolution of a partnering relation between the individuals.

* **Use case 2 features: Manage the media archive**
  + Add a media file to the media archive.
  + Record information about a media file in the archive.
  + Record that a set of people appear in the given media file.
  + Record a tac for a media file. A media file can have many tags.

* **Use case 3 features: Reporting**
  + Locate an individual and return person identity in the family tree.
  + Locate an individual and return file identifier in the family tree.
  + Return the name of an individual.
  + Return the file name of the media file associated with the file identifier.
  + Report how two individuals are related.
  + Report all the descendants in the family tree who are within “generations” generations of the
  + person.
  + Report all ancestors in the family tree who are within “generations” generations of the person.
  + Return all the notes and references on the individual, returned in the same order in which they were added to the family tree.
  + Return the set of media files linked to the given tag whose dates fall within the date range.
  + Return the set of media files linked to the given location whose dates fall within the date range.
  + Return the set of media files that include any of individuals given in the list of people whose
  + dates fall within the date range.
  + Return the set of media files that include the specified person’s immediate children.

**What comes into the program?**

**Individuals’ information**

* Name (Not null)
* Date of birth (Should have a year if it’s not null)
* Location of birth
  + Name
  + City
  + Province
  + Country
* Date of death (Should have a year if it’s not null)
* Location of death
  + Name
  + City
  + Province
  + Country
* Gender
* Occupation
* References
* Notes

**Relations information**

* Parent/child relations
* Partnering ceremony relations
* Partnering dissolutions

**Metadata**

* Date of picture (Should have a year if it’s not null)
* Location of picture
  + Name
  + City
  + Province
  + Country
* Tags
* Individuals identified

**What transformations do I need to make to the data?**

* Date of birth, death, picture comes as a String and will be converted into DateTime format.
* Gender comes as a String and will be converted into Enum.
* Location of death comes as a String with name, city, province, and country all together. It will be converted to store these fields individually.
* With the file location coming into add a media file, file name will be generated based on date and location.

**What part of the data is processed right away?**

* While adding a name for an individual, person identity is returned.
* While adding a location for a media file, file identifier is returned.

**What part of the data do I need to keep longer?**

* Individuals’ information
* Relations information
* Metadata

**What goes out of the program?**

* Person Identity consisting of individual’s information.
* File identifier consisting of media information.
* Individual’s name.
* File’s name.
* Biological relation between 2 individuals.
* Set of person identities as descendants.
* Set of person identities as ancestors.
* List of notes and references.
* Set of file identifiers for a tag.
* Set of file identifiers for a location.
* Set of file identifiers for a date range.
* Set of file identifiers as immediate children for a person.

**Assumptions**

It is given that all the attributes for an individual and file will be coming as a String.

**Constraints**

For current version, focus only on biological relation.

For current version, focus on only English genealogy definitions for relations.

**Strange cases**

* Attributes for individual or file are not realistic.
* Attributes values are not realistic e.g.: Date of birth is in future.
* Invalid document added as a reference.
* When location of the file does not exist.
* For adding a parent/child, partnering and dissolution relation, 1 or both individuals does not exist.

**Important for the solution to do**

To links family tree information with an archive of pictures and metadata.

**Who are the users and how will they use it?**

Genealogist will be using the system to manage the family tree, media archive and to get links between individuals.

**What is the target environment?**

Timberlea: timberlea.cs.dal.ca

**How stable are the requirements?**

Requirements are provided as SRS document and are meant to be stable.

**Technologies to be used**

* Java
* MySQL

**Tools to be used**

* Visual Paradigm
* IntelliJ
* MySQL Workbench