

CSCI 3901: Course Project

Milestone 4: Implementation report in relation to earlier plan

Changes made to the strategy during development

The following changes were made to the database schema as new points were discovered during development:

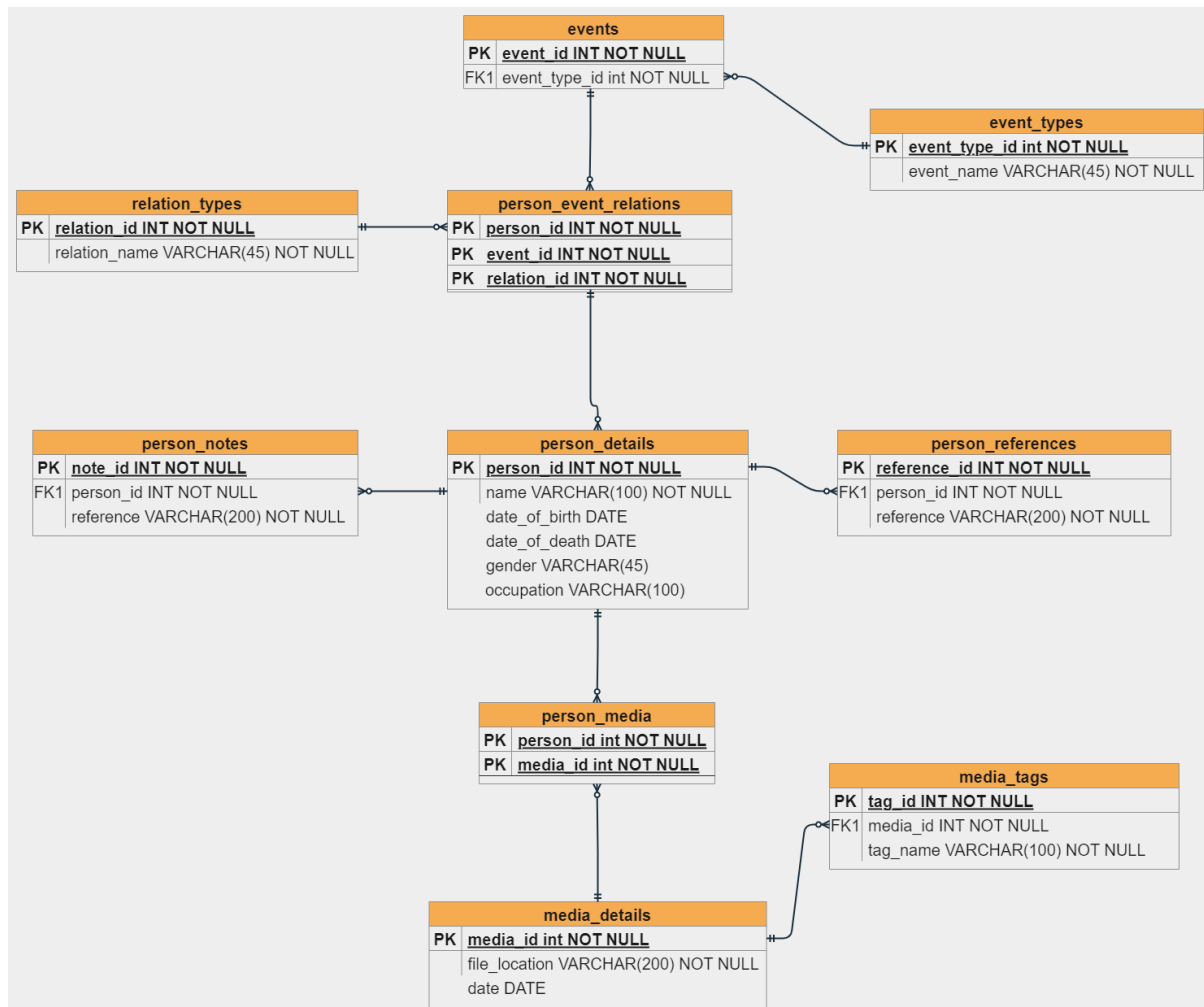


Figure 1: Old Database Schema

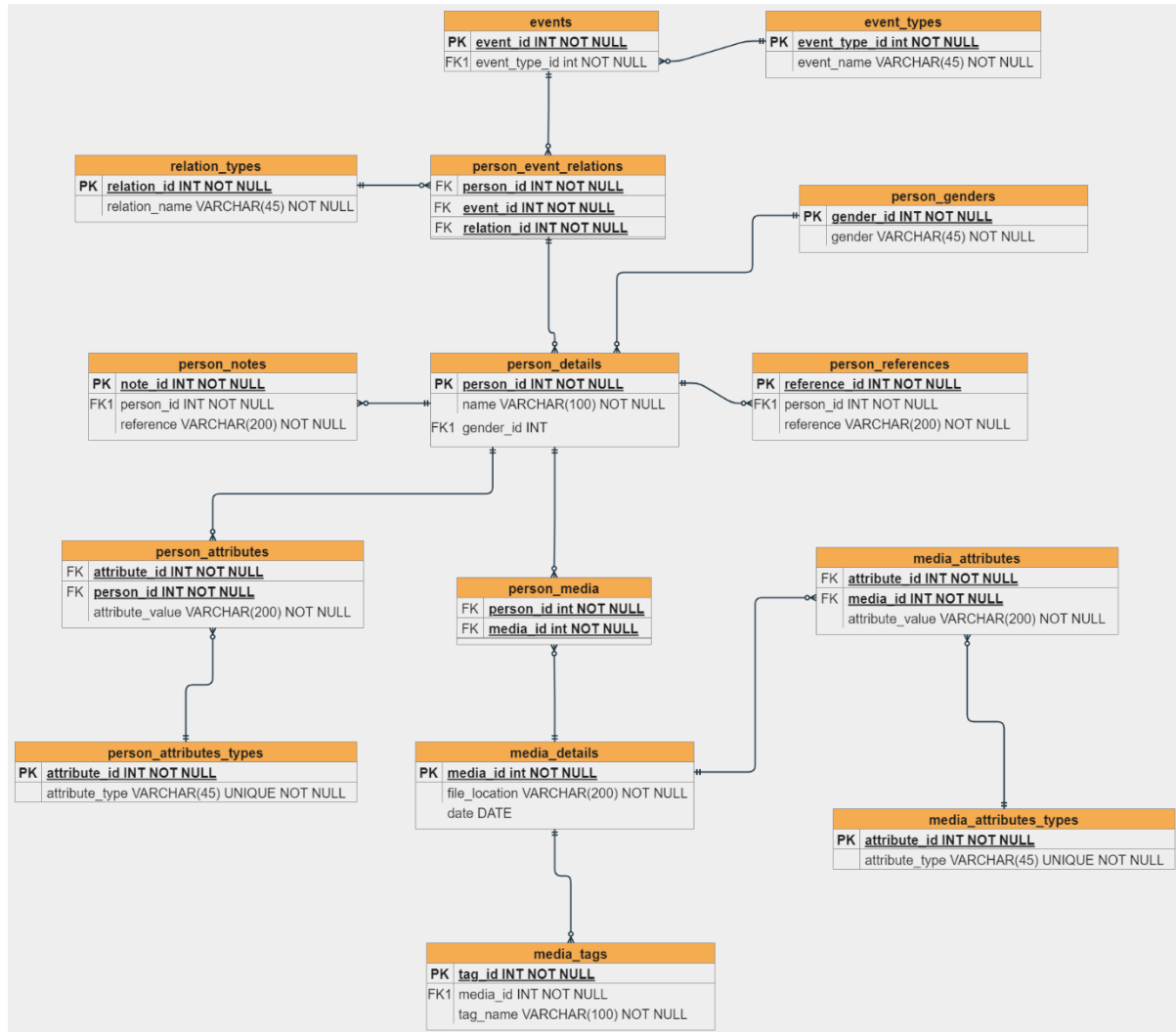


Figure 2: Updated Database Schema

1. **person_genders** table was added which contains set of **gender_ids** and **genders** so that gender of a person in **person_details** table is constrained to these values only. Also, this makes the system flexible enough to add new genders other than Male/Female in the future.
2. Separate attribute tables were added for **person_details** and **media_details** table. Attributes will be defined in the **attribute_types** tables and identified by a key. **person_attributes** and **media_attributes** tables connect with their respective **attribute_types** table to store attribute values. The benefit of this is that new attributes for people or media can be defined in the future as needed.

Implemented Features

The following features have been implemented in the code and connected with the database:

PersonIdentity Class

Defines data for a person.

Fields

```
private int personId;  
private String name;  
private int genderId;  
private Map<String,String> attributes = new HashMap<>();
```

Methods

Getter and Setter methods for above fields.

FileIdentifier Class

Defines data for a file.

Fields

```
private int mediaId;  
private String fileLocation;  
private Date dateCreated;  
private String location;  
private Map<String,String> attributes = new HashMap<>();
```

Methods

Getter and Setter methods for above fields.

Genealogy Class

Contains methods to collect data to form the Family Tree and Media Archive.

The following methods have been implemented:

Methods for Family Tree

- PersonIdentity addPerson(String name)
- Boolean recordAttributes(PersonIdentity person, Map<String, String> attributes)
- Boolean recordReference(PersonIdentity person, String reference)
- Boolean recordNote(PersonIdentity person, String note)
- Boolean recordChild(PersonIdentity parent, PersonIdentity child)

Methods for Media Archive

- FileIdentifier addMediaFile(String fileLocation)

- Boolean peopleInMedia(FileIdentifier fileIdentifier, List<PersonIdentity> people)
- Boolean tagMedia(FileIdentifier, fileIdentifier, String tag)

Methods for Reporting

- PersonIdentity findPerson(String name)
- FileIdentifier findMediaFile(String name)
- String findName(PersonIdentity id)
- String findMediaFile(FileIdentifier fileId)

Change in Feature Plan

The following table shows the original feature plan:

Table 1: Original Plan for Feature Development

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

Reason for change in plan

After finalizing the Database Schema, instead of going according to modules (Family Tree, Media Archive, Reporting), I decided to implement the methods from each module that can be used to generate the family tree and store the media archives. This can make the process of finding the ancestors and descendants of a person, and relationship between a pair of individuals easier, since we have the appropriate structured data to report it. Some methods for reporting have already been implemented as described above.

The methods for recording attributes for people and media are not yet implemented but can be done in a short period to complete the family tree and media archive generation.

Black box testing has been completed in Milestone 2. However, white box testing is pending as some methods are yet to be implemented. The entire white box testing using JUnit will be done when all methods of system are implemented.

Table 2: New Plan for Feature Development

Feature	Date of Completion	Status
Planning of Data Structures, Code Design, Key Algorithms	November 17, 2021	Completed
Implementation of Database Schema	November 21, 2021	Completed
Implementation for generating the Family Tree, Media Archive, some Reporting functions and recording the information in the Database.	November 30, 2021	Completed
Remaining methods for recording attributes for people and media	December 1, 2021	
Implementation for finding ancestors, descendants, relationship between people and their corresponding media files.	December 9, 2021	
Testing of the System (including White Box tests using JUnit)	December 12, 2021	