Database Design Project: Archive Accessions

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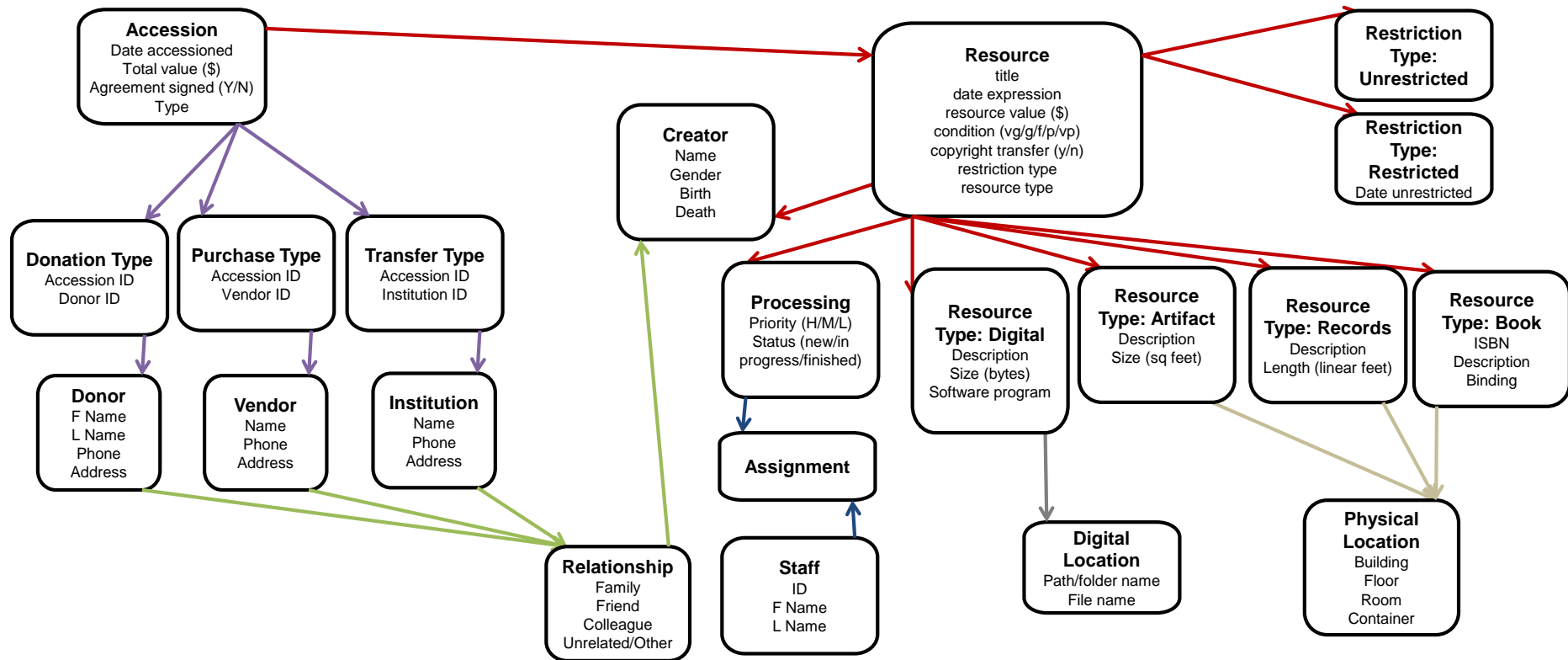INST733

Overview

- Business Case

- Logical Design

- Physical Design & Queries

Business Case

- Focused on 5 purposes to meet client needs:
  - (1) allow archivists to input details of the accession and the source;
  - (2) access information about accession sources;
  - (3) input preliminary information about the resources in accessions;
  - (4) access information about resource creators; and
  - (5) assign a processing status and assignment to each resource.
- Original proposal was focused on the complexity of accessions and the different resources in those accessions; the final business case took more client needs into account
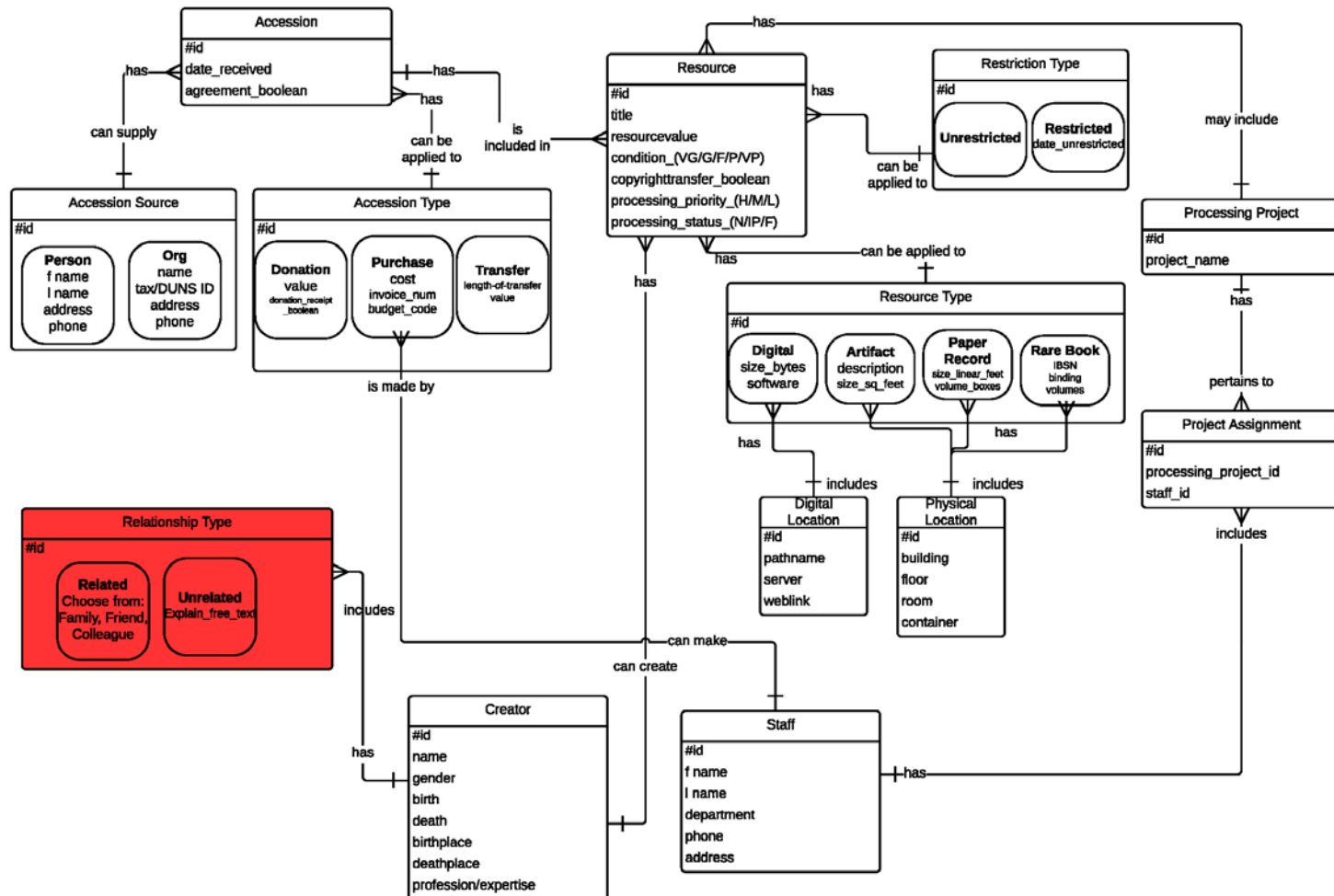
Business Case: Conceptual Model

Logical Design

- Business case had a lot of supertype/subtype entities
  - Accession source, accession type, resource type, restriction type
- Major ERD issue surrounding the relationship between the creators of the resources
  - In archives, creators can be entire families/groups/organizations or individuals
  - How could I use the ERD and eventually MySQL to create a family tree?
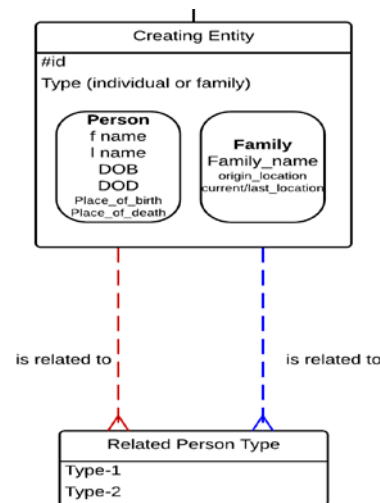
Logical Design: Resource Creators Problem
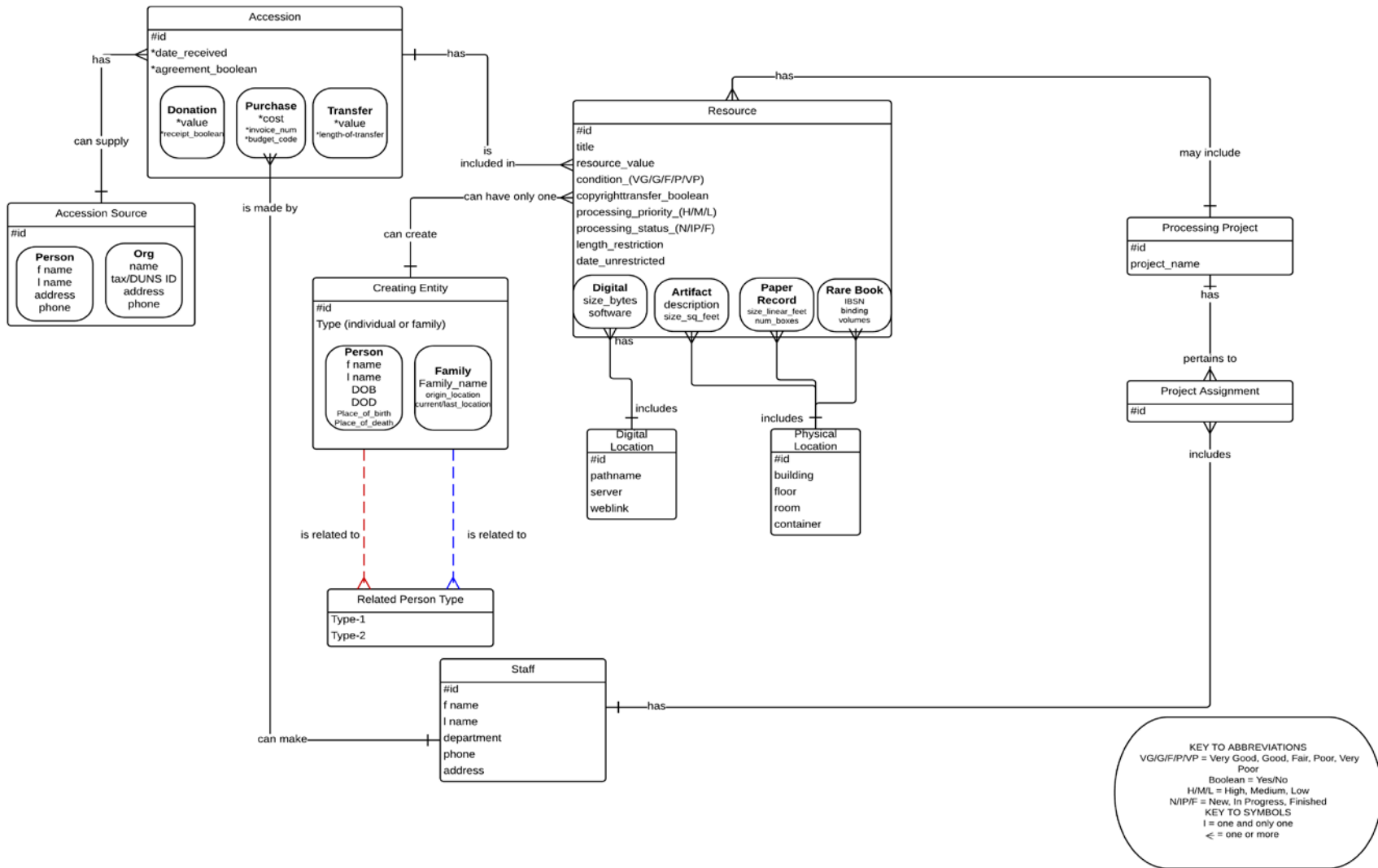
- My first solution:

Logical Design: Resource Creators Solution

- The solution for my creator relationship problem was to use a bill of materials structure in my ERD, so the archivists could input any relationship data they needed and queries would be able to present the complex relationships.
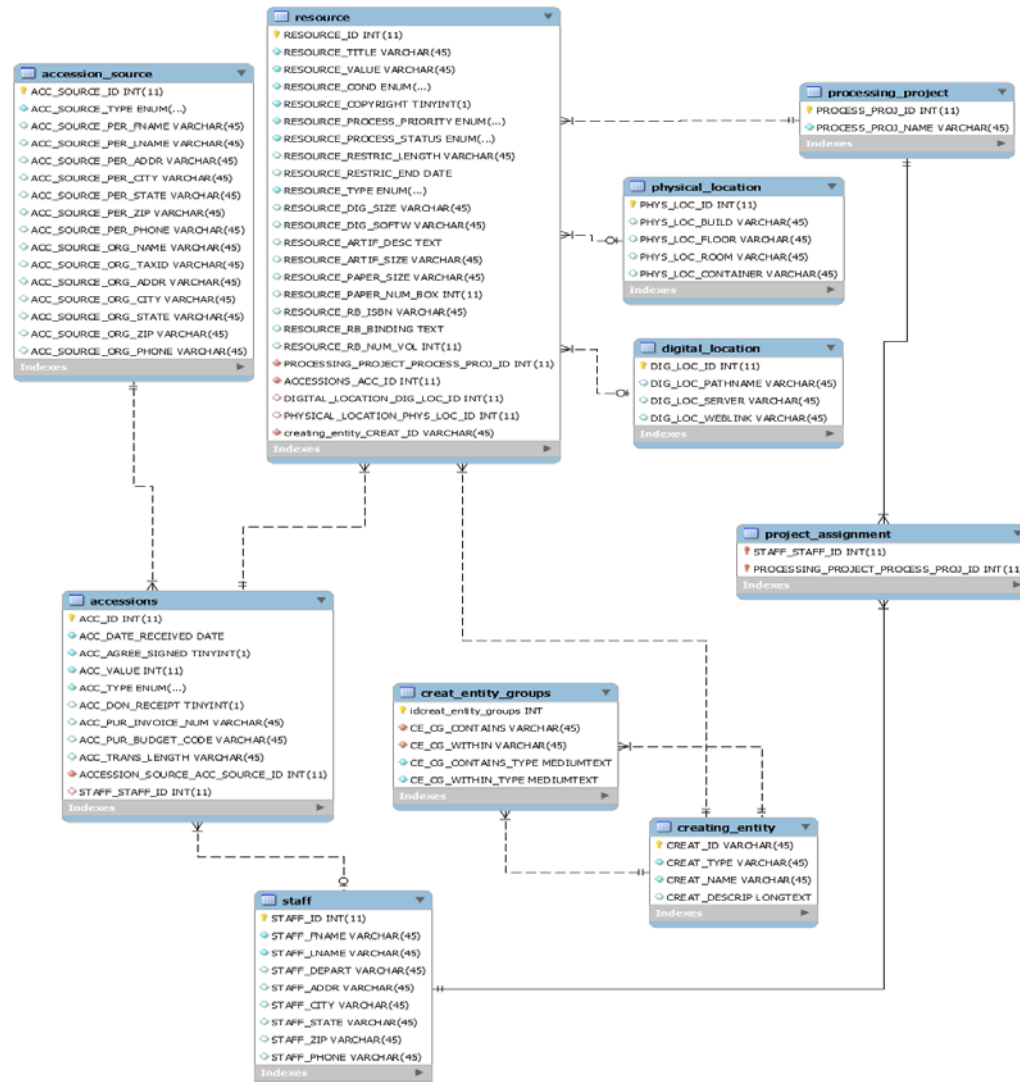

- Additionally, I integrated the Restriction super/subtype entity as an attribute in the Resource entity
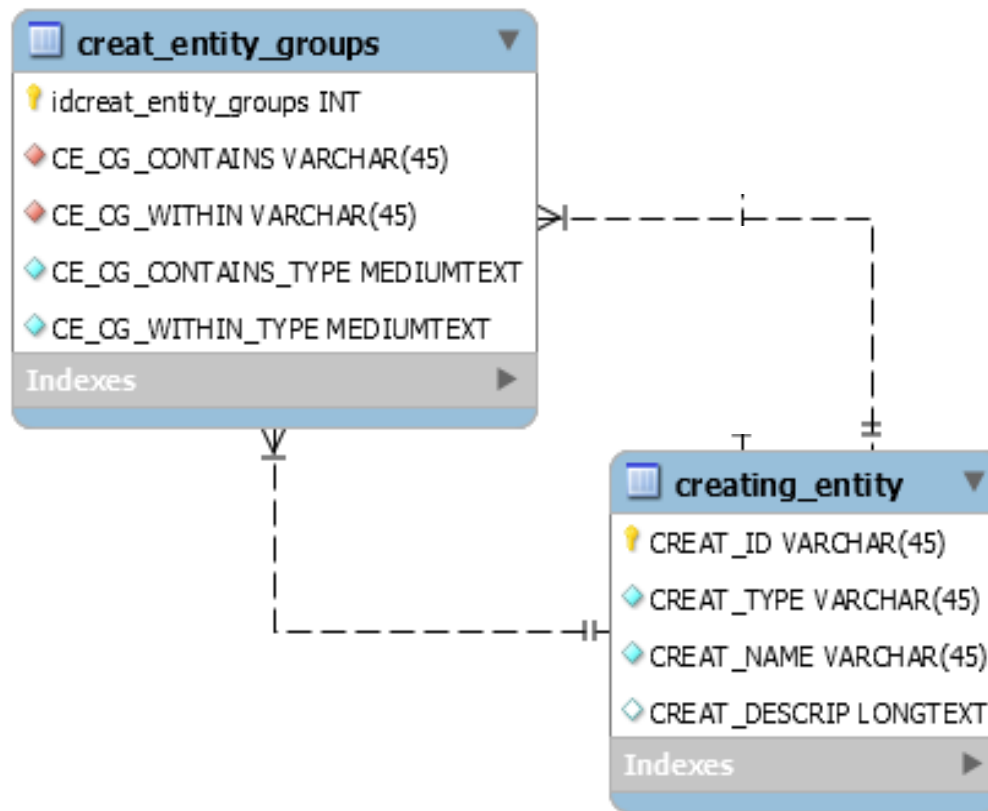
Logical Design: Final ERD

Physical Design: EER Model

Physical Design: Resource Creators

Physical Design: Demo Resource Creators Tables

Creating_entity

CREAT_ID	CREAT_TYPE	CREAT_NAME	CREAT_DESCRIP
AlMoss	Individual	Albert Moss	Born 4-24-1944. Died 9-21-2012.
Coyo	Company	Coyote, Inc.	Former name of Acme, Inc.
DietCoyo	Individual	Marline Dieter	CEO of Coyote, Inc. from 1954-1960.
Moss	Family	Moss Family	Originated in South Africa; remaining members in Washington, DC

Creat_entity_groups

ID	CE_CG_CONTAINS	CE_CG_WITHIN	CE_CG_CONTAINS_TYPE	CE_CG_WITHIN_TYPE
3	Moss	AlMoss	Includes	Member of
7	AlMoss	MkMoss	Father	Son
8	MelMoss	MkMoss	Grandmother	Grandson
12	AlMoss	PaMoss	Husband	Wife
15	Coyo	DietCoyo	Employer	Employee
17	DietCoyo	SmiCoyo	Supervisor	Supervisee

Physical Design: Demo Resource Creators Queries

Albert Moss Relations

```sql
SELECT `creating_entity`.`creat_name` AS
`Family_Member`,
`creat_entity_groups`.`ce_cg_within_type` AS
`Relation_to_Albert_Moss` FROM (`creat_entity_groups`
JOIN `creating_entity` ON
((`creat_entity_groups`.`ce_cg_within` =
    `creating_entity`.`creat_id`))) WHERE
(`creat_entity_groups`.`ce_cg_contains` = 'AlMoss')
UNIONSELECT `creating_entity`.`creat_name` AS
`Family Member`,
`creat_entity_groups`.`ce_cg_contains_type` AS
`Relation to Albert Moss` FROM (`creat_entity_groups`
JOIN `creating_entity` ON
((`creat_entity_groups`.`ce_cg_contains` =
    `creating_entity`.`creat_id`))) WHERE
(`creat_entity_groups`.`ce_cg_within` = 'AlMoss');
```

Family_Member	Relation_to_Albert_Moss
Mike Moss	Son
Patricia Moss	Wife
Moss Family	Includes
Melanie Moss	Mother
Mark Moss	Father

Moss Family Members

```sql
SELECT `creating_entity`.`creat_name` AS
`Members_of_Moss_Family`,
`creating_entity`.`creat_descrip` AS `Biography` FROM
(`creat_entity_groups`    LEFT JOIN `creating_entity`
ON ((`creat_entity_groups`.`ce_cg_within` =
    `creating_entity`.`creat_id`))) WHERE
(`creat_entity_groups`.`ce_cg_contains` = 'Moss');
```

Members_of_Moss_Family	Biography
Mike Moss	Born 8-13-1987.
Patricia Moss	Born 5-25-1947. Died 6-21-2016.
Albert Moss	Born 4-24-1944. Died 9-21-2012.
Melanie Moss	Born 1-31-1910. Died 8-17-1998.
Mark Moss	Born 6-30-1909. Died 4-21-1944.

Thank you!