The Database of the Archive of the Entomological Society

Table Of Contents

Tables:

1. Species
   - This table is included because it fulfills the Archive's purpose of providing information about insects and other arthropods.
   - Fields:
     - Order Name: This taxonomic classification is necessary to group similar species.
     - Family Name: This taxonomic classification is necessary to group similar species.
     - Genus Name: This taxonomic classification is necessary to group similar species.
     - Species Name: This taxonomic classification is necessary to uniquely identify species.

2. Specimens
   - This table is included because it tracks the inventory of insects for the Archive.
   - Fields:
     - Specimen ID: This primary key is necessary to uniquely identify each specimen in the archive's inventory.
     - IsAlive: The distinction between life and death is an important one to clients who want to check out a specimen.
     - Species: Clients should know to what species each specimen belongs.
     - Photograph: Clients will usually want to see a specimen before deciding to check it out.

3. Clients
   - This table is included because the Archive benefits from knowing the contact information of people with whom it transacts.
   - Fields:
     - ClientId: This primary key is necessary to uniquely identify each client who has transacted with the Archive.
     - Client Profession: It's important to know what a client's profession is in order to decide whether or not to approve a request to check out a specimen.
     - Client Street Address: Necessary Contact Information
     - Client City: Necessary Contact Information
     - Client State/Province: Necessary Contact Information
     - Client Country: Necessary Contact Information
     - Client Postal Code: Necessary Contact Information
     - Client Mobile Number: Necessary Contact Information
     - Client Email Address: Necessary Contact Information

4. Requests
   - This table is included because the Archive needs to be able to know what specimens are checked out by whom at any given time.
       - RequestID: This primary key is necessary to uniquely identify each request made to the archive.
       - ClientId: It's necessary to know who made the request.
       - SpecimenId: It's necessary to know what specimen was requested.
       - Request Date: It's necessary to know when the request was submitted.
       - DateOut: It's necessary to know when a specimen left the Archive if a request for it was approved.
       - DateIn it's necessary to know if and when a specimen was returned to the archive.

Business Rules:

1. The same specimen can't be checked out to 2 people at once. This will be used by implementing a RESTRICT ON INSERT rule.

2. A specimen can't be returned before it's checked out. This will be used by implementing a RESTRICT ON INSERT rule.

3. A species will never be deleted from the database. This will be used by implementing a RESTRICT ON INSERT rule.

4. When a client is deleted from the database, that client's requests should also be deleted. This will be done by a cascade on delete rule.

Mission:

The purpose of the Mid America Entomological Archive database is to maintain information about specimens collected by entomologists. The Entomological data will be supplied to inquirers via this database.

Objectives:

1. Maintain information about specimens.

2. Track checkouts of specimens.

3. Preserve specimen records.

4. Enhance the accessibility of specimen records.

5. Maintain requests for research samples.

6. Maintain information about researchers.

7. Maintain information about Archive staff.

Table List:

1. species: - Data Table
   Contains information about a species of arthropod.

2. specimens:
   - Data Table
   Contains information about an individual animal in the keeping of the Entomological
   Archive

3. clients:
   - Data Table
   Contains information about people who have made requests of and/or transactions with
   the Entomological Archive

4. requests:
   - Data Table
   Contains information about requests to checkout specimens from the archive submitted
   to the archive

Field Descriptions

1. species
    a. speciesName (primary key) - Unique identifier for each species.
    b. orderName - The taxonomic order to which the species belongs.
    c. familyName - The taxonomic family to which the species belongs.
    d. genusName - The taxonomic genus to which the species belongs.

2. specimen
    a. specimenId (primary key) - Unique identifier for each specimen.
    b. speciesName (foreign key) - Relates to the species table, indicating the species to which the specimen belongs.
    c. isAlive - Indicates whether the specimen is currently alive (true or false).
    d. specimenPhotograph - Stores a photograph or reference to an image of the specimen.

3. requests
    a. requestId (primary key) - Unique identifier for each request.
    b. clientId (foreign key) - Relates to the client table, identifying the client making the request.
    c. requestDate - The date when the request was made.
    d. speciesName (foreign key) - Relates to the species table, specifying the requested species.
    e. quantity requested - The quantity of the requested species.

4. client
    a. clientId (primary key) - Unique identifier for each client.
    b. client profession - Describes the profession or occupation of the client.
    c. streetNumber - The street number of the client's address.
      - streetName - The name of the street where the client resides.
      - city - The city in which the client is located.
      - stateProvinceRegion - The state, province, or region of the client's address.
      - areaCode - The postal or area code associated with the client's location.
      - country - The country in which the client is situated.
      - phone - The client's contact phone number.
      - email - The client's email address for communication.

FIELD SPECIFICATIONS:

Field Name: **clientAddress**
Parent Table: Clients
Alias(es):   _
Specification Type:
 Unique: _
 Generic: X
 Replica: _
Source Specification: _
Shared By: _
Description: The address of the clients.

PHYSICAL ELEMENTS
Data Type: varchar
Length: 64
Decimal Places: _
Character Support:
 Letters (A-Z):   X
 Numbers (0-9):   X
 Keyboard (.,/$#%): _
 Special (©®™Σπ):   _
LOGICAL ELEMENTS

Key Type: Non: X
         Primary: _
         Foreign: _
         Alternate: _

Key Structure: Simple: _
         Composite: _

Uniqueness: Non-unique: X
         Unique: _

Null Support: Nulls OK: _
         No nulls: X

Values Entered By: User: _
           System: X

Required Value: No: _
          Yes: X

Range of Values: _

Edit Rule:
 Enter now, edits allowed: X
 Enter now, edits not allowed: _
 Enter later, edits allowed: _
 Enter later, edits not allowed: _
 Not determined at this time: _

Field Name: **clientAreaCode**
Parent Table: Clients
Alias(es):   _
Specification Type:
  Unique: _
  Generic: X
  Replica: _
Source Specification: _
Shared By: _
Description: Area code for the client's address.
PHYSICAL ELEMENTS
Data Type: Integer
Length: 5
Decimal Places: 0
Character Support:
  Letters (A-Z):   _
  Numbers (0-9):   X
  Keyboard (.,/$#%): _
  Special (©®™Σπ):   _
LOGICAL ELEMENTS
Key Type: Non: X
            Primary: _
            Foreign: _
            Alternate: _

Key Structure: Simple: _
            Composite: _

Uniqueness: Non-unique: X
            Unique: _

Null Support: Nulls OK: _
          No nulls: X

Values Entered By: User: _
            System: X

Required Value: No: _
            Yes: X

Range of Values: Must be 5 digits.

Edit Rule:
  Enter now, edits allowed: X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _
  Not determined at this time: _

Field Name: **clientCity**
Parent Table: Clients
Alias(es):   _
Specification Type:
  Unique: _
  Generic: X
  Replica: _
Source Specification: _
Shared By: _
Description: City for the client's address.

PHYSICAL ELEMENTS

Data Type: varchar
Length: 64
Decimal Places: _
Character Support:
  Letters (A-Z):   X
  Numbers (0-9):   _
  Keyboard (.,/$#%): _
  Special (©®™Σπ):   _

LOGICAL ELEMENTS

Key Type: Non: X
              Primary: _
              Foreign: _
              Alternate: _

Key Structure: Simple: _
              Composite: _

Uniqueness: Non-unique: X
              Unique: _

Null Support: Nulls OK: _
              No nulls: X

Values Entered By: User: _
              System: X

Required Value: No: _
              Yes: X

Range of Values: _

Edit Rule:
  Enter now, edits allowed: X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: **clientCountry**
Parent Table: Clients
Alias(es):   _
Specification Type:
 Unique: _
 Generic: X
 Replica: _
Source Specification: _
Shared By: _
Description: Provides the country for the client's address.

PHYSICAL ELEMENTS

Data Type: varchar
Length: 32
Decimal Places: _
Character Support:
 Letters (A-Z):   X
 Numbers (0-9):   _
 Keyboard (.,/$#%): _
 Special (©®™Σπ):   _

LOGICAL ELEMENTS

Key Type: Non: X
            Primary: _
            Foreign: _
            Alternate: _

Key Structure: Simple: _
            Composite: _

Uniqueness: Non-unique: X
            Unique: _

Null Support: Nulls OK: _
            No nulls: X

Values Entered By: User: _
            System: X

Required Value: No: _
            Yes: X

Range of Values: _

Edit Rule:
 Enter now, edits allowed: X
 Enter now, edits not allowed: _
 Enter later, edits allowed: _
 Enter later, edits not allowed: _

Field Name: **clientEmail**
Parent Table: Clients
Alias(es):   _
Specification Type:
  Unique: _
  Generic: X
  Replica: _
Source Specification: _
Shared By: _
Description: Provides the email for the client.

PHYSICAL ELEMENTS

Data Type: varchar
Length: 64
Decimal Places: _
Character Support:
  Letters (A-Z):   X
  Numbers (0-9)   X
  Keyboard (.,/$#%): X
  Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: X
        Primary: _
        Foreign: _
        Alternate: _

Key Structure: Simple: _
        Composite: _

Uniqueness: Non-unique: _
        Unique: X

Null Support: Nulls OK: _
        No nulls: X

Values Entered By: User: _
        System: X

Required Value: No: _
        Yes: X

Range of Values: _

Edit Rule:
  Enter now, edits allowed: X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: **clientID**
Parent Table: Clients
Alias(es): _
Specification Type:
  Unique: X
  Generic: _
  Replica: _
Source Specification: _
Shared By: Requests
Description: Unique identifier for each client in our database.

PHYSICAL ELEMENTS

Data Type: Int
Length: _
Decimal Places: 0
Character Support:
  Letters (A-Z): _
  Numbers (0-9): X
  Keyboard (.,/$#%): _
  Special (©®™Σπ): _

LOGICAL ELEMENTS

Key Type: Non: _
        Primary: X
        Foreign: X
        Alternate: _

Key Structure: Simple: X
        Composite: _

Uniqueness: Non-unique: _
        Unique: X

Null Support: Nulls OK: _
        No nulls: X

Values Entered By: User: _
        System: X

Required Value: No: _
        Yes: X

Range of Values: _

Edit Rule:
  Enter now, edits allowed: _
  Enter now, edits not allowed: X
  Enter later, edits allowed: _
  Enter later, edits not allowed: _
  Not determined at this time: _

Field Name: **clientPhone**
Parent Table: Clients
Alias(es):   _
Specification Type:
  Unique: _
  Generic: X
  Replica: _
Source Specification: _
Shared By: _
Description: Provides the phone number for the client.

PHYSICAL ELEMENTS

Data Type: varchar
Length: 10
Decimal Places: 0
Character Support:
  Letters (A-Z):   _
  Numbers (0-9):   X
  Keyboard (.,/$#%): X
  Special (©®™Σπ):   _

LOGICAL ELEMENTS

Key Type: Non: X
           Primary: _
           Foreign: _
           Alternate: _

Key Structure: Simple: _
           Composite: _

Uniqueness: Non-unique: _
           Unique: X

Null Support: Nulls OK: _
           No nulls: X

Values Entered By: User: _
           System: X

Required Value: No: _
           Yes: X

Range of Values: _

Edit Rule:
  Enter now, edits allowed: X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: **clientProfession**
Parent Table: Clients
Alias(es):   _
Specification Type:
  Unique: _
  Generic: X
  Replica: _
Source Specification: _
Shared By: _
Description: Represents the profession of the client.

PHYSICAL ELEMENTS

Data Type: varchar
Length: 32
Decimal Places: 0
Character Support:
  Letters (A-Z):   X
  Numbers (0-9):   _
  Keyboard (.,/$#%): _
  Special (©®™Σπ):   _

LOGICAL ELEMENTS

Key Type: Non: X
         Primary: _
         Foreign: _
         Alternate: _

Key Structure: Simple: _
        Composite: _

Uniqueness: Non-unique: X
        Unique: _

Null Support: Nulls OK: X
       No nulls:

Values Entered By: User: _
         System: X

Required Value: No: _
        Yes: X

Range of Values: _
Edit Rule:
  Enter now, edits allowed: X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: **clientState**
Parent Table: Clients
Alias(es):   _
Specification Type:
  Unique: _
  Generic: X
  Replica: _
Source Specification: _
Shared By: _
Description: Provides the state/province for the address of the client.

PHYSICAL ELEMENTS

Data Type: varchar
Length: 64
Decimal Places: _
Character Support:
  Letters (A-Z):   X
  Numbers (0-9):   _
  Keyboard (.,/$#%): _
  Special (©®™Σπ):   _

LOGICAL ELEMENTS

Key Type: Non: X
        Primary: _
        Foreign: _
        Alternate: _

Key Structure: Simple: _
        Composite: _

Uniqueness: Non-unique: X
        Unique: _

Null Support: Nulls OK: _
        No nulls: X

Values Entered By: User: _
        System: X

Required Value: No: _
        Yes: X

Range of Values: _
Edit Rule:
  Enter now, edits allowed: X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _
  Not determined at this time: _

Field Name: _ familyName
Parent Table: _ species
Alias(es): _
Specification Type:
 Unique: _ Yes
 Generic: _
 Replica: _
Source Specification: _
Shared By: _
Description: _ The official, classical, scientific, taxonomical family name

PHYSICAL ELEMENTS

Data Type: _ VAR CHAR
Length: _ 20
Decimal Places: _ N/A
Character Support:
 Letters (A-Z): _ X
 Numbers (0-9): _
 Keyboard (.,/$#%): _
 Special (©®™Σπ): _ X

LOGICAL ELEMENTS

Key Type: Non: _ X
        Primary: _
        Foreign: _
        Alternate: _

Key Structure: Simple: _
        Composite: _

Uniqueness: Non-unique: _ X
        Unique: _

Null Support: Nulls OK: _
        No nulls: _ X

Values Entered By: User: _
        System: _ X

Required Value: No: _
        Yes: _ X

Range of Values: _ No domain limitation

Edit Rule:
 Enter now, edits allowed: _ X
 Enter now, edits not allowed: _
 Enter later, edits allowed: _
 Enter later, edits not allowed: _
 Not determined at this time: _

Field Name: _ genusName
Parent Table: _ species
Alias(es): _
Specification Type:
 Unique: _ Yes
 Generic: _
 Replica: _
Source Specification: _
Shared By: _
Description: _ The official, classical, scientific, taxonomical genus name

PHYSICAL ELEMENTS

Data Type: _ VAR CHAR
Length: _ 20
Decimal Places: _ N/A
Character Support:
 Letters (A-Z): _ X
 Numbers (0-9): _
 Keyboard (.,/$#%): _
 Special (©®™Σπ): _ X

LOGICAL ELEMENTS

Key Type: Non: _ X
        Primary: _
        Foreign: _
        Alternate: _

Key Structure: Simple: _
        Composite: _

Uniqueness: Non-unique: _ X
        Unique: _

Null Support: Nulls OK: _
        No nulls: _ X

Values Entered By: User: _
        System: _ X

Required Value: No: _
        Yes: _ X

Range of Values: _ No domain limitation

Edit Rule:
 Enter now, edits allowed: _ X
 Enter now, edits not allowed: _
 Enter later, edits allowed: _
 Enter later, edits not allowed: _
 Not determined at this time: _

Field Name: _ orderName
Parent Table: _ species
Alias(es): _
Specification Type:
 Unique: _ Yes
 Generic: _
 Replica: _
Source Specification: _
Shared By: _ Specimins, Requests
Description: _ The official, classical, scientific, taxonomical order name

PHYSICAL ELEMENTS

Data Type: _ VAR CHAR
Length: _ 20
Decimal Places: _ N/A
Character Support:
 Letters (A-Z): _ X
 Numbers (0-9): _
 Keyboard (.,/$#%): _
 Special (©®™Σπ): _ X

LOGICAL ELEMENTS

Key Type: Non: _ X
    Primary: _
    Foreign: _
    Alternate: _

Key Structure: Simple: _
    Composite: _

Uniqueness: Non-unique: _ X
    Unique: _

Null Support: Nulls OK: _
    No nulls: _ X

Values Entered By: User: _
    System: _ X

Required Value: No: _
    Yes: _ X

Range of Values: _ No domain limitation

Edit Rule:
 Enter now, edits allowed: _ X
 Enter now, edits not allowed: _
 Enter later, edits allowed: _
 Enter later, edits not allowed: _

Field Name: _ speciesName
Parent Table: _ species
Alias(es): _
Specification Type:
  Unique: _ Yes
  Generic: _
  Replica: _
Source Specification: _
Shared By: _ Specimins, Requests
Description: _ The official, classical, scientific, taxonomical species name

PHYSICAL ELEMENTS

Data Type: _ VAR CHAR
Length: _ 20
Decimal Places: _ N/A
Character Support:
  Letters (A-Z): _ X
  Numbers (0-9): _
  Keyboard (.,/$#%): _
  Special (©®™Σπ): _ X

LOGICAL ELEMENTS

Key Type: Non: _
        Primary: _ X
        Foreign: _ X
        Alternate: _

Key Structure: Simple: _ X
        Composite: _

Uniqueness: Non-unique: _
        Unique: _ X

Null Support: Nulls OK: _
        No nulls: _ X

Values Entered By: User: _
        System: _ X

Required Value: No: _
        Yes: _ X

Range of Values: _ No domain limitation

Edit Rule:
  Enter now, edits allowed: _
  Enter now, edits not allowed: _ X
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: _ isAlive
Parent Table: _ specimen
Alias(es): _
Specification Type:
  Unique: _ Yes
  Generic: _
  Replica: _
Source Specification: _
Shared By: _ Requests
Description: _ tells if the specimen in question is alive

PHYSICAL ELEMENTS

Data Type: _ boolean
Length: _ 1
Decimal Places: _ N/A
Character Support:
  Letters (A-Z): _ Yes
  Numbers (0-9): _ Yes
  Keyboard (.,/$#%): _ No
  Special (©®™Σπ): _ Yes

LOGICAL ELEMENTS

Key Type: Non: _ Yes
          Primary: _
          Foreign: _
          Alternate: _

Key Structure: Simple: _
          Composite: _

Uniqueness: Non-unique: _ Yes
          Unique: _

Null Support: Nulls OK: _
          No nulls: _ Yes

Values Entered By: User: _
          System: _ Yes

Required Value: No: _
          Yes: _ Yes

Range of Values: _ True or False

Edit Rule:
  Enter now, edits allowed: _ X
  Enter now, edits not allowed: _
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: _ **photograph**
Parent Table: _ specimen
Alias(es): _
Specification Type:
  Unique: _ Yes
  Generic: _
  Replica: _
Source Specification: _
Shared By: _ Specimens
Description: _ A web link to a photograph of the specimen

PHYSICAL ELEMENTS

Data Type: _ VAR CHAR
Length: _ 40
Decimal Places: _ N/A
Character Support:
  Letters (A-Z): _ X
  Numbers (0-9): _ X
  Keyboard (.,/$#%): _ X
  Special (©®™Σπ): _ X

LOGICAL ELEMENTS

Key Type: Non: _ X
        Primary: _
        Foreign: _
        Alternate: _

Key Structure: Simple: _
        Composite: _

Uniqueness: Non-unique: _
        Unique: _ X

Null Support: Nulls OK: _
        No nulls: _ X

Values Entered By: User: _
        System: _ X

Required Value: No: _
        Yes: _ X

Range of Values: _ No domain limitation

Edit Rule:
  Enter now, edits allowed: _
  Enter now, edits not allowed: _ X
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

Field Name: _ specimenID
Parent Table: _ Specimen
Alias(es):   _
Specification Type:
  Unique: _ Yes
  Generic: _
  Replica: _
Source Specification: _
Shared By: _ Transaction
Description: _ Uniquely identifies an individual animal in the archives possession

PHYSICAL ELEMENTS

Data Type: _ int
Length: _
Decimal Places: _ 0
Character Support:
  Letters (A-Z):   _
  Numbers (0-9):   _ X
  Keyboard (.,/$#%): _
  Special (©®™Σπ):   _

LOGICAL ELEMENTS

Key Type: Non: _
          Primary: _ X
          Foreign: _ X
          Alternate: _

Key Structure: Simple: _ X
          Composite: _

Uniqueness: Non-unique: _
          Unique: _ X

Null Support: Nulls OK: _
          No nulls: _

Values Entered By: User: _
          System: _ X

Required Value: No: _
          Yes: _ X

Range of Values: _

Edit Rule:
  Enter now, edits allowed: _
  Enter now, edits not allowed: _ X
  Enter later, edits allowed: _
  Enter later, edits not allowed: _

ER Diagram

|Requests|

RequestID	PK
ClientID	FK
RequestDate	Date
DateOut	Date
DateIn	Date
SpecimenID	FK

Clients

ClientsID	PK
ClientsProfession	VAR(64)
StreetAddress	VAR(64)
City	VAR(64)
State/Province	VAR(64)
ZIP	INT
Phone	VAR(15)
Country	VAR(64)
Email	VAR(64)

Specimens

SpeciesName	FK
SpecimenID	PK
IsAlive	bool
Photograph	VAR(64)

Species

Species Name	PK
ClassName	VAR(64)
OrderName	VAR(64)
FamilyName	VAR(64)
GenusName	VAR(64)

CASCADE (1:1) (1:N) IGNORE (1:1) (0:N) (1:N) RESTRICT (1:1)