Milestone 02: Database Design

Revised Data Planning

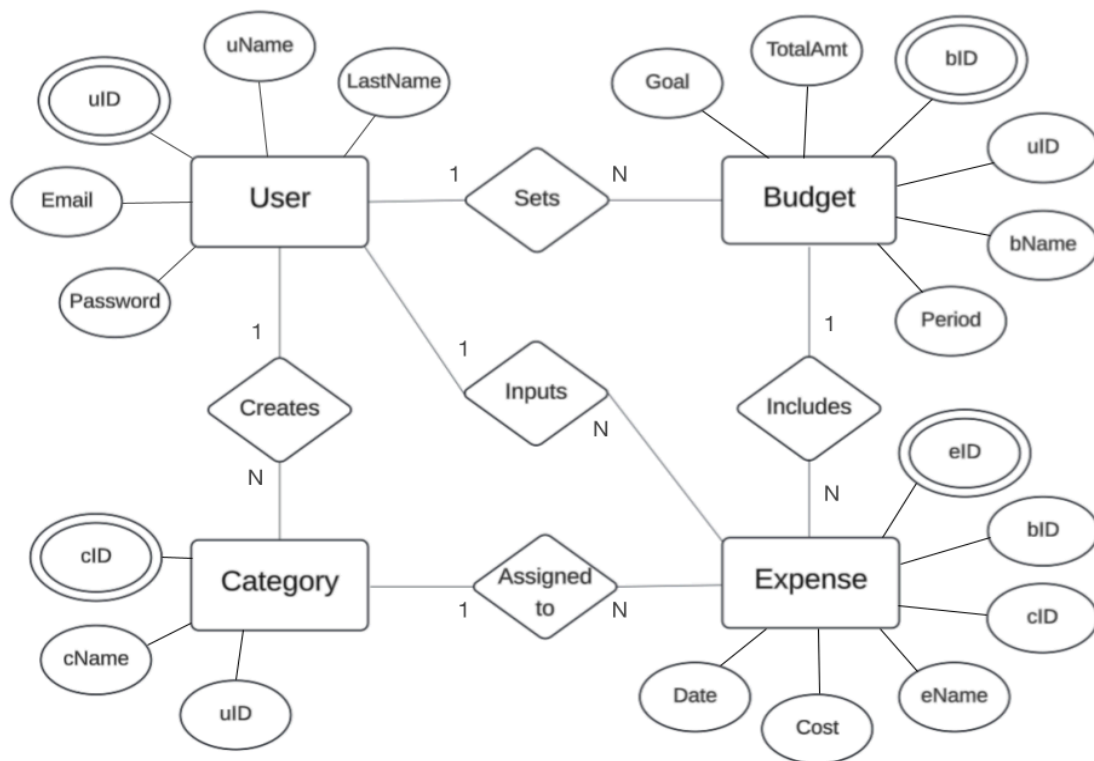Key Data Entities

Entity Name	User	Budget	Category	Expense
Attributes	[**PK] uID uName LastName Email Password	[**PK] bID [*FK] uID bName TotalAmt Goal Period	[**PK] cID [*FK] uID cName	[**PK] eID [*FK] bID [*FK] cID [*FK] uID eName Cost Date

Key Relationships
-   User to Budget (1:N)☐A single User can create multiple Budgets.
-   User to Expense (1:N)☐A single User can create multiple Expenses.
-   User to Category (1:N)☐A single User can create multiple Categories.
-   Budget to Expense (1:N)☐Each Budget contains its own specific list of Expenses.
-   Category to Expense (1:N)☐Each Expense has a Category assigned to it.

ER Diagram

SQL CREATE Statements

```sql
CREATE TABLE User (
      uID INT AUTO_INCREMENT PRIMARY KEY,
      uName VARCHAR(50) NOT NULL,
      LastName VARCHAR(50) NOT NULL,
      Email VARCHAR(50) NOT NULL UNIQUE,
      Password VARCHAR(255) NOT NULL
);

CREATE TABLE Budget (
      bID INT AUTO_INCREMENT PRIMARY KEY,
      uID INT NOT NULL,
      bName VARCHAR(50),
      TotalAmt DECIMAL(10,2),
      Goal DECIMAL(10,2),
      Period VARCHAR(50),
      FOREIGN KEY (uID) REFERENCES users(uID) ON DELETE CASCADE
);

CREATE TABLE Category (
      cID INT AUTO_INCREMENT PRIMARY KEY,
      uID INT NOT NULL,
      cName VARCHAR(20),
      FOREIGN KEY (uID) REFERENCES users(uID) ON DELETE CASCADE
);

CREATE TABLE Expense (
      eID INT AUTO_INCREMENT PRIMARY KEY,
      bID INT,
      cID INT,
      uID INT NOT NULL,
      eName VARCHAR(50),
      Cost DECIMAL(10,2),
      Date DATE,
      FOREIGN KEY (bID) REFERENCES Budget(bID) ON DELETE CASCADE,
      FOREIGN KEY (cID) REFERENCES Category(cID) ON DELETE CASCADE,
      FOREIGN KEY (uID) REFERENCES users(uID) ON DELETE CASCADE
);
```