# Teacher Preparation Lesson Plan

**Subject Area:** Computer Science
**Unit Title:** Database Management
**Grade Level:** 9-12
**Lesson Number:** 1 of 10

**Duration:** 60 minutes
**Date:** March 10, 2024
**Teacher:** John Doe
**Room:** Computer Lab

## Curriculum Standards Alignment

**Content Standards:**

- Understand the concept of database tables and their importance in data management
- Learn how to create and manage database tables using SQL commands

**Skills Standards:**

- Analyze and interpret data stored in a database table
- Design and implement a database table to store and manage data

**Cross-Curricular Links:**

- Mathematics: data analysis and interpretation
- Science: data collection and management

## Essential Questions & Big Ideas

**Essential Questions:**

- What is the purpose of a database table?
- How do you create and manage a database table using SQL commands?

**Enduring Understandings:**

- Database tables are used to store and manage data in a structured format
- SQL commands are used to create, modify, and manipulate database tables

## Student Context Analysis



**Class Profile:**

- Total Students: 25
- ELL Students: 5
- IEP/504 Plans: 3
- Gifted: 2

**Learning Styles Distribution:**

- Visual: 40%
- Auditory: 30%
- Kinesthetic: 30%

## Introduction to Database Tables

Welcome to this lesson on creating and managing database tables with SQL commands! In this lesson, we will introduce the fundamental concepts of database tables and SQL commands, and provide hands-on practice for creating and managing database tables.

A database table is a collection of related data stored in a structured format. SQL commands are used to create, modify, and manipulate database tables.

## Lesson Objectives

**Lesson Objectives:**

- Understand the concept of database tables and their importance in data management
- Learn how to create and manage database tables using SQL commands
- Apply SQL commands to real-world scenarios

## Creating Database Tables

The syntax for creating a database table is as follows:

```
CREATE TABLE table_name (
  column1 data_type,
  column2 data_type,
  ...
);
```

For example:

```
CREATE TABLE customers (
  customer_id INT,
  name VARCHAR(255),
  email VARCHAR(255)
);
```

## Guided Practice: Creating a Database Table

Provide a sample dataset and have students work in pairs to create a database table.

Sample Dataset:

| Customer ID | Name | Email |
|---|---|---|
| 1 | John Doe | john.doe@example.com |
| 2 | Jane Doe | jane.doe@example.com |
| 3 | Bob Smith | bob.smith@example.com |

## Managing Database Tables

SQL commands are used to manage database tables, including inserting, updating, and deleting data.

The syntax for inserting data into a database table is as follows:

```
INSERT INTO table_name (column1, column2, ...)
VALUES (value1, value2, ...);
```

For example:

```
INSERT INTO customers (customer_id, name, email)
VALUES (1, 'John Doe', 'john.doe@example.com');
```

## Guided Practice: Managing a Database Table

Provide a sample dataset and have students work in pairs to manage a database table.

Sample Dataset:

| Customer ID | Name | Email |
|---|---|---|
| 1 | John Doe | john.doe@example.com |
| 2 | Jane Doe | jane.doe@example.com |
| 3 | Bob Smith | bob.smith@example.com |

Instructions:

1. Create a database table to store the customer data.
2. Insert the customer data into the database table.
3. Update the email address of customer 2 to jane.doe2@example.com.
4. Delete customer 3 from the database table.

## Independent Practice: Creating and Managing a Database Table

Provide a scenario and have students work individually to create and manage a database table.

Scenario:

You are the database administrator for an e-commerce company. You need to create a database table to store customer orders. The table should include the following columns:

- Order ID
- Customer ID
- Order Date
- Total Cost

Instructions:

1. Create a database table to store the order data.
2. Insert 5 orders into the database table.
3. Update the total cost of order 3 to $100.00.
4. Delete order 2 from the database table.

## Assessment

Review the key concepts and objectives of the lesson.

Administer a quiz to assess student understanding.

Quiz:

1. What is the syntax for creating a database table?
2. What is the purpose of the PRIMARY KEY constraint?
3. How do you insert data into a database table?

## Conclusion

In this lesson, we introduced the fundamental concepts of database tables and SQL commands, and provided hands-on practice for creating and managing database tables.

We hope that you now have a better understanding of how to create and manage database tables using SQL commands.

Thank you for your attention, and we look forward to the next lesson!