**Database Design**

**Tables and Relationships**

1. **buses**
   * **id**: INT, Primary Key, Auto Increment
   * **bus\_number**: VARCHAR(10), Unique
   * **route\_id**: INT, Foreign Key (References bus\_routes.id)
   * **type**: ENUM('morning', 'afternoon')
   * **availability**: ENUM('available', 'unavailable')
2. **students**
   * **id**: INT, Primary Key, Auto Increment
   * **name**: VARCHAR(100)
   * **grade**: VARCHAR(10)
   * **bus\_id**: INT, Foreign Key (References buses.id)
   * **status**: ENUM('registered', 'waiting')
   * **date**: DATE
3. **bus\_routes**
   * **id**: INT, Primary Key, Auto Increment
   * **route\_name**: VARCHAR(100), Unique
   * **available**: ENUM('yes', 'no')
4. **transactions**
   * **id**: INT, Primary Key, Auto Increment
   * **bus\_id**: INT, Foreign Key (References buses.id)
   * **student\_id**: INT, Foreign Key (References students.id)
   * **date**: DATE
   * **type**: ENUM('morning', 'afternoon')

Database Relationships

* **buses** table references **bus\_routes** table with route\_id.
* **students** table references **buses** table with bus\_id.
* **transactions** table references both **buses** and **students** tables with bus\_id and student\_id.

-- ---------------------------------------Create table for bus routes-------------------------------------------------------------

CREATE TABLE bus\_routes (

id INT AUTO\_INCREMENT PRIMARY KEY,

route\_name VARCHAR(100) UNIQUE NOT NULL,

available ENUM('yes', 'no') NOT NULL

);

--------------------------------------------- Create table for buses----------------------------------------------------------------

CREATE TABLE buses (

id INT AUTO\_INCREMENT PRIMARY KEY,

bus\_number VARCHAR(10) UNIQUE NOT NULL,

route\_id INT NOT NULL,

type ENUM('morning', 'afternoon') NOT NULL,

availability ENUM('available', 'unavailable') NOT NULL,

FOREIGN KEY (route\_id) REFERENCES bus\_routes(id)

);

----------------------------------------- Create table for students----------------------------------------------------------------

CREATE TABLE students (

id INT AUTO\_INCREMENT PRIMARY KEY,

name VARCHAR(100) NOT NULL,

grade VARCHAR(10) NOT NULL,

email VARCHAR(100) NOT NULL,

status ENUM('registered', 'waiting') NOT NULL,

date DATE NOT NULL

);

-- -------------------------------------Create table for transactions-------------------------------------------------------------

CREATE TABLE transactions (

id INT AUTO\_INCREMENT PRIMARY KEY,

bus\_id INT NOT NULL,

student\_id INT NOT NULL,

date DATE NOT NULL,

type ENUM('morning', 'afternoon') NOT NULL,

payment\_status ENUM('paid', 'unpaid') NOT NULL,

FOREIGN KEY (bus\_id) REFERENCES buses(id),

FOREIGN KEY (student\_id) REFERENCES students(id)

);