

# Take Me Home: A WVU Ride-Share Service Database

## Scenario

WVU students face transportation challenges due to unreliable transportation services, high costs of ridesharing, and limited parking. "Take Me Home" is an application designed to offer a safe, affordable, and reliable ride-share service dedicated for WVU students. The service relies on a database system to manage survey results, users, drivers, passengers, ride requests, and ride offers efficiently.

A structured database is ideal for implementing this project as it will efficiently manage user information and input. Before development begins, the planning team will conduct surveys to gather insights from WVU students regarding their experiences with existing transportation services and their willingness to use a new ride-share system. The collected data will help validate the need for an alternative transportation option, ensuring the project addresses real student concerns. Once the needs are validated and addressed through the survey, the project development will begin. The database then will be used to handle the users' profile details, drivers' info, passengers' info, and the ride offers and requests on the app.

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# Tables

**Table 1: Survey Results**

This table collects and stores user assessments of transportation services. This data aids in understanding preferences and the reliability perceived by users of different transportation options in the community.

User ID	Classification	Most reliable Transportation Service	PRT Reliability rating (1-5)	Mountain Line reliability rating (1-5)	How often you use PRT	Willingness to use a new WVU Rideshare service (1-5)
<i>VARCHAR(9)</i>	<i>VARCHAR(9)</i>	<i>VARCHAR(12)</i>	INT	INT	<i>VARCHAR(6)</i>	INT
001	Sophomore	Mountain Line	3	5	Weekly	5
002	Freshman	PRT	5	4	Daily	5
003	Senior	PRT	2	1	Weekly	4
004	Sophomore	Uber	1	2	Rarely	2
005	Junior	Personal Car	2	1	Rarely	3
006	Junior	Mountain Line	2	3	Weekly	2
007	Sophomore	Walking	4	3	Weekly	1
008	Senior	Personal Car	1	1	Rarely	3
009	Junior	PRT	4	2	weekly	4
010	Sophomore	PRT	4	1	Weekly	5

**Table 2: User Information**

This table manages user registration and authentication data. Essential for maintaining secure access to the web application and personalizing the user experience.

Email*	Password	First_Name	Last_Name	Student_ID	Class
<i>VARCHAR(50)</i>	<i>VARCHAR(20)</i>	<i>VARCHAR(50)</i>	<i>VARCHAR(50)</i>	<i>CHAR(9)</i>	<i>VARCHAR(9)</i>
001@email.com	aA001!	John	Doe	800123456	Sophomore
002@email.com	aA002!	Alice	Wonder	800456789	Freshman
003@email.com	aA003!	Sara	Herring	800789456	Senior
004@email.com	aA004!	Darren	Jackson	800147258	Sophomore
005@email.com	aA005!	Helen	Creek	800258369	Junior
006@email.com	aA006!	Jane	Smith	800369258	Junior
007@email.com	aA007!	Mike	Brown	800357159	Sophomore
008@email.com	aA008!	Terry	Johnson	800135478	Senior
009@email.com	aA009!	Doris	Thrall	800346582	Junior
010@email.com	aA010!	Tracey	Logsdon	800147519	Sophomore

**Table 3: Drivers**

This table contains information about registered drivers including their vehicle details. This is crucial for matching drivers with passengers and ensuring vehicle capacity meets the demand.

Driver_License*	First_Name	Last_Name	Vehicle_Type	Seating_Capacity	Smoking_Allowed?
<i>VARCHAR(8)</i>	<i>VARCHAR(50)</i>	<i>VARCHAR(50)</i>	<i>VARCHAR(20)</i>	INT	<i>VARCHAR(3)</i>
WV123456	John	Doe	Sedan	3	YES
WV123457	Alice	Wonder	SUV	6	NO
WV123458	Sara	Herring	Compact	2	NO
WV123459	Darren	Jackson	Van	7	YES
WV123460	Helen	Creek	Sedan	3	NO

**Table 4: Passengers**

This table includes a list of passengers. It includes their User\_ID as the primary key and then important information. The only unique column in this table would be the primary key. All columns would need to be filled in.

User_ID*	First_Name	Last_Name	has_Luggage	Payment_Method
<i>CHAR(9)</i>	<i>VARCHAR(50)</i>	<i>VARCHAR(50)</i>	<i>CHAR(1)</i>	<i>VARCHAR(10)</i>
800369258	Jane	Smith	Y	VISA
800357159	Mike	Brown	N	PayPal
800135478	Terry	Johnson	N	AMEX
800346582	Doris	Thrall	Y	CASH
800147519	Tracey	Logsdon	N	VISA

**Table 5: Ride Offers**

This table includes all ride offers currently available. It keeps track of who is making the offer and when and where the ride will occur. The Offer\_ID is the primary key. No other columns have to be unique. The only constraints in place are that none of the columns can be null and the date/time must be greater than the current date/time.

Offer_ID*	Driver_License	Departure_Time	Arrival_Time	Meet-up location	Destination	Seats_Available
CHAR(9)	VARCHAR(12)	DATETIME	DATETIME	VARCHAR(100)	VARCHAR(100)	INT
RO79426153	WV123460	02/11/2025 8:00 AM	02/11/2025 10:30 AM	WVU Coliseum Morgantown, WV	Capitol Building Charleston, WV	2
RO56281347	WV123458	02/12/2025 12:45 PM	02/12/2025 1:45 PM	Mountainlair Morgantown, WV	Meadowbrook Mall Bridgeport, WV	3
RO92167480	WV123457	02/11/2025 4:15 PM	02/11/2025 4:25 PM	Mountainlair Morgantown, WV	Chick-fil-a Morgantown, WV	2
RO30485962	WV123459	02/12/2025 3:00 AM	02/12/2025 6:30 AM	UTC Target Morgantown, WV	Dulles International Airport Washington, DC	1
RO74853190	WV123456	03/11/2025 1:30 PM	03/11/2025 3:00 PM	WVU Coliseum Morgantown, WV	PPG Paints Area Pittsburgh, PA	4

**Table 6: Ride Requests**

This table includes all ride requests currently available. It keeps track of who is requesting the ride and when and where the ride will occur. The Request\_ID is the primary key. No other columns have to be unique. The only constraints in place are that none of the columns can be null and the date/time must be greater than the current date/time.

Request_ID*	User_ID	Requested_Departure_Time	Arrival_Time	Requested_Start_Location	Requested_End_Location
CHAR(9)	CHAR(9)	DATETIME	DATETIME	VARCHAR(100)	VARCHAR(100)
RR38567291	800369258	02/11/2025	02/11/2025	Mountainlair	WVU Coliseum

		7:00 PM	7:10 PM	Morgantown, WV	Morgantown, WV
RR24980156	800357159	02/13/2025 7:00 AM	02/13/2025 7:10 AM	WVU Coliseum Morgantown, WV	Mountainlair Morgantown, WV
RR90753148	800135478	02/12/2025 5:30 PM	02/12/2025 5:45 PM	Mountainlair Morgantown, WV	UTC Target Morgantown, WV
RR62348705	800346582	02/14/2025 2:15 PM	02/14/2025 2:30 PM	WVU Coliseum Morgantown, WV	Morgantown Mall Morgantown, WV
RR51479032	800369258	02/11/2025 10:30 AM	02/11/2025 10:35 PM	WVU Coliseum Morgantown, WV	Chick-fil-a Morgantown, WV

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# Parameters

The ride-share platform consists of three primary user groups: students, drivers, and administrators. Students can create and manage their profiles, request rides, view ride history, and provide ratings and feedback on drivers. Drivers, who must be registered students with a valid license and vehicle, can sign up to offer rides, submit vehicle details, accept or decline ride requests, and access their ride history and ratings. Administrators oversee the registration process, approving or rejecting driver applications, monitoring ride transactions for compliance, and resolving disputes between passengers and drivers.

On the backend, database administrators are responsible for maintaining and optimizing the relational database, ensuring data integrity, security, and backups. Backend developers implement and manage APIs that facilitate data exchange between the frontend and database, ensuring efficient system performance.

Each user role requires specific knowledge. Frontend users, including passengers, drivers, and administrators, must be able to navigate the platform effectively. Backend users, such as developers and database administrators, need programming expertise, security knowledge, and an understanding of data encryption.

The platform is designed as a web application with restricted access, allowing only eligible West Virginia University students to log in using a valid email address through a single sign-on system. The development stack includes Java for programming and MySQL for database management, with Eclipse and MySQL Workbench as the primary development tools.