

SCHOOL OF INFORMATION, COMPUTER, AND COMMUNICATION
(ICT)

SIRINDHORN INTERNATIONAL INSTITUTE OF TECHNOLOGY
THAMMASAT UNIVERSITY

CSS325 DATABASE MANAGEMENT SYSTEM

FINAL REPORT
PROJECT NAME: THE KNIGHT BUS BOOKING

BY

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Abstract

The bus is one of most used public transportation in Thailand. Although there is no public long-trip bus in Thailand, our project has already adopted The Knight Bus concept from the Harry Potter movie series to simulate the booking system. Our booking allows users to book a bus by specific day, time, floor, bed, origin station, and destination station. When the payment is confirmed by our staff then the booking is complete.

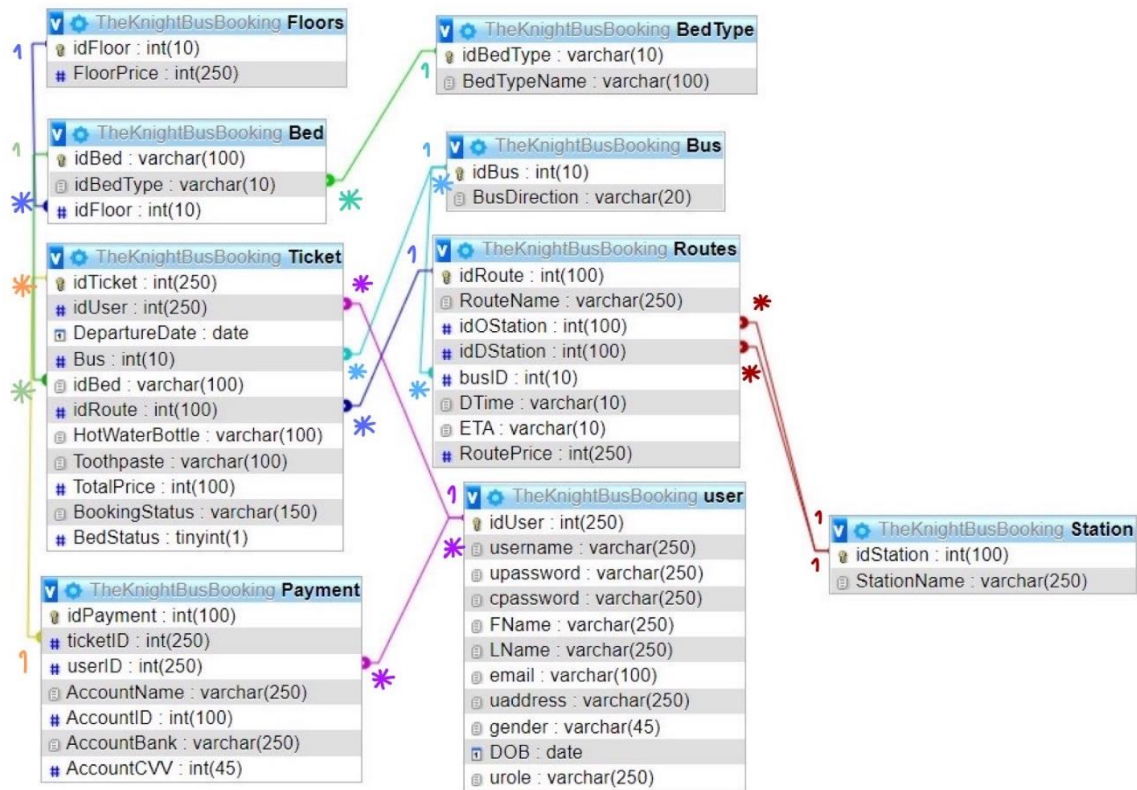
The Knight Bus Booking is a part of Database System (CSS325), Sirindhorn International Institute of Technology by the Golden Trio. We aim to develop a bus booking system with a more comfortable system that provides clear booking information for the user. This report consists of Introduction, ER Diagram, Context Diagram, Data Flow Diagram, Functional Design, User Interface, Implementation on Database Management Systems, Explanation of Stored Procedures, and Conclusion. Introduction part provides a basic understanding of The Knight Bus and also the booking system. The diagrams show the relationship between the entities, the relationship to the external entities, and the flow of data. Functional Design summarizes the different functional accessed permission between roles. User Interface allows us to see the mockups and real UI of The Knight Bus Booking and let our aim come true. Implementation on Database Management Systems show how we implement database with coding. The procedures that are created in the database will be shown in Explanation of Stored Procedures. Conclusion provides the summary of the system with database.

Introduction

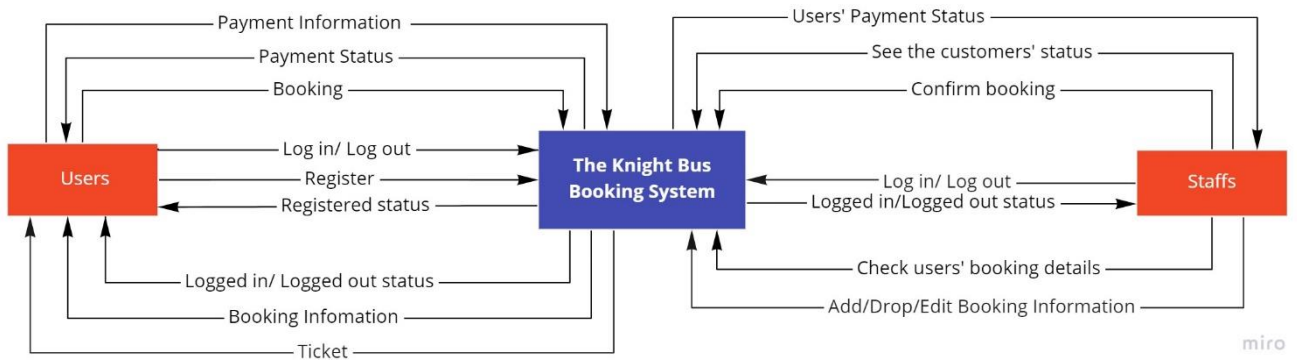
The Knight Bus is the long-trip bus in the Harry Potter movie series. The Knight Bus Booking is the long-trip bus booking system for wizards and witches. Because of the long-trip, this bus has beds instead of seats. Our Knight Bus is a 3-floor bus, with three bed types. There is a simple bed, a deluxe bed with hot chocolate, and a premium bed with a hot water bottle and a toothpaste in the color of their choice. The route can be chosen from our road map and the departure time can be chosen by the bus schedule list, grouped by the bus direction. The total fee is calculated by the bed type and route. The upper floors are more expensive than the lower floor since they are more private than the lower one. The payment system is like paying by credit card in the real world but we accept only wizarding world money which means that our users need to have an account in wizarding world bank.

To book a bus in The Knight Bus Booking, users need to sign up for an account. Only users can book a bus. Users can book only a bed per booking. After users complete their payment, our staff will check it and update the payment status. The booking system only gives users a ticket ID while the real ticket will be sent by our owl mail.

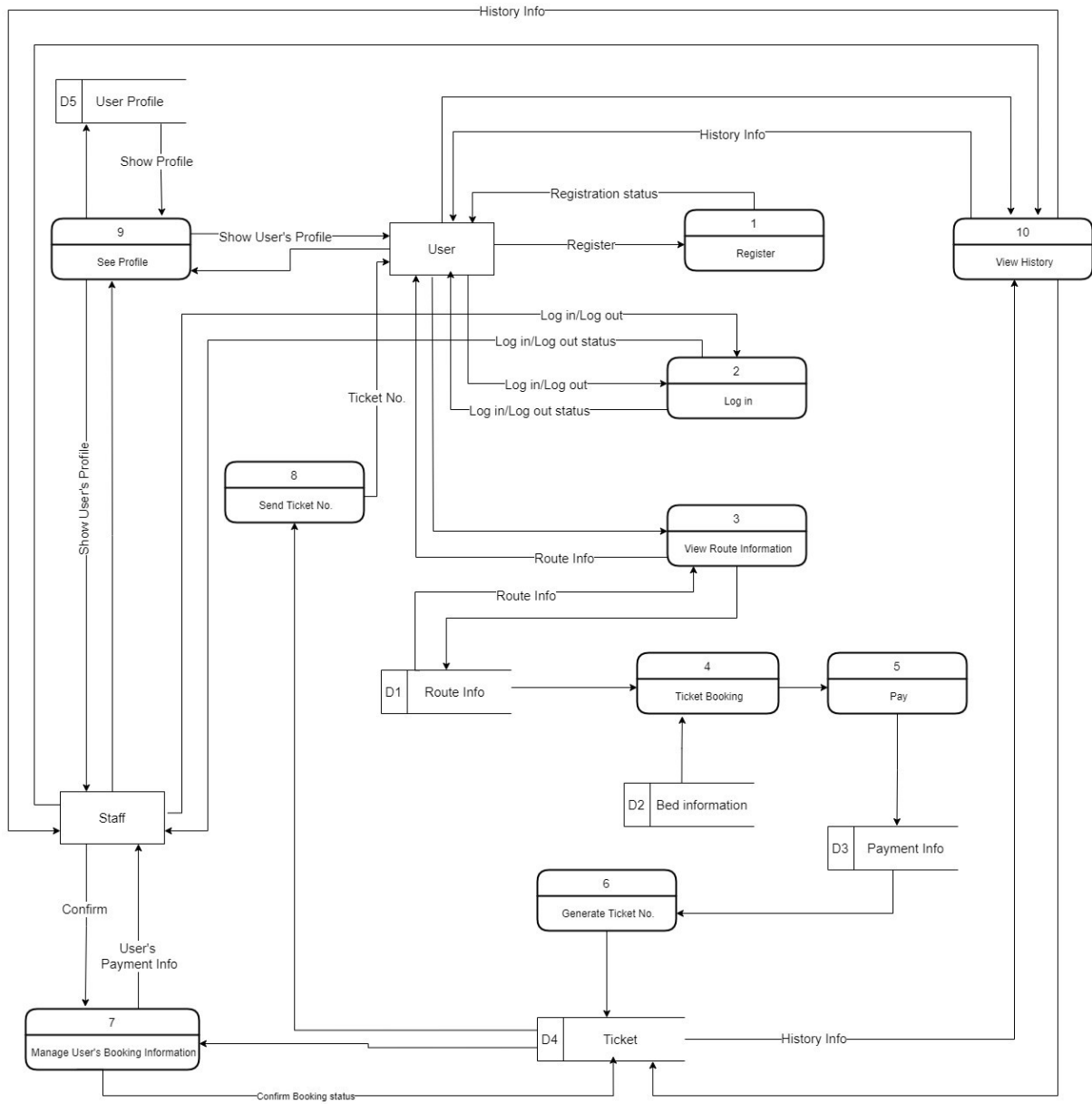
ER Diagram



Context Diagram



Data flow Diagram



Functional Design

Function	User	Staff
Register	YES	NO
Log in/ Log out	YES	YES
Route Information	YES	YES
Booking	YES	NO
Booking History	YES	YES
See all users' information	NO	YES
Confirm Booking	NO	YES
Add/Drop/Edit Booking Information	NO	YES
Payment	YES	NO
Payment Status	YES	YES

User Interface (Mock up)



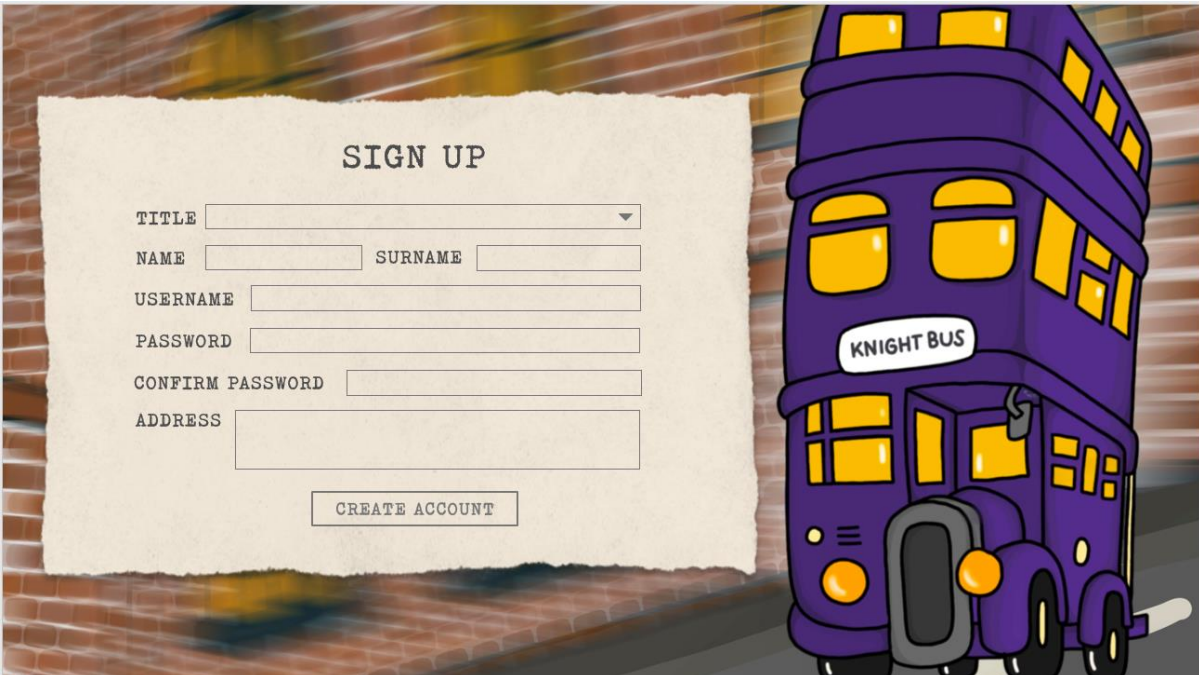
A mockup of a 'SIGN IN' form. The form is on a piece of aged, torn paper with a light beige background. It features a title 'SIGN IN' in a bold, black, sans-serif font. Below the title are two input fields: 'USERNAME' and 'PASSWORD', each with a light beige border and a small white cursor. A 'LOG IN' button is centered below the password field. At the bottom of the form, there is a link: 'Don't have the account? SIGN UP'. The background of the mockup is a blurred image of a brick wall and a purple double-decker bus with yellow windows and a 'KNIGHT BUS' sign on its side.

SIGN IN

USERNAME

PASSWORD

Don't have the account? [SIGN UP](#)



A mockup of a 'SIGN UP' form. The form is on a piece of aged, torn paper with a light beige background. It features a title 'SIGN UP' in a bold, black, sans-serif font. Below the title are several input fields: 'TITLE' (a dropdown menu), 'NAME' and 'SURNAME' (two separate input fields), 'USERNAME', 'PASSWORD', 'CONFIRM PASSWORD', and 'ADDRESS' (a larger input field). A 'CREATE ACCOUNT' button is centered below the address field. The background of the mockup is a blurred image of a brick wall and a purple double-decker bus with yellow windows and a 'KNIGHT BUS' sign on its side.

SIGN UP

TITLE

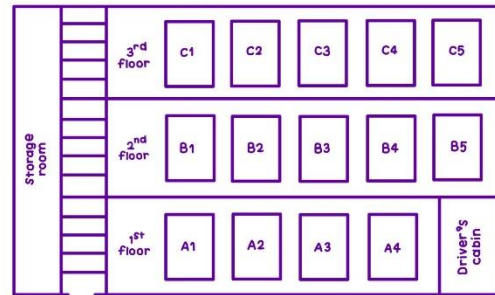
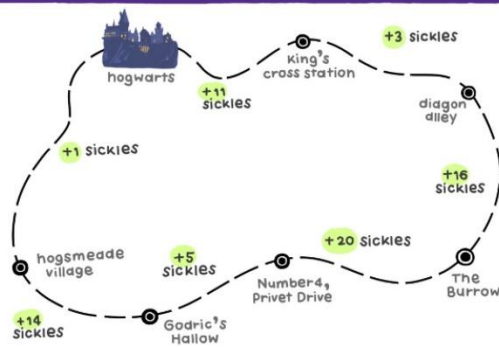
NAME SURNAME

USERNAME

PASSWORD

CONFIRM PASSWORD

ADDRESS



1st floor: simple bed (+11 sickles)

2nd floor: deluxe bed with hot chocolate (+13 sickles)

3rd floor: premium bed with a hot water bottle and a toothpaste in the color of your choice. (+15 sickles)

Date: Origin: Bed No.:

Time: Destination:

[Go to payment](#)

Your Booking Information

Date: 11th October 2021 Time: 11:00 pm

Origin: Hogwarts Destination: Diagon Alley

Bed No.: C1 Bed Type: Premium Floor: 3

Hot water bottle:

Toothpaste:

Payment

Bank: Account Name:

Bank No.: Personal CVV:

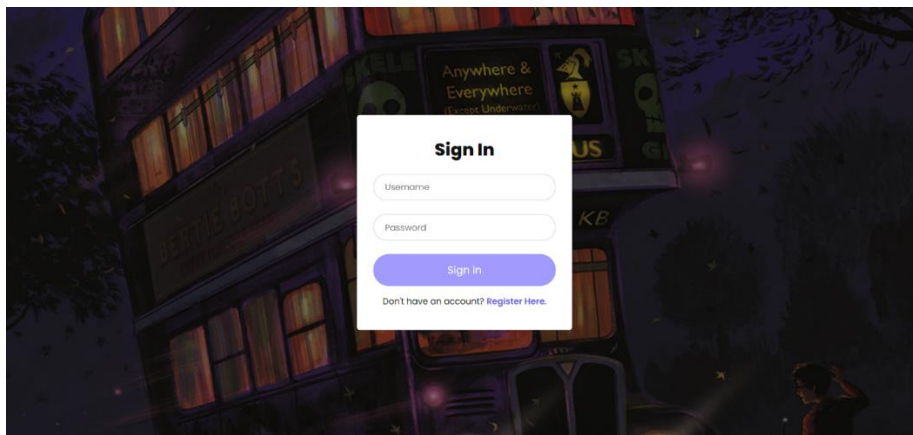
[Confirm](#)

User Interface

1. User side

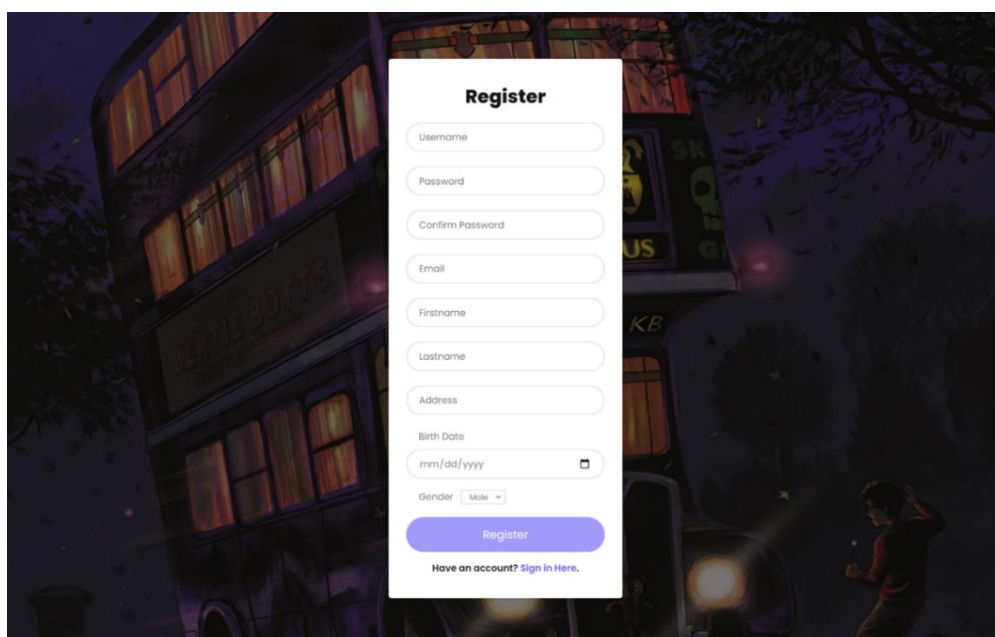
1.1 Log in

This is the first page shown to users when accessing. Logging in is required in order to reach all functions in the website. If users already have their own account, they can immediately log into a homepage. If not, they need to create new accounts by clicking “Register Here”. After that, the system will bring them to the registration process.



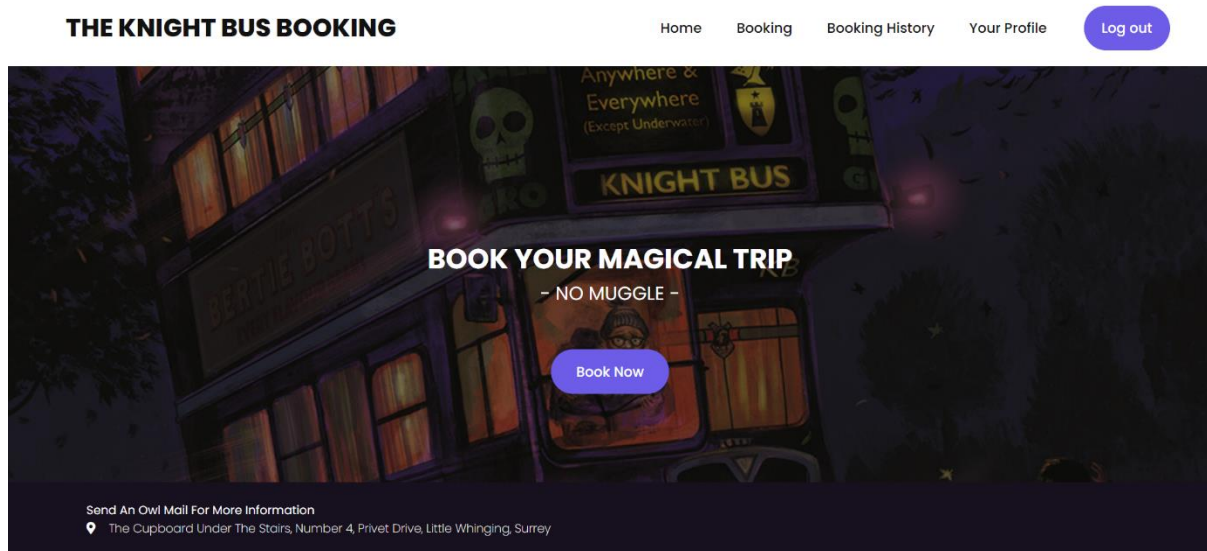
1.2 Register

A user needs to fill in the required information: username, password, email, first name, last name, address, date of birth, and gender, as shown on figure below. If there is only an empty field that is not filled, the system will alert the message to notify the users.



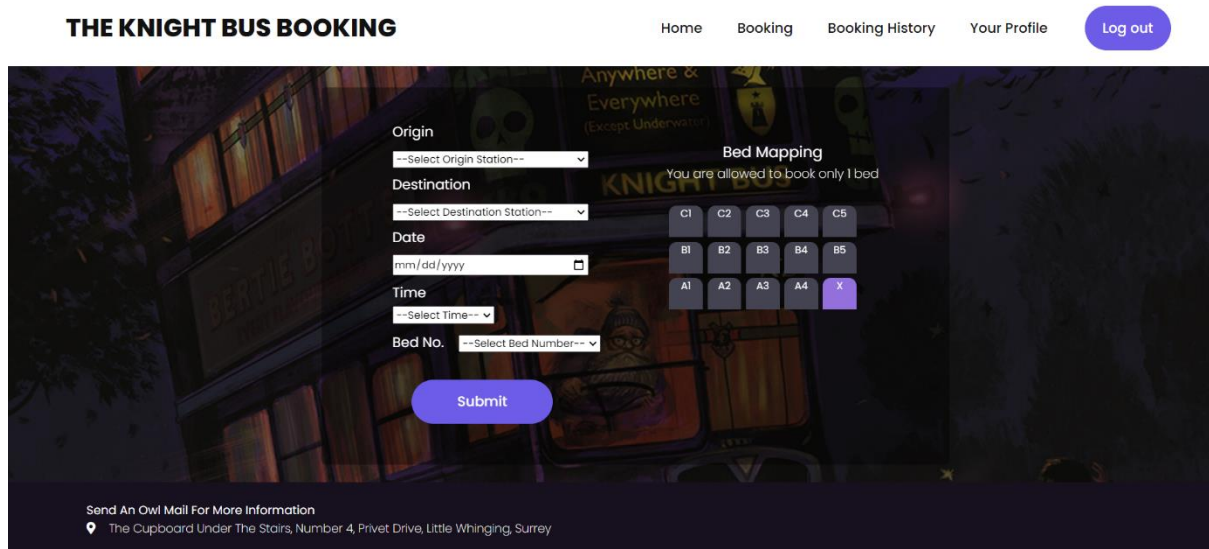
1.3 Home

Once logged in, the user can start browsing the interested routes and booking his/her magical trip by clicking “Book Now” button or “Booking” menu lying on the head bar.



1.4 Booking

Users need to select origin, destination, date, time, and bed number. Moreover, there is a bed mapping on the right.



1.5 Check Booking Information

Your booking information is shown on this page, and if users have booked the bed on the third floor (Type C), the system will show dropdown menus for choosing hot water bottle and toothpaste colors and also the total price of the ticket.

THE KNIGHT BUS BOOKING

HomeBookingBooking HistoryYour ProfileLog out

Anywhere & Everywhere
(Except Under the Stairs)

KNIGHT BUS

KB

Your Booking Information

Date: 2021-10-13

Time: 08:00

Origin: Hogwarts

Destination: Kings Cross Station

Bed No: C2

Bed Type: Premium bed

Floor: 3

Hot water bottle:

Yellow

Toothpaste:

Green

Total Price: 15 Sickles

Confirm

Send An Owl Mail For More Information

The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

1.6 Payment

Since this is a magical trip, so the payment system is distinctly different from what we have done in our daily life. Users have to select the account bank and fill in their own account name, account number, and personal CVV, so the system will make an auto payment through account number.

THE KNIGHT BUS BOOKING

HomeBookingBooking HistoryYour ProfileLog out

Anywhere & Everywhere
(Except Under the Stairs)

KNIGHT BUS

KB

Payment

Bank

--Select Bank--

Account Name

Account Name

Bank No.

Bank No.

Personal CVV:

Personal CVV

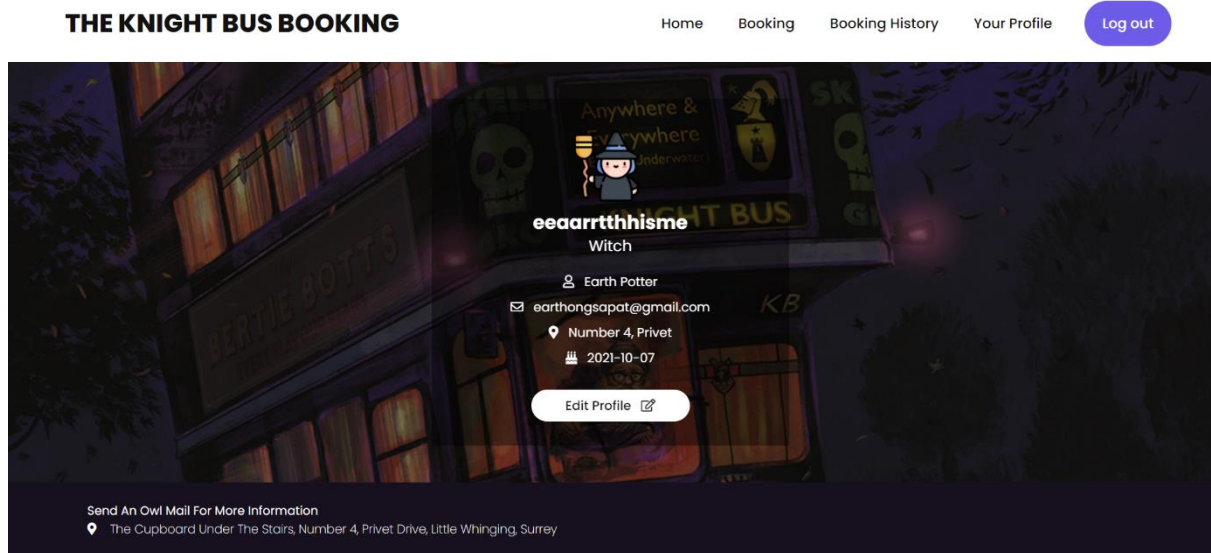
Pay

Send An Owl Mail For More Information

The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

1.7 User Profile

A general information of users will be shown here. It includes users' username, user icon and role: witch or wizard depending on their gender, full name, email, address, and date of birth. We allow users to edit some of their profile information that will be shown in details on the next page, so there is an edit profile button at the bottom.



1.8 Booking History

There is a booking history, showing some information of the ticket, of the logged in user.

THE KNIGHT BUS BOOKING

Home Booking Booking History Your Profile Log out

Ticket ID	User ID	Departure Date	Bus ID	Bed ID	Route ID	Hot Water Bottle	Toothpaste	Price	Booking Status
2	6	2021-11-23	1	C3	3	Yellow	Green	29	Wait for payment Confirmation
7	6	2021-11-24	10	C4	34	Blue	Green	44	Wait for payment Confirmation
8	6	2021-11-10	4	C5	43	Blue	Green	35	Wait for payment Confirmation
11	6	2021-11-23	7	C4	73	Yellow	Yellow	16	Wait for payment Confirmation
12	6	2021-11-23	2	C1	15	Blue	Purple	18	Wait for payment Confirmation
18	6	2021-12-09	8	A4	10	None	None	26	Wait for payment Confirmation
19	6	2021-11-23	2	B5	87	None	None	83	Wait for payment Confirmation
22	6	2021-11-17	12	A2	52	None	None	50	Wait for payment Confirmation
23	6	2021-11-18	1	C3	1	Blue	Yellow	26	Wait for payment Confirmation

Send An Owl Mail For More Information
The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

1.9 Edit User Profile

Users are allowed to edit only first name, last name, email, address, and date of birth. If they would like to edit other information such as gender or username, they need to contact us via an owl mail providing at the footer of all pages.

The screenshot shows the 'Edit Profile' form on the Knight Bus Booking website. The header includes the site name 'THE KNIGHT BUS BOOKING' and navigation links: 'Home', 'Booking', 'Booking History', 'Your Profile', and a 'Log out' button. The form is overlaid on a dark, atmospheric background featuring a building with a sign that reads 'Anywhere & Everywhere (Except Underwater)' and 'KNIGHT BUS'. The form fields are: 'Firstname', 'Lastname', 'Email', 'Address', and 'mm/dd/yyyy' for the date of birth. An 'Update' button with a checkmark icon is at the bottom of the form. Below the form, a footer section contains the text 'Send An Owl Mail For More Information' and a location pin icon followed by the address 'The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey'.

2. Admin side

2.1 Home

Overall details are the same as homepage of user side but change some menu bars lying on the header and also change “Book Now” button to “Confirm Booking Status”.

The screenshot shows the Admin Home page on the Knight Bus Booking website. The header includes the site name 'THE KNIGHT BUS BOOKING' and navigation links: 'Home', 'Route Info', 'Confirmation', 'Your Profile', and a 'Log out' button. The main content area features a dark, atmospheric background with a building and a sign that reads 'Anywhere & Everywhere (Except Underwater)' and 'KNIGHT BUS'. The text 'MANAGE USERS' MAGICAL TRIP' is prominently displayed, followed by '- ONLY FOR ADMIN -'. Below this, a 'Confirm Booking Status' button is visible. The footer section is identical to the user side, containing the text 'Send An Owl Mail For More Information' and the address 'The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey'.

2.2 Routing Information

The routing information table is shown on this page, it also has buttons of deleting and editing the routing information. If admins click delete, the system will remove that route from the database and the information is also disappeared from the table.

THE KNIGHT BUS BOOKING

[Home](#) [Route Info](#) [Confirmation](#) [Your Profile](#) [Log out](#)

ID	Name	Origin	Destination	Bus ID	Departure Time	ETA	Price	Delete	Edit
0	Example	Diagon Alley	Diagon Alley	2	05:00	09:00	700 sickles		
1	Hogwart Express	Hogwarts	Kings Cross Station	1	06:00	08:00	11 sickles		
2	Hogwarts Express	Hogwarts	Kings Cross Station	8	11:30	21:05	59 sickles		
3	Be Ready for School	Hogwarts	Diagon Alley	1	06:00	08:30	14 sickles		
4	Be Ready for School	Hogwarts	Diagon Alley	8	11:30	20:35	56 sickles		
5	Christmas at Weasley's	Hogwarts	The Burrow	1	06:00	11:00	30 sickles		
6	Christmas at Weasley's	Hogwarts	The Burrow	8	11:30	18:05	40 sickles		
7	Train to Nightmare	Hogwarts	Number 4, Privet Drive	1	06:00	14:00	50 sickles		
8	Train to Nightmare	Hogwarts	Number 4, Privet Drive	8	11:30	15:05	20 sickles		

Send An Owl Mail For More Information

The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

2.3 Edit Routing Information

If admins click the editing button, they will be brought to this page that will show a route name, origin, and destination of the route they would like to edit, as well as, edit its bus number, estimate time arrival, time, and price of that route (it is a price not including the bed price yet).

THE KNIGHT BUS BOOKING

[Home](#) [Route Info](#) [Confirmation](#) [Your Profile](#) [Log out](#)

Anywhere & Anywhere
(Except Underwater)

SK

KB

BEINE BOTTS

KNIGHT BUS

Edit Route

Route Name: Hogwart Express

Origin: Hogwarts

Destination: Kings Cross Station

2

06:00:00

ETA: --:--:--

Price 12

Update

Send An Owl Mail For More Information

The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

2.4 Update Confirmation

This is the table of all users' tickets and their booking information. It also has an updating and deleting button as the routing information page. If admins click delete, the system will remove that ticket from the database and the information itself is also disappeared from the table. While clicking update, it will bring them to another page that allows to change the booking status of that user (checking if that user has already paid for the ticket).

THE KNIGHT BUS BOOKING

HomeRoute InfoConfirmationYour ProfileLog out

Ticket ID	User ID	Departure Date	Bus ID	Bed ID	Route ID	Price	Booking Status	Delete	Check
1	4	2021-11-23	1	C5	5	45	Wait for payment Confirmation	✖	✔
2	6	2021-11-23	1	C3	3	29	Wait for payment Confirmation	✖	✔
3	4	2021-11-23	5	C4	59	34	Wait for payment Confirmation	✖	✔
4	4	2021-11-23	10	C4	32	49	Wait for payment Confirmation	✖	✔
5	4	2021-11-23	1	C2	5	45	Wait for payment Confirmation	✖	✔
6	4	2021-11-23	2	C3	15	18	Wait for payment Confirmation	✖	✔
7	6	2021-11-24	10	C4	34	44	Wait for payment Confirmation	✖	✔
8	6	2021-11-10	4	C5	43	35	Wait for payment Confirmation	✖	✔
9	4	2021-11-24	5	C3	57	20	Wait for payment Confirmation	✖	✔

Send An Owl Mail For More Information

The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

2.5 Update Booking Status

If the users have already paid for their tickets, admins will update the booking status for users in this page.

THE KNIGHT BUS BOOKING

HomeRoute InfoConfirmationYour ProfileLog out

Anywhere & Everywhere
(Except Underwater)

Update Payment Status

Ticket ID: 2

User ID: 4

Departure Date: 2021-11-01

Bus ID: 5

Bed ID: C3

Route ID: 146

Total Price: 34 Sickles

Booking Status: Confirmed

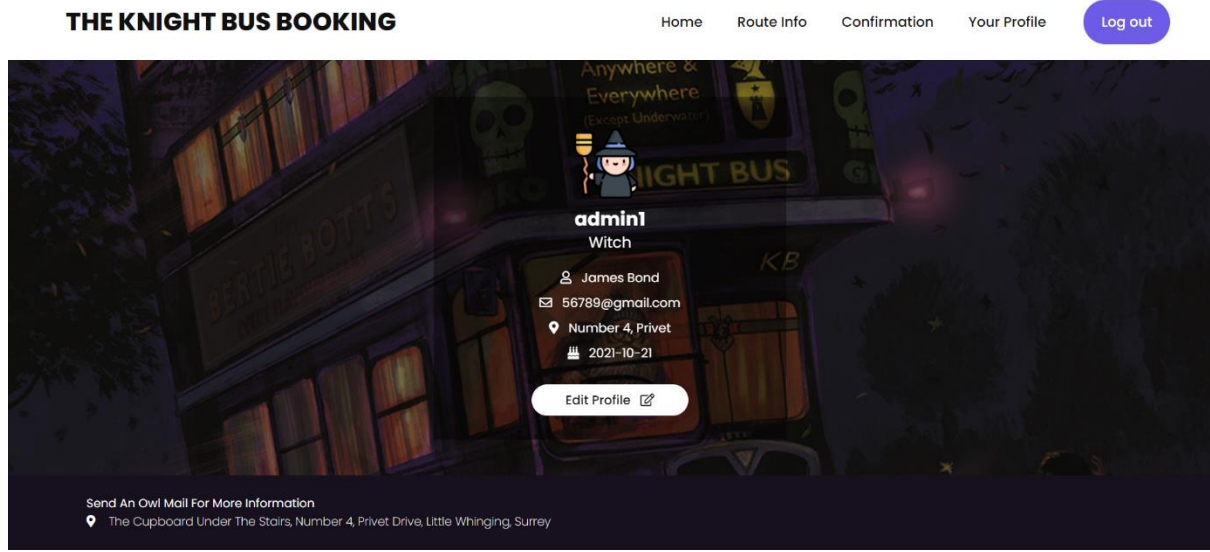
Update

Send An Owl Mail For More Information

The Cupboard Under The Stairs, Number 4, Privet Drive, Little Whinging, Surrey

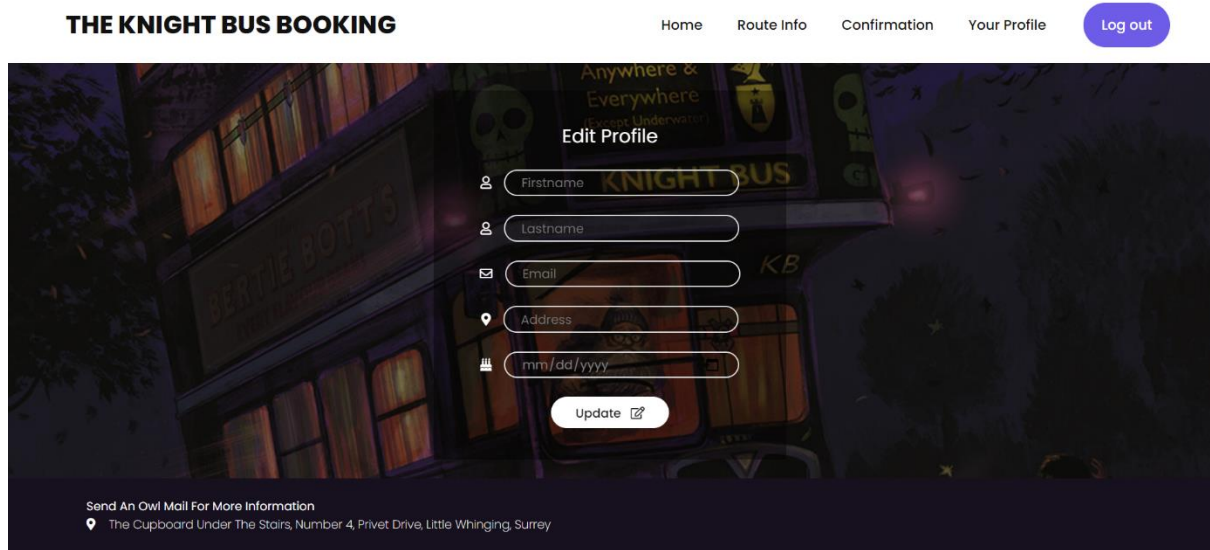
2.6 Admin Profile

All details are the same as user profile in user side.



2.7 Edit Admin Profile

All details are the same as edit user profile in user side.



Implementation on Database Management Systems

1. User registers in register page and after pressing 'Register' button, the fill in information will be automatically inserted into user table.
2. User signs in to the system with the registered username and password which will be checked with the information in the database whether they are similar.
3. User's booking and payment information will be automatically inserted to Ticket table and Payment table after pressing 'Pay' button.
4. User and admin can edit their profile in their profile page. The updated information will be automatically updated into user table.
5. Admin is allowed to update and user's booking information. The updated information will be automatically updated into Routes table or deleted.
6. Admin is allowed to edit and delete routing information. The updated information will be automatically updated into Routes table or deleted.

Database Structure













































Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> Bed	Browse Structure Search Insert Empty Drop	14	InnoDB	latin1_swedish_ci	48 KiB	-
<input type="checkbox"/> BedType	Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> Bus	Browse Structure Search Insert Empty Drop	14	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> Floors	Browse Structure Search Insert Empty Drop	3	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> Payment	Browse Structure Search Insert Empty Drop	21	InnoDB	latin1_swedish_ci	48 KiB	-
<input type="checkbox"/> Routes	Browse Structure Search Insert Empty Drop	99	InnoDB	latin1_swedish_ci	64 KiB	-
<input type="checkbox"/> Station	Browse Structure Search Insert Empty Drop	7	InnoDB	latin1_swedish_ci	16 KiB	-
<input type="checkbox"/> Ticket	Browse Structure Search Insert Empty Drop	21	InnoDB	latin1_swedish_ci	80 KiB	-
<input type="checkbox"/> user	Browse Structure Search Insert Empty Drop	6	InnoDB	latin1_swedish_ci	16 KiB	-
9 tables	Sum	188	InnoDB	latin1_swedish_ci	320 KiB	0 B

Bed Table Structure








#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	idBed	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 2	idBedType	varchar(10)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/> 3	idFloor	int(10)			No	None			Change Drop More

Bed Table

+ Options











 					idBed	idBedType	idFloor		
<input type="checkbox"/>		Edit		Copy		Delete	A1	A	1
<input type="checkbox"/>		Edit		Copy		Delete	A2	A	1
<input type="checkbox"/>		Edit		Copy		Delete	A3	A	1
<input type="checkbox"/>		Edit		Copy		Delete	A4	A	1
<input type="checkbox"/>		Edit		Copy		Delete	B1	B	2
<input type="checkbox"/>		Edit		Copy		Delete	B2	B	2
<input type="checkbox"/>		Edit		Copy		Delete	B3	B	2
<input type="checkbox"/>		Edit		Copy		Delete	B4	B	2
<input type="checkbox"/>		Edit		Copy		Delete	B5	B	2
<input type="checkbox"/>		Edit		Copy		Delete	C1	C	3
<input type="checkbox"/>		Edit		Copy		Delete	C2	C	3
<input type="checkbox"/>		Edit		Copy		Delete	C3	C	3
<input type="checkbox"/>		Edit		Copy		Delete	C4	C	3
<input type="checkbox"/>		Edit		Copy		Delete	C5	C	3

BedType Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/> 1	idBedType 	varchar(10)	utf8mb4_general_ci		No	None			 Change  Drop  More
<input type="checkbox"/> 2	BedTypeName	varchar(100)	utf8mb4_general_ci		No	None			 Change  Drop  More

BedType Table

+ Options

						idBedType	BedTypeName	
<input type="checkbox"/>		Edit		Copy		Delete	A	Simple bed
<input type="checkbox"/>		Edit		Copy		Delete	B	Deluxe bed
<input type="checkbox"/>		Edit		Copy		Delete	C	Premium bed

Bus Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idBus	int(10)		No	None			Change Drop More
<input type="checkbox"/>	2	BusDirection	varchar(20) utf8mb4_general_ci		No	None			Change Drop More

Bus Table

+ Options						
					idBus	BusDirection
<input type="checkbox"/>	Edit	Copy	Delete		1	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		2	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		3	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		4	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		5	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		6	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		7	Clockwise
<input type="checkbox"/>	Edit	Copy	Delete		8	Anticlockwise
<input type="checkbox"/>	Edit	Copy	Delete		9	Anticlockwise
<input type="checkbox"/>	Edit	Copy	Delete		10	Anticlockwise
<input type="checkbox"/>	Edit	Copy	Delete		11	Anticlockwise
<input type="checkbox"/>	Edit	Copy	Delete		12	Anticlockwise
<input type="checkbox"/>	Edit	Copy	Delete		13	Anticlockwise
<input type="checkbox"/>	Edit	Copy	Delete		14	Anticlockwise

Floor Table Structure

+ Options						
					idFloor	FloorPrice
<input type="checkbox"/>	Edit	Copy	Delete		1	11
<input type="checkbox"/>	Edit	Copy	Delete		2	13
<input type="checkbox"/>	Edit	Copy	Delete		3	15

Floor Table

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idFloor	int(10)			No	None			Change Drop More
<input type="checkbox"/>	2	FloorPrice	int(250)			No	None			Change Drop More

Payment Table Structure

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idPayment	int(100)			No	None			Change Drop More
<input type="checkbox"/>	2	ticketID	int(250)			No	None			Change Drop More
<input type="checkbox"/>	3	userID	int(250)			No	None			Change Drop More
<input type="checkbox"/>	4	AccountName	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	5	AccountID	int(100)			No	None			Change Drop More
<input type="checkbox"/>	6	AccountBank	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	7	AccountCVV	int(45)			No	None			Change Drop More

Payment Table

+ Options										
<input type="checkbox"/>	Edit	Copy	Delete	idPayment	ticketID	userID	AccountName	AccountID	AccountBank	AccountCVV
<input type="checkbox"/>	Edit	Copy	Delete	1	1	4	a01	1	hogwarts	1
<input type="checkbox"/>	Edit	Copy	Delete	2	2	4	a03	3	hogwarts	3
<input type="checkbox"/>	Edit	Copy	Delete	3	3	4	a04	4	gringotts	4
<input type="checkbox"/>	Edit	Copy	Delete	4	4	4	a05	5	hogwarts	5
<input type="checkbox"/>	Edit	Copy	Delete	5	5	4	a09	9	gringotts	9
<input type="checkbox"/>	Edit	Copy	Delete	6	6	4	a08	8	hogwarts	8
<input type="checkbox"/>	Edit	Copy	Delete	7	7	4	a09	9	gringotts	9
<input type="checkbox"/>	Edit	Copy	Delete	8	8	4	a10	10	hogwarts	10
<input type="checkbox"/>	Edit	Copy	Delete	9	9	4	a11	11	gringotts	11
<input type="checkbox"/>	Edit	Copy	Delete	10	10	4	a12	12	hogwarts	12
<input type="checkbox"/>	Edit	Copy	Delete	11	11	4	a13	13	gringotts	13
<input type="checkbox"/>	Edit	Copy	Delete	12	12	4	a14	14	hogwarts	14
<input type="checkbox"/>	Edit	Copy	Delete	13	13	4	a16	16	gringotts	16
<input type="checkbox"/>	Edit	Copy	Delete	14	14	4	a17	17	hogwarts	17
<input type="checkbox"/>	Edit	Copy	Delete	15	15	4	a19	19	hogwarts	19
<input type="checkbox"/>	Edit	Copy	Delete	16	16	4	a20	20	gringotts	20
<input type="checkbox"/>	Edit	Copy	Delete	17	17	4	a01	1	hogwarts	1
<input type="checkbox"/>	Edit	Copy	Delete	18	18	4	a21	21	gringotts	21
<input type="checkbox"/>	Edit	Copy	Delete	19	19	4	a22	22	hogwarts	22
<input type="checkbox"/>	Edit	Copy	Delete	20	20	4	a23	23	gringotts	23
<input type="checkbox"/>	Edit	Copy	Delete	21	21	6	Hongsapat	1234567	hogwarts	132

Routes Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idRoute	int(100)		No	None			Change Drop More
<input type="checkbox"/>	2	RouteName	varchar(250) utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3	idOStation	int(100)		No	None			Change Drop More
<input type="checkbox"/>	4	idDStation	int(100)		No	None			Change Drop More
<input type="checkbox"/>	5	busID	int(10)		No	None			Change Drop More
<input type="checkbox"/>	6	DTime	varchar(10) utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	7	ETA	varchar(10) utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	8	RoutePrice	int(250)		No	None			Change Drop More






















Routes Table

#	Type	idRoute	RouteName	idOStation	idDStation	busID	DTime	ETA	RoutePrice
<input type="checkbox"/>	Edit Delete	0	Leave empty	1	2	1	00:00	00:00	000
<input type="checkbox"/>	Edit Delete	1	Hopewell Express	1	2	1	00:00	00:00	10
<input type="checkbox"/>	Edit Delete	2	Hopewell Express	1	2	8	10:28	21:05	50
<input type="checkbox"/>	Edit Delete	3	Be Ready for School	1	3	1	00:00	00:30	14
<input type="checkbox"/>	Edit Delete	4	Be Ready for School	1	3	8	10:30	20:35	50
<input type="checkbox"/>	Edit Delete	5	Christmas at Woodley's	1	1	1	00:00	11:00	50
<input type="checkbox"/>	Edit Delete	6	Christmas at Woodley's	1	4	8	10:30	19:05	40
<input type="checkbox"/>	Edit Delete	7	Learn to Nightmare	1	5	1	00:00	14:00	50
<input type="checkbox"/>	Edit Delete	8	Learn to Nightmare	1	5	8	10:28	19:05	20
<input type="checkbox"/>	Edit Delete	9	Learn to the Little House	1	6	1	00:00	19:30	50
<input type="checkbox"/>	Edit Delete	10	Hopewell Round Trip	1	6	8	10:28	19:35	15
<input type="checkbox"/>	Edit Delete	11	Phone Professor	1	7	1	00:00	17:30	50
<input type="checkbox"/>	Edit Delete	12	Phone Professor	1	7	8	10:30	11:55	1
<input type="checkbox"/>	Edit Delete	13	Hopewell Express	2	1	2	00:00	15:35	50
<input type="checkbox"/>	Edit Delete	14	Hopewell Express	2	1	8	10:30	13:30	11
<input type="checkbox"/>	Edit Delete	15	Long Leaper Trip	2	3	2	00:00	00:30	3
<input type="checkbox"/>	Edit Delete	16	Long Leaper Trip	2	3	8	10:30	22:35	64
<input type="checkbox"/>	Edit Delete	17	To Route	2	4	2	00:00	00:30	18
<input type="checkbox"/>	Edit Delete	18	To Route	2	4	8	10:30	20:05	51
<input type="checkbox"/>	Edit Delete	19	Learn to Hall	2	5	2	00:00	17:30	38
<input type="checkbox"/>	Edit Delete	20	Learn to Hall	2	5	8	10:30	17:05	31
<input type="checkbox"/>	Edit Delete	21	Home	2	6	2	00:00	13:30	48
<input type="checkbox"/>	Edit Delete	22	Home	2	6	8	10:30	13:35	26
<input type="checkbox"/>	Edit Delete	23	Trick or Treat	2	7	2	00:00	15:30	50
<input type="checkbox"/>	Edit Delete	24	Trick or Treat	2	7	8	10:30	13:35	12
<input type="checkbox"/>	Edit Delete	25	Love Label	2	1	3	00:00	15:35	50
<input type="checkbox"/>	Edit Delete	26	Love Label	2	1	10	10:30	13:30	14
<input type="checkbox"/>	Edit Delete	27	Where is My Towel?	3	2	1	00:00	14:30	64
<input type="checkbox"/>	Edit Delete	28	Where is My Towel?	3	2	10	10:30	17:00	3
<input type="checkbox"/>	Edit Delete	29	My Pocket is Empty	3	4	3	00:00	00:30	10
<input type="checkbox"/>	Edit Delete	30	My Pocket is Empty	3	4	10	10:30	20:35	64
<input type="checkbox"/>	Edit Delete	31	Edi Again	3	5	3	00:00	11:30	26
<input type="checkbox"/>	Edit Delete	32	Edi Again	3	5	10	10:30	17:35	34
<input type="checkbox"/>	Edit Delete	33	Edaphie's Home Tour	3	8	2	00:00	13:30	41
<input type="checkbox"/>	Edit Delete	34	Edaphie's Home Tour	3	8	10	10:30	19:05	20
<input type="checkbox"/>	Edit Delete	35	Shops to Shops	3	7	3	00:00	15:35	50
<input type="checkbox"/>	Edit Delete	36	Shops to Shops	3	7	10	10:30	14:05	15
<input type="checkbox"/>	Edit Delete	37	What Bring You Straight Back Home?	4	1	4	00:00	12:35	40
<input type="checkbox"/>	Edit Delete	38	What Bring You Straight Back Home?	4	1	10	10:30	19:30	30
<input type="checkbox"/>	Edit Delete	39	Who Worth Lie Late	4	2	4	00:00	14:30	51
<input type="checkbox"/>	Edit Delete	40	Who Worth Lie Late	4	2	10	10:30	14:30	19
<input type="checkbox"/>	Edit Delete	41	Who Can Get Your School Starts Here?	4	3	4	00:00	15:35	54
<input type="checkbox"/>	Edit Delete	42	Who Can Get Your School Starts Here?	4	3	10	10:30	14:00	10
<input type="checkbox"/>	Edit Delete	43	Time to Go Hall	4	6	4	00:00	00:30	20
<input type="checkbox"/>	Edit Delete	44	Time to Go Hall	4	6	10	10:30	20:35	50
<input type="checkbox"/>	Edit Delete	45	To Future's	4	6	4	00:00	13:30	26
<input type="checkbox"/>	Edit Delete	46	To Future's	4	6	10	10:30	19:35	45
<input type="checkbox"/>	Edit Delete	47	Increasing More	4	7	4	00:00	12:30	26
<input type="checkbox"/>	Edit Delete	48	Increasing More	4	7	10	10:30	19:35	31
<input type="checkbox"/>	Edit Delete	49	Unstuck to School	5	1	1	00:00	00:30	20
<input type="checkbox"/>	Edit Delete	50	Unstuck to School	5	1	10	10:30	19:30	50
<input type="checkbox"/>	Edit Delete	51	To Platform & G	5	2	5	00:00	11:35	31
<input type="checkbox"/>	Edit Delete	52	To Platform & G	5	2	10	10:30	17:30	38
<input type="checkbox"/>	Edit Delete	53	You are a Wizard, Harry	5	3	5	00:00	12:35	34
<input type="checkbox"/>	Edit Delete	54	You are a Wizard, Harry	5	3	10	10:30	17:30	50
<input type="checkbox"/>	Edit Delete	55	It's Not Much But It's Home	5	4	2	00:00	11:35	50
<input type="checkbox"/>	Edit Delete	56	It's Not Much But It's Home	5	4	10	10:30	16:30	20
<input type="checkbox"/>	Edit Delete	57	Hall to Home	5	8	5	00:00	07:30	5
<input type="checkbox"/>	Edit Delete	58	Hall to Home	5	8	10	10:30	19:35	64
<input type="checkbox"/>	Edit Delete	59	Let's Eat Some Muggie Business	5	7	3	00:00	00:30	19
<input type="checkbox"/>	Edit Delete	60	Let's Eat Some Muggie Business	5	7	10	10:30	19:35	50
<input type="checkbox"/>	Edit Delete	61	Whanning History Tour	6	1	5	00:00	00:30	10
<input type="checkbox"/>	Edit Delete	62	Whanning History Tour	6	1	10	10:30	21:30	55
<input type="checkbox"/>	Edit Delete	63	Abuse to School	6	2	8	00:00	13:35	20
<input type="checkbox"/>	Edit Delete	64	Abuse to School	6	2	10	10:30	19:30	44
<input type="checkbox"/>	Edit Delete	65	Madam's Shopping	6	3	8	00:00	13:35	20
<input type="checkbox"/>	Edit Delete	66	Madam's Shopping	6	3	10	10:30	19:30	41
<input type="checkbox"/>	Edit Delete	67	Family Visiting	6	4	6	00:00	11:00	50
<input type="checkbox"/>	Edit Delete	68	Family Visiting	6	4	10	10:30	19:30	25
<input type="checkbox"/>	Edit Delete	69	Henry's Trip	6	5	6	00:00	14:05	70
<input type="checkbox"/>	Edit Delete	70	Henry's Trip	6	5	10	10:30	19:30	5
<input type="checkbox"/>	Edit Delete	71	Whanning Village Tour	6	7	3	00:00	00:30	18
<input type="checkbox"/>	Edit Delete	72	Whanning Village Tour	6	7	10	10:30	21:05	50
<input type="checkbox"/>	Edit Delete	73	Woodland to Open	7	1	7	00:00	00:30	1
<input type="checkbox"/>	Edit Delete	74	Woodland to Open	7	1	14	10:30	23:30	88
<input type="checkbox"/>	Edit Delete	75	Let's Eat Some Muggie Business	7	2	7	00:00	00:30	12
<input type="checkbox"/>	Edit Delete	76	Let's Eat Some Muggie Business	7	2	14	10:30	21:30	68
<input type="checkbox"/>	Edit Delete	77	Shops to Shops	7	3	7	00:00	00:30	10
<input type="checkbox"/>	Edit Delete	78	Shops to Shops	7	3	14	10:30	20:30	65
<input type="checkbox"/>	Edit Delete	79	Let's Get Home Before Mom Knows	7	4	7	00:00	11:05	21
<input type="checkbox"/>	Edit Delete	80	Let's Get Home Before Mom Knows	7	4	14	10:30	19:30	38
<input type="checkbox"/>	Edit Delete	81	Edi that Jokers	7	5	7	00:00	14:05	51
<input type="checkbox"/>	Edit Delete	82	Edi that Jokers	7	5	14	10:30	19:30	19
<input type="checkbox"/>	Edit Delete	83	Village to Village	7	6	7	00:00	15:35	50
<input type="checkbox"/>	Edit Delete	84	Village to Village	7	6	14	10:30	19:30	14
<input type="checkbox"/>	Edit Delete	85	Hopewell Round Trip	1	1	1	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	86	Hopewell Round Trip	1	1	8	10:30	23:05	70
<input type="checkbox"/>	Edit Delete	87	Kings Cross Station Round Trip	2	2	2	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	88	Kings Cross Station Round Trip	2	2	9	10:30	23:05	70
<input type="checkbox"/>	Edit Delete	89	Udappan Alley Round Trip	3	3	3	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	90	Udappan Alley Round Trip	3	3	10	10:30	23:05	70
<input type="checkbox"/>	Edit Delete	91	The Burrow Round Trip	4	4	4	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	92	The Burrow Round Trip	4	4	11	10:30	23:05	70
<input type="checkbox"/>	Edit Delete	93	Number 4 smart (the round trip)	5	5	5	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	94	Number 4 smart (the round trip)	5	5	10	10:30	23:05	70
<input type="checkbox"/>	Edit Delete	95	Good's Puller Round Trip	6	6	6	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	96	Good's Puller Round Trip	6	6	10	10:30	23:05	70
<input type="checkbox"/>	Edit Delete	97	Hopewell Village Round Trip	7	7	7	00:00	17:35	70
<input type="checkbox"/>	Edit Delete	98	Hopewell Village Round Trip	7	7	14	10:30	23:05	70

Station Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idStation	int(100)		No	None			Change Drop More
<input type="checkbox"/>	2	StationName	varchar(250)	utf8mb4_general_ci	No	None			Change Drop More

Station Table

+ Options							idStation	StationName
<input type="checkbox"/>		Edit		Copy		Delete	1	Hogwarts
<input type="checkbox"/>		Edit		Copy		Delete	2	Kings Cross Station
<input type="checkbox"/>		Edit		Copy		Delete	3	Diagon Alley
<input type="checkbox"/>		Edit		Copy		Delete	4	The Burrow
<input type="checkbox"/>		Edit		Copy		Delete	5	Number 4, Privet Drive
<input type="checkbox"/>		Edit		Copy		Delete	6	Godrics Hollow
<input type="checkbox"/>		Edit		Copy		Delete	7	Hogsmeade

Ticket Table Structure

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idTicket	int(250)		No	None			Change Drop More
<input type="checkbox"/>	2	idUser	int(250)		No	None			Change Drop More
<input type="checkbox"/>	3	DepartureDate	date		No	None			Change Drop More
<input type="checkbox"/>	4	Bus	int(10)		No	None			Change Drop More
<input type="checkbox"/>	5	idBed	varchar(100)	utf8mb4_general_ci	No	None			Change Drop More
<input type="checkbox"/>	6	idRoute	int(100)		No	None			Change Drop More
<input type="checkbox"/>	7	HotWaterBottle	varchar(100)	utf8mb4_general_ci	No	None			Change Drop More
<input type="checkbox"/>	8	Toothpaste	varchar(100)	utf8mb4_general_ci	No	None			Change Drop More
<input type="checkbox"/>	9	TotalPrice	int(100)		No	None			Change Drop More
<input type="checkbox"/>	10	BookingStatus	varchar(150)	utf8mb4_general_ci	No	None			Change Drop More
<input type="checkbox"/>	11	BedStatus	tinyint(1)		No	None			Change Drop More

Ticket Table

Options

			idTicket	idUser	DepartureDate	Bus	idBed	idRoute	HotWaterBottle	Toothpaste	TotalPrice	BookingStatus	BedStatus	
<input type="checkbox"/>				1	4	2021-11-23	1	C5	5	Yellow	Blue	45	Your payment is confirmed	0
<input type="checkbox"/>				2	6	2021-11-23	1	C3	3	Yellow	Green	29	Wait for payment Confirmation	0
<input type="checkbox"/>				3	4	2021-11-23	5	C4	59	Blue	Purple	34	Wait for payment Confirmation	0
<input type="checkbox"/>				4	4	2021-11-23	10	C4	32	Green	Yellow	49	Wait for payment Confirmation	0
<input type="checkbox"/>				5	4	2021-11-23	1	C2	5	Blue	Green	45	Wait for payment Confirmation	0
<input type="checkbox"/>				6	4	2021-11-23	2	C3	15	Yellow	Green	18	Wait for payment Confirmation	0
<input type="checkbox"/>				7	6	2021-11-24	10	C4	34	Blue	Green	44	Wait for payment Confirmation	0
<input type="checkbox"/>				8	6	2021-11-10	4	C5	43	Blue	Green	35	Wait for payment Confirmation	0
<input type="checkbox"/>				9	4	2021-11-24	5	C3	57	Blue	Green	20	Wait for payment Confirmation	0
<input type="checkbox"/>				10	4	2021-11-23	13	C2	72	Yellow	Green	71	Wait for payment Confirmation	0
<input type="checkbox"/>				11	6	2021-11-23	7	C4	73	Yellow	Yellow	16	Wait for payment Confirmation	0
<input type="checkbox"/>				12	6	2021-11-23	2	C1	15	Blue	Purple	18	Wait for payment Confirmation	0
<input type="checkbox"/>				13	4	2021-11-23	1	C3	9	Yellow	Green	70	Wait for payment Confirmation	0
<input type="checkbox"/>				14	4	2021-11-23	2	B3	21	None	None	57	Wait for payment Confirmation	0
<input type="checkbox"/>				15	4	2021-11-23	3	C4	31	Blue	Blue	51	Wait for payment Confirmation	0
<input type="checkbox"/>				16	6	2021-12-09	8	A4	10	None	None	26	Wait for payment Confirmation	0
<input type="checkbox"/>				17	6	2021-11-23	2	B5	87	None	None	83	Wait for payment Confirmation	0
<input type="checkbox"/>				18	4	2021-11-23	1	B5	3	None	None	27	Wait for payment Confirmation	0
<input type="checkbox"/>				19	4	2021-11-23	1	C1	3	Blue	Green	29	Wait for payment Confirmation	0
<input type="checkbox"/>				20	6	2021-11-17	12	A2	52	None	None	50	Wait for payment Confirmation	0
<input type="checkbox"/>				21	6	2021-11-18	1	C3	1	Blue	Yellow	26	Wait for payment Confirmation	0

user Table Structure

	#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	idUser	int(250)			No	None			Change Drop More
<input type="checkbox"/>	2	username	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	3	upassword	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	4	cpassword	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	5	FName	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	6	LName	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	7	email	varchar(100)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	8	uaddress	varchar(250)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	9	gender	varchar(45)	utf8mb4_general_ci		No	None			Change Drop More
<input type="checkbox"/>	10	DOB	date			No	None			Change Drop More
<input type="checkbox"/>	11	urole	varchar(250)	latin1_swedish_ci		No	None			Change Drop More

user Table

+ Options

				idUser	username	upassword	cpassword	FName	LName	email	uaddress	gender	DOB	urole
<input type="checkbox"/>				1	admin1	admin123	admin123	Fifee	Granger	fifee@hogwarts.com	Thailand	Female	2021-11-09	Admin
<input type="checkbox"/>				2	admin2	admin123	admin123	drttdt	rcgcc	tdyy	tdtrd	Male	2021-10-29	Admin
<input type="checkbox"/>				3	admin3	admin123	admin123	Hongsapatara	Thippayapokin	admin3@knightbus.com	Hogwarts	Female	2000-08-05	Admin
<input type="checkbox"/>				4	kiwewi	kiwewi1234	kiwewi1234	Kiwi	Potter	kiwi@potter.com	Number 4, Privet Drive, Little Whinging, Surrey	Female	2000-12-15	User
<input type="checkbox"/>				5	RewTnd	123456	123456	Thanadon	Pitakwarin	123456@gmail.com	22/12 London	Male	2021-10-01	User
<input type="checkbox"/>				6	eeaartrthhisme	1234	1234	Earth	Potter	earthongsapat@gmail.com	Number 4, Privet	Female	2021-10-07	User

Explanation of Stored Procedures

bedtype_A_booking: To create a table with existing Bed Type A booking information.

Edit routine

Details

Routine name

bedtype_A_booking

Type

PROCEDURE

Parameters

Direction

Name

Type

Length/Values

Options

Add parameter

Definition

```
1 BEGIN
2   DROP TABLE IF EXISTS bedtype_A_booked;
3   CREATE TABLE bedtype_A_booked(
4     TicketID int(250) NOT NULL,
5     Date date NOT NULL,
6     BusID int(10) NOT NULL,
7     RouteID int(100) NOT NULL);
8   INSERT INTO bedtype_A_booked (TicketID, Date, BusID, RouteID)
9     SELECT idTicket, DepartureDate, Bus, idRoute FROM Ticket WHERE idBed =
10    "A1" OR idBed = "A2" OR idBed = "A3" OR idBed = "A4";
11 END
```

Is deterministic

☐

Adjust privileges

☒

Definer

`root`@`localhost`

Security type

DEFINER

SQL data access

CONTAINS SQL

Comment

Go

Close

+ Options

TicketID	Date	BusID	RouteID
16	2021-12-09	8	10
20	2021-11-17	12	52

bedtype_B_booking: To create a table with existing Bed Type B booking information.

Edit routine

Details

Routine name

bedtype_B_booking

Type

PROCEDURE

Parameters

Direction

Name

Type

Length/Values

Options

Add parameter

Definition

1 BEGIN

2 DROP TABLE IF EXISTS bedtype_B_booked;

3 CREATE TABLE bedtype_B_booked(

4 TicketID int(250) NOT NULL,

5 Date date NOT NULL,

6 BusID int(10) NOT NULL,

7 RouteID int(100) NOT NULL);

8 INSERT INTO bedtype_B_booked (TicketID, Date, BusID, RouteID)

9 SELECT idTicket, DepartureDate, Bus, idRoute FROM Ticket WHERE idBed =

"B1" OR idBed = "B2" OR idBed = "B3" OR idBed = "B4" OR idBed = "B5";

10 END

Is deterministic

☐

Adjust privileges

☒

Definer

`root`@`localhost`

Security type

DEFINER

SQL data access

CONTAINS SQL

Comment

Go

Close

+ Options

TicketID	Date	BusID	RouteID
14	2021-11-23	2	21
17	2021-11-23	2	87
18	2021-11-23	1	3

bedtype_C_booking: To create a table with existing Bed Type C booking information.

Edit routine

Details

Routine name
bedtype_C_booking

Type
PROCEDURE

Parameters
Direction
Name
Type
Length/Values
Options

Add parameter

Definition

```

1 BEGIN
2   DROP TABLE IF EXISTS bedtype_C_booked;
3   CREATE TABLE bedtype_C_booked(
4     TicketID int(250) NOT NULL,
5     Date date NOT NULL,
6     BusID int(10) NOT NULL,
7     RouteID int(100) NOT NULL);
8   INSERT INTO bedtype_C_booked (TicketID, Date, BusID, RouteID)
9     SELECT idTicket, DepartureDate, Bus, idRoute FROM Ticket WHERE idBed =
10    "C1" OR idBed = "C2" OR idBed = "C3" OR idBed = "C4" OR idBed = "C5";
11 END

```

Is deterministic
☐

Adjust privileges
☒

Definer
`root`@`localhost`

Security type
DEFINER

SQL data access
CONTAINS SQL

Comment

Go
Close

+ Options

TicketID	Date	BusID	RouteID
1	2021-11-23	1	5
2	2021-11-23	1	3
3	2021-11-23	5	59
4	2021-11-23	10	32
5	2021-11-23	1	5
6	2021-11-23	2	15
7	2021-11-24	10	34
8	2021-11-10	4	43
9	2021-11-24	5	57
10	2021-11-23	13	72
11	2021-11-23	7	73
12	2021-11-23	2	15
13	2021-11-23	1	9
15	2021-11-23	3	31
19	2021-11-23	1	3
21	2021-11-18	1	1

Conclusion

The Knight Bus Booking is a long-trip bus booking system which implemented by Database Management System. Our system has 2 sides, for user and admin. User and admin share the same sign in page but because of their different defined role, they will be brought to different page. Users are able to register, sign in, sign out, book the bus, pay for their booking, and edit their profile. Admins are able to sign in, sign out, update and delete routing information, update and delete booking information, and edit their profile. The coding is linked with the database for collecting and using data.