**IEEE FORMAT FOR SOFTWARE REQUIREMENT SPECIFICATION**

**1.) INTRODUCTION**

i. Purpose

ii. Scope

iii. Abbreviations

iv. Refrences

v. Technologies

**2.) OVERALL DESCRIPTION**

i. Product Perspective

ii. Software Interface

iii. Hardware Interface

iv. Communication Interface

v. Product Function

vi. User Characteristics

vii. Constraints

viii. Use-case Model Survey

**3.) SPECIFIC REQUIREMENT**

i. Use-case Reports

ii. Supplementary requirements

Contents

[1.0 Introduction……………………………………………………….2](#_Toc374291360)

[1.1 System Purpose……………………………………………….......2](#_Toc374291361)

[1.2 System Scope……………………………………………………..2](#_Toc374291362)

[1.3System Overview………………………………………………….2](#_Toc374291363)

[1.3.2 System Functions……………………………………………….2](#_Toc374291365)

[1.3 Definitions………………………………………………………...3](#_Toc374291367)

[2.0 Requirements……………………………………………………...3](#_Toc374291368)

[2.1 External Interfaces………………………………………………...3](#_Toc374291369)

[2.1.1 Hardware Interfaces……………………………………………..3](#_Toc374291370)

[2.1.2 System Interfaces………………………………………………..3](#_Toc374291371)

[2.1.3 User Interfaces…………………………………………………..3](#_Toc374291372)

[2.2 Functions………………………………………………………….4](#_Toc374291373)

[2.2.1 Case Diagram Charts……………………………………………4](#_Toc374291374)

[2.2.2 Functional Requirements………………………………………..4](#_Toc374291375)

[2.2.3 Use Case Tables………………………………………………...6](#_Toc374291376)

[2.3 Performance Requirement………………………………………...6](#_Toc374291377)

[2.4 Design Constraints………………………………………………...6](#_Toc374291378)

[3.0 Appendices………………………………………………………...7](#_Toc374291379)

[Appendix A – Case Diagram Charts………………………………..7](#_Toc374291380)

[1.1.1Appendix B – Use Cases…………………………………………8](#_Toc374291386)

[Use Case 1…..........................................................................................8](#_Toc374291387)

[Use Case 2……………………………………………………………..9](#_Toc374291388)

[Use Case 3……………………………………………………………..9](#_Toc374291389)

[Use Case 4……………………………………………………………..9](#_Toc374291390)

[Use Case 5……………………………………………………………10](#_Toc374291391)

[Use Case 6……………………………………………………………10](#_Toc374291392)

[Use Case 7……………………………………………………………10](#_Toc374291393)

[Use Case 8……………………………………………………………11](#_Toc374291394)

[Use Case 9……………………………………………………………11](#_Toc374291395)

[Use Case 10…………………………………………………………..12](#_Toc374291396)

4-Databse Sql Coding………………………………………………..13

1.0 Introduction

1.1 System Purpose

The company wants to find a solution to reduce its operating costs. The system being developed is a system to handle the business needs of renting out vehicles to customers, maintaining records and data on vehicle fleet, operating the customer portal website, and reporting the state of the system to the company. The system does not fulfill any other needs of the business.

1.2 System Scope

The functional scope of the system is represented in four different aspects of the system: Customer Service Module (CS), Web Portal Module (WP), Fleet Management Module (FM) and Reports and Analytics Module (RA).

1.2.1 The scope of the Fleet Management module is keeping track of the rental vehicle fleet. This module’s purpose will be to contain the data on the vehicle fleet and information about the specific vehicles. The Fleet Management module will not handle the renting of the vehicles.

1.2.2 The scope of the Customer Web Portal is to rent vehicles to customers online in the absence of an employee. The module will interface with the fleet management module but will not perform any of that module’s duties. The same goes for the Customer Service module.

1.2.3 The scope of the Customer Service Module is to provide a clear and easy to use layout for employees and customers to follow along with as they work out a rental. As mentioned above the module will interface with the fleet management module but will not perform any of that module’s duties.

1.2.4 The scope of the Reports and Analytics Module is to provide a predetermined spot that will contain all of the reports made from employees on car rentals. It will help the store managers and corporate office when they need to file reports and check on rentals.

1.3 System Overview

1.3.1 System Context

The system has been designed with four modules in mind. These modules are the customer service module, the web portal module, the fleet management module, and the reports and analytics module. These four modules will make up the structure of the system. The customer service module will be the part of the system that is supposed to provide the employee with everything they need to perform their duties. The web portal module will be the part of the system that handles the website where the customers will be able to go through an automated process to rent cars. The fleet management module will do as its name suggests and manage the rental fleet. The reports and analytics module will be the part of the system that will be used to generate reports from the remaining three modules for the purpose organizing the data on the status of the company. The system will be able to interact with outside systems to process payment on behalf of the company.

1.3.2 System Functions

The system will be able to rent out vehicles. The system will be able to accept payments. The system will keep track of the rental fleet. The system will generate reports for the employees.

1.3.3 User Characteristics

The users will be customers which can include traveling business people, out of town visitors, and local residents in need of a car. Other users of the system will be the employees both at the store level and a headquarters. The employees will all be using windows desktops to conduct their business on the system but the system will need to accommodate the variety of devices that the customers will have. The customers will have mobile devices running several different operating software including android, iOS, and blackberry. The full website also must accommodate these different operating systems.

1.3 Definitions

**Login**

A customer may log in to the system. For this he needs to provide his user name.

**Show current bookings**

A customer may review his current bookings. The current bookings are listed in a table

showing the most important information.

**Cancel booking**

A customer may cancel each individual booking at any time. For this he provides the

booking number of the booking to cancel.

**Search cars**

A customer may search for cars that he's interested in renting. A table shows all the search

results.

**Book car**

A customer may book a car. When doing so, the car is reserved for a given time period for

that customer.

**Edit personal data**

A customer may edit his personal data. This includes changing his email address and

adding and editing personal addresses.

**Transactions**

Explanation of the transactions not necessary as stated in the Database 2 lecture of

10.06.2010.

Our queries can be found in section 7.2 Query Examples and Transactions however.

***Logging***

When doing any database action like inserting a new booking or canceling a booking this

action is logged as a log entry in a special table shortly describing the transaction.

Fires upon: INSERT / DELETE

Table: Bookings

***Server Timestamps***

When adding a new booking a booking, the current time stamp should be inserted into the

database entry. This time stamp shall correspond to the server clock, not to the client

clock.

Fires upon: INSERT

Table: Bookings

**CAR RENTING SYSTEM: CRS**

1. Customer Service Module: CS
2. Customer Web Portal: WP
3. Fleet Management: FM
4. Reports and Analytics: RA

Actors

1. Employee: Emp
2. Manager: Man
3. Customer: Cus

2.0 Requirements

2.1 External Interfaces

2.1.1 Hardware Interfaces

R1: The system will have 3 terminals per store, with each one having a touch screen monitor, keyboard, credit card scanner and a cash register.

R2: The system will have a 45 minute battery backup at each terminal.

R3: The system will have a 2 hour battery backup at the server at headquarters.

2.1.2 System Interfaces

R4: The system will interact with the banking network for the purpose of processing payments.

R5: The systems data needs will be supported by a connection to the headquarters server.

2.1.3 User Interfaces

R6: The System will consist of Four (4) modules; Customer Service, Customer Portal Website, Fleet Management, Reports & Analytics.

2.2 Functions

2.2.2 Functional Requirements

R7: The System will contain a Customer Service module that will allow Store and Corporate employees to provide information to customers

R8: The System will contain a Customer Service module that will allow Store and Corporate employees’ access to the system for the purpose of Creating "Rental Agreements"

R9: The System will contain a Customer Service module that will allow Store and Corporate employees to collect payments

R10: The System will contain a Customer Portal Website that will provide information to the public and customers about the company and operations of the company.

R10.1: This information will include Locations, Hours of operation, contact information, available rental vehicles, rental packages, price estimate, and any other information deemed necessary by the company.

R11: The customer portal website will provide the customer with the closest location to their zip code and up to the next five (5) closest locations in addition to hours of operations, contact info and directions.

R12: The System will generate an inventory capacity report for the desired time and location.

R13: The System will allow for new vehicles to be added to the inventory of the company.

R14: The Fleet management module will allow the system to track vehicle maintenance. Maintenance will be tracked through mileage and or time as decided by the company.

R15: The System will contain a Report and Analytics Module that will serve the purpose of generating reports on the operations of the company.

R16: The System will contain a Report and Analytics Module that will be capable of generating reports for items such as sales, maintenance, vehicle history, operations, rentals, and insurance.

R17: The System will contain a Report and Analytics Module that will be capable of generating reports for a desired time and location

R18: The system will batch the daily operations to headquarters at the end of each business day.

R19: The system will generate a backup of all data weekly for the purpose of data loss prevention at the headquarters.

R20: The system will allow the customer to input the desired date, location and package options to determine vehicle availability. If vehicle is available then the system will move onto the next step. If vehicle is not available then the system will prompt the customer to pick another vehicle.

R21: The system will display only vehicles that are currently available to rent to the customer during the rental process.

R22: The system will create a customer account if the customer is not in the system.

R23: The customer account will require name, address, date of birth, driver’s License, and credit card number.

R24: The system will require a credit card be on file but will allow customer to use different forms of payment at time of rental.

R25: The system will provide a report of the vehicles that are scheduled to be rented out and returned for the specified day.

R26: The system will allow for a block reservation of more than one (1) car at a time.

R27: at time of pickup the system will allow the employee to bring up the specified reservation and to print out a "rental agreement"

R28: The system will require the employee to verify the information on the "Rental Agreement" and to then input into the system a notice that the agreement has been gone over. This will ensure that the employee has in fact gone over the agreement and everything is in place.

R29: The system will ask if the employee has obtained the customer Signature on the "rental agreement". Customer signature is required on the rental agreement by company policy.

R30: The system will allow for preliminary payment to be collected at time of pickup if company policies states that payment is to be collected at time of pickup.

R31: The customer will liable for a "no show" charge if they fail to pick up the vehicle at the specified time. The system will require that the charge be process before the reservation can be closed out in the case of a "no show"

R32: The customer will have twenty four (24) hours before pickup time to call and cancel the reservation before the system requires the "no show" charge

R33: At time of return of rental vehicle the system will allow the employee to print out a "Vehicle inspection form". This form is to be filled out at the vehicle and then input back into the system.

R34: The "vehicle inspection form" will require information including model, license plate number, vin number, and damage to the vehicle, level of fuel in the gas tank, mileage, and a section for any other issues.

R35: The system will allow for a vehicle to be returned to a different location than the original rental location for the charge of a fee to be determined by the company.

R36: The system will identify and additional charges that need to be charged for any damage or issue to the rental vehicle.

R37: For company accounts the system will allow for the invoice (bill) to be sent to the company.

R38: Company billing will be required to be set up in advance with the company to prevent fraud.

R39: After the vehicle inspection is done then the system will print off a final invoice for the costumer to sign. This invoice will contain the total amount charged by the rental company including primary rental and additional charges. Physical copy will be saved as proof of transaction.

R40: The system will provide employees with a login.

R41: The system will provide employees with a logout.

R42: The system will provide employees with the option to reset their login password.

R43: The system will provide employees with the option to change their login password.

R44: The system will allow employees with quick an efficient access to customer information.

R45: The system will provide employees with a screen view of all customer pickups for a specified day.

R46: The system will provide employees with a screen view of an existing reservation of a customer.

R47: The system will provide customers to login on the web portal and view existing reservation in the system.

R48: The system will allow employees to check vehicle availability from inventory for customers.

R49: The system will allow employees to get specific vehicle information for customers.

2.3 Performance Requirement

The local system should be capable of running, at minimum, 1000 processes per minute (PPM). The Headquarter (HQ) system should be able to process and allocate information to designated terminal within a 10 second refresh rate. The system response time should be no longer than 1.0 seconds in order to keep up with the actions given by the User. As the company begins to acquire more customers and becomes more popular, the system must be able to scale in speed, size, and versatility in order to accommodate the rising needs/wants of the customer basis.

Example Chart of daily system workload:

|  |  |  |  |
| --- | --- | --- | --- |
| System | Daily Usage | Uses | Time |
| Headquarters Terminal | 1000(PPM) \* 200 users \* 24 hours = ~4800000(PPD) | Login, Transfers, Updates, Maintenance, Schedules, Treasury | 10sec/update |
| Local Terminal | 1000(PPM) \* 10 users \* 24 hours = ~240000 (PPD) | Login, ID Creation, Reservation, Payment, Information Input | 1sec/response |

2.4 Design Constraints

The system will be constrained by operating software of the host system and will need to be able to function on the different internet servers

1. The system will need to function on major internet operating software including Internet explorer, Firefox, Chrome, Safari, Opera, and Android.
2. The system will be constrained operating software of the host computer which is windows.

3.0 Appendices

## Appendix A – Case Diagram Charts

 fig-1

UC7 Choose package with vehicle model

UC9 Make reservation  
already customer

UC17 View existing reservation

Web Portal (WP)

UC6 Locate closest store from zip code

UC8 Make reservation  
new customer

Customer (Cus)

fig-2

fig-3

UC24 Batch daily operations

Report and Analytics Module (RA)

UC23 Create report

UC25 Generate data backup to headquarters

Store Manager(Man)

## Appendix B – Use Cases

Use Case 1: Login {Actor: Emp, Man; Reference: R40}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will display main menu |
| 1) The User will select “Login” | 2) The System will bring up login menu. (Username and Password) |
| 3)The User will fill in the information and continue as necessary |  |

Use Case 2: Logout {Actor: Emp, Man; Reference: R41}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will display main menu |
| 1) The User will select “Logout” | 2) The System will bring up confirmation screen displaying, “Are you sure you would like to log out?” |
| 3) The User will select an option (Y/N) | 4) The System will log the User out (Y)  The System will bring the User back to main menu (N) |
| 5) The User will continue as necessary |  |

Use Case 3: Change password {Actor: Emp, Man; Reference: R43}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will display main menu |
| 1) The User will select “Login” | 2) The System will bring up login menu. (Username and Password) |
| 3)The User will fill in the information | 4) The System will display members options |
| 5) The User will select “Change/Reset Password” | 6) The System will display Password options |
| 7) The User will select “Change Password” | 8) The System will prompt for old password and new desired password |
| 9) The User will fill in the information and confirm the change |  |

Use Case 4: Reset password {Actor: Emp, Man; Reference: R42}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will display main menu |
| 1) The User will select “Login” | 2) The system will bring up login menu. (Username and Password) |
| 3) The User will fill in the information | 4) The System will display members options |
| 5) The User will select “Change/Reset Password” | 6) The System will display Password options |
| 7) The User will select “Reset Password” | 8) The System will ask for your secret question and current password |
| 9) The User will fill in the required information | 10) The System will reset the password and send an email confirmation with new password |
| 11) The User will confirm email was sent and carry on with the new system generated password |  |

Use Case 5: Get Customer Information {Actor: Emp, Man; Module: CS; Reference: R44}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will prompt for log in |
| 1) The Employee will log in | 2) The System will bring up employee menus/option |
| 3) The Employee will select Customer Rentals | 4) The System will bring up the rentals at local location that have been reserved |
| 5) The Employee will prompt the customer for ID and verification | 6) The System will bring up that customers rental plan for the employee to verify. |

Use Case 6: Locate closest store from zip code {Actor: Cus, Emp, Man; Module: CS, WP; Reference: R11}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will display main menu |
| 1) The User will select “Store Locations” | 2) The System will prompt a search bar |
| 3) The User will input a zip code | 4) The System will display a map with all locations nearest the input zip code |
| 5) The User may select each location to gather information or relocate to that location’s web page | 6) The System will prompt, “Enter new zip code?” |
| 7) The User selects a choice (Y/N) | 8) The System will re-prompt a search bar (Y)  The System will back to main menu (N) |
| 9) The User will continue as necessary |  |

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will prompt the rental packages menu. |
| 1) The User selects additional information. | 2) The WP gets packages available from headquarters, and displays rental packages, with cars available, price and options. |
| 3) Customer selects desired package. | 4) The System provides inputs for pickup location, pickup date, drop off location, and drop off date. |
| 5) The User provides the necessary inputs to determine vehicle availability. | 6) The WP queries available rental vehicles and provides a list that the user can select. |
| 7) The User selects a vehicle to rent | 8) The WP prompts the user to continue. |
| 9) The User selects the “Continue” button. |  |

Use Case 7: Choose package with vehicle model {Actor: Cus, Emp, Man; Module: CS, WP; Reference: R10, R21}

Use Case 8: Make reservation new customer {Actor: Cus, Emp, Man; Module: CS, WP; Reference: R22, R24}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will prompt, “Do you have an existing account?” |
| 1) The Customer will select “No.” | 2) The WP displays customer input form, prompts for continuation. |
| 3) The Customer fills out form and selects the “Continue” button. | 4) The System verifies that all required inputs are filled out. The WP displays an input for credit card information. |
| 5) The Customer completes the credit card information and selects “Continue”. | 6) The WP sends the data to headquarters to be verified. Data is uploaded into database. VRS provides a reservation number after credit card verification. VRS calculates invoice bill estimate for customer. The WP displays the reservation and prompts the customer if they want to print a confirmation of the reservation. |
| 7) The Customer selects the “Print Reservation” button. | 8) The WP displays a print friendly version of the reservation for convenient printing. |

Use Case 9: Make reservation existing customer {Actor: Cus, Emp, Man; Module: CS, WP; Reference: R24}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will prompt, “Do you have an existing account?” |
| 1) The Customer selects yes. | 2) The WP prompts for an email address and password. |
| 3) The Customer inputs email, password, and selects the continue button. | 4) The WP displays customer input form with personal information prefilled, prompts for continuation. |
| 5) The Customer verifies information and select the continue button | 6) The System verifies that all required inputs are filled out. The WP displays an input for credit card information. Current information is prefilled with credit card number being hidden with asterisks. |
| 7) The Customer verifies credit card information or changes, then selects the continue button. | 8) The WP sends the data to headquarters to be verified. Data is uploaded into database. VRS provides a reservation number after credit card verification. VRS calculates invoice bill estimate for customer. The WP displays the reservation and prompts the customer if they want to print a confirmation of the reservation. |
| 9) The Customer selects “Print.” | 10) The WP displays a print friendly version of the reservation for convenient printing. |

Use Case 10: View customer pickups {Actor: Emp, Man; Module: CS; Reference: R45}

|  |  |
| --- | --- |
| Actor | System |
|  | 0) The System will prompt for log in |
| 1) The User will log in | 2) The System will display menu |
| 3) The User will select “Customer History” | 4) The System will display the menu (above) and all pre-existing customers with vehicles related to each (below) |
| 5) The User will select “Vehicle Pick Up” | 6) The System will display all vehicle pickups within the past 2 weeks |
| 7) The User will log out |  |

**7 Appendix**

**7.0 Database SQL Coding**

**7.1 Database Tables with Data**

***7.1.1 AGENCY***

***7.1.2 BOOKING***

***7.1.3 BRANCH***

***7.1.4 BRANCH\_ADDRESS***

***7.1.5 CAR***

ID AGENCY\_ID NAME

1 1 Spain

2 1 Germany

3 2 Germany

4 2 USA

BRANCH\_ID STREET\_NAME CITY\_NAME STREET\_NUMBER POSTAL\_CODE COUNTRY

PHONE\_NUMBER

1 Spain Street Madrid 32 443020S Spain 2020 / 2399

2 New Street Hamburg 43 343023 Germany 903403

3 Other Street Frankfurt 33a 9402 Germany 232393

4 Liberty Street New York 53a 123344 USA 84398

ID CAR\_TYPE\_ID BRANCH\_ID REGISTRATION\_NUMBER COLOR DATE\_OF\_MANUFACTURING

BASE\_PRICE\_PER\_DAY

1 1 1 X23-234 green 01.02.99 20

2 2 2 BC-343 red 21.02.02 15

3 3 3 TW-435 blue 11.03.01 23

4 4 4 232-444 pink 03.04.45 100

BOOKING\_NUMBER CUSTOMER\_ID AGENCY\_ID CAR\_ID BOOKING\_DATE RETURN\_DATE

TIME\_STAMP

1 1 1 1 01.01.02 01.02.02 15.06.10 20:10

2 2 1 2 22.04.09 23.04.09 15.06.10 20:10

3 3 2 1 02.02.03 20.02.03 15.06.10 20:10

4 4 2 2 20.05.45 21.05.45 15.06.10 20:10

8 1 1 4 03.02.00 03.03.02 15.06.10 20:10

9 1 2 3 02.02.02 03.02.02 15.06.10 20:10

10 1 2 4 03.02.02 04.02.02 15.06.10 20:12

ID NAME

1 First Agency

2 Agency Bond

***7.1.6 CAR\_TYPE***

***7.1.7 CUSTOMER***

***7.1.8 CUSTOMER\_ADDRESS***

***7.1.9 LOGGING***

**7.2 Query Examples and Transactions**

***7.2.1 List all available cars for a given date and location***

SELECT CAR\_TYPE.NAME, CAR\_TYPE.TYPE, CAR.BASE\_PRICE\_PER\_DAY,

CAR.REGISTRATION\_NUMBER, AGENCY.NAME AS AGENCY\_NAME, BRANCH.NAME AS

BRANCH\_NAME

FROM CAR

JOIN CAR\_TYPE ON CAR\_TYPE.ID = CAR.CAR\_TYPE\_ID

JOIN BRANCH ON BRANCH.ID = CAR.BRANCH\_ID

JOIN BRANCH\_ADDRESS ON BRANCH\_ADDRESS.BRANCH\_ID = BRANCH.ID

JOIN AGENCY ON AGENCY.ID = BRANCH.AGENCY\_ID

WHERE CAR.ID NOT IN

(SELECT BOOKING.CAR\_ID FROM BOOKING WHERE BOOKING.BOOKING\_DATE <= '2002-

02-01' AND BOOKING.RETURN\_DATE >= '2002-02-30')

AND BRANCH\_ADDRESS.CITY\_NAME = 'New York'

ID NAME PRODUCER TYPE AUTOMATIC

1 Kaefer VW PKW 0

2 E90 BMW PKW 1

3 Fiesta Ford PKW 0

4 Tank Army Military 0

ID STREET\_NAME CITY\_NAME STREET\_NUMBER POSTAL\_CODE COUNTRY PHONE\_NUMBER

CUSTOMER\_ID

2 Matthias Street Matthias City 11 3254 Germany 23443 2

3 Priya Street Priya City 23 347687 India 6436547 3

4 Radhika Street Radhika City 443 8673 India 5434 4

5 HFT Street HFT City 32a 6342 Germany 3423 / 3432 5

7 Alex Street Alex Town 49 4903 Alex Country 90340 1

ID LOGIN\_NAME REGISTER\_DATE EMAIL CUSTOMER\_TYPE FIRST\_NAME SURNAME

DATE\_OF\_BIRTH PASSWORD COMPANY\_NAME

1 Alex 06.06.10 alex@hft.de private Alexander Weickmann 01.01.00 none

2 Matthias 02.02.08 matze@hft.de private Matthias Ruszala 02.01.00 none

3 Priya 03.06.99 priya@hft.com private Priya S 05.03.99 none

4 Radhika 05.04.03 radhika@hft.com private Radhika Mohan 22.04.38 none

5 HFT 04.02.01 hft@stuttgart.de company none HFT Stuttgart

ID MESSAGE

1 Booking was deleted.

2 New booking was inserted.

3 New booking was inserted.

NAME TYPE BASE\_PRICE\_PER\_DAY REGISTRATION\_NUMBER AGENCY\_NAME BRANCH\_NAME

Tank Military 100 232-444 Agency Bond USA

***7.2.2 List all current bookings for a given customer***

SELECT BOOKING.BOOKING\_NUMBER, BOOKING.BOOKING\_DATE,

BOOKING.RETURN\_DATE, AGENCY.NAME, CAR.REGISTRATION\_NUMBER,

CAR\_TYPE.NAME

FROM BOOKING

JOIN AGENCY ON BOOKING.AGENCY\_ID = AGENCY.ID

JOIN CAR ON CAR.ID = BOOKING.CAR\_ID

JOIN CAR\_TYPE ON CAR\_TYPE.ID = CAR.CAR\_TYPE\_ID

WHERE BOOKING.CUSTOMER\_ID = '1'

***7.2.3 Retrieve details for a given customer***

SELECT \* FROM CUSTOMER WHERE CUSTOMER.ID = 1

***7.2.4 List all addresses for a given customer***

SELECT CUSTOMER.FIRST\_NAME, CUSTOMER.SURNAME,

CUSTOMER\_ADDRESS.STREET\_NAME, CUSTOMER\_ADDRESS.STREET\_NUMBER

FROM CUSTOMER

JOIN CUSTOMER\_ADDRESS ON CUSTOMER\_ADDRESS.CUSTOMER\_ID = CUSTOMER.ID

WHERE CUSTOMER.ID = 1

***7.2.5 List all car types***

SELECT CAR\_TYPE.NAME, CAR\_TYPE.PRODUCER

FROM CAR\_TYPE

BOOKING\_NUMBER BOOKING\_DATE RETURN\_DATE NAME REGISTRATION\_NUMBER NAME

1 01.01.02 01.02.02 First Agency X23-234 Kaefer

8 03.02.00 03.03.02 First Agency 232-444 Tank

9 02.02.02 03.02.02 Agency Bond TW-435 Fiesta

10 03.02.02 04.02.02 Agency Bond 232-444 Tank

ID LOGIN\_NAME REGISTER\_DATE EMAIL CUSTOMER\_TYPE FIRST\_NAME SURNAME

DATE\_OF\_BIRTH PASSWORD COMPANY\_NAME

1 Alex 06.06.10 alex@hft.de private Alexander Weickmann 01.01.00 none

NAME PRODUCER

Kaefer VW

E90 BMW

Fiesta Ford

Tank Army

FIRST\_NAME SURNAME STREET\_NAME STREET\_NUMBER

Alexander Weickmann Alex Street 49

***7.2.6 List all agencies***

SELECT AGENCY.NAME

FROM AGENCY

***7.2.7 List all bookings for a given date and branch***

SELECT CAR.REGISTRATION\_NUMBER, CUSTOMER.FIRST\_NAME, CUSTOMER.SURNAME,

CUSTOMER.EMAIL, BOOKING.BOOKING\_DATE, BOOKING.RETURN\_DATE

FROM BOOKING

JOIN CUSTOMER ON BOOKING.CUSTOMER\_ID = CUSTOMER.ID

JOIN CAR ON BOOKING.CAR\_ID = CAR.ID

JOIN BRANCH ON CAR.BRANCH\_ID = BRANCH.ID

WHERE BRANCH.ID = 1 AND BOOKING.BOOKING\_DATE = '2002-01-01'