Use Case "Rent Bike"

1. Use case code

UC006

2. Brief Description

In the ECOBIKERENTAL software project, UC "Rent Bike" describes the interaction between user and ECOBIKERENTAL software when the user wishes to rent a bike.

3. Actor

3.1 User

4. Preconditions

There is an active network connection to the Internet

5. Basic Flow of Events

Step 1. The user requests to rent a bike.

Step 2. The ECOBIKERENTAL software displays a form for user to enter the barcode of the bike.

Step 3. The user enters the barcode of the bike he/she wants to rent.

Step 4. The ECOBIKERENTAL software displays the current information of the rented bike.

Step 5. The ECOBIKERENTAL software calls an API to convert the barcode into a rental code.

Step 6. The ECOBIKERENTAL software asks the user to choose a payment method to make transactions by display a list of available options (in this simulation, there is only one option which is paying via credit card).

Step 7. The user chooses a payment method.

Step 8. The ECOBIKERENTAL software calculates the deposit amount.

Step 9. The ECOBIKERENTAL software displays the transaction information.

Step 10. The user confirms the transaction.

Step 11. The ECOBIKERENTAL software calls UC "Deduct money from card".

Step 12. The ECOBIKERENTAL software saves the transaction.

Step 13. The ECOBIKERENTAL software displays the successful rental notification.

6. Alternative Flows

Table 1-Alternative flows of events for UC Rent Bike

No	Location	Condition	Action	Resume location
1	At Step 4	If the barcode entered is invalid	- The ECOBIKERENTAL software notifies user that the barcode is invalid and asks the user to enter a valid barcode.	Resumes at Step 2

7. Input data

Table 2- Input data of bike barcode

No	Data fields	Description	Mandatory	Valid condition	Example
1	Barcode	Each bike has a different barcode	Yes	A string contains 12-13 digits	1-234567-890128

Table 3- Input data of payment method

No	Data fields	Description	Mandatory	Valid condition	Example
1	Payment Method	Choose from a list	Yes		Credit Card

8. Output data

Table 4-Output data of displaying rented bike's current information

No	Data fields	Description	Display Format	Example
1	Bike Type	Can be one in three following types: - standard bike - standard e-bike - twin bike		Standard Bike
2	Barcode	Each bike has a different barcode.	A string contains 12-13 digits	1-234567-890128
3	License Plate	License plate of the rented bike	A string of uppercase letters and digits	69NO420
4	Current Battery	Show the current battery of the rented bike, only when the bike type is standard e-bike.	Positive double with 2 decimal places. Period for decimal point.	42.69%

Table 5-Output data of displaying transaction information

No	Data fields	Description	Display Format	Example
1	Deposit Amount	The deposit amount that the user has to pay when renting bike.	- Comma for thousands separator - Positive integer - Right alignment	400,000
2	Currency			VND
3	Payment Method			Credit Card
4	Rental Code	Rental code converted from the barcode of the rented bike	A string of digits	1234567890

9. Postconditions

The logs have been updated accordingly.

One barcode corresponding to a bike is now unavailable.