

!Standard Mode: off

!List Exceptions:

{NETWORK_EXCEPTION::NetworkUnreachable},

{SOFTWARE_EXCEPTION::SubscriptionVerificationFailed}

Use Case: UseBIXI

Scope: BIXISystem

Level: SUMMARY

Intention: "The user intends to use the BIXI system."

Multiplicity: "Many users can use the BIXI system at the same time."

Primary Actor: HUMAN::User::1..*

Main Success Scenario:

1. "The User goes to a BIXI System station."

2. [RentBike] "The User rents a bike."

3. "The User rides the System bike."

4. [ReturnBike] "The User returns the bike."

Use case ends in: SUCCESS

Extensions:

Exception for (1-4):

(1-4)a.^ timeout:60s "Network fails to send confirmation."

(1-4)a.1. {NETWORK_EXCEPTION::NetworkUnreachable} "Network unreachable."

Use case ends in: FAILURE

Alternative for 2:

2a. "The User is a non-member in the System."

2a.1. [RentBikeNonMember] "The User rents a bike using a pay station."

Use case continues at step: 3

Use Case: RentBike

Scope: BIXISystem

Level: USER_GOAL

Intention: "To rent a bike from a BIXI station."

Multiplicity: "Many users can rent bikes at the same time."

Primary Actor: HUMAN::User::1..*

Secondary Actor: DEVICE::BikeDock::1..*

Main Success Scenario:

1. "The User inserts their BIXI key into the BikeDock."

"The BikeDock verifies the User's subscription."

"The BikeDock unlocks the bike."

"The User takes the bike."

Use case ends in: SUCCESS

Extensions:

Exception for 2:

2a. {SOFTWARE_EXCEPTION::SubscriptionVerificationFailed} "Subscription verification failed."

Use case ends in: FAILURE

Use Case: RentBikeNonMember

Scope: BIXISystem

Level: USER_GOAL

Intention: "To rent a bike from a BIXI station as a non-member."

Multiplicity: "Many users can rent bikes at the same time."

Primary Actor: HUMAN::User::1..*

Secondary Actor: DEVICE::PayStation::1..*

Main Success Scenario:

1. "The User goes to the PayStation."

2. "The User selects the rental option."

3. "The User inserts their credit card."

4. "The PayStation verifies the payment."

5. "The PayStation provides an unlocking code."

6. "The User enters the unlocking code at the BikeDock."

7. "The BikeDock unlocks the bike."

8. "The User takes the bike."

Use case ends in: SUCCESS

Extensions:

Exception for 4:

4a. {SOFTWARE_EXCEPTION::PaymentVerificationFailed} "Payment verification failed."

Use case ends in: FAILURE

Use Case: ReturnBike

Scope: BIXISystem

Level: USER_GOAL

Intention: "To return a bike to a BIXI station."

Multiplicity: "Many users can return bikes at the same time."

Primary Actor: HUMAN::User::1..*

Secondary Actor: DEVICE::BikeDock::1..*

Main Success Scenario:

1. "The User pushes the bike into an empty BikeDock."

"The BikeDock locks the bike."

"The BikeDock verifies the return."

"The BikeDock indicates a successful return with a green light."

Use case ends in: SUCCESS

Extensions:

Exception for 2:

2a. {HARDWARE_EXCEPTION::LockingMechanismFailed} "Locking mechanism failed."

Use case ends in: FAILURE

Use Case: NotifyMaintenance

Scope: BIXISystem

Level: SUB_FUNCTION

Intention: "To notify BIXI mechanics of bicycles requiring servicing."

Multiplicity: "Many notifications can be sent at the same time."

Primary Actor: PHYSICAL_ENTITY::BikeDock::1..*

Main Success Scenario:

1."The User presses the maintenance button on the BikeDock."

"The BikeDock sends a notification to the BIXI maintenance system."

Use case ends in: SUCCESS

Extensions:

Exception for 2:

2a. {NETWORK_EXCEPTION::NotificationFailed} "Notification failed."

Use case ends in: FAILURE

Handler Use Case: ReconnectNetwork

Scope: BIXISystem

Level: USER_GOAL

Intention: "To reconnect to the network when the network is unreachable."

Primary Actor: None

Contexts and Exceptions: UseBIXI {NETWORK_EXCEPTION::NetworkUnreachable}

Main Success Scenario:

"Step 1 can be repeated as many times as necessary."

1."The system attempts to reconnect to the network."

2."The system connects to the network."

Use case ends in: SUCCESS

Extensions:

Alternative for 1:

1a. ^ timeout:30s "The system is unable to connect to the network."

Use case continues at step: 1