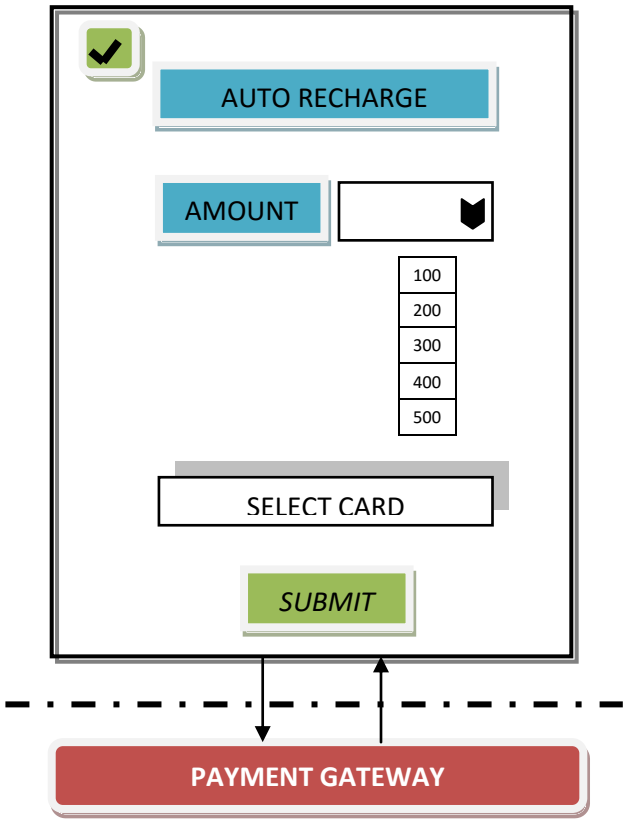
AUTO-RECHARGE

Assumptions:

- User is Registered and successfully logged-in
- Has one or more card details added in the application
- Minimum balance in the account: 100
- Recharge amount options - under the drop down: 5 (100, 200, 300, 400, 500)
- Payment mode: Cards(Credit card/Debit Card)

Pictorial Representation of my understanding of the requirement:



Functional Scenarios:

A. Registration to Auto-Recharge:

1. `*Auto-Recharge*` Check box should be clicked, without which the user should not be allowed to select `*Amount*`
2. Try to enter the Amount manually - Denied/Disabled (negative scenario). Unless amount is selected from the drop down, `*Select Card*` should not be enabled

3. Select card from the saved cards. If there are no cards saved already, invoke call to `Add New Card` function which allows user to add a new card(card number, cvv, expiry) and verifies.
4. Unless all the above is valid, `Submit` should not be clickable
5. Multiple click on `Submit`

B. Auto-Recharge Function:

1. Account Balance is below 100, Auto-Recharge is triggered >> payment gateway returns success >> Recharge is done successfully.
2. Account Balance is NOT below 100 and Auto-Recharge is triggered >> BUG (-ve scenario).
3. Invalid payment gateway is called >> BUG : For example for a card under VISA network, MasterCard payment gateway is triggered.
4. Session timeout while waiting for Response from Payment Gateway >> Auto Recharge fails. (Scalability)
5. The account usage limit is exceeded for a certain period(Day/Month/Year) >> Auto-Recharge should not be triggered.
6. Delay in sending request (to Payment Gateway) or receiving response(from Payment Gateway) due to network or internet connection issues >> Auto-Recharge behaviour should be analysed and any responses causing crashes should be reported. (Scalability).
7. Auto-Recharge infinite loop: when the Account Balance is below 100 and Auto-Recharge is triggered and payment gateway is returning fail statuses, there is a chance of auto-recharge being triggered for indefinite times >> Maximum number of Auto-Recharge trigger failure should be controlled after which no more Auto-Recharge is triggered unless issue is trouble-shot.
8. Auto-Recharge reset/update should be allowed for the user >> like change recharge amount, change card or opt out of Auto-Recharge.
9. Network-reset of Auto-Recharge after triggering Payment-gateway.
10. Make sure Payment gateway transaction is triggered through a secure channel(HTTPS/SSL).
11. Check console and Network logs for any internal errors.
12. Auto-recharge function crashes after triggering the payment gateway.
13. Account Balance is below 100>> Auto-recharge is triggered but fails since auto-recharge module is down.
14. When User-B tries to add a card which is already being used by User-A.

Error and Exception-Handling:

1. Error from payment gateway response for Insufficient card balance.
2. Error from payment gateway response for invalid cvv/expiry/OTP.
3. Delay(network delay) in payment gateway response.
4. Invalid transaction receipt from Payment Gateway.

5. Payment-gateway session time-out or internal server error.
6. Auto-Recharge looping might result in DB crash.
7. Pop-up blocker is enabled and trigger to payment gateway fails.
8. When wallet balance is below the minimum amount defined and Usage limit is reached.
9. Account Balance is low but Auto-recharge is crashed/down.

LOAD Testing:

1. When the account balance of millions of customers go below 100(the minimum balance), auto-recharge will be triggered in parallel>>How auto-recharge module handles load.
2. When payment gateway is triggered by " auto-recharge" for millions of customers simultaneously.

PERFORMANCE Testing:

1. Time taken by Auto-recharge to complete the whole transaction should be minimum.
2. Huge number of requests to be handled gracefully when hit simultaneously.

SECURITY:

1. No unauthorised access to be allowed to modify Auto-recharge settings (System Hack).
2. 2FA to be made available when user tries to modify auto-recharge settings.
3. Users' payment details to be stored in a secure way.
4. Payment gateway is triggered through a secure channel.

Notifications: (SMS/Email)

1. When user successfully registers for Auto-recharge
2. When auto-recharge is triggered.
3. When auto-recharge is completed.
4. Critical Errors from payment gateway which resulted in auto-recharge failure (invalid card details/insufficient card balance/Expired and Blocked card).
5. Account balance - usage limit is reached.
6. Invalid notifications : for example, notification sent to user even though `Auto-Recharge` is not triggered.
7. Application updates and compliance updates.

INTEROPERABILITY:

1. Auto-recharge being a separate module, check for any issues when integrated within the system.
2. Check if Auto-recharge is adversely affecting any existing functionality or vice-versa.
3. Any new feature implemented within Auto-recharge should not affect the functionality of the already existing Auto-recharge module.

LOCALISATION:

1. Check if the application language is easily understandable by diverse user base.
2. Currency, date-time format is accurately displayed.

INTERNATIONALISATION:

1. Handling foreign currency exchange when user has added an international/multi currency card.
2. Adhere to international security standards.

COMPLAINCE:

1. All terms and conditions are provided before user opts for Auto-Recharge.
2. Any modifications to Terms, conditions and Privacy policy is to be displayed to the user and is accepted by user.
3. Check if Data is protected and not used for any unintended purposes.

NOTE:

As this module is under payments, Auto-Recharge SandBox Testing can be done.