Assignment 2

The most used online social networking site - Facebook uses the following protocols to run:

1. The user must first enter their Login details
2. If the user is a valid user, then notifications, messages and requests are retrieved simultaneously in order to prepare the homepage
3. If the user is not a valid user and the user is trying to attempt a login more than three times, then their account is locked and they are sent a warning of login attempt at the same time. Otherwise, they can attempt login again by entering Login details.
4. "Account Locked" message is displayed when the events end.
5. "Once the homepage is prepared, user preference is checked to see if the user is Online or Hidden.
6. If the user preference is Online, the user status is set as online, otherwise, it is set as Offline.
7. Finally, the user wall is displayed.

Now, **Design** an activity diagram for Facebook.

Ecommerce has been booming in Bangladesh, and especially with the pandemic, the demand for it has exponentially increased. A general case ecommerce runs as follows:

1. After a customer visits the site, they search for a product by typing its name which is passed to the SearchEngine
2. The SearchEngine then fetches the products from the ProductsDatabase and serials them in accordance to the relevance of the searched keywords and returns them to the customer
3. The customer selects an item which takes the user to the ProductPage
4. From the ProductPage, the customer adds the item to their cart which sends a request to the CustomerCart
5. After receiving the request, CustomerCart sends a request to the ProductsDatabase to check if the item is in stock, if the item is in stock, the product gets added to the CustomerCart otherwise an error is shown
6. Finally, the customer selects to checkout which sends a request to the CartCheckout where the customer has to enter their full name, email address, phone number and delivery address
7. If all the information has been entered correctly, a success message is shown, otherwise an error message is shown

Design the sequence diagram for the above scenario