1. **Design a course registration platform**

Objects and behaviors

Computer:
Data:
Behaviors: startUp, connectToInternet

Registration website:
Data: courseCode, courseName, courseVenue, courseSchedule, courseInstructor, registrationOpen & closeDate
Behavior: searchForCourse, registerCourse

Student:
Data: name, schoolID, emailAddress, password, userID
Behavior: startComputer, searchForRegistrationWebsite, searchForCourses, registerFor Courses

Sequence of invoking behaviors on objects
Register for course

Student zhu;
Zhu.startUpComputer-> pin: computerStartUp
If the Internet.isAvailable
    Zhu. loginToTheWebsite->username, pin: login
    Zhu.searchForCourse->courseDescription: ListOfCourses
    Zhu.findDesirableCourse-> INFO5100
    If INFO5100. HasVacantPositions->Zhu register for the course
    else
        joinWaitinglist or searchOtherCourses
    end
  end

2. **Order food in a food delivery app. (like Uber Eats)**

Internet Service:
 Data: Name, phoneNumber
 Behaviors: Connect

App:
Data: listOfRestaurant, listOfDriver, map
Behaviors:

User:
Data: name, phone, userLocation
Behaviors: logInToApp, findRestaurant , orderFood, review

Driver:
Data: name, driverPhoto, driverLicense, phone, driverLocation
Behaviors: confirmOrder, contactRestaurant, pickUpFood, deliverFood
        contactUser

Restaurant:
Data: name, location, foodType, foodPrice, foodPhoto
Behaviors: receiveOrder, makeFood, contactDriver

Traffic System:
Data: roadCondition
Behaviors: getRoadCondition

Map System:
Data: Road
Behaviors: locateUser, locaterestaurant, askTrafficSystem, selectBestRoad, selectDriver

Credit Card:
Data: name, bankName, cardNumber, address, securityCode, expiry
Behaviors:

Bank: Data:
Behaviors: authorizedTransaction

Help Service:
Data: servicePhoneNumber
Behaviors: chatOnLine, Question, Answer

Sequence of invoking behaviors on objects
orderFoodInApp

if the Internet.isAvailable
zhu.loginToApp->userName,pin:connected
if order food now
    zhu.searchResturant->location, price, type of food: suggestResturant
    zhu.findDesirebleResturant->zhu.placeTheOrder-> creditCard, address : confirmation
    mapSystem.findNearestDriver->

    if numberOfAvaliableDriverIn5Miles<1
     return waitForDriverResponse
    else
     return driveInformation
    end
    bank.authorizeTransaction

3. Design a platform for buying tickets of local events.

Objects and behaviors:

Computer:
Data:
Behaviors: startUp, connectToInternet

Website:
Data: eventDescription, priceOfTickets
Behaviors:search, display,sort,order

Buyer:
Data: Name, Phone, Address, emailAddress,
Behaviors: startUpComputer, search, filter, buy,review

Event host:
Data: Name, contactInformation, ticketPrice
Behaviors: login,post,comfirmTicketSold

Credit Card:
Data: Name, bankName, cardNumber, address, securityCode, expiry
Behaviors:

Bank: Data:
Behaviors: authorizedTransaction

Help Service:
Data: servicePhoneNumber
Behaviors: chatOnLine, Question, Answer

TicketBuyer zhu;
Zhu.startUpComputer->pin:computerStartUp
If the Internet. isAvailable
    Zhu.loginToThePlatform->userName,pin:login
    Zhu.searchForEvent->eventDescription:ListOfEvents
    Zhu.findDesirableEvent->eventName
    if eventHolder.hasVacantSeats
        Zhu.placeTheOrder-> creditCard, address : confirmation
    else
        return ticketIsSoldOut
    end
end

4. Buy a computer from Amazon.
Computer:
Data:

Behaviors: startUp, connectToInternet

Website(Amazon):
Data: listOfProduct, priceOfProduct, descriptionOfProduct
Behaviors: search, display, sort, compare

Buyer:
Data: Name, Phone, Address, emailAddress, amazonAccount
Behaviors: startUpComputer, search, filter, buy, reviews, cancel, sort, compare

Company:
Data: Name, listOfProduct, ProductDetails: price, qualification
Behaviors: login, post, sell, deliver

Sequence of invoking behaviors on objects
BuyingComputerInAmazon

Computer CompanyA;
if the Internet. isAvailable
CompanyA.loginToAmazon -> userName, pin : connected if theWebsite. isAvailable
CompanyA.post -> productDetails : confirmationForPosting else
refresh the Website

Buyer Zhu;
Zhu. startUpComputer -> pin : computerStartUp
if the Internet. isAvailable
    Zhu.loginToAmazon->userName,pin :login
    Zhu.searchForComputerComputerDescription :ListOfCompanies   .
    Zhu.findDesirableComputer -> companyName : productPage
    Zhu.placeTheOrder -> creditCard, address : confirmation
end

5. Design an app for booking hotels.
Objects and behaviors:

Internet Service:
Data: Name, phoneNumber
Behaviors: connect

App:
Data: listOfHotels, informationOfHotels,membersOfApp
Behaviors:

User:
Data: Name, Phone, stayPlace, stayTime
Behaviors: logInToApp, searchHotel, bookHotel, reviews, cancel

Hotel:
Data: Name, hotelPhoto, contactInformation, hotelLocation,hotelPrice
Behaviors: confirmUserOrder

Credit Card:
Data: Name, bankName, cardNumber, address, securityCode, expiry
Behaviors:

Bank:
Data:
Behaviors: authorizedTransaction

Help Service:
Data: servicePhoneNumber
Behaviors: chatOnLine, Question, Answer

Sequence of invoking behaviors on objects

bookingHotelInApp

if the Internet. isAvailable
  zhu.loginToApp -> userName, pin: connected
  zhu.searchHotel -> location, destination,price,availability ;
  zhu.findDesirebleHotel -> listOfHotel : Hotel
  zhu.placeTheOrder -> creditCard, address : confirmation
end
bank.authorizeTransaction