Scenarios:

**1. Hiking**

1.1. Rent a ReachNow to drive to mountain rainier on weekends with friends

1.2. On the way, fill the gas

1.3. On the way, eat at restaurant for lunch

1.4. Buy the ticket to get into the park

1.5. Book a hotel or check in the hotel.

Problem : Making the orders for hiking

Identify Objects and Behaviors:

Thing (Object)/Entity:

Information (Data)/(State):

Services (Behaviors)/Actions

Things :

hiker :

Data: Name, passportID, Phone

Behaviors : search, reviews, compare, return, cancel,pay

TravelApps:

Data : carRent;gasStation;mealOrder;parkTicket

: information about different catagories(transportation, meal,tickets)

Behaviors : searchAndOrderSatisifiedService

Cars:

Data : rentPrice, insurance

Behavior:

CreditCard

Data : Name,number, type(credit or debit), expiry, security code

Behavior :

CreditCardCompany

Behavior : authorizeTransaction

Sequence of invoking behaviors on Objects:

Maketheordersforhiking:

hiker Sophia,

TravelApps: QuNaer

Orders :carRent;gasStation;mealOrder;parkTicket,

CreditCard card,

CreditCarCompany visa

orderConfirmation response

If mobileDataTraffic||wif.isAvailable

Sophia.turnOnQuNaer-> internet, question : information about traveling in different catagories.

//Sophia.findDesirablecarRentInformationInFirstPage ->Collection of carRent Information

pageNumber = 1;

Loop

if Sophia.findsNoInformation

break

end

Sophia.findDesirablecarRentInformationInAPage->priceRange,insurance:Collection of carRentInformation

else

pageNumber = pageNumber + 1;

End

QuNaer.addTheOrderToSHoppingLIst

//Sophia.findEasyReachAndCheapGasStationInFirstPage ->Collection of gasStation Information

pageNumber = 1;

Loop

if Sophia.findsNoInformation

break

end

SophiafindEasyReachAgasStationAPage->Distance,price,discount information:Collection of carRentInformation

else

pageNumber = pageNumber + 1;

end

End

QuNaer.addTheOrderToSHoppingLIst

//Sophia.findDesirableMealsInFirstPage ->Collection of meals Information

pageNumber = 1;

Loop

if Sophia.findsNoInformation

break

end

Sophia.findDesirableMealsInFirstPage->type,load,review,price,discount information:Collection of meals

else

pageNumber = pageNumber + 1;

end

End

QuNaer.addTheOrderToSHoppingLIst

//Sophia.findDesirableHotelInFirstPage ->Collection of hotels Information

pageNumber = 1;

Loop

if Sophia.findsNoInformation

break

end

Sophia.findDesirableHotelInFirstPage->distance;size;price,discount information:Collection of Hotels

else

pageNumber = pageNumber + 1;

end

End

QuNaer.addTheOrderToSHoppingLIst

//Sophia.findTicketInFirstPage ->Collection of hotels Information

pageNumber = 1;

Loop

if Sophia.findsNoInformation

break

end

Sophia.findTicketInFirstPage->Source;price,discount,type(first-hand or second -hand) information:Collection of tickets

else

pageNumber = pageNumber + 1;

end

End

QuNaer.addTheOrderToSHoppingLIst

Sophia.payFortheOrder-> orders, creditCard, address, QuNaer :OrderConfirmation

response = OrderConfirmation

Else

Sophia.cantOrderNow

Else

Sophia.logInTheAppAfterAWhileBack

1. **Organise a career fair(Suppose you are the organiser)**

Problem : Organising a career fair

Identify Objects and Behaviors:

Thing (Object)/Entity:

Information (Data)/(State):

Services (Behaviors)/Actions

Things :

Organizer Sophia:

Data: name, editDate

Behaviors:SetTheNumberLimitOfPlaceForCompanies,SetTheNumberLimitForregisters

employees :

Data: Name, email ,Phone,educational experience,Skills,WorkingExperience

Behaviors:registers,reception,searchForCompanies,fsearchForPostions,fillOnlineApplicationForm,applyForInterview,ReceivedInterviewFeedBack,

Company HR：

Data: CompanyName,HRName,company email ,Phone

Behaviors:registers,reception,registerForPlace;ListRequirementsFor

Postions,recieveOnlineApplicationForm,applyForInterview,GiveInterviewFeedback,

Participant management system:

Data : Name, email ,Phone

Behaviors : restoreInformation,SearchCompanyName;presentRelatedData;makeConnections

Sequence of invoking behaviors on Objects:

Organising a career fair:

Organizer Sophia,

Computer tools:Participant management system

employers :

Company HR：

jobFinding response;

If internet.isAvailable

Sophia.SetTheNumberLimitOfPlaceForCompaniesemployers

employees.buildHisOrHerOwnProfileTheSystem ->Collection of his or her Information(Name, email ,Phone,educational experience,Skills,WorkingExperience)

ParticipantManagementSystem.sendInvitationsToEmployers

ParticipantManagementSystem.saysSorryThereIsNoSpaceAvaliable;

HR.buildTheCompanyProfileOnTheSystem->Collection of the company information and the postions’requirement

ParticipantManagementSystem.sendInvitationsToHR

ParticipantManagementSystem.saysSorryThereIsNoSpaceAvaliable;

ParticipantManagementSystem.matchThePostionsWithEmployees

ParticipantManagementSystem.PresentMatchedJobs

//employees.findDesmirableJobInFirstPageOfTheSystem ->Collection of postions Information

pageNumber = 1;

Loop

if employers.findsNoInformation

break

end

employers.findDesirableJobaInFirstPage->salary,working hours everyday,company’s reputation in this field , vacation period each year :Collection of details

else

pageNumber = pageNumber + 1;

end

End

ParticipantManagementSystem.sendRequestToHR

If HR.accept the request

ParticipantManagementSystem.sendInterviewInvitation

Else

ParticipantManagementSystem.saysSorryThisJobIsNotAviliable

//HR.findEmployersInFirstPageOfTheSystem ->Collection of employers required Information

pageNumber = 1;

Loop

if HR.findsNoInformation

break

end

employers.findDesirableEmployersInFirstPage->required salary,educational experience,Skills,WorkingExperience :Collection of details

else

pageNumber = pageNumber + 1;

end

End

ParticipantManagementSystem.sendApplicationInvitationToEmployers

If Employers.accept the Invitation

ParticipantManagementSystem.sendInterviewInvitation

Else

ParticipantManagementSystem.saysSorryEmployersIsNotAviliable

Sophia.payFortheOrder-> orders, creditCard, address, QuNaer :OrderConfirmation

response = OrderConfirmation

Else

Sophia,browseInternetAfterAWhileBack

**3.Ordering Pizza from Pizza Hut**

Problem : Ordering Pizza from Pizza Hut

Identify Objects and Behaviors:

Thing (Object)/Entity:

Information (Data)/(State):

Services (Behaviors)/Actions

Things :

consumers Sophia:

Data:name, address, cellphone,email,

Behaviors:lookAtTheManu,SearchForTheDesirableTypeOfPizza,PayTheOrder,writeReview.

Hut workers :

Data: Name ,WorkingPhoneNumber

Behaviors:checkTheFoodServingTableForSpace,Accept the order,confirm payment

Food serving Table:

Data:Allplaces, SpaceTakenByPizza,PizzaTypes

Behaviors:passTheOrderedPizzaToCustomers ,remindTheManagerForTheLackOfPizza

Food cooking facility:

Data: Allplaces, SpaceTakenByPizza,TimeForFinishingCooking

Behaviors:RemindTheWorkerToTakeThePizzaOut,RemindTheWorkerToPutMorePizzaIn,Cook

Sequence of invoking behaviors on Objects:

Ordering Pizza from Pizza Hut:

consumers Sophia:

Workers

Food serving Table:

Food cooking facility:

orderConfirm response;

Sophia.lookAtTheManu,

Sophia.SearchForTheDesirableTypeOfPizza

Sophia.sendTheOrderRequest

Workers.checkwhetherThereIsPizzaFoodServingTable

If ThereIsPizzaFoodservingTable

Workers.Accept the order

Sophia.PayTheOrder

FoodServingTable,passTheOrderedPizzaToCustomers

Sophia.writeReview.

Else

Workers.checkwhetherThereIsPizzaFoodCookingFacility

If ThereIsPizzaInFoodCookingFacility

FoodCookingFacility.presentTheTimeWhenFinish

Workers.tellTheCustomersTheTimeWaitFoodCookingFacility

Else

Workers.putNewPizzaI

Workers.tellTheCustomersTheTimeWaitFoodCookingFacility

Workers.Accept the order

Sophia.PayTheOrder

FoodServingTable,passTheOrderedPizzaToCustomers

Sophia.writeReview.

**4.Design a code sharing platform (eg: Github).**

Problem : Design a code sharing platform

Identify Objects and Behaviors:

Thing (Object)/Entity:

Information (Data)/(State):

Services (Behaviors)/Actions

Things :

Manager Sophia:

Data:Managername,password,cellphone,LastEditTime,

Behaviors:postNoticeOnTheTopOfTheFirstPage,SetRulesForColumns,checkAndBlockIllegalContentPosted

Users A,B:

Data:Usersname, email,password

Behaviors:BuildProfile,SearchForResources,postCode,comments,createAGroup,inviteFriendsToGroup,acceptInvitationToGroup,declineInvitationToGroup

If Internet.isAvailable

Sophia.turnOnThePlatform-> internet, question : information about traveling in different catagories.

Sophia.SetRulesForColumns

Sophia.postNoticeOnTheTopOfTheFirstPageBlockIllegalContentPosted

1. BuildProfile

A.postCode

Sophia.checkAndBlockIllegalContentPosted

If theCodeIsValid

Platform.PostedtheCodeOnTheWebsite

Else

Platform.sorryIllegalContent

1. BuildProfile

B.SearchForResources

//B.findWantedResourcesInFirstPage ->Collection of resource

pageNumber = 1;

Loop

if Sophia.findsNoInformation

break

end

Sophia.findWantedResourcesInFirstPage->Reource

else

pageNumber = pageNumber + 1;

end

End

B.comments;

Sophia.checkAndBlockIllegalContentPosted

If theCodeIsValid

Platform.PostedtheCommentOnTheWebsite

Else

Platform.sorryIllegalContent

B.createAGroup;

B.inviteFriendsToGroup(A);

If A.acceptInvitationToGroup,

Platform.groupFormed

Else

Platform.sorryInvalidRequest

1. Design a soft-drink/snacks vending machine.

Things :

Consumers Sophia:

Data:

Behaviors:readTheIntroductionOfGoods,pushTheSelectBotton,pushThePayBotton,payForTheOrder,getTheDrink/snacksOutOfMachine

drink/snacks vending machine

Data:catagories,price,drinkName,snacksName

Behaviors:turnToThePaymentPage,PassTheOrderedToCustomers

CreditCard

Data : Number, name, company, expiry, security code

Behavior :

CreditCardCompany

Behavior : authorizeTransaction

If Electricity.isAvailable

Sophia.readTheIntroductionOfDrink/snacks>price,size,calories,fat,suger:information about Drink/snacks.

peter.searchInInternet -> internet, question : Collection of ElectronicWebsite

//peter.findDesirableDrink/snacks -> Collection of Websites : price,size,calories,fat,suger

pageNumber = 1;

Loop

if peter.findsNothingSales

break

end

peter.findfindDesirableDrink/snacks -> price,size,calories,fat,suger

If TheDrink/snacks is avilable

break

else

pageNumber = pageNumber + 1

end

Sophia.pushTheSelectBotton

VendingMachine.turnToThePaymentPage

Sophia.payForTheOrder

VendingMachine.PassTheOrderedToCustomers

Sophia.getTheDrink/snacksOutOfMachine

Else

NothingAppearOnTheScreen

Tips :

1. You may go as deep as you want , like the first scenario will be an example, you can simplify it or make it more complex.

2. Use pseudo code. This assignment has nothing to do with the real code, we want you to experience what is object oriented language.

Success criteria:

1. Be able to parsing the daily activities into some small block and learn the way to design things. Different may have different ways to parse the same scenario. So make your own copy.

2. Be able to make progress according to reviews from teachers and TA.

Requirement:

1. Deadline is Sep, 15th. If you encounter any problem to meet this deadline, please contact TA or Professor directly.

2. Individual work, not team project. But can have discuss with other classmates.