Questions:

Given a few circumstances, try to think in objects and design the objects and behaviors for each question. Use the pseudo code to describe a certain sequence of invoking behaviors and objects. Try to think as much details as you can and come up with the solution independently.

1. Design a course management system (Like Canvas);

- *CourseManagement*:
  - Data: Empolyee, courseId, courseCredits, courseHours, courseName, courseInstructor, courseTas;
  - Behaviors: SignIn, logIn, viewAllCourses, SearchCourse, FilterCourse, addCourse, deleteCourse, modifyCourse, logOut;

```
Empolyee emma;
CourseRegistration neuCourseRegistration;
emma.login(loginCredentials);
emma.viewAllCourses();
emma.searchCourse(courseId);
if course is not InList
 emma.addCourse(course);
 if emma change her mind
   emma.deleteCourse(course);
emma.FilterCourse(criteria);
emma.modifyCourse(course);
emma.logOut();
```

2. Design a pet adoption platform

- *PetAdoptionPlatform:*
  - Data: person, petId, petType, petName, petAge;
  - Behaviors: SignIn, logIn, logOut, adoptPet, dropPet, viewAllPets, searchPet;

```
Person emma;
emma.login(loginCredentials);
emma.viewAllPets();
emma.searchPet(petType, petName, petAge);
emma.adoptPet(petId);
if emma change her mind
    emma.dropPet(petId);
emma.logOut();
```

3. Design an app to book airline ticket.

- *AirBookSystem:*
  - Data: customer, airline, flighttime, flightDeparture, flightDestination;
  - Behaviors: SignIn, logIn, logOut, viewAllFlights, searchFlight, bookFlight, dropFlight;

```
customer emma;
emma.login(loginCredentials);
emma.viewAllFlights();
emma.searchFlight(airline, fligtTime, flightDeparture 
flightDestination);
emma.bookFlight(petId);
if emma change her mind
    emma.dropFlight(petId);
emma.payFlight();
emma.logOut();
```

4. Design a course registration platform.

- *CourseRegistration*:
  - Data: student, courseId, courseManagement
  - Behaviors: SignIn, logIn, viewAllCourse, SearchCourse, FilterCourse, addCourse, registerCourse, dropCourse, logOut;

```
student emma;
courseManagement neuCourseManagement;
emma.login(loginCredentials);
emma.search(courseId);
if course is InList
 emma.addCourse(course);
 if emma change her mind
   emma.dropCourse(course);
 emma.registerCourse(course);
emma.FilterCourse(criteria);
emma.addCourse(course);
emma.registerCourse(courses);
emma.logOut();
```

5. Order food in a food delivery app.(Like Uber Eats)

- *FoodDeliberyApp*:
  - Data: customer, foodstore, deliveryServiceCompany;
  - Behaviors: orderFood,

```
customer emma;
store kfc;
deliveryServiceCompany uber;
emma.login(loginCredentials);
emma.search(kfc, delivertime, distance);
emma.orderFood();
uber.checkout(emma.address, emma.phone, emma.creditCard);
amazon.sendReceipt(emma.emailAddress);
if emma change her mind
   emma.requestCancelOrder(kfc);
   kfc.refund(emma);
 else
   kfc.sendToShipper(uber);
   uber.ship(food);
Courier jamie = ups.allocateCourier;
jamie.contactCustomer(emma);
jamie.deliverPackage(emma.address);
if emma satisfied with the food
```

```
    emma.writeReview("*****");
   else
     emma.writeReview("ooooo");
     emma.requestRefund(uber);
     uber.notify(kfc);
     kfc.refund(emma);
```