Assignment 1 UML Design

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Scenario Description

With the rapid restoration of production and life order, people's travel and orderly flow have been increasing. **The epidemic risk level query system** provided by the National Health Commission has been launched on the applet of The State Council client, which can check the epidemic risk level of nearly 3,000 counties (cities, districts and banners) in China. **Blue - low risk** , **yellow - medium risk** , **red - high risk** .

1. For all WeChat users, when using the app, it will first obtain WeChat ID and Address Info to display the Epidemic Risk Level of **district where the user is currently located**. If there is a low, medium or high risk in the area, it will return a list of low, medium and high risk zones.
2. A user can query the risk level of one **destination district** by selecting a province, city, and district. After querying, it will return a list of low, medium and high risk zones in current district, then user can optionally **subscribe** current district.
3. A user can also **view all districts he/she subscribed**.
4. A user can also **query all infomation** in the whole country or specified province. After querying, the number of high, medium and low risk areas and a list of all risk zones can be obtained on the page. In this process, user can optionally generate images, or copy the results.
5. A user get his/her **travel historys** in the past seven days by the program. More specifically, it can obtain the user's mobile phone number, and then return the provinces and cities that the user has traveled in the past seven days.
6. Administrators also need to log in WeChat before using it. Administrators can **modify** the risk zones of one district. When the risk level changes, all subscribers will be notified.

Let's declare some nouns first:

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epidemic risk level 疫情风险等级
user 用户
administrator 管理员
province 省
city 市  (a province contains one or more citys)
district 区  (a city contians several districts)
risk zone 风险区域 (表示风险区)  (a district contains none or more rsik zones)
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Question 1: Use case diagram (30 points)

Draw a user case diagram according to the scenario above. The use case diagram should contains actors, use case and system boundary.

Question 2: Class diagram. (40 points)

Find and draw all **entity class** according to the scenario above. In this sections you need to indicate the class names, relevant attributes, some of methods and the relationship between classes. In addtion, you need also design and draw a **control class** named **risk system**, which includes a number of methods for system control.

Only the following methods need to appear in class diagram.

method name	return value	parameter	describe
addRiskZone	Null	Null	create a new object in method and add the new object in a riskZone collection
removeRiskZone	Null	RiskZone	remove current object from collection.
updateRiskZone	Null	RiskZone	upate an object in collection
~~subscribeDistrict~~	Null	District	add current district to the subscribed collection
~~viewAllSubscribed~~	Collection of district	Null	return all subscribed districts
calculateRiskZoneCount	Design by you	City	Calculate the number of high, medium and low risk zones according to the designated city
calculateRiskZoneCount	Design by you	Null	Calculate the number of high, middle and low risk zones in China.
searchRiskZonesByDistrict	Collection of risk zones	District	return a list of risk zones according to a parameter district
modifyriskZoneByDistrict	Null	District and others Design by you	For parameter district, do add, remove or update risk zone according to the operation value.

Question 3: Draw a sequence diagram to represent the risk level change and push process.(30 points)

The administrator login wechat, in this process he/her sent his/her info to Rsit System to verify it. After login, it returns the Admin Main Page, then administrator can select the province, city and district on the page, and then do modify risk zones in current district. In this sections, he/she can choose to add(create a new one), delete(destroy the object) or update(change the risk level) the risk zone. After completing the operation, the administrator submits the modify result. After successful submission, all subscribers in the region(district) will be notified of the change in risk level information.

What to Submit?

Complete all the questions and combine the UML diagrams into a single PDF file before **Sep. 28th 11:00 pm.**. If necessary, given several explanations about your diagrams.

Any handwriting UML diagrams are not allowed for this assignment