



NEIGHBOR EXPERTS

ABSTRACT

A web based application that help people share their knowledge not only across community but also cross the country

Linlin Han
Linlin Fan
Zeyu Ma
Xi Chen
Ziqing Qiu

Scope Definition

Problem

Despite of hundreds of thousands online tutoring resources posted recently, people find it lack of communicating with the teachers. Also people who have certain field of knowledge cannot find a platform to share their knowledge face to face among small group of people. Due to many unofficial tutors, from government perspective, it is hard to monitor this type of business.

Need

A web based app allows people to have small scale of lectures either in their own house or in public spot such as library or cafe. Meanwhile people who have the need of learning skills can find available knowledge sharing points around the pinned location.

Neighbor Experts Project

Below are the proposed subsystems:

- Event radar subsystem
- Event posting subsystem
- Event booking subsystem
- Event management subsystem
- Account management subsystem
- Report subsystem

Systems Vision

Problem Description

There are many children education agents in Canada. However, the business for adult education is usually targeting to some big goals either academic or business aspects. In terms of small scale of learning requirements such as math tutoring, yoga, and even like how to arrange flowers, so far the only way for people to acquire those knowledge is through online resources.

From government perspective, since those small group of business are usually paid by cash, it is not easy to track the income and will cause tax issues.

System Capabilities

- Displaying nearby available knowledge sharing events (location, time, cost, etc....).
- Posting knowledge sharing events.

- Providing add/modify/delete booking functions.
- Collecting user information.
- Sending statement to user.
- Forming tax and revenue report to user.

Business Benefits

Like Airbnb, it is expected that the deployment of this web application will provide the following benefits:

- Provide more flexible and small groups of face to face learning opportunities.
- Save a significant amount of time for people finding appropriate knowledge sharing events.
- Increase the knowledge sharer's business income, thereby provide the platform for them to build their reputation.
- Track information and analyze, thereby improve safety level of society.
- Calculation of tax and bills is done online without use of real paper. Eco-friendly and time saving.

Stakeholder Register

| STAKEHOLDER REGISTER | | | | | |
|----------------------|----------------------|-------------------|----------------|---------------------|---------------------------|
| Stakeholder Name | Stakeholder Position | Internal/External | Contact | Operation/Executive | Interest (High, Med, Low) |
| Linlin Han | Student | Internal | Phone Email | Executive | High |
| Linlin Fan | Teacher | Internal | Phone Email | Operation | High |
| Ziqing Qiu | Govt. officer | External | Phone Email | Executive | Medium |
| Zeyu Ma | General MGR | Internal | Phone Email | Operation | High |
| Xi Chen | Bank | External | Phone Email | Executive | Medium |

Analyst Interview Questions

| ANALYST INTERVIEW QUESTIONS | | |
|--|-------------|--|
| Question | Stakeholder | Answer |
| Student | | |
| What features do you want to see for this app? | Linlin Han | Browse all available knowledge sharing events. Being able to register the |

| | | |
|---|------------|---|
| | | event. Have feedback and rating system. |
| Will you need to change the radius of a certain target in order to find more events? | Linlin Han | Yes |
| Do you need to support IOS, Android and WINDOWS mobile platforms? | Linlin Han | No. so far only desktop based is supported |
| How often do you use this app? | Linlin Han | Couple times a day. |
| If you need to cancel an event, do you want to inform all students via E-mail or phone? | Linlin Han | E-mail |
| If students quit one of your event, do you want to be informed via E-mail or phone? | Linlin Han | E-mail |
| Teachers | | |
| What features do you want to see for this app? | Linlin Fan | Being able to post knowledge sharing events. Income Tax report. Check feedback. |
| Are you willing to choose public place to teach like café or library? | Linlin Fan | Yes. |
| What is your expected percentage of deduction? | Linlin Fan | 30%. |
| Govt. officer | | |
| Is it legal to collect student and teacher's info? | Ziqing Qiu | Yes. |
| Does this income need reporting to CRA if the owner is individual? | Ziqing Qiu | Yes. It's better to calculate TAX form directly. |
| Do you need to trigger an alarm if this application notice something illegal (such as one person is order for arrest, expired emission test etc....)? | Ziqing Qiu | Yes. That will be helpful. |
| General MGR | | |
| What features do you want to see for this app? | Zeyu Ma | To engage more teachers and members by dynamic change deduction rates. During important festivals, can post promotions. |

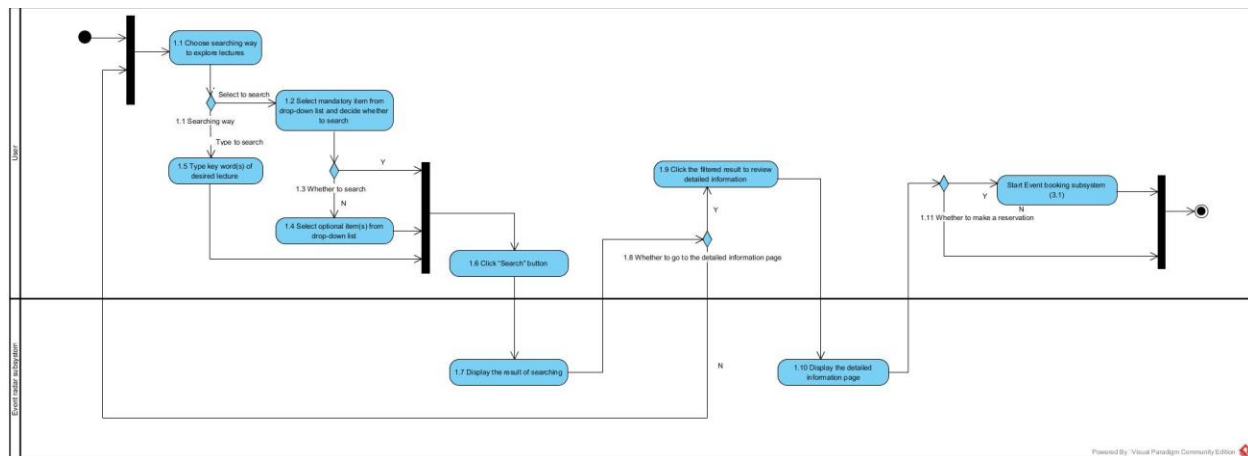
| BANK | | |
|--|---------|------|
| Will you open payment interface to this app? | Xi Chen | Yes. |
| Do you support other payment method like cheque or cash? | Xi Chen | Yes. |

Internal Meetings

| LAB AND OUT OF CLASS MEETINGS | | |
|-------------------------------|--|---|
| Date | Names Of Group Members -- Present | Work Activity |
| Sep 11, 2017 | Linlin Han Linlin Fan Ziqing Qiu | Creation of Vision Statement. Form question lists and define the scope. |
| Sep 14, 2017 | Linlin Han Linlin Fan Zeyu Ma Xi Chen Ziqing Qiu | Add two new members into group. Redefine subsystem and assign to each team member. Set weekly meeting on Monday. |
| Sep 18, 2017 | Linlin Han Linlin Fan Zeyu Ma Xi Chen Ziqing Qiu | Discuss workflow, review comments. Finalize chapter 1,2,and 3. |
| Sep 25, 2017 | Linlin Han Linlin Fan Zeyu Ma Xi Chen Ziqing Qiu | Review use case, assign part A domain class to each subsystem. |
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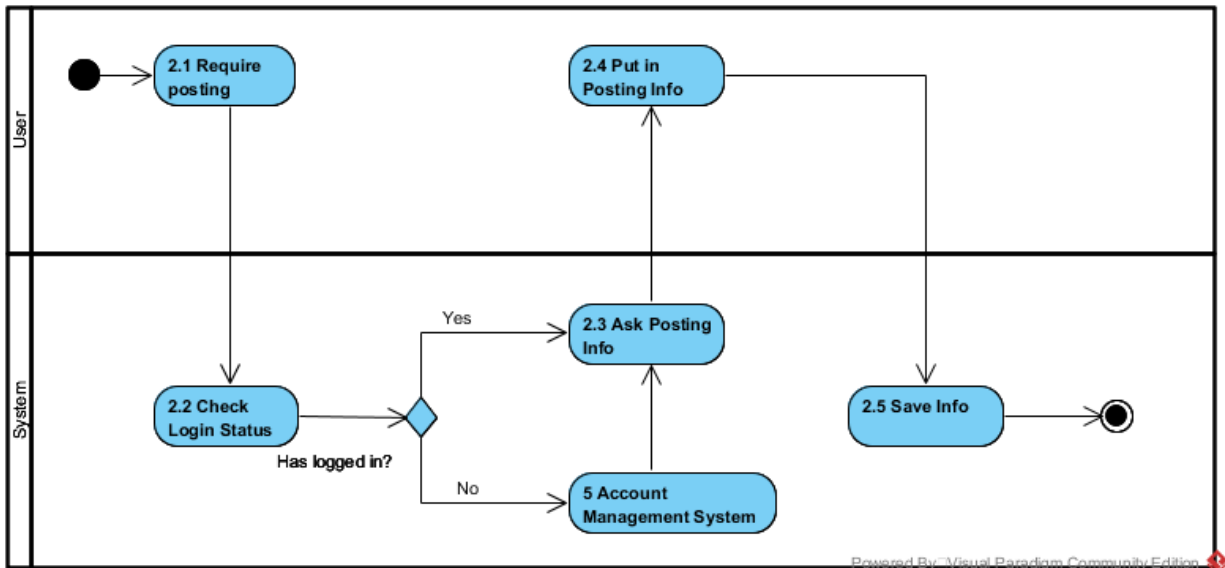
Workflows

1. Event radar subsystem



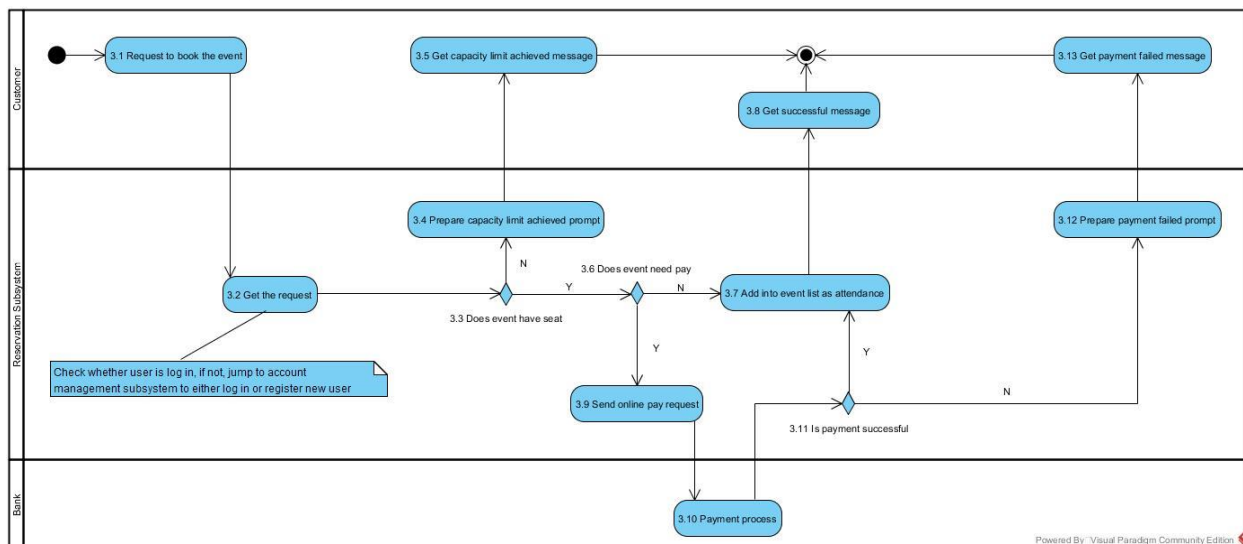
- 1.1. User chooses searching way to explore lectures
 - 1.1.1. If user chooses "Select to search", go to 1.2
 - 1.1.2. If user chooses "Type to search", go to 1.5
- 1.2. User selects mandatory item(s) from drop-down list
- 1.3. User decides whether to search
 - 1.3.1. If yes, go to 1.6
 - 1.3.2. If no, go to 1.4
- 1.4. User selects optional item(s) from drop-down list, and go to 1.6
- 1.5. User types key word(s) of desired lecture
- 1.6. User clicks "Search" button
- 1.7. Event radar subsystem displays the result of searching
- 1.8. User decides whether to go to the detailed information page, or to search again
 - 1.8.1. If user is satisfied with the result, go to 1.9
 - 1.8.2. If user is not satisfied with the result, go to 1.1
- 1.9. User clicks the filtered result to review detailed information
- 1.10. Event radar subsystem displays the detailed information page
- 1.11. User decides whether to make a reservation
 - 1.11.1. If yes, go to 3.1 Event booking subsystem
 - 1.11.2. If no, go to 1.13
- 1.12. End

2. Event posting subsystem



- 2.1. User requests to post advertisement
- 2.2. System checks login status
 - 2.2.1. If user logged in, go to 2.3
 - 2.2.2. If no, go to 5
- 2.3. System requests user put in course information
- 2.4. User puts in course information
- 2.5. System saves event information to event management subsystem
- 2.6. End

3. Event booking subsystem



- 3.1. User requests to reserve the event
- 3.2. Reservation subsystem receives the request message. Subsystem will verify whether user is login,

if not, jump to account management subsystem for user to either log in or register new account

3.3. Reservation subsystem checks whether the event's capacity limits reached

3.3.1. If the event has reached its maximum capacity, go to 3.4

3.3.2. If the event still has capacity, go to 3.6

3.4. Reservation subsystem prepares book failure message (reason: no capacity)

3.5. User gets reservation failure prompts and go to 3.14

3.6. Reservation subsystem checks whether the event need payment

3.6.1. If no, go to 3.7

3.6.2. If yes, go to 3.9

3.7. Reservation subsystem adds the reservation into user's event list

3.8. User gets reservation successful message with its detail information and go to 3.14

3.9. Reservation subsystem sends online payment request to bank

3.10. Bank verifies the payment and response to reservation subsystem

3.11. Reservation subsystem checks whether the payment is successful

3.11.1. If yes, go to 3.7

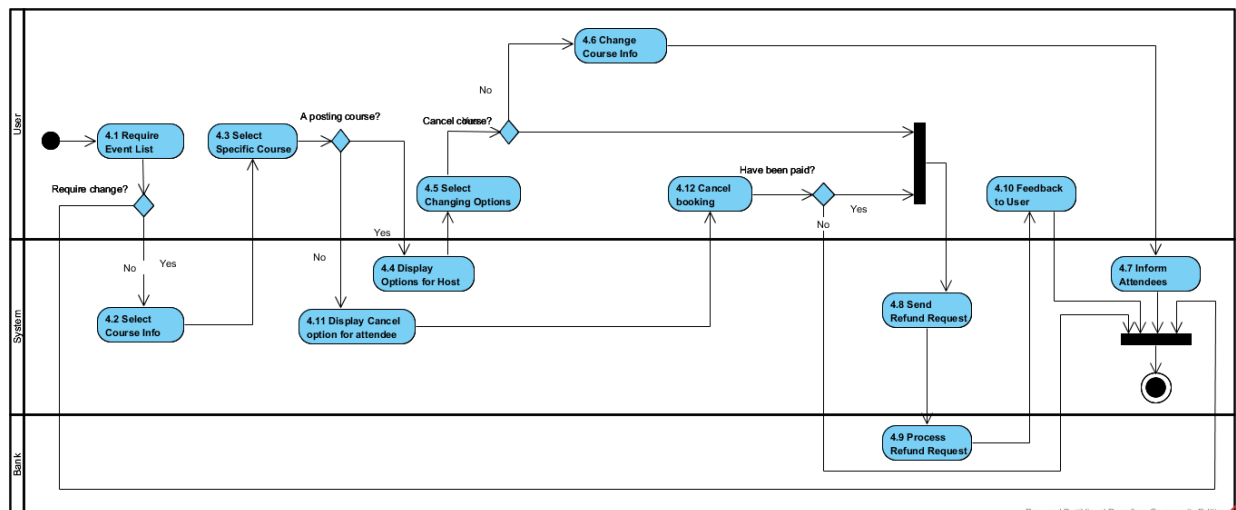
3.11.2. If no, go to 3.12

3.12. Reservation subsystem prepares book failure message (reason: payment fail)

3.13. User gets reservation failure prompt

3.14. Reservation workflow ends

4. Event management subsystem



4.1. User requests event list

4.2. System selects course information and display a courses list

4.3. User selects specific course that need to be changed

4.3.1 If it is a posting course, go to 4.4

4.3.2 If it is a getting course, go to 4.11

4.4. System displays changing options for host

4.5. Host selects changing options

4.5.1 If the user selects "Cancel Course", go to 4.8

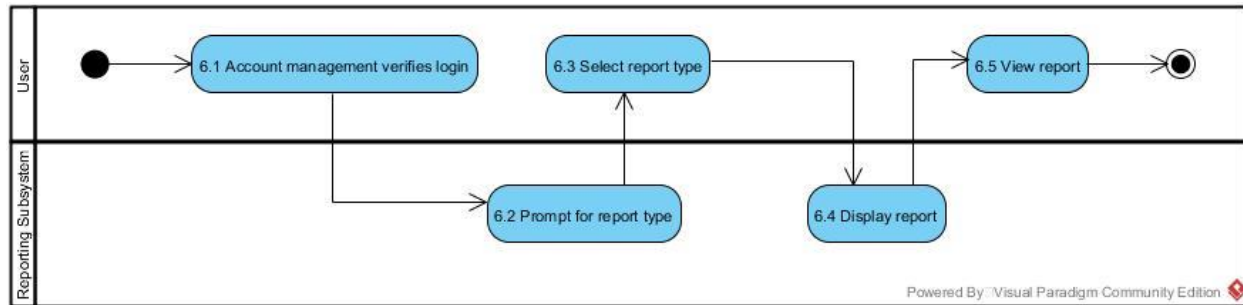
4.5.2 if the user not selects "Cancel Course" go to 4.6

4.6. Host changes course information

- ## 5. Account management subsystem

- 5.9. System upgrades user account to teacher account if he/she applied
 5.10. System saves user record, END

6. Report subsystem



- 6.1. User logs into system
 6.2. Reporting subsystem prompts user to select report type
 6.3. User selects the report type
 6.4. Reporting subsystem displays the result
 6.5. User views the report
 6.6. Report workflow ends

Use Case List

| No | Users' Roles/Actors | Goal Use Cases |
|----|---------------------|----------------------------------|
| 1 | Student | Browse filtered available events |
| | | Book a new event |
| | | Check all booked event |
| | | Quit an event |
| | | View report |
| | | Log into system |
| 2 | Teacher | Browse filtered available events |
| | | Post a new event |
| | | Book a new event |
| | | Check all booked event |
| | | Check all posted event |
| | | Update an event |
| | | Cancel an event |
| | | View report |
| | | Log into system |

| | | |
|---|--------------------|-----------------------|
| 3 | Government officer | Check teacher licence |
| 4 | General manager | View report |

Use Case Descriptions

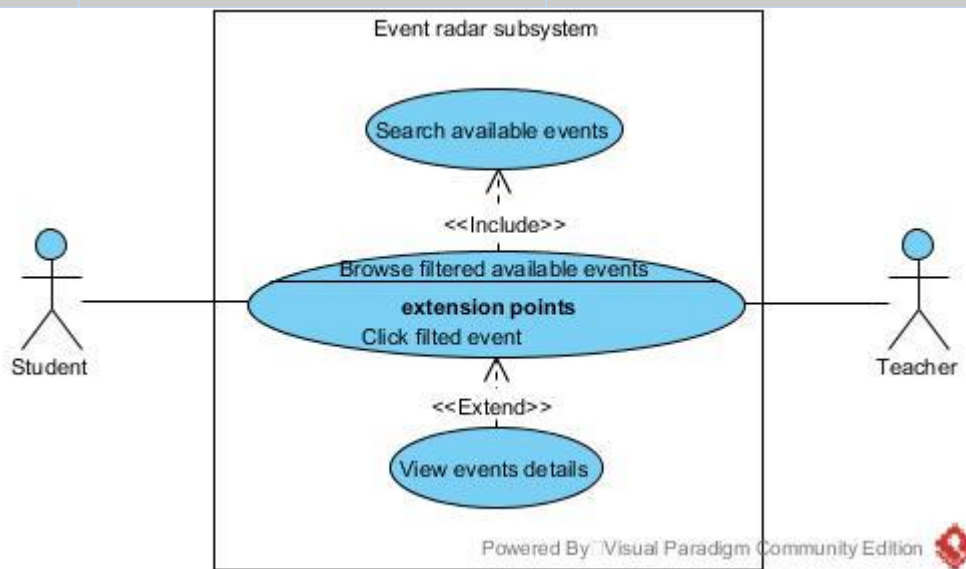
| No | Goal Use Cases | Use Case Descriptions |
|----|----------------------------------|---|
| 1 | Browse filtered available events | User types in desired keywords such as event type, location, distance, system filters out results and display the result |
| 2 | Book a new event | Student chooses one event, system prompts the event details, student pays the fee if needed, system sends confirmation email to student |
| 3 | Check all booked event | Student views all the registered event with time ,address, and teacher information |
| 4 | Check all posted event | Teacher views all the posted event with time ,address, and all enrolled student information |
| 5 | Quit an event | Student quit an event, system send confirmation to student and teacher. System update the current enrolled student information for this event |
| 6 | Cancel an event | Teacher cancel an event and send confirmation to all enrolled students |
| 7 | View report | User selects report type, system display the report |
| 8 | Post a new event | Teacher posts new event with time, address, capacity, event description |
| 9 | Update an event | Teacher updates the event information such as time, address, and capacity |
| 10 | Check teacher licence | Teacher uploads required documents or licence, government officer reviews the materials and approved the registration |
| 11 | Register new user | User fills all the required fields, system saves user record |
| 12 | Validate existing user login | System checks the validity of username and password |

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|----|---------------|---|
| 13 | Quit an event | Student quit an event and send confirmation to teacher. |
|----|---------------|---|

Use Case Diagram

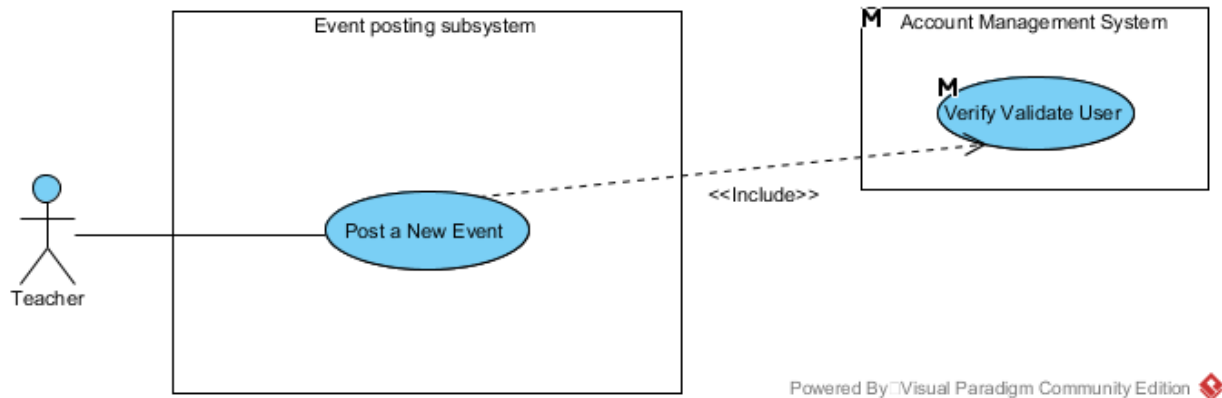
1. Event radar subsystem

| No | Goal Use Case | User Role/Actors |
|----|----------------------------------|------------------|
| 1 | Browse filtered available events | Student/Teacher |



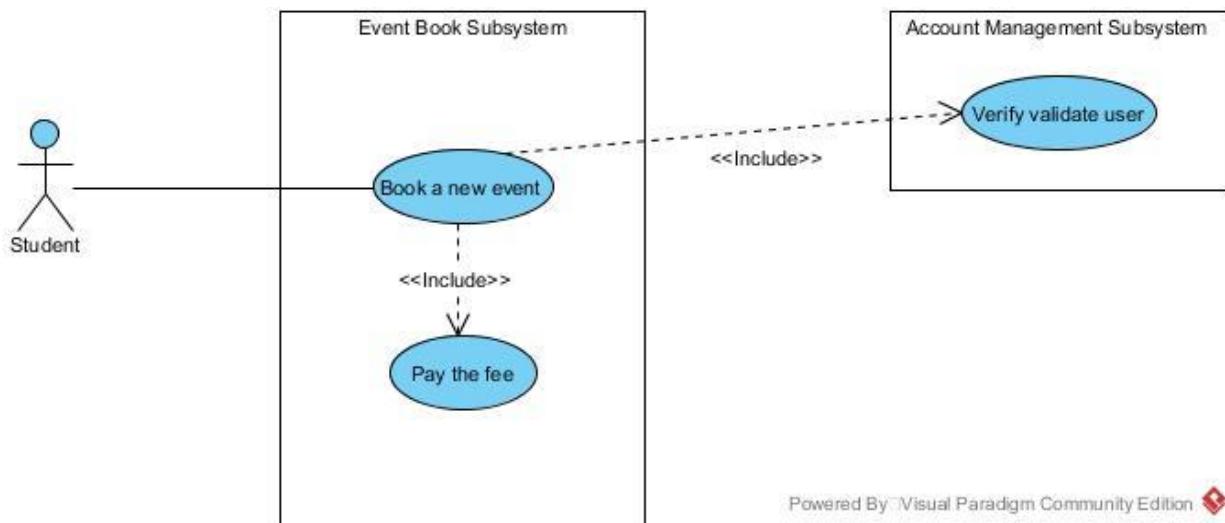
2. Event posting subsystem

| No | Goal Use Case | User Role/Actors |
|----|------------------|------------------|
| 1 | Post a new event | teacher |



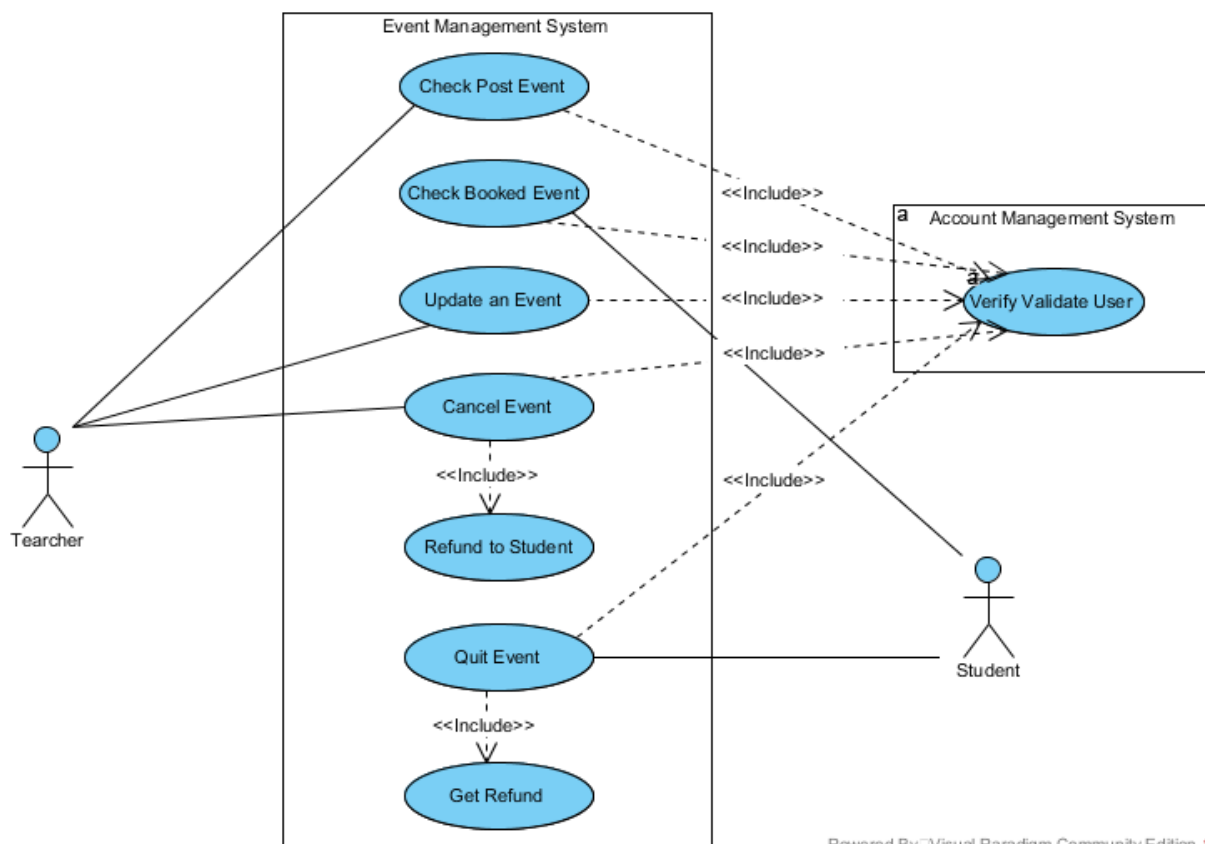
3. Event booking subsystem

| No | Goal Use Case | User Role/Actors |
|----|------------------|------------------|
| 1 | Book a new event | Student |



4. Event management subsystem

| No | Goal Use Case | User Role/Actors |
|----|-------------------------|------------------|
| 1 | Check all post events | Teacher |
| 2 | Check all booked events | Student |
| 3 | Update an event | Teacher |
| 4 | Cancel event | Teacher |
| 5 | Quit event | Student |

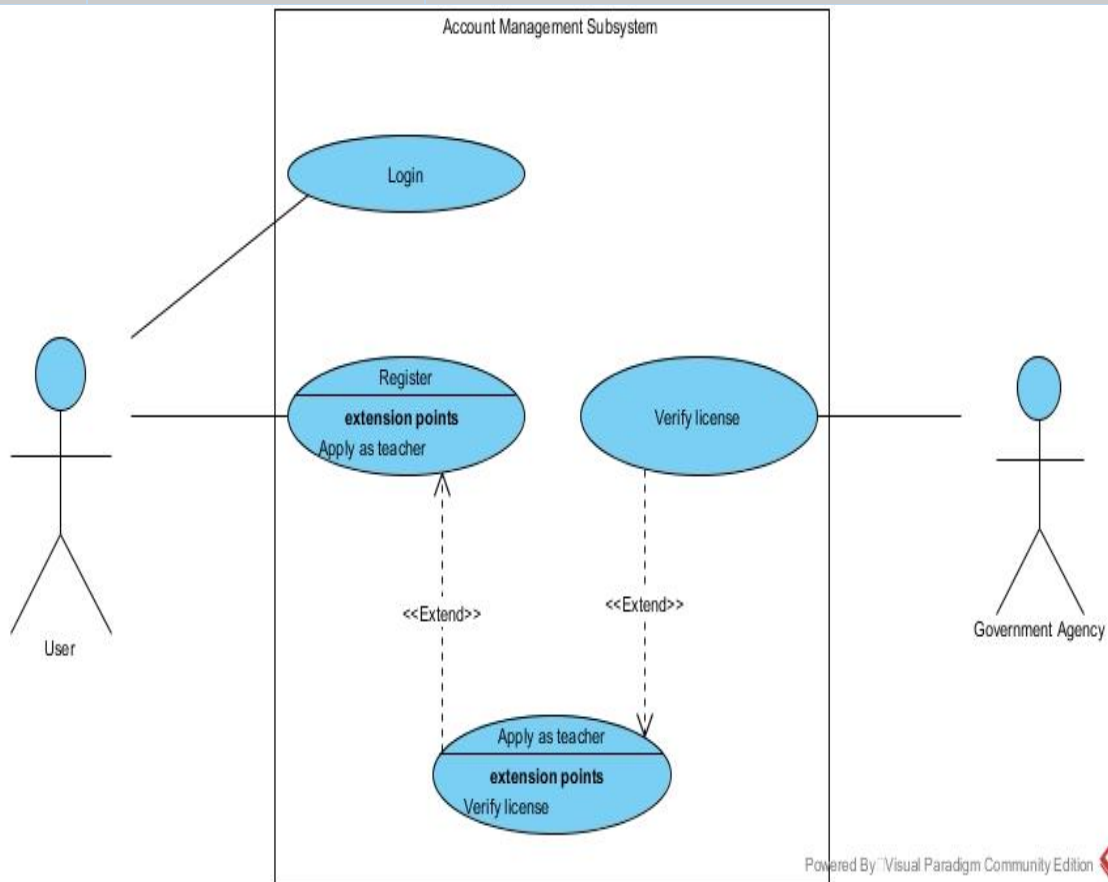


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5. Account management subsystem

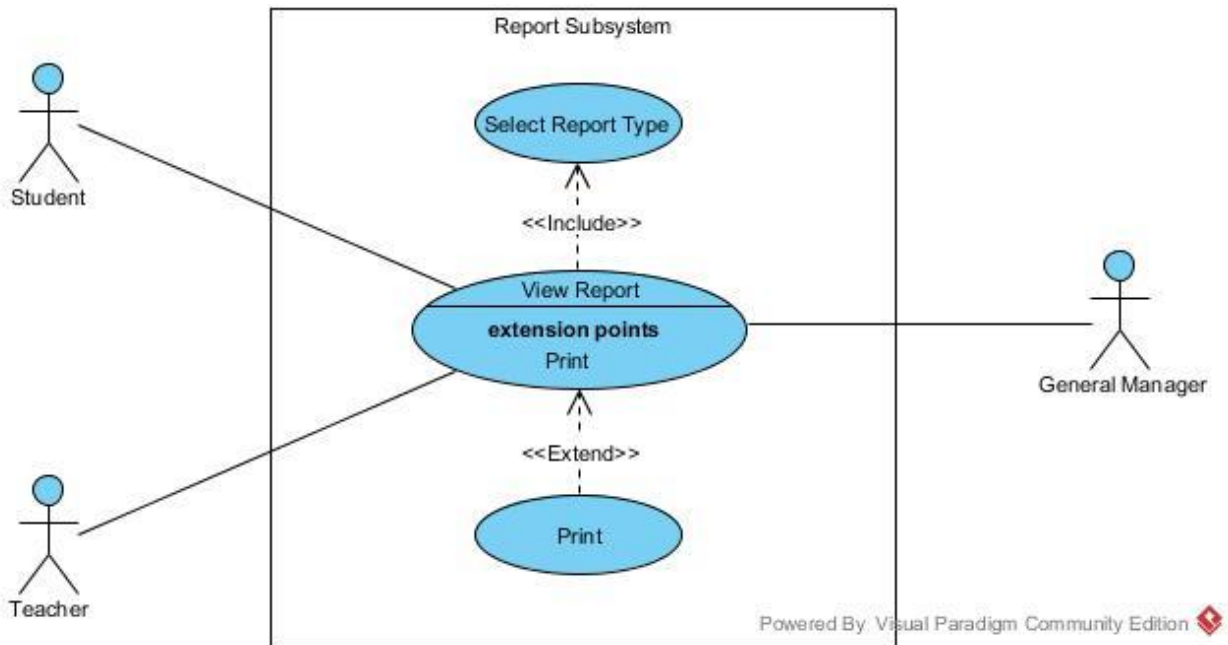
| No | Goal Use Case | User Role/Actors |
|----|---------------|------------------|
| 1 | Login | User |

| | | |
|---|------------------|-------------------|
| 2 | Register | User |
| 3 | Apply as teacher | User |
| 4 | Verify license | Government Agency |



6. Report subsystem

| No | Goal Use Case | User Role/Actors |
|----|---------------|-------------------------------|
| 1 | View report | User(teacher/student/Manager) |
| 2 | Print report | User(teacher/student/Manager) |



User Stories

Browse filtered available events

As a user (teacher/student), I want to search the available events based on the keywords I type or the categories I select.

1. A type area is necessary so I can type keywords to search
2. A select area is necessary so I can select option from dropdown list to search
3. After submitting the searching criterias, the filtered result should be displayed on the map page
4. A detailed page should be shown when I click the filtered result

| | |
|---------------------------|--|
| Use case name: | Browse an event. |
| Scenario: | Browse filtered available events. |
| Triggering event: | User wants to browse filtered available events. |
| Brief description: | User types in keywords or selects option from category dropdown list, and system filters out results and display the result. User clicks the filtered result, and the system displays the detailed page. |
| Actors: | Teacher, Student. |

| | | |
|------------------------------|---|--|
| Related use cases: | Log into the system, book an event. | |
| Stakeholders: | Teacher, Student, General Manager. | |
| Preconditions: | Web page that interacts with user must be available. Keywords user types in should be valid. | |
| Postconditions: | Filtered result should be displayed based on the value user types/selects. A detailed page should be displayed after user clicks filtered result. | |
| Flow of activities: | Actor | System |
| | 1.User types in keywords or selects option from category dropdown list, and click search button. 2.User clicks the filtered result to review detailed information. | 1.1 System displays the result of searching. 2.1 System displays the detailed information page. |
| Exception conditions: | 1.1 User types invalid keywords. 1.2 User omits the mandatory selecting items. | |

Update an event

As a teacher, I want to update an existing event's time and location information that was posted by me previously.

1. All previous posted events must pop up on the screen after choose update tab and verifies log in
2. Sort the events by nearest date
3. Indicate previous time and location information of a certain event
4. Send out confirmation emails to all students once finish the update

| | |
|-----------------------|---------------------------|
| Use case name: | Update an event. |
| Scenario: | Update an existing event. |

| | | |
|------------------------------|--|---|
| Triggering event: | Teacher wants to update an existing event. | |
| Brief description: | Teacher update an existing event posted by themselves with new time, location information. | |
| Actors: | Teacher. | |
| Related use cases: | View all posted events, cancel one event. | |
| Stakeholders: | Teacher, Student, General Manager. | |
| Preconditions: | Event management subsystem must be available. Teacher must pass account management subsystem to log in. | |
| Postconditions: | Event must be updated and saved. All students enrolled to this event must receive the update email. | |
| Flow of activities: | Actor | System |
| | 1. Teacher indicates desire to update an existing event 2. Teacher enters new time or location information | 1.1 System display all events posted by this teacher. 1.2 System prompts for teacher to choose one event that needs to be updated. 2.1 System updates the event. 2.2 System sends out event update email to all students enrolled to this event. |
| Exception conditions: | 1.1 Teacher does not have event 1.2 The time is invalid such as before today 1.3 The location is invalid such as street name | |

User log into system

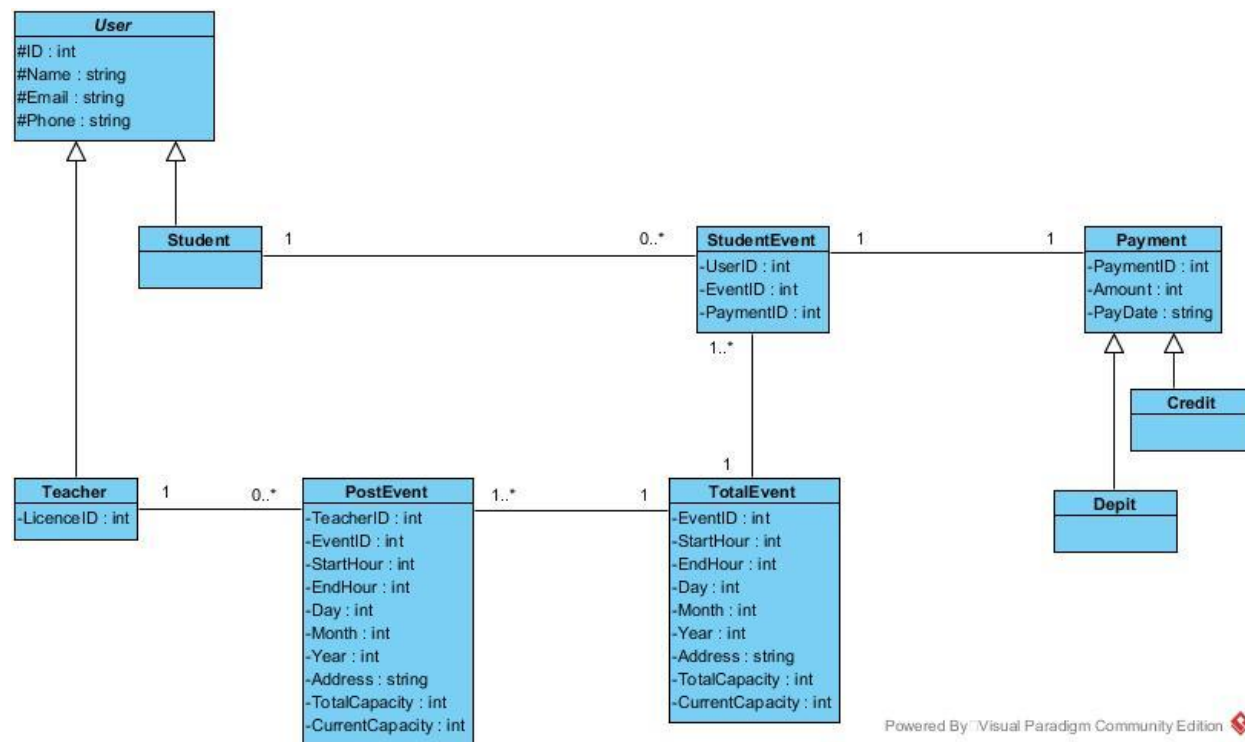
As an unauthenticated user, I would like to login as an authenticated user to browse and manage events.

1. Login to the system with username and password
2. Be allowed to recover forgotten username or password via email or text
3. Be allowed to recover forgotten username or password via safe questions
4. Be alerted about unusual activity about the account
5. Be able to request a reset of password

| | | |
|----------------------------|--|---|
| Use case name: | Log into the system | |
| Scenario: | Log into the system as an authenticated user | |
| Triggering event: | User wants to login | |
| Brief description: | User logs into the system to browse and manage events | |
| Actors: | User | |
| Related use cases: | Register | |
| Stakeholders: | Teacher & Student | |
| Preconditions: | User must be registered. System has a record of the user | |
| Postconditions: | User successfully login. User can access all the privileges of the account. | |
| Flow of activities: | Actor | System |
| | 1.User enters username and password 2.User wants to recover username or(and) password | 1.1 System verifies username and password 1.2 System checks the IP and device, alert user for unrecognized IP and device 2.1 System response through email, safe questions or any other security measures |

| | | |
|------------------------------|--|--|
| | 3.User request password reset | 3.1 System send reset link to user email |
| Exception conditions: | 1.1 Username or(and) password is invalid | |

Domain Class Diagram



Technology Tools

| Tools | Description |
|----------------------|-------------|
| HTML,CSS, Javascript | Interface |
| C#, Java, PHP | Logic |
| Sql developer | Data |
| | |

Project Plan [M]

| ID | Task Mode | Task Name | Duration | Start | Finish | Predecessors | Resource Names | 2017 |
|----|-----------|--|-----------------|-------------------|--------------------|--------------|---------------------------------------|------|
| 0 | | Neighbor Experts Project | 17 days? | Tue 17/9/5 | Mon 17/9/2 | | | 31 |
| 1 | | Part A: Requirement Analysis & Business | 17 days? | Tue 17/9/5 | Mon 17/9/25 | | | |
| 2 | | Define Project Scope | 2 days | Tue 17/9/5 | Wed 17/9/6 | | | |
| 3 | | Identify Problems | 0.5 days | Tue 17/9/5 | Tue 17/9/5 | | Project Director | |
| 4 | | Analyze the need | 0.5 days | Tue 17/9/5 | Tue 17/9/5 | 3 | Project Director | |
| 5 | | Develop the solution | 0.5 days | Wed 17/9/6 | Wed 17/9/6 | 4 | Project Manager | |
| 6 | | Map out subsystem | 0.5 days | Wed 17/9/6 | Wed 17/9/6 | 5 | Project Manager,Application Architect | |
| 7 | | Develop System Vision | 4 days | Thu 17/9/7 | Mon 17/9/12 | | | |
| 8 | | Analyze the problem | 1 day | Thu 17/9/7 | Thu 17/9/7 | 6 | Project Director | |
| 9 | | Draft system capabilities | 1 day | Fri 17/9/8 | Fri 17/9/8 | 8 | Application Architect,Project Manager | |
| 10 | | Outline business benefit | 0.5 days | Sat 17/9/9 | Sat 17/9/9 | 9 | Project Manager | |
| 11 | | Register stakeholders | 0.5 days | Sat 17/9/9 | Sat 17/9/9 | 10 | Stakeholders | |
| 12 | | Design potential interview questions | 1 day | Mon 17/9/11 | Mon 17/9/11 | 11 | Stakeholders | |
| 13 | | Develop Subsystem Workflow | 3 days | Thu 17/9/14 | Mon 17/9/18 | 7 | All group members | |
| 14 | | Hold group meeting | 1 day? | Tue 17/9/19 | Tue 17/9/19 | 13 | All group members | |
| 15 | | Develop Related Use Case | 4 days | Wed 17/9/20 | Sun 17/9/24 | 14 | All group members | |
| 16 | | Hold group meeting | 1 day? | Mon 17/9/25 | Mon 17/9/25 | 15 | All group members | |

Project: Neighbor Experts Project

Date: Wed 17/9/27

Task

Split

Milestone

Summary

Project Summary

Inactive Task

Inactive Milestone

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Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

External Tasks

External Milestone

Deadline

Progress

Manual Progress

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Page 1

