需求分析

项目：移动触摸板

背景：学校课堂中越来越多地使用多媒体平台进行教学，在这种教学模式中，如果教师上课过程中在讲台上走动或走下讲台与学生互动时，就会出现无法操作多媒体平台的情况，而目前最多采用的电子教鞭设备只有翻页和激光笔功能，过于简单。本项目旨在为这一问题提供一种基于手机应用的解决方案。

应用环境：安卓系统的手机，配备java虚拟机的计算机，校园网wifi覆盖的教室

需求描述：在wifi环境下用手机控制pc的鼠标，控制方式模仿笔记本触摸板，可以选择连接同一环境中不同IP的电脑，单指在屏幕上滑动可移动鼠标，双指一起滑动可以滚动滑条，手指轻击屏幕模拟左键单击，长按屏幕进入选中移动模式直至轻击结束，具有模拟鼠标左右的两个按键。

需求流程：

用户：使用多媒体平台教学的老师

前提：pc端服务程序已启动，手机已手动连接至同一wifi

1. connect server（pc）
2. single finger move
3. double finger move
4. click
5. longclick-shortclick
6. left button click
7. right button click

RUML分析

1. connect server(pc)
2. Use Case Name: Connect Server
3. Brief Description: User input the IP of the oriented pc, and click the button ”Reconnect”
4. Precondition: Oriented pc has connected wifi and start server program
5. Primary Actor: The teacher using this system
6. Secondary Actors: pc
7. Dependency: none
8. Generallization: this must be done to enable other process
9. BasicFlow:

<a>S:User click the button “Reconnect”.

P:The app has been awake.

<b>P:App connects with the IP in EditText.

S:The app has connected to the oriented IP.

1. single finger move
2. Use Case Name: Single Finger Move
3. Breif Description: User touch the screen of phone with a finger and move the finger to control the mouse of PC.
4. Precondition: The connection between mobile and PC has been built up.
5. Primary Actor: User’s finger
6. Secondary Actors: PC
7. Dependency: Relied on the connection between mobile and PC.
8. Generalization: none
9. Basic Flow:

<1>S: User touch the screen with single finger.

P:App ready to trace the move of the finger

<2>S:User’s finger move

P:App draw a smooth line according to the moving of finger and the mouse move following the finger.

<3>S:User’s finger leave the screen.

P:End this process and ready to start next process.

1. double finger move
2. Use Case Name: Double Finger Move
3. Brief Description: User touches the screen with two fingers and move the fingers to roll the page.
4. Precondition: The connection between mobile and PC has been built up.
5. Primary Actor: User
6. Secondary Actors: PC
7. Dependency: Relied on the connection between mobile and PC.
8. Generalization: none
9. Basic Flow:

<1>S: User touches the screen with two fingers.

P: The App is ready to trace the move of fingers.

<2>S: Both fingers move parallely.

P: The app draws lines following both fingers and the page on PC rolls according to the average position change of fingers in Y-direction.

<3>S:Both fingers leave the screen.

P:End the Process and ready to start next one.

1. Click
2. Use Case Name: Click
3. Brief Description: User click the screen to implement the function of a mouse click.
4. Precondition: The connection between mobile and PC has been built up.
5. Primary Actor: User
6. Secondary Actors: PC
7. Dependency: Relied on the connection between mobile and PC.
8. Generalization: none
9. Basic Flow:

Step: User click the screen.

Postcondition: the left key of mouse click.

1. longclick-shortclick
2. User Case Name: LongClick-ShortClick
3. Brief Description: User long click the screen to select an element on PC and move his/her (single) finger to move the element until he/she short click the screen.
4. Precondition: The connection between mobile and PC has been built up.
5. Primary Actor: User
6. Secondary Actors: PC
7. Dependency: Relied on the connection between mobile and PC; use case of ”Single Finger Move” and “Click”.
8. Generalization: none
9. Basic Flow:

<1>S:User long clicks the screen to select an element on PC.

P:The screen has changed color and the element of PC has been selected.

<2>S:User’s finger moves.

P:Following the finger, the app draws a line and the selected element moves.

<3>S:User clicks the screen.

P:The original color of screen has recovered and the element has been released.

1. left button click
2. Use Case Name: Left Button Click
3. Brief Description: User click the button at the left bottom of screen to implement the function of mouse’s left click.
4. Precondition: The connection between mobile and PC has been built up.
5. Primary Actor: User
6. Secondary Actors: PC
7. Dependency: Relied on the connection between mobile and PC.
8. Generalization: none
9. Basic Flow:

Step: User click the button at the left bottom of screen

Postcondition: the left key of mouse click.

7. right button click

(1) Use Case Name: Right Button Click

(2) Brief Description: User click the button at the right bottom of screen to implement the function of mouse’s right click.

(3) Precondition: The connection between mobile and PC has been built up.

(4) Primary Actor: User

(5) Secondary Actors: PC

1. Dependency: Relied on the connection between mobile and PC.
2. Generalization: none
3. Basic Flow:

Step: User click the button at the right bottom of screen

Postcondition: the right key of mouse click.