STUDENT ASSISTANCE SYSTEM BY CU LINK CARD

LYU1501 FINAL YEAR PROJECT DEMO

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# Outline

- Backend improvement
- Kiosk
- New Function to Android Application
- iOS application
- Demo
- Real world deployment

Backend improvement

- MySQLi
  - Avoid SQL injection
- Changes in database structure
  - Student without NFC-enabled smartphone
  - Kiosk
 - New table in database (Student card UID, temporary login code *[QR code]*)

The Kiosk

- ▶ **Use of Kiosk**
  - ▶ Serve users who do not have a NFC Android phone

- ▶ **How to use?**
  - ▶ User tap their CU Link on it
  - ▶ QR code generated and displayed on screen
  - ▶ Use mobile application to scan the QR code
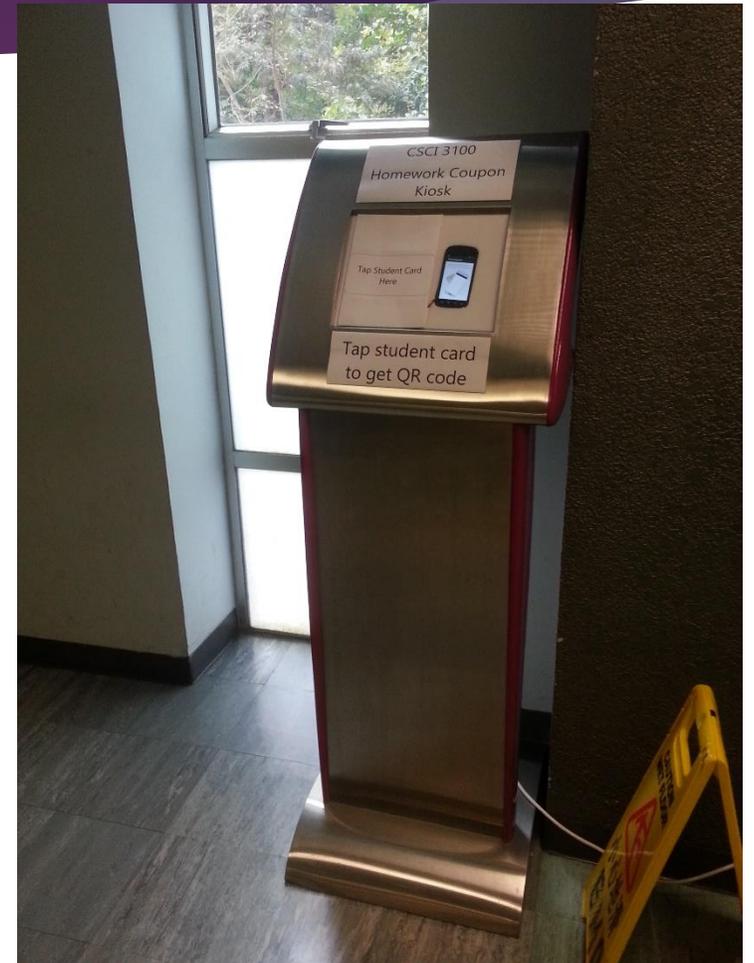
Design of kiosk

▶ Parts:

  ▶ Android Phone

  ▶ NFC Antenna

  ▶ Power Supply

Internet Connection

Wi-Fi

Android Phone

Copper Wire

NFC Antenna

USB Cable

Power Supply
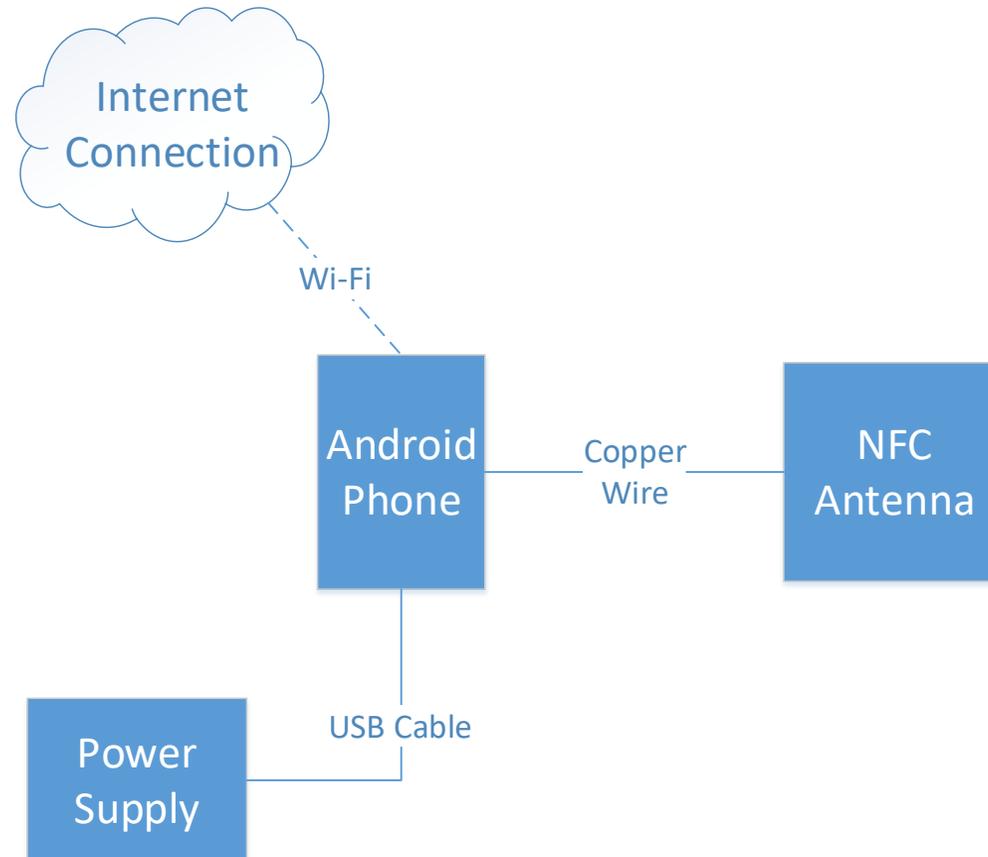
New Function of Android Application

- ▶ In semester 1, only NFC supported Android phone can use the app
  - ▶ For not supported phone, the app will be hided from Google Play

- ▶ View coupon by QR code
  - ▶ Work with QR code shown on kiosk
  - ▶ NFC supported phone could also use QR code to view coupon by options in menu

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Generate Temporary Login ID

Your temporary login QR code:

The temporary login QR code will be valid in 15 minutes time. Tap your card again to leave this page.

Work with QR code

- ZXing Barcode Scanner
  - Download from Google play

- How to use?
  - Click "scan QR code"
  - Scan QR code on kiosk
  - View your coupon

Barcode Scanner

ZXing Team   Shopping   ★ ★ ★ ★ ☆ 770,929 👤

3+

ⓘ This app is compatible with all of your devices.

🔖 Add to Wishlist   **Install**

Verification Code

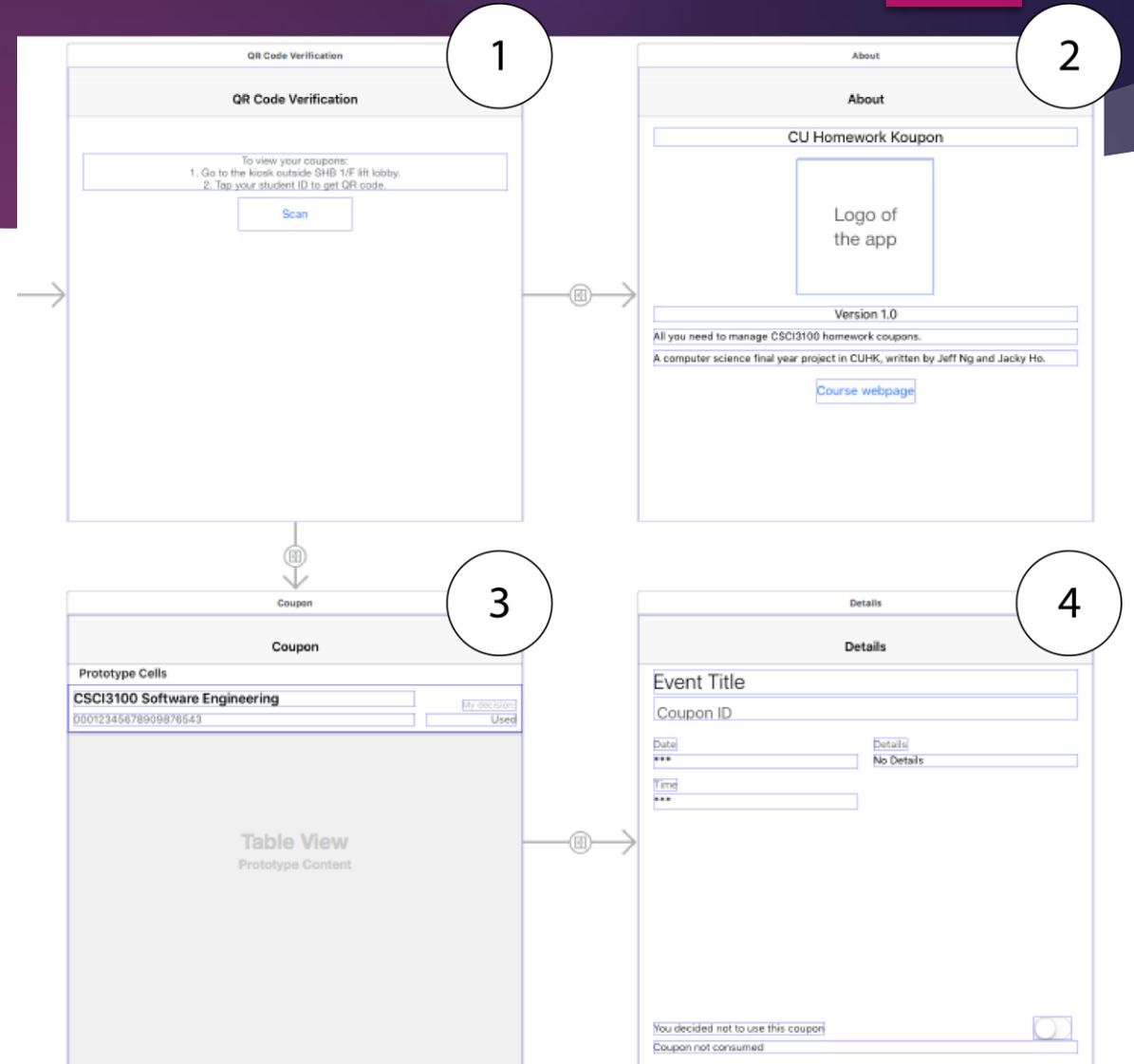Scan QR code on kiosk to view your coupons.

SCAN QR CODE

Detailed instructions:
1. Find the HW coupon kiosk outside SHB101.
2. Tap your student card to get the verification QR code.
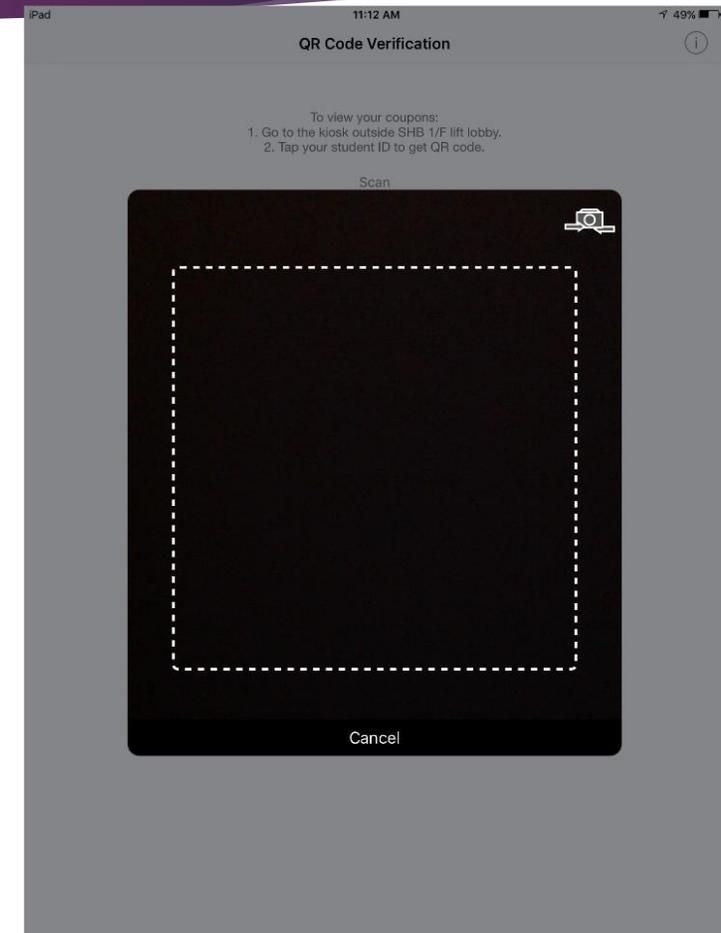Remark: You need to install Barcode Scanner to scan QR code

iOS application

▶ Similar with android application, without NFC function

iOS application

▶ Function:
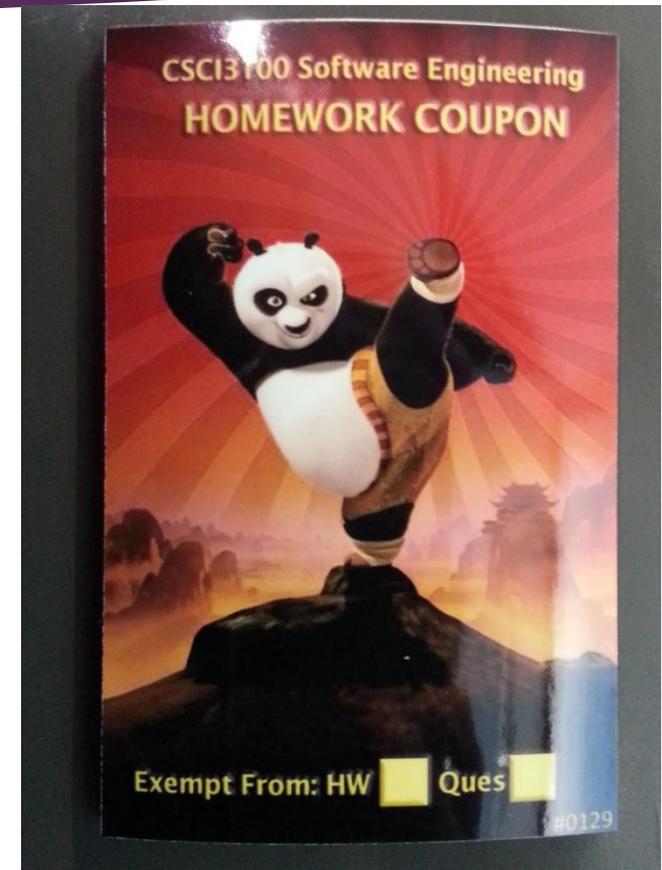- ▶ Scan QR code at kiosk
- ▶ Get list of coupons
- ▶ Decide want to consume or not

▶ Used frameworks to speed up development progress
- ▶ QRCodeReader.swift
- ▶ Ready to use template

Demo

Real world deployment

▶ Deploy in CSCI3100 in 2015/2016 term two

▶ Reasons why choose CSCI3100

   ▶ Second term course

   ▶ Homework coupon

   ▶ Large class (225 students)

▶ Course starts at 11/1/2016

Deployment Method

- ▶ App uploaded to Google Play
- ▶ Both physical coupon & virtual coupon
- ▶ Submit homework: clip physical coupon & write down virtual coupon code
- ▶ Tutors email us the code

CU Homework Koupon

OpenLobster Project   Tools

3+

ℹ This app is compatible with all of your devices.

⊞ Add to Wishlist   Install
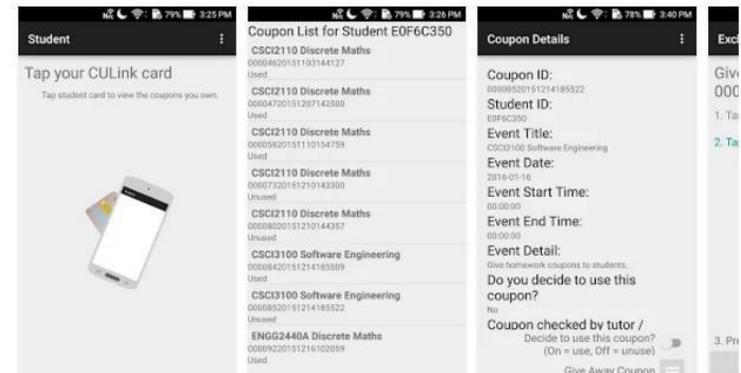
This is a final year project.
Some courses like CSCI3100 gives out "homework coupon" to motivate the interaction between student and teacher. Students can get a coupon if they answered some questions well during lesson. By using the "coupons", student could be exempted in answering some questions in the homework assignment.

READ MORE

Deployment Method

- Leaflet

- No system crash / application not responding errors (Google Play)

Project schedule

2/1/2016
SOFTWARE OF KIOSK CAN DISPLAY
TEMPORARY ID IN NUMBERS
(INSTEAD OF QR CODE)

3/12/2016
SOFTWARE OF KIOSK SUPPORTS QR CODE

4/5/2016
KIOSK READY AT SHB 1/F

3/3/2016
FINALIZING IOS APP

3/17/2016
IOS APP SUPPORTS SCANNING QR CODE

12/31/2015
FINALIZING ANDROID APP

5/6/2016
END OF COURSE CSCI3100

1/14/2016
ANDROID APP: VERSION 1.0

1/17/2016
ANDROID APP: VERSION 1.0.1

4/4/2016
ANDROID APP: VERSION 1.1

DECEMBER   JANUARY   FEBRUARY   MARCH   APRIL

Jan-16   Feb-16   Mar-16   Apr-16   May-16

December 1, 2015

May 7, 2016

1/11/2016
FIRST LESSON OF CSCI3100

4/20/2016
LAST LESSON OF CSCI3100

12/16/2015
CONFIRMATION OF DEPLOYING
THIS PROJECT IN COURSE CSCI3100

2/8/2016 - 2/16/2016
CHINESE NEW YEAR

5/3/2016
CSCI3100 EXAM
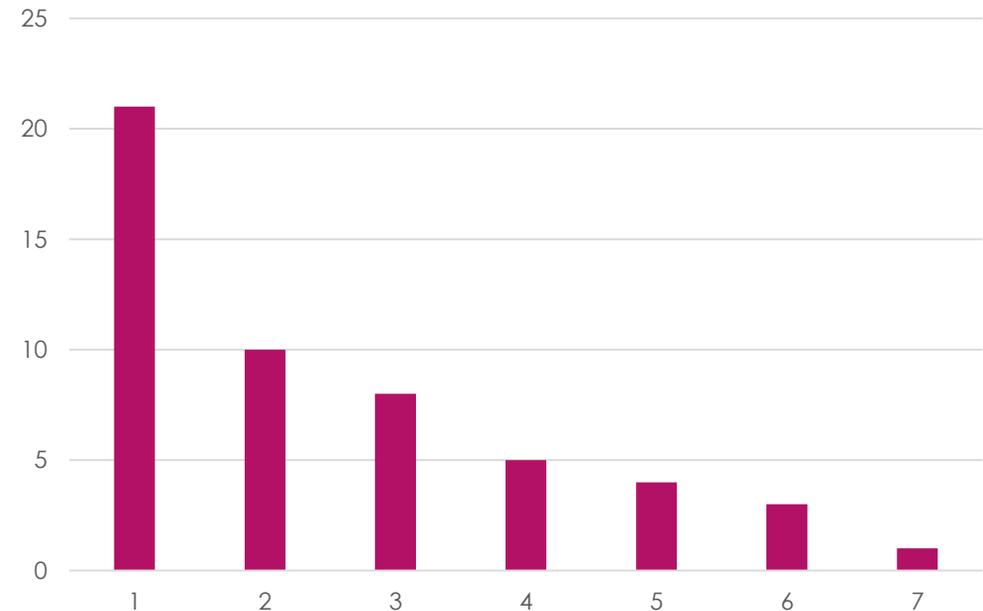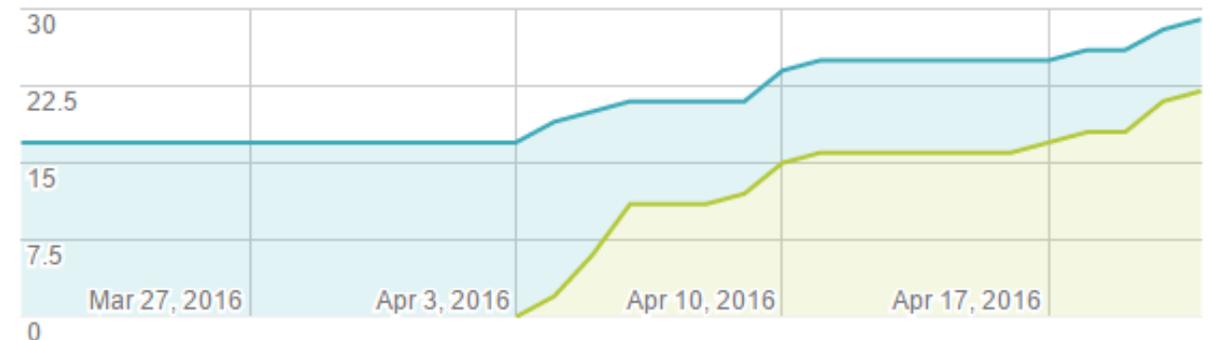
Statistics

- 130 coupons have been distributed during classes

- 52 students get at least one coupon
  - Max number of coupons got by one student: 7

Statistics

- ▶ There are 29 downloads for our application

  - ▶ 13% of the student have download the application

- ▶ Most of user (74%) have updated their application

TOTAL INSTALLS BY USER BY APP VERSION

Statistics

▶ 7 Coupons have been transited from one student to another student

fromStudentID	toStudentID	tranTIme	fromCouponID	couponID	eventID
2077B509	86BF544C	2016-04-19 12:31:46	11122620160418163148	11122620160419123146	17
56CA404C	76AF414C	2016-04-06 17:07:47	07618720160315121952	07618720160406170747	17
56CA404C	76AF414C	2016-04-06 17:07:30	06918020160314111922	06918020160406170730	17
56CA404C	76AF414C	2016-04-06 17:06:44	04515620160222112048	04515620160406170644	17
86F7634C	6098B409	2016-04-18 16:30:00	03114120160216120646	03114120160418163000	17
86F7634C	2077B509	2016-04-18 16:30:21	05716820160229112033	05716820160418163021	17
E67C854C	36AB4A4C	2016-04-18 12:04:45	06617720160307112136	06617720160418120445	17

Statistics

▶ 8 coupons is consumed

  ▶ One of the student have used 4 coupons

conponNo	studentID	couponID	eventID	remarks	used	checked	checkBy
112	2631F2FC	0021122016011212207	17	No remarks	1	1	D09B2E7B
116	26BB414C	0061162016011811759	17	No remarks	1	1	D09B2E7B
152	8607434C	0411522016022211209	17	No remarks	1	1	D09B2E7B
132	B0EEB509	0221322016020111204	17	No remarks	1	1	D09B2E7B
118	F039B309	0081182016011811827	17	No remarks	1	1	D09B2E7B
120	F039B309	0101202016011911946	17	No remarks	1	1	D09B2E7B
136	F039B309	0261362016020211906	17	No remarks	1	1	D09B2E7B
147	F039B309	0371472016021612025	17	No remarks	1	1	D09B2E7B

Statistics

▶ **45 different NFC cards have been tapped on the kiosk**

  ▶ While only 5 of the NFC cards contain coupons

count(DISTINCT couponID)	studentID
1	16CE634C
1	306CCD50
1	40C9137B
7	8607434C
1	CECC37EA

Q & A