THE CHINESE UNIVERSITY OF HONG KONG

Micro-Module Courseware Development Grant

Scheme 2: Studies in Foundation Courses

Final Report (2016-17)

Report due 30 April 2018
Please return by email to The Ad hoc Committee on Planning of eLearning Infrastructure
mmcd@cuhk.edu.hk

PART I

Project title: CUHK Trail Mobile Application Development

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Department / Unit: Physical Education Unit

Project duration: From May 2017 to April 2018

Date report submitted: 30 April 2018

1. Project objectives

The project is on track to meet its objectives and the objectives have not been changed.

The objectives are as follows:

➢ To promote physical activity participation for CUHK students

➢ To build a healthier life style through fitness activity for CUHK students

➢ To introduce and well utilize the newly established CUHK walking trails to all new students every year

2. Process, outcomes or deliverables

One micro-module was produced. A CUHK trail mobile application, an online teaching video of approximately 2 minutes and an e-booklet have been produced.

The micro-module developed has been used for both required and elective PE courses of different sports events in 2017-2018 term 2. From May to December of 2017 was a development phase for the micro module. The mobile application was ready for PEU's internal testing in mid-October. The scheduled trial phase was from October to December 2017. The teaching video and e-booklet were prepared at the same time. Both android and ios applications were ready and uploaded on to the "App Store" and "Play Store" at the end of January 2018. Thus the application was available for students' use and evaluation in 2017-18 term 2. PEU has collected feedback from students and teachers for further modifications and editing of the application at the early stage. The modified applications

for both android and ios were uploaded online again in the early February.

As a trial, 20 classes out of 163 classes (mainly the physical conditioning classes) were selected to use the micro-module. It was then promoted to all the required and elective PE courses of different sports events in term 2 of 2017-2018. It was expected that students can make good use of the mobile application, the online video and the instructional e-booklet to actively participate in brisk walking, jogging and hiking along the CU trails.

The nature of the deliverables has not been changed. Three major deliverables of the project are:
➢ A CUHK trail mobile application
➢ A teaching video which demonstrates how to use the app
➢ An e-booklet
For the details of the deliverables and courses that have used the micro modules, please refer to Part IV of this report.

Overall, the project was completed satisfactorily with very positive feedback received from both teachers and students.

3. Evaluation Plan

We have not altered our evaluation plans.
The micro-module developed has been used for both required and elective PE courses of different sports events, especially for the multiple sessions of physical conditioning course involved. Students were invited to complete a self-evaluation questionnaire on the use of mobile application and feedback was collected.

Findings

Survey

All users of CUHK trail application were invited to conduct an online evaluation survey from 9 to 20 April 2018. There were 601 responses received (65.4% female; 34.6% male; aged 18.9 ± 1.9 years old ranging from 17 to 48). The majority of the respondents (80.2%) reported they used the application more than 10 times, ranging from 1 to 137 times. About one-third of the respondents (31.1%) indicated that they will keep using this application. Table 1 displays that respondents showed positive feedback on the application regarding 1) Appeal/layout; 2) Engagement/motivation; 3) User friendly directions and instructions; 4) Performance/ease of use; 5) Customization of the route. The vast majority of the respondents (85.1%) were satisfied with the CUHK trail application.

144 responses from open-ended questions were received concerning the application design, layout, ease of use and the areas that should be retained. The majority of them reflected that the application design was good. They suggested that the indication of calorie burnt

and the route customization should be retained.

177 responses were received regarding the application design, layout, ease of use and the areas that need improvement. Some comments were received which included 1) the users should be able to save the customized route; 2) the bugs in the application should be improved as it stopped or did not work frequently in the initial stage of launching the application; 3) the GPS did not function well.

Table 1: Responses received related to six attributes of the CUHK trail application (n=601 respondents)

1. Appeal/Layout
Very appealing with excellent graphics (8.7%)
Appealing with good graphic (39.4%)
Limited appeal with average graphics (35.9%)
Very limited appeal with low quality graphics (7.8%)
Boring and unappealing (8.2%)
2. Engagement/Motivation
This app kept me highly motivated and engaged throughout my time with it. (11.1%)
This app kept me motivated and engaged most of the time. (28%)
Somewhat engaging, but lost motivation after a short time. (36.6%)
Barely motivated. (15%)
Boring. (9.3%)
3. User friendly directions & instructions
Very easy to learn and directions are clear and simple to follow. (19.6%)
Easy to learn and directions can be followed. (48.6%)
Kind of difficult to learn. Directions are limited.(19.5%)
Very complex to learn. No directions available. (5%)
Nothing I can do with this app! (7.3%)
4. Performance/Ease of use
Performs and loads quickly. No issue and very liable. (11.6%)
Performs and loads quickly. Some minor technical issues. (43.1%)
Loads and performs slowly. Sometimes crashes. (28.3%)
Crashes fairly often and takes multiple times to open. (10.8%)
Won't open. Won't run. Filled with bugs. (6.2%)
5. Customization of the route
I can customize the route for myself. (44.1%)
Some customization of the route. (25.6%)
Little customization of the route. (17.5%)
No customization of the route. (5.8%)
Disappointing (7%)

6. Overall satisfaction of the CU TRAIL app
Very satisfied (7.7%)
Satisfied (37.3%)
Acceptable (40.1%)
Unsatisfied (9.8%)
Very unsatisfied (5.2%)

Focus group

Thirty students (15 males and 15 females) from ten required Physical Education classes (4 squash classes, 3 tennis classes, 2 squash classes and 1 physical conditioning class) were invited to be interviewees in focus group from 16 to 19 April 2018. Students agreed that the application can promote physical activity participation to CUHK students and encouraged them to establish a healthy lifestyle. They also agreed that the CU trail application should be introduced to all new students every year as they could benefit from unitizing the different walking trails and enjoy brisk walking on the CUHK campus. They also pointed out that there were bugs in the initial stage of launching the application but the bugs were fixed after updating.

4. Dissemination, diffusion and impact

Dissemination

The CUHK trail mobile application, the teaching video and the e-booklet have been put on the webpage of PE Unit and can be accessed with CUHK student or staff accounts. Teachers could play the video during the lessons or post the mobile application and video link on Blackboard for students' to download them for self-practice.

(Please Use Internet Explorer to open the links)
To access the mobile application, teaching video and the e-booklet, students can click "CU Trails App", which is on the page of "PE Courses" on PE Unit website with the following URLs:
i) http://www.peu.cuhk.edu.hk/zh-tw/pe-courses/cu-trails-app (Chi)
ii) http://www.peu.cuhk.edu.hk/en-gb/pe-courses/cu-trails-app (Eng)

Diffusion

As a trial, 20 classes out of 163 classes (mainly the physical conditioning classes) were selected to use the micro-module. It was then promoted to all the required and elective PE courses of different sports events in term 2 of 2017-2018. Since Required Physical Education course is one of the University core courses, applying the micro-module to both required and elective PE courses means that nearly all undergraduate students will be included in this project.

Impact

Self-directed learning and life-long exercise were promoted via the CUHK trail application since students can conduct self-practice and self-evaluation beyond class. Students can make good use of the application to participate in brisk walking, jogging and hiking along CUHK walking trails. The trail routes are divided into several levels based on its distance and difficulty to meet the needs of different students.

This project can be viewed as a pilot study to assess the usability and acceptability of a mobile application designed to promote self-directed learning and life-long exercise. This can also serve as a reference for PEU and other departments/units.

PART II

Financial data

Funds available:

Funds awarded from MMCDG $ 100,000

Funds secured from other sources $
(please specify_____)

Total: $ 100,000

Expenditure:

Item	Budget as per application	Expenditure	Balance
a) Student Helpers	2,750	2,997.5	(247.5)
b) Production cost of the mobile app (Outsourcing service of app development company)	70,300	72,500*	(2,200)
c) Virtual Machine hosting & maintenance (ITSC)	13,750	21,451	(7,701)
d) App Maintenance (Outsourcing Company)	10,550	0	10,550
e) Booklet publishing	1,650	0	1,650
f) Printing, Stationery & Supplies	1,000	1,000	0
g) One year Hong Kong Post e-Cert (server) with "Multi-domain" feature for cuhktrail.peu.cuhk.edu.hk	-	1,280	(1,280)
Total:	100,000	99,228.5	771.5

Awaiting the invoice to confirm the estimated expenditure

Lessons learnt from the project

Key success factors

Since the deliverables of the project (i.e. the mobile application, the online video and the e-booklet) are online materials, it is easy for students to access them.

In addition, the entire delivery approach of the mobile application, e.g. the user-centric personalization allows users to set their preferences of sports type, trails, location, etc., which has greatly motivated them to engage in physical exercise. The application also monitors their own progress and fitness level locally on their device which is critical for users to retrieve their data for further improvement. The application has actually made their exercise experience delightful. The following collected data has showed the frequency on the usage of mobile application:

Total apps downloaded (Android+iOS):	2243
Total activated users:	2142
Total no. of users used the apps at least once:	1394
Total no. of users did exercises at least 5 weeks:	887

(As of 10 April 2018)

Difficulties encountered and remedial actions taken

We did not have a team of professional video shooting crew to record the video. So we had to recruit a student helper to do so. Furthermore, PE Unit had to communicate frequently between the mobile application company and the Information Technology Services Centre (ITSC) in developing the CU trail application which was quite time-consuming. The time consumed on application procedure for virtual server and verification of students' data from ITSC was longer than our expectation. The schedule was thus rather tight in launching the testing application. It was believed that the micro-module could be produced earlier and better with a better planning on the schedule next time.

Role of other units in providing support

We have sought the assistance from ITSC in providing a virtual server, verification of students' data, restricting access to the online teaching video to CUHK students and staff only, and applying for uploading both the android and ios applications on to the "App Store" and "Play Store", etc.

Suggestions to CUHK

➢ Increasing funding support

The initial funding of $100,000 was insufficient to carry out the micro module as a total of 250,000 was needed in mobile application production, data collection, etc. Although PE Unit has incorporated a research project into the eLeanring project to support the costs, extra

funding support was required from the PE Unit for costs on maintenance and further enhancement in the future.

PART IV
Information for public access

1. Keywords
Please provide five keywords (in the order of most relevant to your project to least relevant) to describe your micro-modules/pedagogies adopted.

(Most relevant)   Keyword 1: Physical activity

                        Keyword 2: Walking trails

                        Keyword 3: Fitness

                        Keyword 4: Psychological wellbeing

(Least relevant)   Keyword 5: Self-directed learning

2. Summary
Please provide information, if any, in the following tables, and provide the details in Part I.

Table 1: Publicly accessible online resources (if any)
(a) **Project website:** N/A
(b) **Webpage(s):** **(Please Use Internet Explorer to open the links)** To access the mobile application, teaching video and the e-booklet, students can click "CU Trails App", which is on the page of "PE Courses" on PE Unit website with the following URLs: i) http://www.peu.cuhk.edu.hk/zh-tw/pe-courses/cu-trails-app (Chi) ii) http://www.peu.cuhk.edu.hk/en-gb/pe-courses/cu-trails-app (Eng)
(c) **Tools / Services:** N/A
(d) **Pedagogical Uses:** Teachers would explain and demonstrate the required skills in class. Students could extend their learning out of class by using the skills learnt in classes, watching the online video and using the mobile application themselves. The URLs of video and e-booklet have been uploaded to the PE Unit website and blackboard for students' self-learning. By using the application, we can get students to do brisk walking, jogging and hiking regularly and to establish the habit of regular exercise and a healthy life style.
(c) **Others (please specify):** N/A

Table 2: Resources accessible to a target group of students (if any)

If resources (e.g. software) have been developed for a target group of students (e.g. in a course, in a department) to gain access through specific platforms (e.g. Blackboard, facebook), please specify.

Course Code/ Target Students	Term & Year of offering	Approximate No. of students	Platform
All undergraduate students taking Physical Education courses (includes required and elective PE courses)[Note 1]	2nd Term 2017-18 onwards*	20-28 students	PE Unit website and Blackboard

Note 1: These students were mainly Year 1 students though there are some senior year students as all CUHK undergraduates are required to take Physical Education courses within their first study year.

* A total of 163 classes were selected to use the micro-module. In other words, 3901 students who had taken PHED courses had used the micro-module in term 2 of 2017-2018.

Course Code	Course Title
PHED1011/1012	Track & Field (Men/Women)
PHED1017/1018	Physical Conditioning (Men/Women)
PHED1021/1022	Basketball (Men/Women)
PHED1023/1024	Volleyball (Men/Women)
PHED1025/1026	Softball (Men/Women)
PHED1027/1028	Team Handball (Men/Women)
PHED1029/1038	Soccer (Men/Women)
PHED1030	Special P.E.
PHED1031/1032	Tennis (Men/Women)
PHED1033/1034	Squash (Men/Women)
PHED1040	Woodball (Mixed)
PHED1041/1042	Badminton (Men/Women)
PHED1043/1044/1140	Table Tennis (Men/Women)
PHED1046	Yoga (Women)
PHED1122	Taekwondo (Mixed)
PHED1130	Modern Dance (Mixed)
PHED1066X	Yoga (Women)
PHED1070X	Archery (Mixed)
PHED1110X	Tai Chi (Mixed)
PHED1120X	Taekwondo (Mixed)
PHED2060X	Intermediate Table Tennis (Mixed)

Table 3: Presentation (if any)	
Please classify each of the (oral/poster) presentations into one and only one of the following categories	**Number**
(a) In workshop/retreat within your unit (e.g. department, faculty)	*0*
(b) In workshop/retreat organized for CUHK teachers (e.g. CLEAR workshop, workshop organized by other CUHK units)	*0*
(c) In CUHK ExPo jointly organized by CLEAR and ITSC	*0*
(d) In any other event held in HK (e.g. UGC symposium, talks delivered to units of other institutions)	*0*
(e) In international conference	*0*
(f) Others (please specify)	*0*

Table 4: Publication (if any)	
Please classify each piece of publication into one and only one of the following categories	**Number**
(a) Project CD/DVD	*0*
(b) Project leaflet	*0*
(c) Project booklet	*1*
(d) A section/chapter in a booklet/ book distributed to a limited group of audience	*0*
(e) Conference proceeding	*0*
(f) A chapter in a book accessible internationally	*0*
(g) A paper in a referred journal	*0*
(h) Others (please specify)	*0*

3. A one-page brief write up

Please provide a one-page brief write-up of no more than 500 words and a short video.

As to promote physical activity participation and to establish a healthier lifestyle for CUHK students through brisk walking, jogging and hiking, a CUHK trail mobile application was devised for students to well utilize the newly established CUHK walking trails. This mobile application together with a teaching video and an instructional e-booklet were introduced to all the students during their Required and Elective Physical Education (PE) courses of different sports events, especially for the physical conditioning course in 2017-18 term 2.

Target students:	All undergraduate students taking Physical Education courses (includes required and elective PE courses)[Note 1]
Term & Year of offering:	2nd Term 2017-18 onwards
Estimated class size:	20-28 students
Platform:	PE Unit website and Blackboard

Note 1: These students were mainly Year 1 students though there are some senior year students as all CUHK undergraduates are required to take Physical Education courses within their first study year.

Besides, self-directed learning and life-long exercise was promoted via the CUHK trail application since students can conduct self-practice and self-evaluation beyond class. They can monitor their own progress and fitness level, as well as set individual target by using the personal fitness activity log. An award on participation marks in required and/or elective PE course was provided to motivate the students to use the application more frequently. It is expected that students can perform self-learning by making good use of the online video, the mobile application and e-booklet before and after class.

MMCD Output
One micro-module was produced. A mobile application, an online teaching video and an e-booklet have been produced.

(Please Use Internet Explorer to open the links)
1) The CU trail mobile application
    i) http://www.peu.cuhk.edu.hk/zh-tw/pe-courses/cu-trails-app (Chi)
    ii) http://www.peu.cuhk.edu.hk/en-gb/pe-courses/cu-trails-app (Eng)

2) The e-booklet
    http://www.peu.cuhk.edu.hk/images/content/pe-specials/cutrails_project/instructional_guide_for_cu_trails_app_rev_20180122.pdf
    Please refer to Appendix I for the instructional guide for CU trail app

3) A short video for the project
    https://www.cuhk.edu.hk/peu/restricted/login/cuhk_trail_app/%2000_cuhk_trail_apps_intro.htm

Evaluation
Both student surveys and focus-group interview were conducted to assess the effectiveness of the micro-module. In conclusion, responses received from students are positive. The vast majority of the participants agreed that the micro-module would motivate them to actively participate in physical activities.

Appendix I: Instructional Guide for CU Trail App

Instructional Guide for CU Trails App
中大健行手機應用程式使用指南

Step 1:

步驟 1:

Search & download "CU Trails" app from Google Play Store or iOS App Store

請使用 谷歌 Play 商店 或 iOS 應用商店 搜尋並下載 "CU Trails" 應用程式。
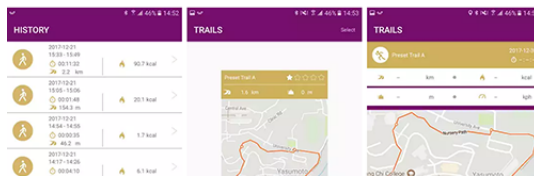
Google Play Store

谷歌 Play 商店
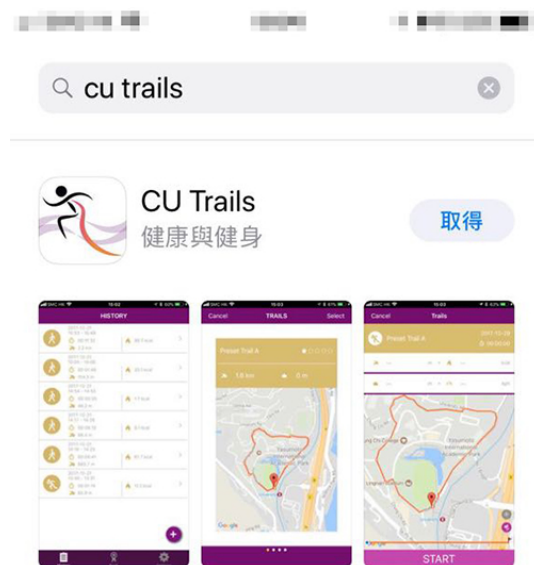
iOS App Store

iOS 應用商店

Step 2:
步驟 2:

Please click into the app , choose language and do the set up

進入應用程式 後，請選擇語言，再進行設置。

CUHK

香 港 中 文 大 學
The Chinese University of Hong Kong

學生 / 職員

Physical
Education Unit

English

Step 3:
步驟 3:

- ➢ Please type your name and email address
  請輸入姓名及電郵地址
- ➢ Agree the disclaimer
  同意免責聲明
- ➢ Click "SEND"
  點擊"發送"

註冊

請輸入名字

名字

請輸入電郵地址

電郵地址

學生請使用域名為@link.cuhk.edu.hk的電郵地址
職員請使用域名為@cuhk.edu.hk的電郵地址

免責聲明

It is important to us that athletes stay healthy and injury free while training. Physical Education Unit of CUHK provides the application "CU Trails" for information purposes only, and cannot be held liable if the users get injured or something goes wrong. The users should be responsible and use your best judgment and common sense. In particular, the contents of the application "CU Trails", regardless whether they are provided by Physical Education Unit

☐ 我同意上述聲明

發送

REGISTRATION

Enter Your Name

Name

Enter Your Email

E-mail

For student, use email with domain @link.cuhk.edu.hk
For staff, use email with domain @cuhk.edu.hk

Disclaimer

It is important to us that athletes stay healthy and injury free while training. Physical Education Unit of CUHK provides the application "CU Trails" for information purposes only, and cannot be held liable if the users get injured or something goes wrong. The users should be responsible and use your best judgment and common sense. In particular, the contents of the application "CU Trails", regardless whether they are provided by Physical Education Unit

☐ I agree to the above disclaimer.

SEND

Step 4:
步驟 4:

- ➢ You will receive an activation code
  你將會收到啟動碼
- ➢ Please enter the code in the space provided
  請於空格中輸入啟動碼
- ➢ Click "ACTIVATE"
  點擊"啟動"
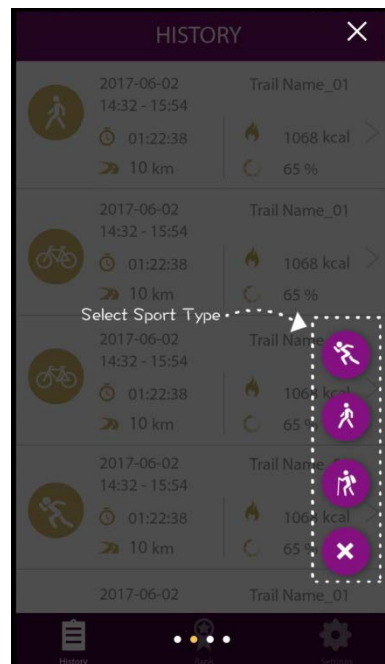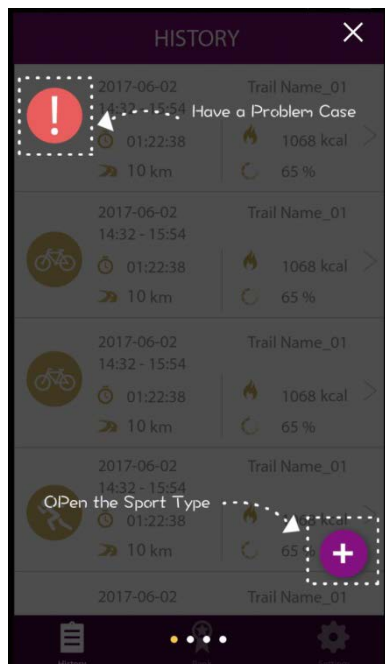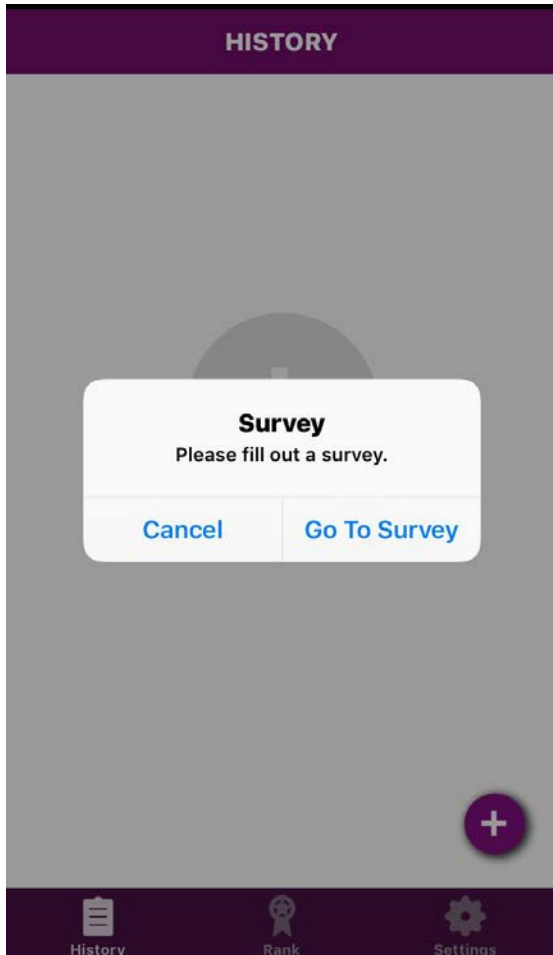
Step 5:
步驟 5:

- ➢ You will see a starter demonstration
  畫面將顯示初次登入的操作示範
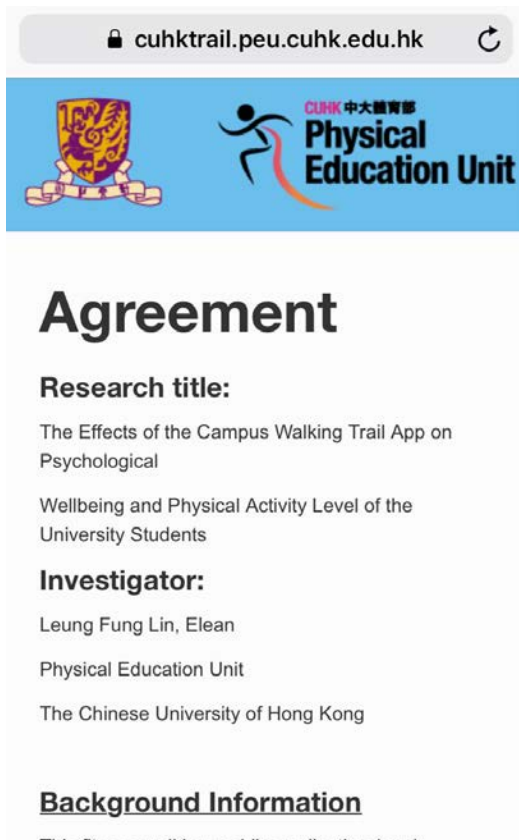- ➢ Please read and follow the instructions
  請細閱及跟隨指示
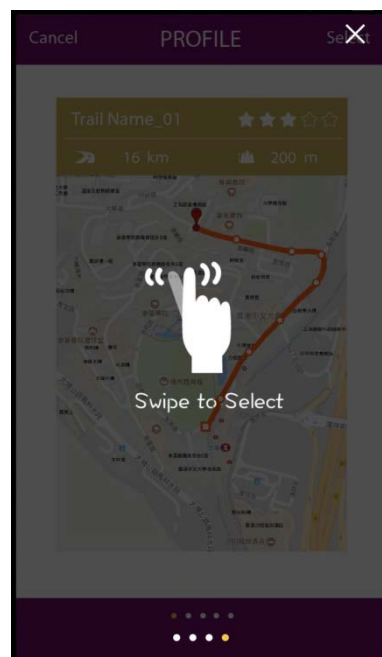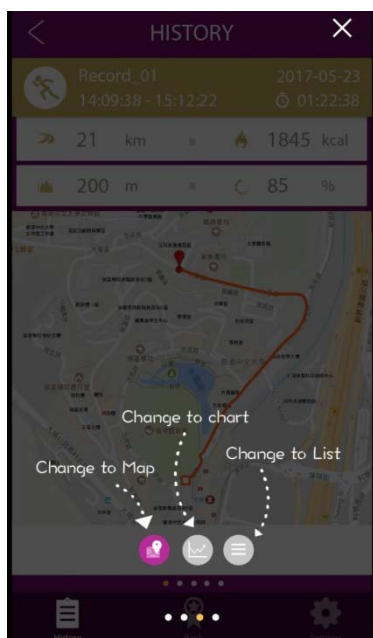
Step 6:
步驟 6:

> ➢ You will be invited to fill out the survey
>   用戶將獲邀請填寫問卷
> ➢ Please proceed by clicking "Go To Survey"
>   請點擊 "前往問卷"

Step 7:

步驟 7:

- ➤ Please fill in the questionnaire accordingly
  請跟隨指示填寫問卷
- ➤ Accept the invitation
  請接受邀請
- ➤ Click "Agree" if you would like to join the survey
  如選擇參與問卷調查，請點擊"同意"
- ➤ Please click "Submit" after completion
  完成問卷後，請點擊"提交"

Step 8:
步驟 8:

> ➤ Start to use the app
> 開始使用應用程式
> ➤ Click "+"
> 點擊 "+"

記錄	HISTORY
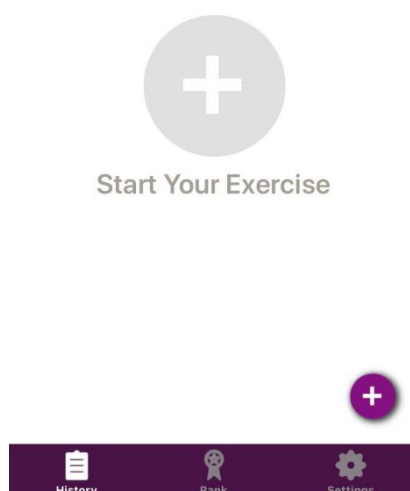
> ➤ Choose the exercise mode
> 選擇運動模式
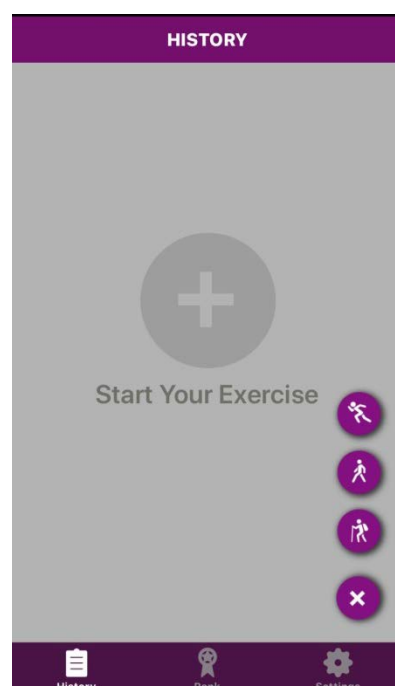
➢ Choose the route designed by the app or customize your own route
選擇程式提供的路線或自行設定路線

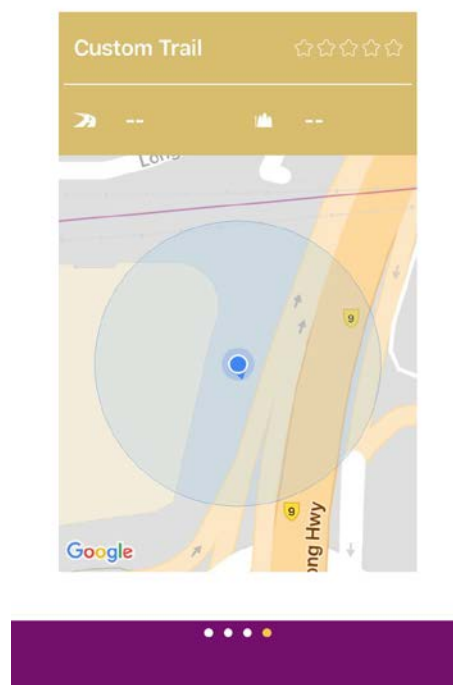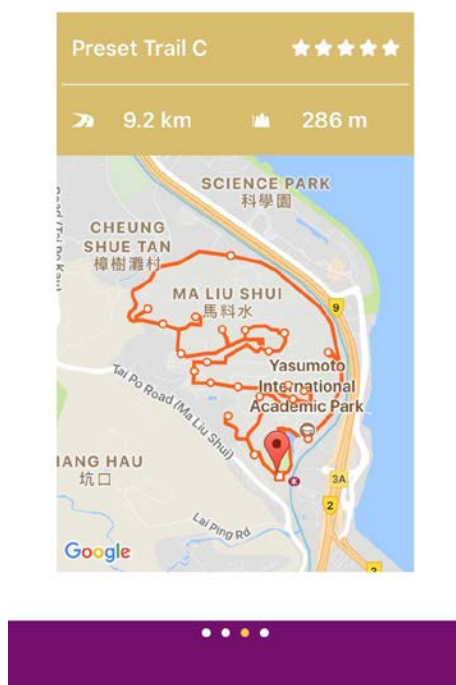- ➢ The app would seek your permission to access your location
  程式將徵求你的許可以取用你的位置
- ➢ Please click "Allow"
  請點擊"允許"

- ➢ Enjoy brisk walking/jogging/hiking!!!
  請享受健步行/緩跑/行山的樂趣!!!