ELCHK Lutheran Secondary School

Form Three Computer Literacy

Exploring
MIT App Inventor 2

Name : _____

Class : _____ ( )

Content

URL for downloading resource materials

http://www.lss.edu.hk/download/f3ict/ict.html

Assignment

Date	Content	Mark/Grade

Chapter 1
Introduction of MIT App Inventor 2

1.1 What is App Inventor?

App Inventor is a free online platform which lets you develop applications for Android phones by putting puzzles (program blocks) together. It is no need to learn complicated program instructions. Users must visit App Inventor website with Google Chrome web browser to build apps with App Inventor.

App Inventor website : **http://ai2.appinventor.mit.edu/**

The App Inventor servers store your work online and help you keep track of your projects. Moreover, you can download your work to your own computer. Users can test their apps with either a connected phone or emulator (模擬器).

1.2 Install App Inventor

Although App Inventor is an online platform, you must have a few programs installed in your computer:

(a) **App Inventor Setup software**

You need to download and install App Inventor Setup software from the website :

http://appinventor.mit.edu/explore/content/windows.html

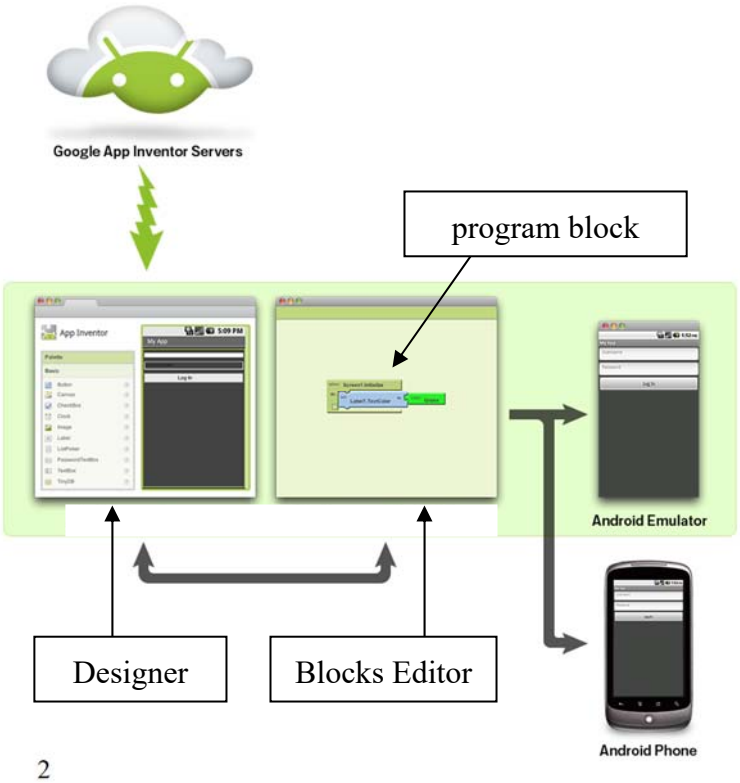
(b) Your computer should have installed the latest version of web browser **Google Chrome**. App Inventor works only on Chrome but not other web browsers.

You also need a **Google account** (any existing Google account) to log on to App Inventor platform.

1.3 App Inventor Interface

To build an app, we need to

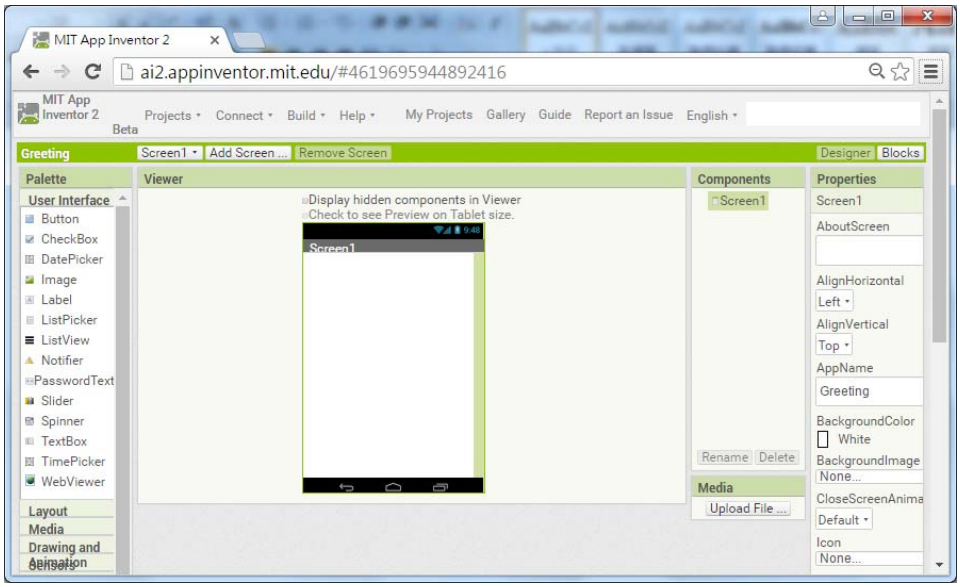
- draw the "screen" in **Designer**
- create program blocks in **Blocks Editor**
- run software **aiStart** (which transfers your app program to the emulator or your phone.)
- click [Connect] → [Emulator] / [USB] to run the app in the device.



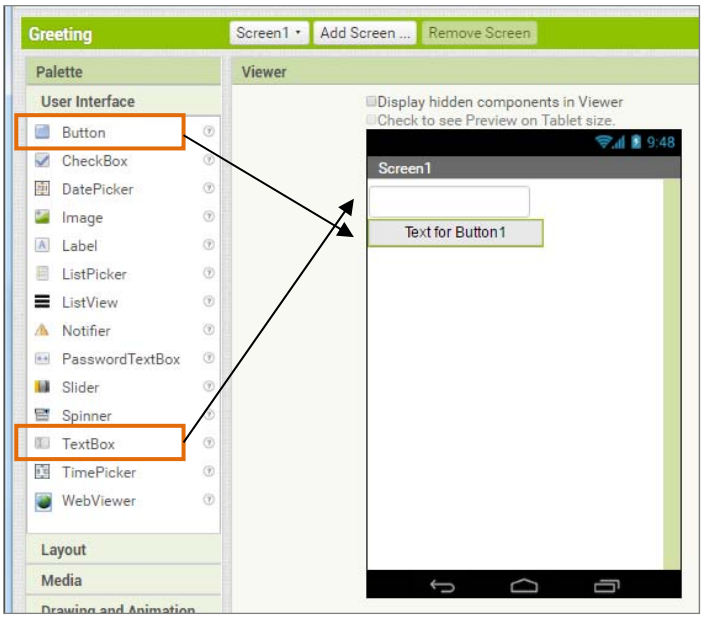
Activity 1 Your first App

You are going to login App Inventor platform and write a simple app of greeting.

1. Run Chrome
2. Browse website **http://ai2.appinventor.mit.edu/**
3. Login App Inventor platform by entering your own Google account.
4. You should now in the Designer screen. It shows a blank app screen "Screen1".
   (You may ask to input a name for the new app. Please input **Greeting** .)



5. Drag a Text Box and a Button to "Screen1".



   Question

   (a) What is the name of the Text Box?

   _____

   (b) What is the name of the Button?

   _____

6. Click on the Text Box, change its property in the **Properties** window.

   Font size = 30

   Width = Fill parent ...

   Text alignment = center

   Text = Hello!

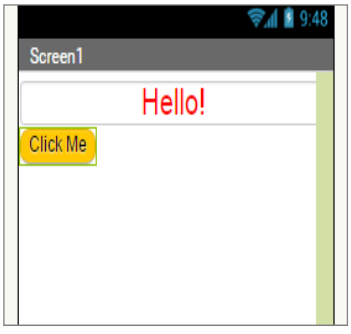
   Text color = RED

7. Click on the Button, change its property:

   Background color = Orange

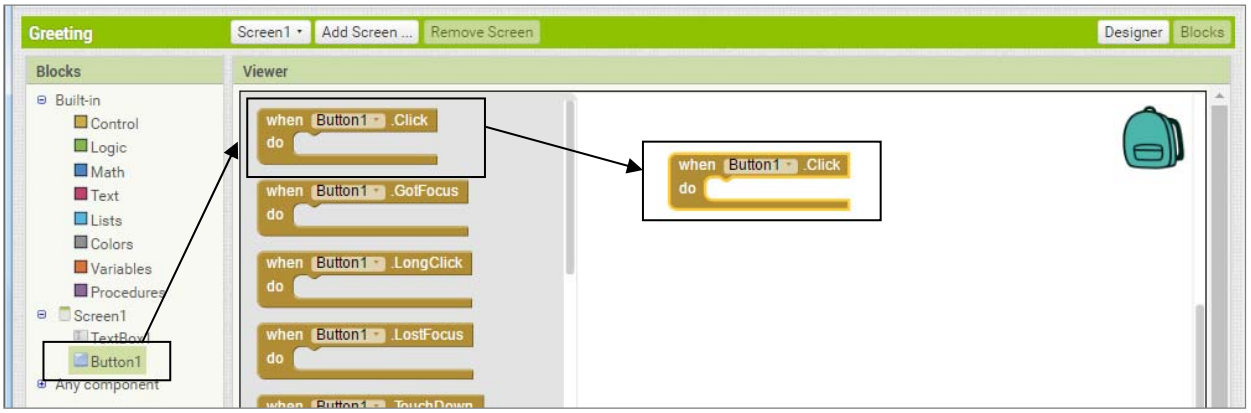
   Shape = rounded

   Text = Click Me

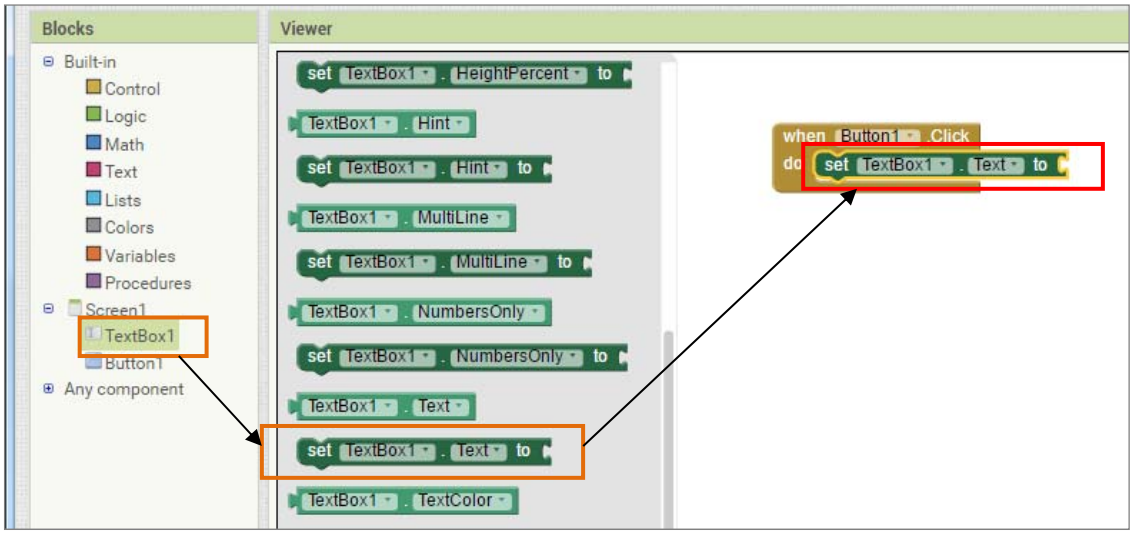


8. Click once on [**Blocks**] button to switch to program blocks workspace.

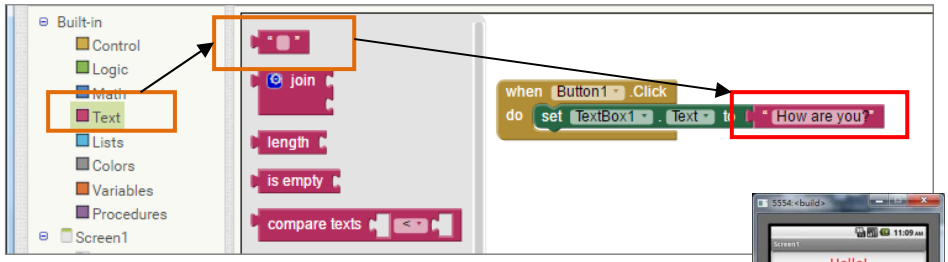
9. Click **Button1** icon to open its block list. Drag the "When Block1. click" block to the workspace.



10. Click Textbox1 icon to open its block list. Find and drag the "Set Textbox1.text to" block inside " When Block1. click " block as shown below. (You need scroll down the block list ....)

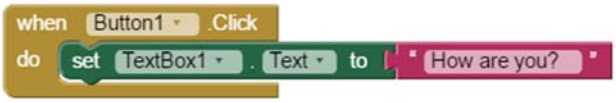


11. Click Text icon (in Build-in section). Drag " " icon to the end of the "Set Textbox1.text to" block. Enter "How are you?" in the block as below.



12. Run software **aiStart**.
13. Save your project. Click **Connect → Emulator.**
14. You should see an emulator after waiting for a few minutes. Click once on your app icon. Your app running in the emulator.

Question Describe the function of the program block:



_____

Remark : You may revise the content of this chapter from the school "Flipped Classroom" :

[Computer] → [Form 3] → [App Inventor - Chapter 1 : Your first App]

Self-Directed Learning - Notes Writing

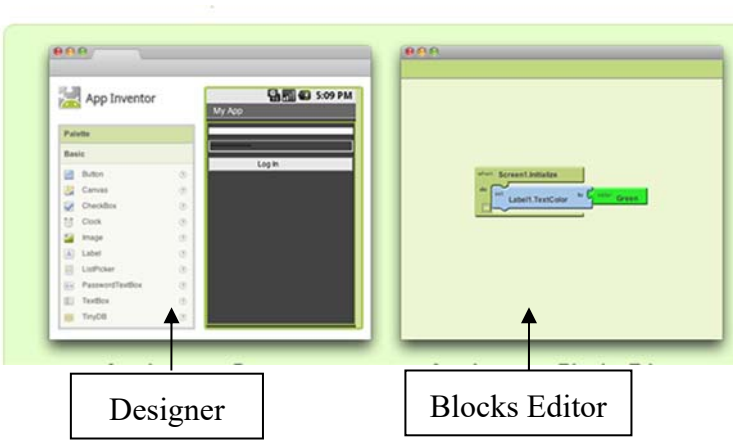
1. What is App Inventor?

App Inventor is _____

_____

_____

2. Working area of App Inventor



In Designer workspace, we can _____

_____

In Blocks editor workspace, we can _____

_____

Other key notes

_____

_____

_____

_____

_____

_____

Chapter 2
An app to find the area of circle

2.1 Knowing Mathematics functions

App Inventor provides a number of program blocks for building mathematics expressions. But the way of 'writing' a Mathematic expression in AI is quite different from other software such as Excel. Let us get familiar with Mathematic expression in AI before building our apps in this lesson.

Class Activity 1

1. Try to identify the following program blocks and write the corresponding Mathematic expressions.

example : 8 – X

– (+)

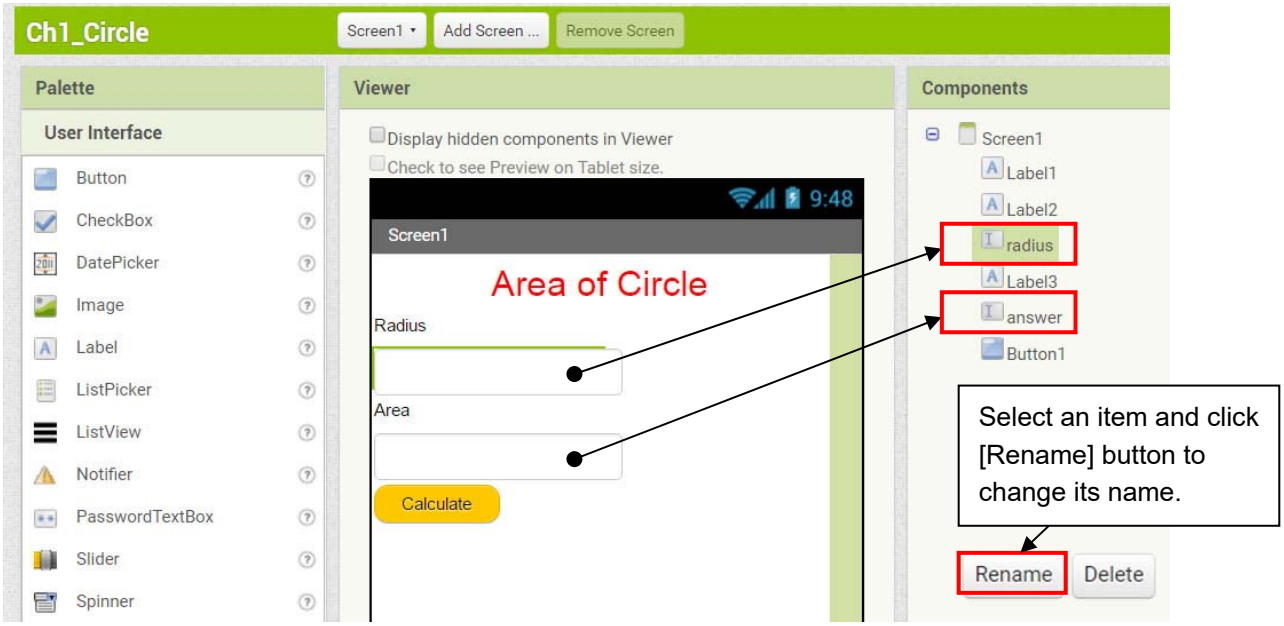
2. Fill in the correct words in the program blocks to present the Mathematic functions on the right.

AI program block	Mathematic function
	$\sqrt{12}$
	COS (X)
	Remainder of X ÷ 5
	Round up of X
	| Y | (absolute value of Y)

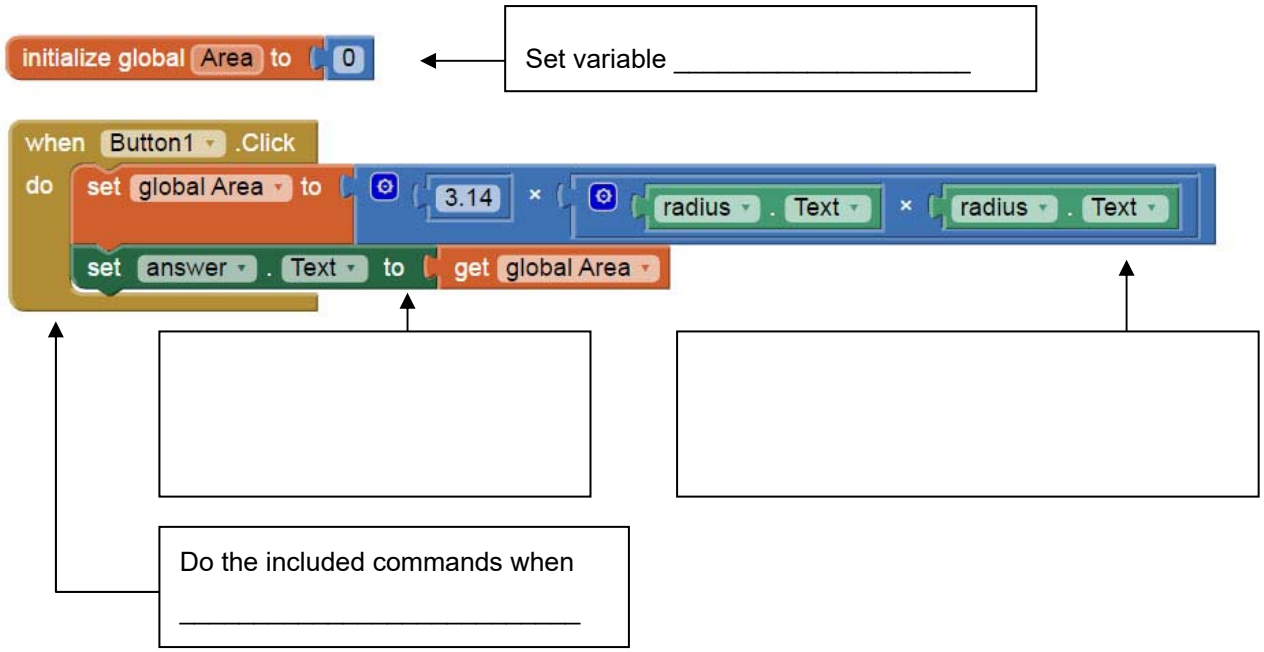
Activity 2 App to find the area of a circle

You are going to write an app to find the area of a circle with a given radius in App Inventor.

1. In Chrome, login AI website **http://ai2.appinventor.mit.edu/** with your Google account.
2. Open a new app called "circle_area".
3. In Design mode, drag the following elements into "Screen1". Format the elements as shown below. Rename the two textboxes as "radius" and "answer".



4. Switch to **Blocks** mode, build the following program blocks. Fill the boxes to explain the functions of the program blocks.



5. Save your project.
6. Run software **aiStart**. Click **Connect → Emulator** to run your app in emulator.
7. Test your app with the following radius values. Write down the output areas.

(a) radius = 5 area = _____ (b) radius = 12.8 area = _____

Homework　App to find the circumference of a circle

Modify the app in Activity 2 so that it calculate and show BOTH the area and the circumference of a circle with the given radius. (Hint : You should add one more label and textbox in the Design mode.)

Follow the steps below to print your app.

1. In the design mode, press [Print Screen] key on the keyboard to capture the screen.
2. Paste the picture in a Word file.
3. Repeat step 1 and 2 to capture the screen of the blocks mode.
4. Resize the two pictures so that they can be printed in one page.
5. Print the Word file. Cut out the "Screen1" and all program blocks. Paste them in the box below.
   Hint : You may revise this chapter and seek help of this homework from the **Flipped Classroom**:
   [Computer] → [Form 3] → [App Inventor - Chapter 2 : Find the circumference of a circle]

Self-Directed Learning - Notes Writing

1. User Interface elements

Label is used to _____

TextBox is used to _____

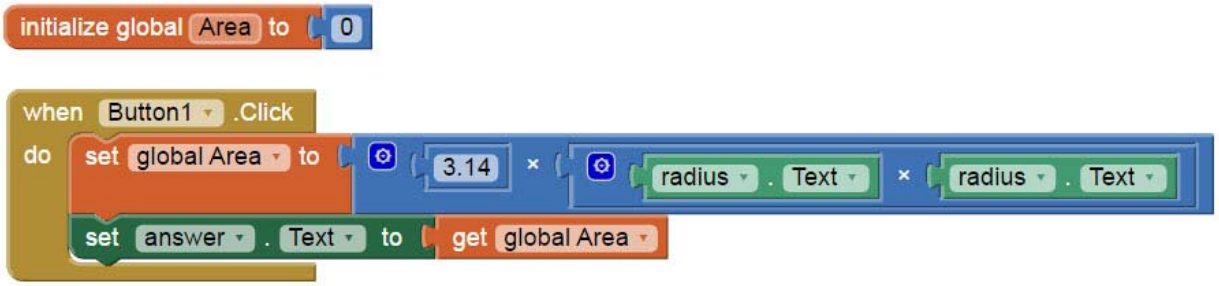
Button is used to _____

2. Blocks elements

In App Inventor, a variable is used to _____

At the beginning of a program, a variable must be _____

3. Analyze program blocks



In above program blocks,

a variable _____ is _____

When "Button1" is clicked, _____

_____

_____

_____

_____

Other key notes

_____

_____

_____

_____