It is very difficult to design fun and simple game. Programming it is hard but it is not as hard as designing it. – Dick Thung.

**Workshop 1**

In this workshop, we want to study how to create a complete game. Flash is very good environment for writing simple but very fun game.

Let us have short revision of the basic of simple interactive program (i.e. game) architecture. The basic of an interactive time-driven program is show in Figure 1.

1. Initialize your game world.
2. Jump into an never-ending loop. In the case of AS 3.0, it means the `ENTER_FRAME` event.
3. Read the keyboard or mouse input. I.e. Keyboard event or Mouse event.
4. Simulate the game world’s objects according to the user input.
5. Draw out the all the game world objects to screen. In AS 3.0, this is implicitly done by the system. You don’t really need to do it if all of your objects are MovieClip. However, we still need to draw out the score and time.

![Figure 1 Typical Event Loop (Infinite)](image)

In this workshop, we use the classic **Wall Brick** game as an example for writing the game.
The game

The game play of Wall Brick is very simple and I don’t need to explain the play mechanism. You can take a look of the YouTube video of this game in the following link for the game play.

http://www.youtube.com/watch?v=-lVr9XXcOg8

Use the folder workshop1 as the start up point for this workshop. I wrote the skeleton of the game for you and you need to complete several key components of the skeleton to make the game a playable one.

Initialization

The first step you need to do is create the bricks, set the color of the bricks, and put them in the row and column.

Exercise 1:

1a.) Create an array to store each of the color square.
1b.) Each of the color squares needs to remember whether it is:
   - Be hit or not.
   - How much score point it is worth of.

Tips: You need to write code in the init_bricks() function and the set_color() function will help you to set the color of each square.

Exercise 2:

In this exercise, you need to create the TextField for:

2a.) Score
2b.) Game time that has been passed.

Tips: the place for writing code for Score and Game Time is also within init_bricks().
Process Input

In this part of the exercise, we want to handle the interaction with the bat and the ball.

Exercise 3:

Write code to handle the movement of the bat when the user presses the left and right arrow.

3a.) Write code to handle the left arrow key movement.
3b.) Write code to handle the right arrow key movement.

Tips: You need to check whether the bat will move outside the boundary of the screen. Use LX() and RX() to help you for the checking.