



Flash Review



Introduction

- ❑ Flash is the industry standard for interactive vector graphics and animation for the Web.
- ❑ As you work in Flash, you create a movie by drawing or importing artwork, arranging it on the Stage, and animating it with the Timeline.
- ❑ You make the movie interactive by using actions to make the movie respond to events in specified ways.



What's new in Flash MX

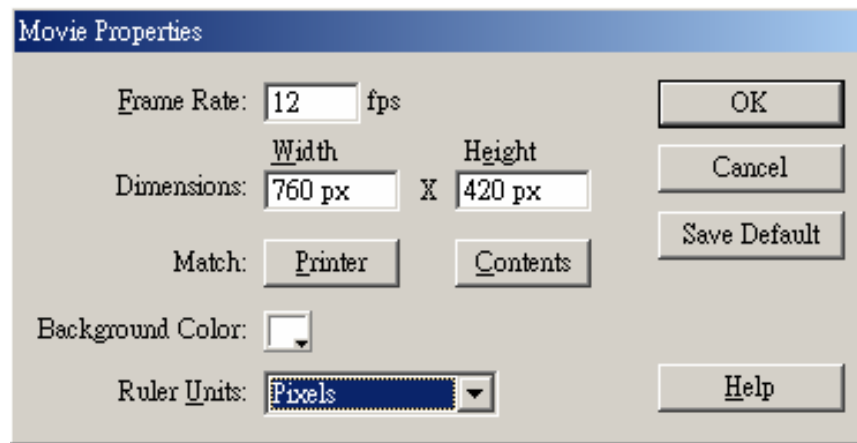
- ❑ It makes some significant productivity and performance enhancements whatever you are doing traditional animations, rich Internet applications, delivering video online or developing for mobile phones and devices.
- ❑ It integrates rich media and interactivity.
- ❑ Some featuring innovations like ActionScript programming, database connectivity capabilities and re-usable components.



Working Environment

- ❑ Each time you open Flash, the application creates a new file, with the FLA extension.
- ❑ In each FLA file, there is a stage for you create your movie.
- ❑ First of all, you should set the size, frame rate, background color, and other properties of a new movie in the Movie Properties dialog box by choosing **Modify > Document**.

Working Environment



- ❑ For **Frame Rate**, enter the number of animation frames to be displayed every second. For most computer-displayed animations, especially those playing from a Web site, 8 fps (frames per second) to 12 fps is sufficient. (12 fps is the default frame rate.)



Working Environment

- ❑ To specify the **Stage size** in pixels, enter values for Width and Height.
- ❑ To set the Stage size so that there is equal space around the content on all sides, click Match Contents. To set the Stage size to the maximum available print area, click Match Printer.
- ❑ To set the **background color** of your movie, choose a color from the Background color swatch.



The Stage and the Timeline

- ❑ Like films, Flash movies divide lengths of time into frames. The **Stage** is where you compose the content for individual frames in the movie, drawing artwork on it directly or arranging imported artwork.
- ❑ The **Timeline** is where you coordinate the timing of the animation and assemble the artwork on separate layers. The Timeline displays each frame in the movie.



Symbols and instances

- ❑ **Symbols** are reusable elements that you use with a movie. Symbols can be graphics, buttons, movie clips, sound files, or fonts.
- ❑ When you place a symbol on the Stage, you create an **instance** of that symbol.
- ❑ **Layers** act like stacked sheets of transparent acetate, keeping artwork separate so you can combine different elements into a cohesive visual image.



Creating animation overview

- ❑ You create **animation** by changing the content of successive frames. There are two methods for creating an animation sequence in Flash: frame-by-frame animation and tweened animation.
- ❑ In **frame-by-frame animation** you create the image in every frame.
- ❑ In **tweened animation**, you create starting and ending frames and let Flash create the frames in between.



Shape Tweening

- ❑ **Shape tweening** means the transformation of the shape of the object.
- ❑ Flash cannot tween the shape of groups, symbols, text blocks, or bitmap images. Use **Modify > Break Apart** to apply shape tweening to these elements.
- ❑ **To tween a shape:**
 1. Click a layer name to make it the current layer and select an empty keyframe where you want the animation to start.



Shape Tweening

2. Insert a keyframe and create the image for the first frame of the sequence.
3. Insert a keyframe and create the image for the last frame of the sequence.
4. Select any frame in-between the first and the last frames, choose Window > Panels > Frame.
5. For Tweening, select Shape.



Shape Tweening

- ❑ **To break apart groups or objects:**

- 1 Select a group, text block, bitmap, or symbol that you want to break apart.
- 2 Choose Modify > Break Apart

- ❑ Breaking apart complex symbols and large blocks of text can take a long time. You might need to increase the application's memory allocation to properly break apart complex objects.



Motion Tweening

- ❑ In **motion tweening**, you define properties such as position, size, and rotation for an instance, group, or text block at one point in time, and then you change those properties at another point in time.
- ❑ In a motion tweening, the object must be grouped in advance.
- ❑ To make a **motion tweening**
 1. Click a layer name to make it the current layer, and select an empty keyframe in the layer where you want the animation to start.



Motion Tweening

2. Insert a keyframe and create the image for the first frame of the sequence.
3. Insert a keyframe and locate the final position of the image for the last frame of the sequence.
4. Select any frame in-between the first and the last frames, choose Window > Panels > Frame.
5. For Tweening, select Motion.



Motion Tweening

- ❑ **To group the objects:**

- 1 Select those objects you want to group.
- 2 Choose Modify > Group

- ❑ **To ungroup the objects:**

- 1 Select those objects you want to group.
- 2 Choose Modify > Ungroup



Using Layers

- ❑ **Layers** are like transparent sheets of acetate stacked on top of each other.
- ❑ When you create a new Flash movie, it contains one layer. You can add more layers to organize the artwork, animation, and other elements in your movie.
- ❑ You can hide layers, lock layers, or display layer contents as outlines. You can also change the order of layers.



Using Layers

- ❑ **To create a layer, do one of the following:**
 - Click the Add Layer button at the bottom of the Timeline, or,
 - Choose Insert > Layer.

- ❑ **To delete a layer, do one of the following:**
 - Select the corresponding layer and click the rubbish bin button.



Using Scenes

- ❑ **Scene** is the stage where you work. Besides layers, you can also add several scenes in your movie.

- ❑ **To add scene, do one of the following:**
Choose Insert > Scene.

- ❑ **To delete scene, do one of the following:**
Choose Insert > Remove Scene

Using Scenes

- ❑ **To switch from one scene to another:**

Click the Edit Scene button



- ❑ If there is not specified, the movie always starts at scene 1.



Creating button

- ❑ **Buttons** are actually four-frame interactive movie clips. When you select the button behavior for a symbol, Flash creates a Timeline with four frames.
- ❑ The first three frames display the button's three possible states; the fourth frame defines the active area of the button.
- ❑ The Timeline doesn't actually play; it simply reacts to pointer movement and actions by jumping to the appropriate frame.



Creating button

❑ To create a button:

1. Draw a symbol in a frame
2. Group the symbol

Select the symbol > Choose Modify > Group

3. Convert the symbol into button

Select the grouped symbol > Choose Insert > Convert to symbol > Choose button in the dialog box.

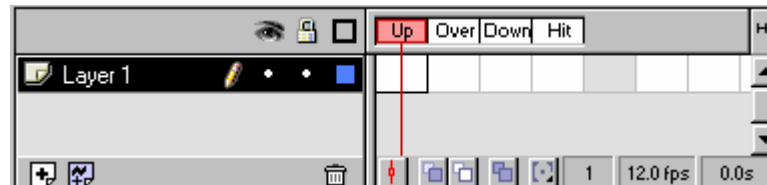
Creating button



4. Double click the button
5. Edit the four states of the button

Creating button

6. Select the **Down** frame and insert a keyframe to it.



It is the state of the button when the mouse is held down. The subject must be ungroup before editing.

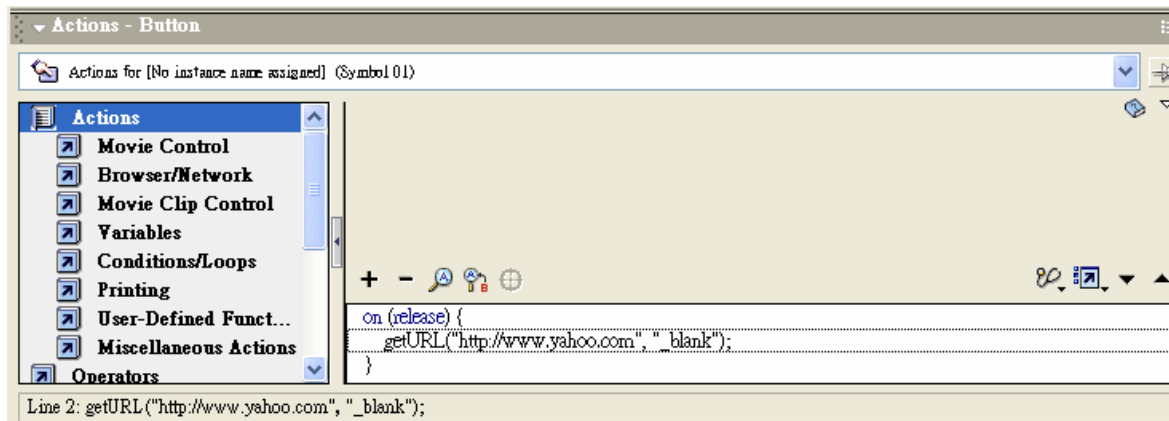


Creating button

7. Select the **Over** frame and insert a keyframe to it.
It is the state of the button when the mouse is placed over it.
8. Select the **Hit** frame and insert a keyframe to it.
It defines the effective area of the button.

Action Script

- ❑ Script can be added to the movie to make it interactive.
- ❑ To add an action script, select a frame > right click > Action





Action Script

- ❑ **Stop**

To stop the movie.

- ❑ **Go To**

To goto and play a specified scene and frame.

- ❑ **GetURL**

To a specified URL.



Flash – Action Script

Basic Action

- **Get URL – Opens specified URL in optionally stated window.**

```
on (release) {  
    getUrl(http://www.yahoo.com, _self);  
}
```

- **Go To – Go to a specified line number or label and either play or stop.**

```
gotoAndPlay(7);  
gotoAndStop("Score");
```

Basic Action

- **If Frame Is Loaded – Determines whether a specified frame is loaded. The action is often used in early frames as a preloader.**

```
ifFrameLoaded ("Scene 1", 14) {  
    gotoAndPlay(4);  
}
```

- **Load Movie – Loads a specified movie at a URL in a stated level or into a specified target movie clip.**

```
on (release) {  
    loadMovie("Movie1.swf", 1)  
}
```

Basic Action

- **On Mouse Event – Triggers a script when the mouse or keyboard event occurs.**

```
on (release) {  
    unLoadMovie (44);  
}
```

Mouse event includes : on (release), on (press), on (releaseOutside), on (rollOver), on (rollOut), on (dragOver), on (dragOut).

```
on (keyPress"B") {  
    unLoadMovie (44);  
}
```

Basic Action

- **Play – Plays movie. No parameters.**

```
play ( );
```

- **Stop – Stops movie. No parameters.**

```
stop ( );
```

- **Stop All Sounds – All sounds are turned off.**

```
stopAllSounds ( );
```

Actions

- **Break – Stops a repeated action in a loop.**

```
do {  
    k = k + 1;  
    if (k > 6) {  
        break;  
    }  
} while (k < 9);
```

- **Call – Initiates an action in a specified frame but does not open the frame.**

```
call ("4");
```

- **Comment – Allows remarks in a script without any action taken.**

```
// This is a remark
```


Actions

- **do while – Loop until the termination condition is met.**

```
do {  
    k = k + 1;  
} while (k < 9);
```

- **If...then...else – Provides a conditional structure.**

```
if (k = 8) {  
    gotoAndPlay (1);  
} else {  
    gotoAndPlay(10);  
}
```

- **for – Loop from an initial set value to a termination condition at an increment level.**

```
for (k = 1; k < 10; k++) {  
    box = k;  
}
```

Actions

- **onClipEvent** – Action script associated with the selected movie clip.

```
onClipEvent (load) {  
    score = 1;  
}
```

Clip event includes : onClipEvent (enterFrame), onClipEvent (unload), onClipEvent (mouseDown), onClipEvent (mouseUp), onClipEvent (mouseMove), onClipEvent (keyDown), onClipEvent (keyUp), onClipEvent (data)

- **Print** – Sends a specified bounding box in the named level or target to a printer as a vector graphic.

```
print (0, "Movie1");
```

Functions

- **ord** – Returns the ASCII encoding value of a character.

```
k = ord("a");
```

- **getProperty** – Returns the value of the specified property of the specified target.

```
k = getProperty(InstanceName, _x);
```

- **getTimer** – Returns the number of millisecond since the started playing.

```
t = getTimer( );
```

Functions

- **int** – Returns a value with the decimal value truncated.

```
k = 34.964;  
n = int(k);
```

- **number** – Converts an expression to a floating point or Boolean number.

```
k = "145.67";  
a = Number(k);
```

- **random** – Generates a random number between “0” and “n-1”.

```
k = random(9);
```

Functions

- **string** – Converts a number into a string variable.

```
k = 34.964;  
temp = string(k);
```

- **chr** – Returns the corresponding character of an ASCII value.

```
CH = chr(65);
```

Functions

- **substring** – Returns the partial string defined by (“stringName”, index, length).

```
temp = substring(“SandLight”, 4, 5);
```

- **length** – Returns the length of the string.

```
k = length(“SandLight”);
```

Properties

- **_alpha** – Level of transparency of an instance.

```
setProperty(InstanceName, _alpha, 50);
```

- **_focusrect** – Sets a property to have a yellow rectangle around buttons when a tab is used to navigate.

```
setProperty(InstanceName, _focusrect, true);
```

- **_rotation** – A rotation quality has values between 0 and 360.

```
setProperty(InstanceName, _rotation, 270);
```

Properties

- **_visible** – Set the visibility of the instance.

```
setProperty(InstanceName, _visible, false);
```

- **_width / _height** – Set the width/height of the movie clip.

```
setProperty(InstanceName, _width, 50);
```

- **_x / _y** – Set the horizontal/vertical position of a specified movie clip.

```
setProperty(InstanceName, _x, 0);
```


Properties

- **`_xmouse / _ymouse`** – Returns the horizontal/vertical position of the center of the mouse cursor.

```
xpos = _xmouse;
```

- **`_totalframes`** – Returns the total number of frames in a movie clip.

```
total = _totalframe;
```

- **`_framesloaded`** – Returns the total number of frames in a movie clip that has been loaded.

```
s = _framesloaded;
```



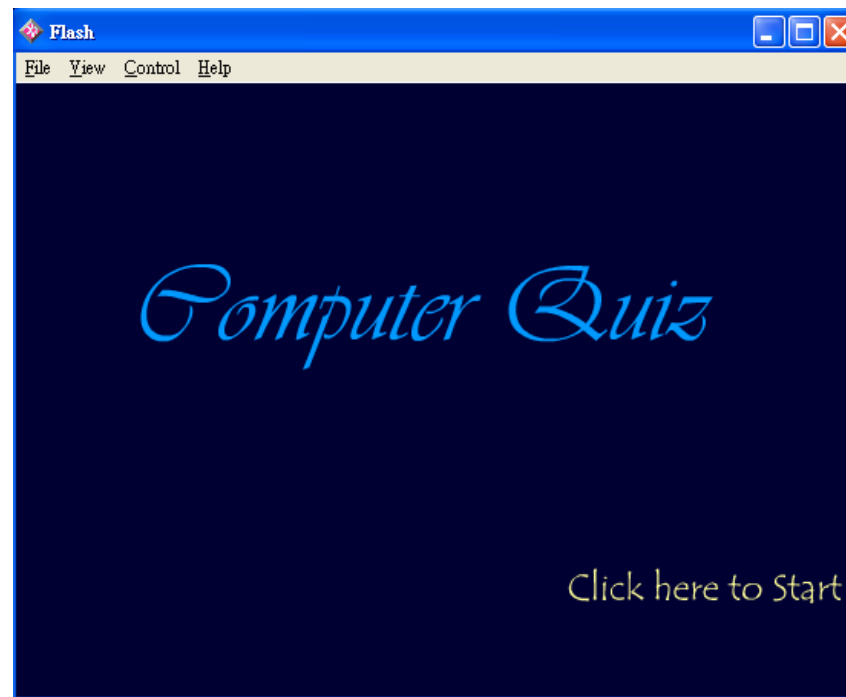
More about Flash Action Script

Introduction

- Macromedia Flash provides an easy way to add action script to our animation or HTML design.
- In Flash animation, action script can be added to every frame or every instance on the scene.
- Here, we will demonstrate how to create a multiple choice interaction using Flash action manager.

Getting Start

- We will start with creating the Start-up page of the whole multiple choice action. The layout is as follow:



Creating the Start-up Page

1. Start a new page
 - i. Select **File>New** to start a new page for the movie.
 - ii. Select **Modify>Document** to set the dimension of the page and the background color of the page.

Creating the Start-up Page

2. Add a text to the start-up page

- Select TEXT TOOL from the tool bar, place the text cursor on the page and type “Computer Quiz”
- In the Properties box, you can set the size and color of the text.

Creating the Start-up Page

3. Add a button to the start-up page
 - Select TEXT TOOL from the tool bar, place the text cursor on the page and type “Click here to Start”
 - In the Properties box, you can set the size and color of the text
 - Select ARROW TOOL from the tool bar, click on the text to select it

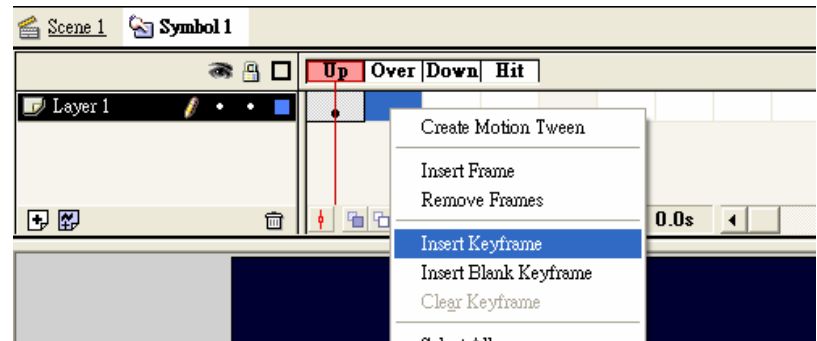
Creating the Start-up Page

- iv. Select **Insert>Convert to Symbol** to convert the text to a button
- v. In the Symbol Properties dialog, use the default name for the symbol, set the symbol behavior to Button and click OK

Note : If the button is made up of a graphic and a text, you should first group them together before conversion.

Creating the Start-up Page

4. Change the appearance of the button
 - i. Select ARROW TOOL from the tool bar, double click on the button to edit its appearance. Make sure that the frames on the timeline is changed to UP, OVER, DOWN and HIT
 - ii. Select the frame OVER. Right click the mouse and select **Insert keyframe**



Creating the Start-up Page

- iii. Select TEXT TOOL from the tool bar, highlight the text and change its color when mouse over
- iv. Select the frame DOWN. Right click the mouse and select **Insert keyframe**
- v. Select TEXT TOOL from the tool bar, highlight the text and change its color when mouse down

Creating the Start-up Page

- vi. Select the frame HIT. Right click the mouse and select **Insert keyframe**

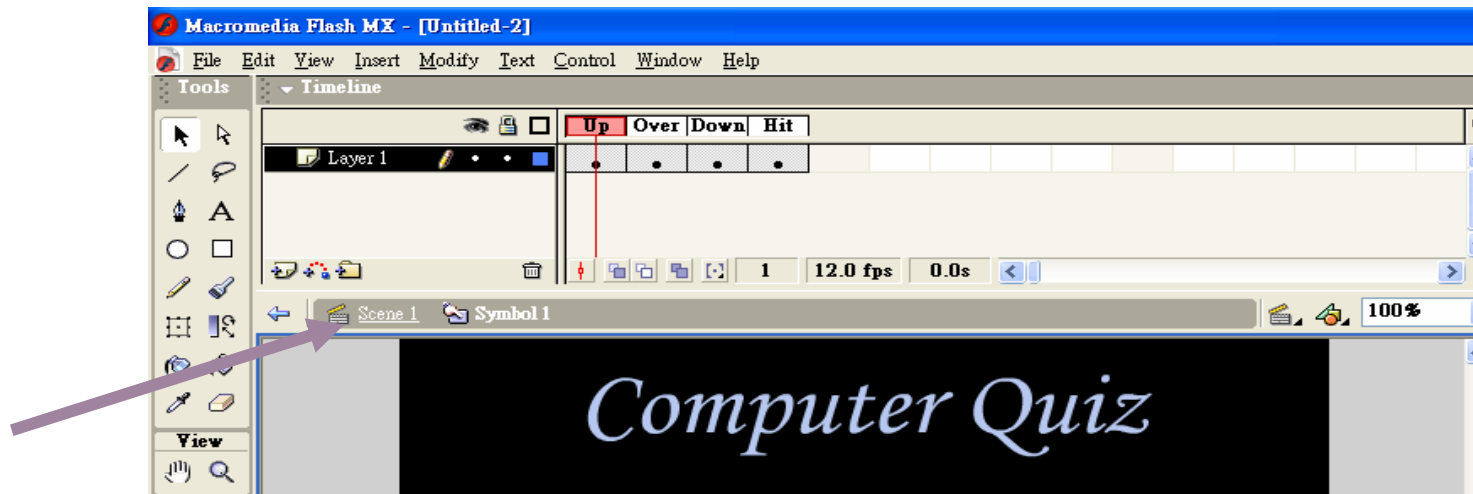
- vii. Select RECTANGLE TOOL from the tool bar. Place a rectangle on the text “Click here to Start” to define the hit area of the button.

Note : The hit area is an invisible area where the finger cursor appears when the mouse arrow cursor is place over it

Creating the Start-up Page

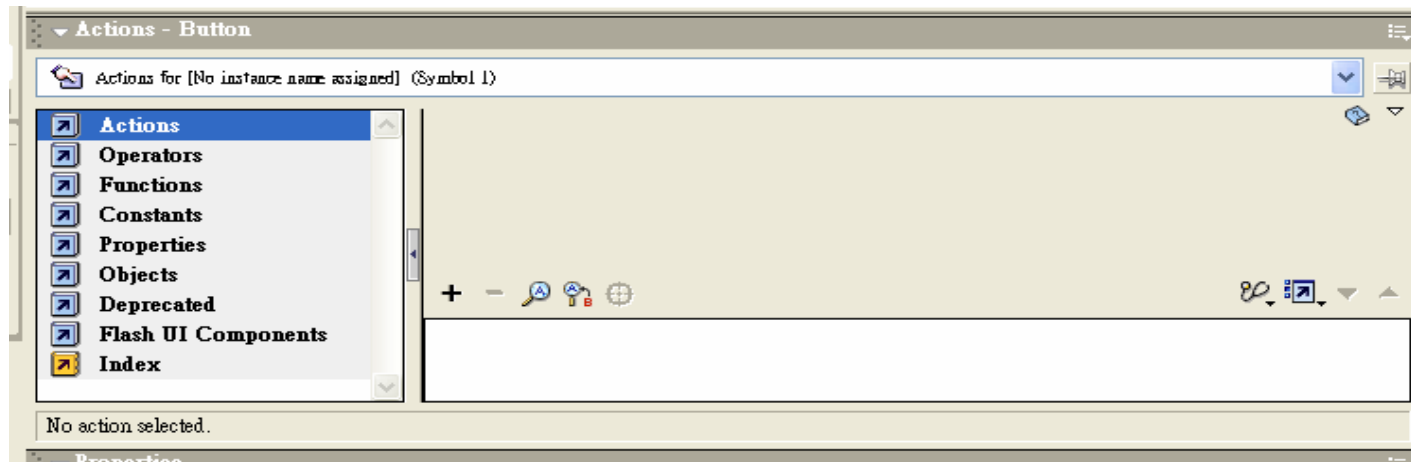
5. Return to Scene1

- After changing the appearance of the button, click the **Scene1** button above the timeline to return to scene1



Creating the Start-up Page

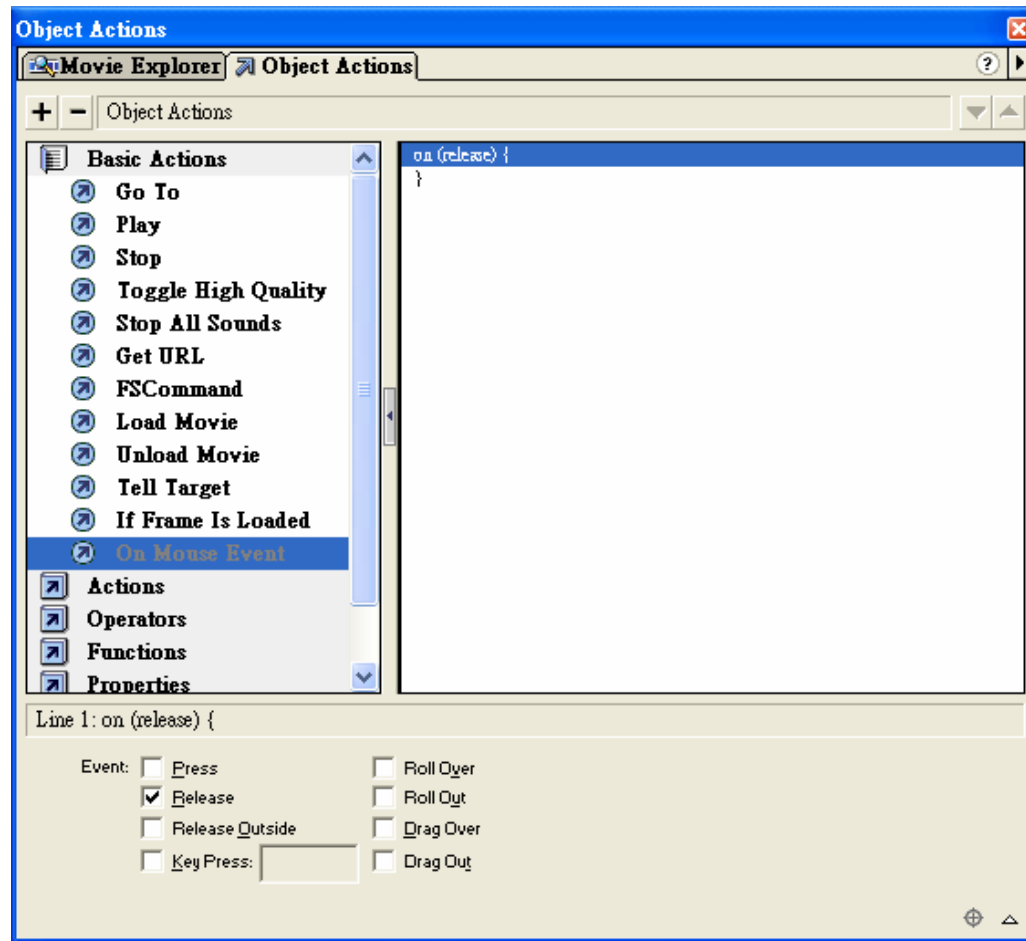
6. Adding action script to the button
 - Select ARROW TOOL from the tool bar and click on the button to select it. Make sure the Action box is at Action - Button



Creating the Start-up Page

- ii. An Object Actions dialog box appears on the screen. The **Mouse Event** action script is added by automatically.
- iii. Set the mouse event to Release as default.

Creating the Start-up Page



Creating the Start-up Page

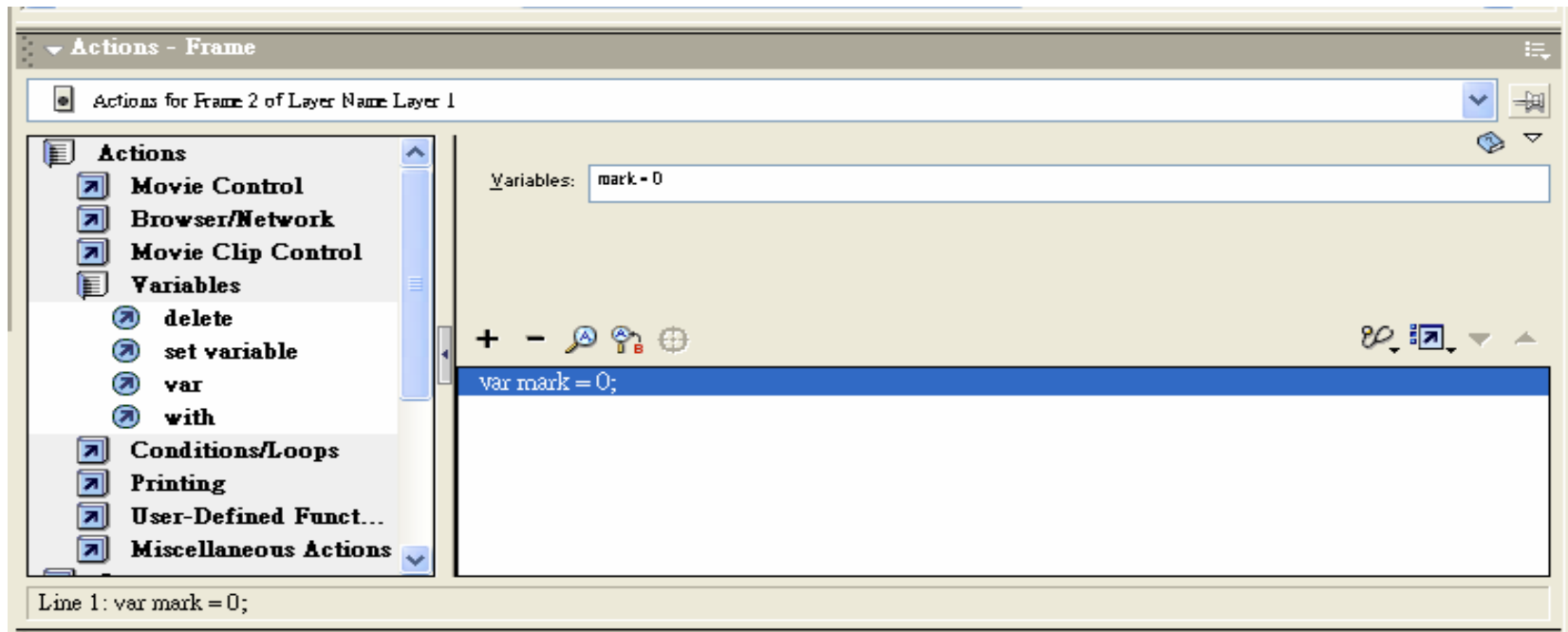
- iv. Double click **Go To** action script under **Actions>Movie Control**.
- v. Set Scene to <Current Scene>, Type to Frame Number, Frame to 2 and check the Go to and Stop box.
- vi. Close the dialog

Creating the Start-up Page

7. Adding action script to the frame
 - i. Select ARROW TOOL from the tool bar and click on the 1st frame of the timeline to select it. Right click on the button and select **Actions**. A Frame Actions dialog appears on the screen.
 - ii. We will then add a variable to the interaction to store the total mark of the student in the quiz. Double click **var** action script under **Actions**.

Creating the Start-up Page

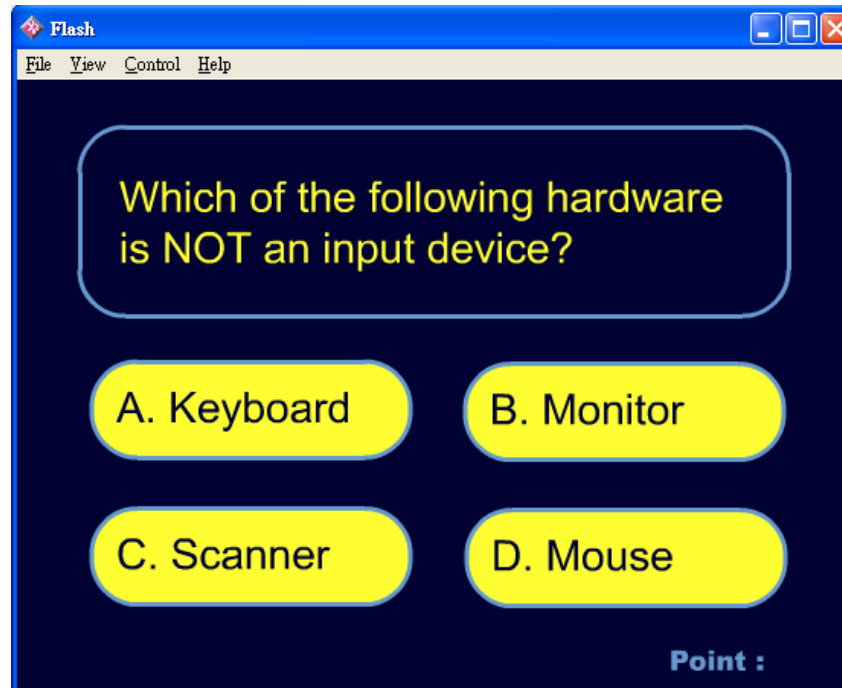
- vi. In the variable field, type Mark = 0



- vii. Close the dialog

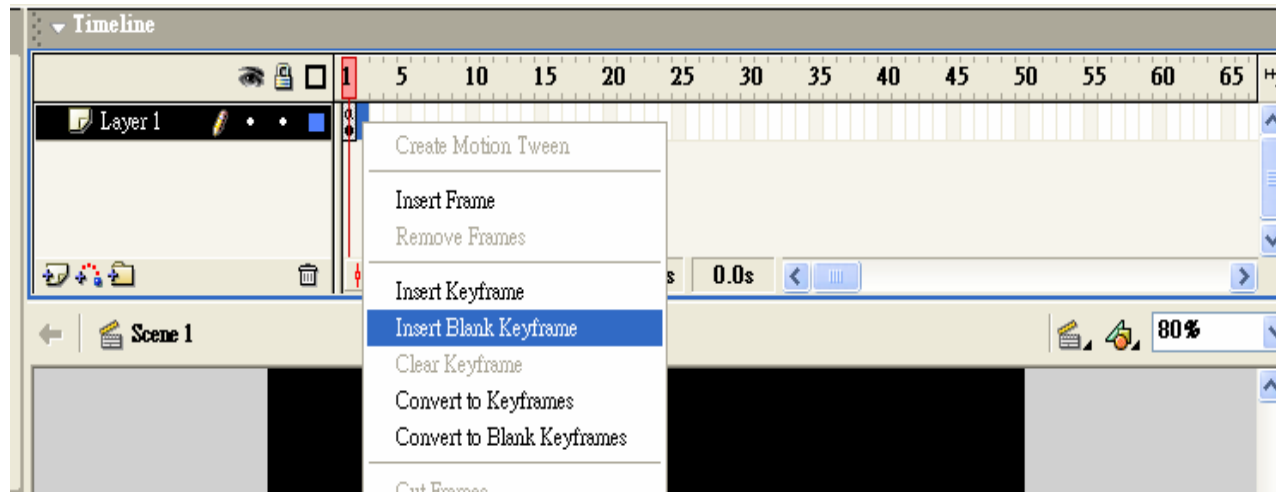
Creating the First Question Page

- We will create a new page for the first question. The layout is as follow:



Creating the First Question Page

1. Create a new frame for the first question
 - i. Select the 2nd frame on the timeline of Scene 1. Right click on the frame and select **Insert blank keyframe**.



Creating the First Question Page

2. Insert the first question

- i. Select RECTANGLE TOOL from the tool bar, draw a unfilled rectangle on the page to hold the question text.
- ii. Select TEXT TOOL from the tool bar. Place the text cursor inside the rectangle and type the question title “Which of the following is NOT an input device?”

Note : You can edit the style and size of the text in the Properties Box.

Creating the First Question Page

3. Insert Choice A

- i. Select RECTANGLE TOOL from the tool bar, draw a unfilled rectangle with rounded corner on the page to hold Choice A.
- ii. Select TEXT TOOL from the tool bar. Place the text cursor inside the rectangle and type the answer for the choice “A. Keyboard”

Creating the First Question Page

4. Convert Choice A to button
 - i. Select both the rectangle and the text of choice A. Group the two elements together by selecting **Modify>Group**
 - ii. Select the grouped object, select **Insert>Convert to Symbol** to change the object to button
 - iii. In the Symbol Properties dialog, use the default name for the symbol, set the symbol behavior to Button and click OK

Creating the First Question Page

5. Change the appearance of the button
 - i. Double click on the button to edit its appearance. Make sure that the frames on the timeline is changed to UP, OVER, DOWN and HIT
 - ii. Change the Over and Down appearance of the button and define the HIT area. (Refer to p.49 to p.51 for the procedures)

Creating the First Question Page

6. Insert Choice B

- i. Return to Frame 2 of Scene 1, draw the Choice B button on the stage using RECTANGLE TOOL and TEXT TOOL. Type “B. Monitor” for the text of the button
- ii. Follow the same procedures of Choice A, group the two elements and convert the grouped object to symbol. Change the appearance of the button as well.

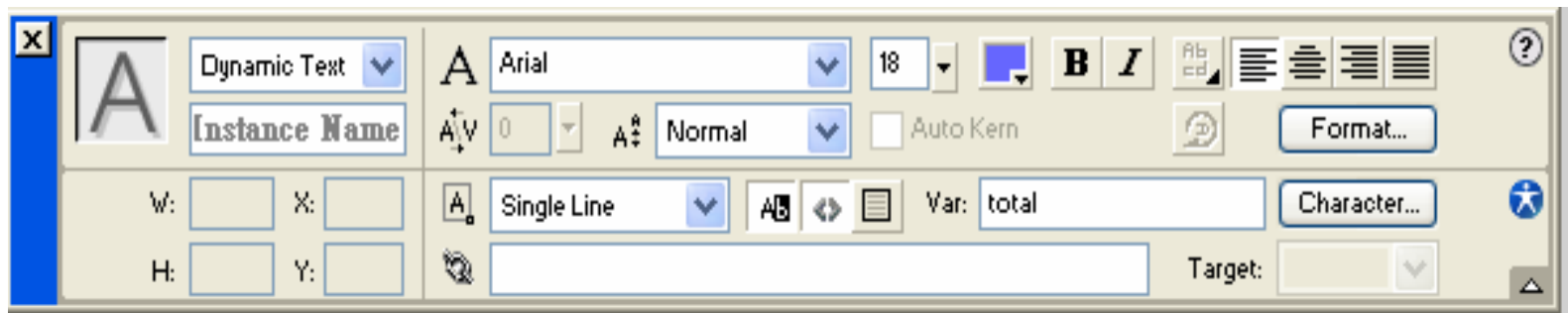
Note : Choice B is the correct answer

Creating the First Question Page

7. Display the mark on the stage
 - i. Select TEXT TOOL from the toolbar, place the text cursor at the right button corner of the stage and type “Point : ”
 - ii. Place another text cursor next to “Point : ”, it is a dynamic text field to hold the mark of the quiz.
 - iii. Leave the content of the text box empty.

Creating the First Question Page

- iv. In the Properties box, select Dynamic Text and the Single Line option. Type TOTAL in the Var field as the variable name of the text in the text box.



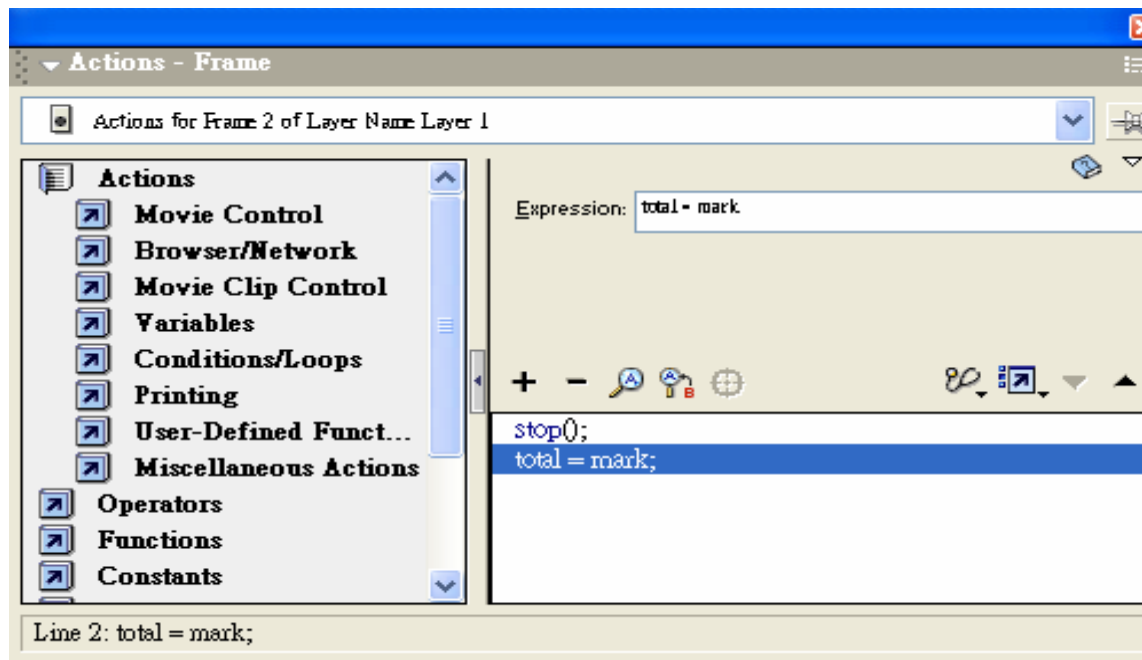
Creating the First Question Page

8. Add action script to the frame

- i. Select the 2nd frame of the timeline. Right click on the frame and select Actions
- ii. In the Frame Actions dialog box, double click **Stop** under **Actions>Movie Control**
- iii. We will then display the mark on the text field TOTAL of the frame. Double click = action script under **Operators>Assignment**

Creating the First Question Page

- iv. In the expression field, type TOTAL = Mark



- v. Close the dialog box

Creating the First Question Page

9. Add action script to the Choice A
 - i. Select the Choice A, make sure the Actions box shows Actions - Button
 - ii. Double click **Go To** action script under **Actions>Movie Control**.
 - iii. Set Scene to <Current Scene>, Type to Frame Number, Frame to 3 and check the Go to and Stop box. Frame 3 contains question 2 of the quiz

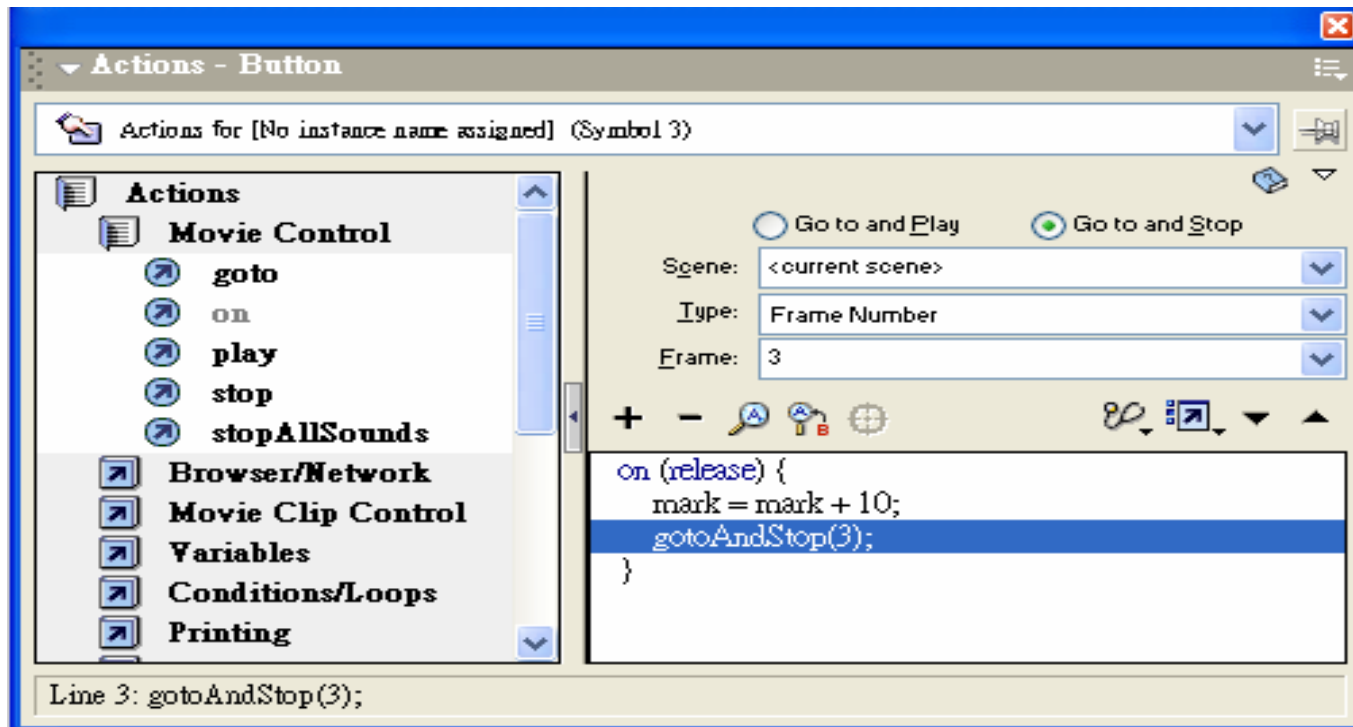
Creating the First Question Page

10. Add action script to the Choice C and Choice D
 - i. Select the Choice C, right click on the button and select Actions
 - ii. An Object Actions dialog box appears on the screen. Add the same script under the On Mouse Release event as that of Choice A.
 - iii. Repeat the same procedures for Choice D.

Creating the First Question Page

11. Add action script to the Choice B
 - i. Select the Choice B, right click on the button and select Actions
 - ii. Double Click = under **Operators>Assignment**. In the expression field, type `Mark = Mark + 10`
 - iii. Double Click **Go to** under **Actions>Movie Control**. Set scene to <Current Scene>, Type to Frame Number, Frame to 3 and check the Go to and Stop box.

Creating the First Question Page



- vi. Close the dialog box

Creating the Second Question Page

- To create the second question page, click on the 3rd frame of the timeline and insert a keyframe on it. The rest is done in the same way as before.