Objects (also called "Controls")

1. Objects/Controls in LiveCode - What are they?

Objects - In LiveCode, as well as in other object-oriented languages (Java), you have many types of objects:

1. **Buttons** – to create events (e.g. Push button, on/off,)
2. **Fields** – to show or enter data in (e.g. text entry - name, address, etc)
3. **Scrollbars** – to set an amount (e.g. size of image)
4. **Graphics** – basic objects or ones drawn by hand (e.g. box, circle, etc)
5. **Images** – usually photos, etc (e.g. sunset.jpg)
6. **Players** – for videos, sound, etc (e.g. clapping.wav, YouTube videos, etc.)

In LiveCode we also have

Groups – a collection of objects together (e.g. keys of a keyboard, a set of buttons)
Cards – essentially a window, screen or level in a game
Stacks – many cards grouped together to make a program

All controls have names. LiveCode gives them a default name (like "Button") and a unique ID. We refer to them in the code by both – object type and their name:

```
Graphic  "Rectangle"
Field  "Text Entry Field"
Label  "Label"
Image  "Line"
Button  "Button"
```

We can give them names that we like better. To change a name, click on the object then open up it's 'Property Inspector'. (Besides changing the name, you can also change the "Label")

```
Graphic  "myBox"
Field  "First Name"
Image  "Sunset"
Button  "Push Me"
```

When we refer to them we have to include **both the type and the name** because you can have two different objects with the same name.

It is just like if you have a friend named "Sam" and your dog is also named "Sam" So if you are talking about Sam, you have to be clear which one you are talking about. If you say "Sam eats food off the floor" you better not mean your friend "Sam". You need to specify if you mean your friend or your dog. "My dog Sam is so funny" or "My friend Sam is really nice".

Likewise, in LiveCode we have to include both the object and its name

```
set the top of  the  graphic  "mybox"  to the top of the  card  "mycard"
put "Sally" into the  field  "Name"
set the loc of the  button "myBox"  to 100,100
move the image "ball" to 250,32
hide the graphic "box"
```

Controls

But we can not call a group of objects - "objects" or stacks - "objects". So we use the term "Controls" which covers everything

So from now on may will try to use the name **Controls** instead of **Objects**

2. Controls (Objects) - Identifying Them

We know that objects are identified by their "Type" and "Name".
e.g.

```
button "box"
image "sunset"
field "Name"
button "b1"
```

But there are different forms for their name, depending on how much information that you need about it.
Suppose we have a button called "box"
It has a

```
name = button "box"
short name = "box"
long name = button "box" of card id 1002 of stack "Untitled 1"
```

You can see this for yourself by adding the following script to your card

```
on mouseDown
  answer "the name is: " & the name of the target
  answer "the short name is: " & the short name of target
  answer "the long name is: " & the long name of target
end mouseDown
```

and clicking on different objects on your card. You will see the differences.

Advanced Topics:

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3. LiveCode Controls (Objects) and Their Properties

1. Buttons - for performing actions

A. Push Buttons - to perform an action

Properties:

Styles = Push, Square, Rounded Rectangle, Transparent, Opaque and Shadow - to perform an action
Hilite = the property that it has been pressed and is true/false

```
if the hilite of button "Go" then
    (it has been pressed)
end if
```

Use: Usually, you have script on the button to detect when it has been pushed i.e. on mouseUp.

```
on mouseUp
  (it has been pressed)
end mouseUp
```

But if you have many buttons on a card, you can use the "hilite" property in another handler

```
on mouseUp
    if the hilite of button "Go" then
        (it has been pressed)
    end if
    if the hilite of button "Go2" then
        (it has been pressed)
    end if

end mouseUp
```

note: This is good because all your code and ligic is in one place (on the card) and not scattered across many buttons

B - Menu Buttons - for giving menu choices

C - Radio Buttons - for making 1 choice of many

Properties:
Styles = Radio button and Check Box - to make choices (the radio buttons are usually used in groups)

But if you have many buttons on a card, you can use the "hilite" property in another handler

```
on mouseUp
    if the hilite of button "Go" then
        (it has been pressed)
    end if
    if the hilite of button "Go2" then
        (it has been pressed)
    end if

end mouseUp
```

D - Checkbox Buttons - for checking on/off (true or false)

Properties:
Styles = Radio button and Check Box - to make choices (the radio buttons are usually used in groups)

But if you have many buttons on a card, you can use the "hilite" property in another handler

```
on mouseUp
    if the hilite of button "Go" then
        (it has been pressed)
    end if
    if the hilite of button "Go2" then
        (it has been pressed)
    end if

end mouseUp
```

E - Menu Buttons - for selecting one of many choices

Properties:
Styles = menu
Types = option menu, pull Down menu, pop Up menu, Combo Box
menuMode = also the kind of menu
Text = the choices available
Label = currently chosen menu item
menuHistory = the line number of the chosen item

Use: getting the choice

```
on menuPick x
    put x into theChoice
end menuPick
```

2. Fields - to display or enter text

Name = Field, Label Field, Scrolling, Scrolling List, Table text, list, table fields)
Table field - each column separated with a tab, each row by return
Scrolling List Fields - getting the choice , each choice is on a separate line

Use:

```
on mouseUp
    put the selected text of me into theChoice
end mouseUp
```

Data Grids - for displaying data in obth grid and form view as well as custom layouts with other LiveCode objects. Best for large data sets.

4. LiveCode Shortcuts - the "ID", the "short name" , the "name" and the "long name"

LiveCode has ways to identify objects: The "ID", the "short name", and the "long name"

1. **ID** - The ID is the number of that object. ID's are always assigned by LiveCode and are always unique. No 2 objects will have the same ID. (You use this when you skin buttons - you use the ID for the icon.

   e.g. 1004

2. **short name** - The "short name" is the name of the object.

   e.g. "box" or "enemy"
   or "square"

3. **name** or **abbrev name** - The "name" or abbreviated name is the type and name of the object.

   e.g. button "box"
   or image "enemy"
   or graphic "square"

4. **long name** - The long name is the complete description (or location) of the object (the card and stack that it is in)

   e.g. button "box" of card "myCard" of stack "My Stack"
   or button "B" of card id 1375 of stack "/Users/admin/Downloads/school app.livecode"

For You To Try

1. Make a new card, put a button on it and call the button "box. Then add the following code to the button:

```
on mouseUp
    answer the id of me
    answer the short name of me
    answer the long name of me
end mouseUp
```

When you click on it, you will see (in order)

```
1004        (or whatever the ID # is of that object)
Box         (the "short" name of this object)
button "Box" of card "card id 1002 of stack "untitled"
```

In the long name, notice every object has a "type" and a "name" - button "box", card "card id 1002", stack "untitled")

2. Delete that code on the button and add the following code to the CARD script:

```
on mouseUp
    answer "The ID: is" && the id of the target
    answer "Short Name: && the short name of the target
    answer "Long Name:" && the long name of target
end mouseUp
```

now drag any objects from the "Tools Palette" to your card and click on them one by one. You will see what each is.

You can refer to the object using any of them:

```
hide button ID theID
hide button "theShortName"
hide button "theLongName"
```

5. When would we use this? - answer: when you have a large number of buttons, etc

Good question. Let's say you were making something with many buttons - a calculator, a keyboard, a memory game or anything else with many buttons. It would be tedious putting the same code on every button or object. Then if you would make a change, you would have to edit each one at a time.

Wouldn't it be easier just putting 1 copy of the code on the card script and have it see which button was pressed?

Yes, for instance a calculator. You would have 10 buttons for the numbers (0 to 9) and normally would put code on each one.

On button "B1" - the button with the "1" on it

```
on mouseUp
    put "1" into field "number"
end mouseUp
```

On button "B2" - the button with the "2" on it

```
on mouseUp
    put "2" into field "number"
end mouseUp
```

(note: we used "B1" for the name and "1" for the label. It is not a good idea to name any object with just a number. LiveCode does not know id you mean the ID or the name of the object. So instead we include a "B" before each number - as the name)

Instead, you can just do one script on the card

on the CARD Script

```
on mouseUp
    put char 2 of the short name of the target into the field "number"
end mouseUp
```

A little more complicated (not really if you understand it) but a lot less work. You are done. You do not have to do any more scripts

...more to come

Subpages (1): Other Objects Besides Buttons

Comments

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