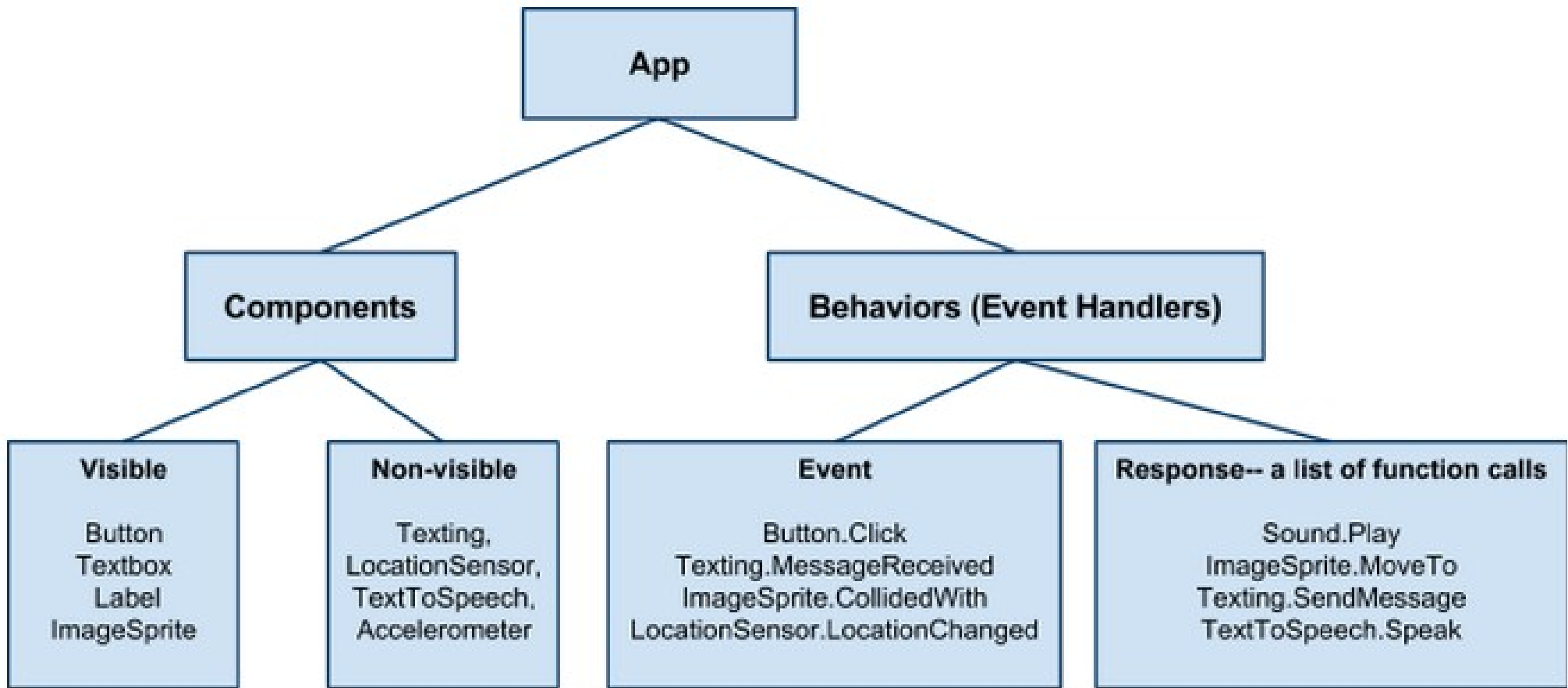


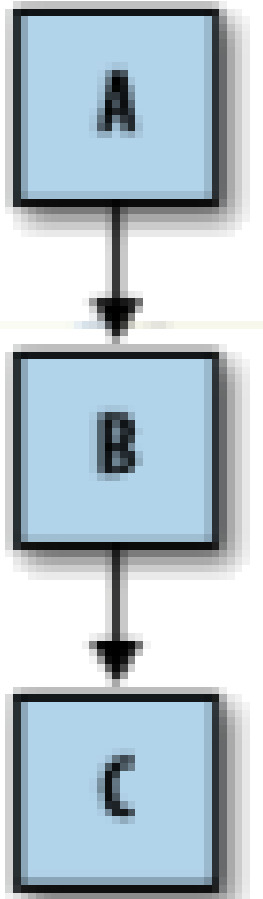
# ΠΓΤ 318: Διαδρασικά Πολυμέσα II

## Διάλεξη 2: App Infrastructure & Conditionals

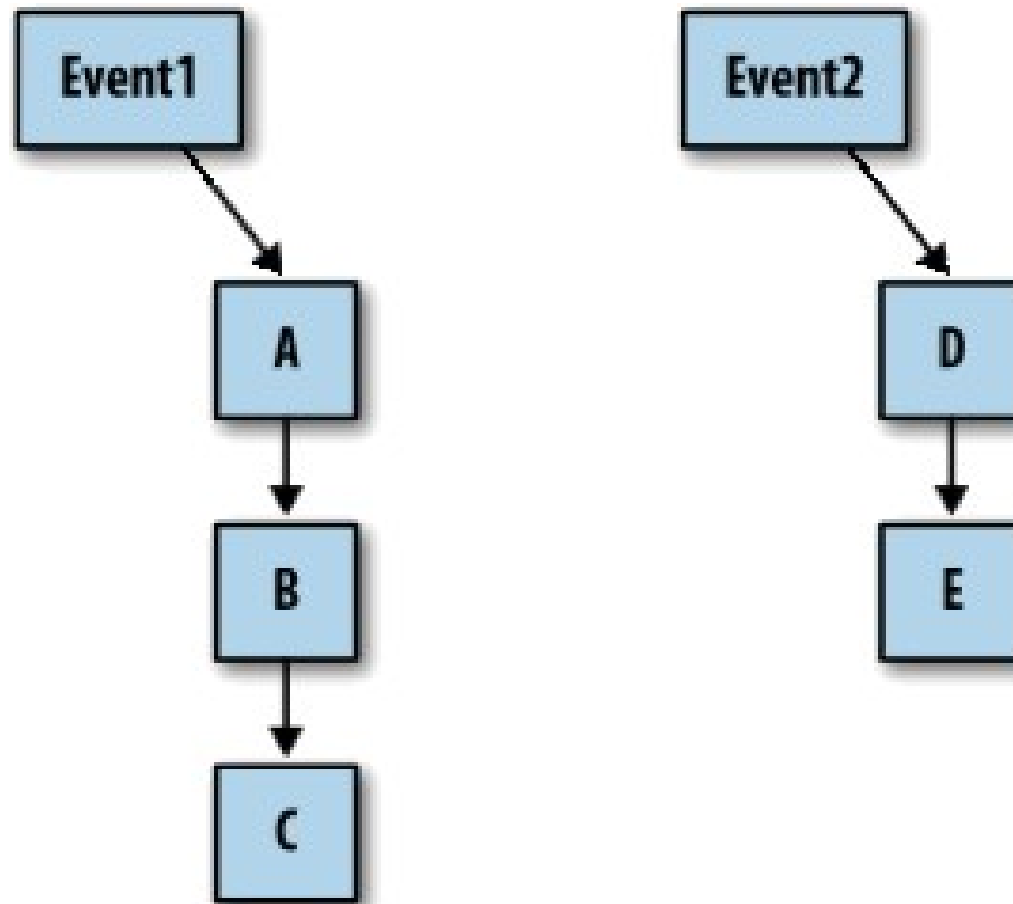
Χαράλαμπος Πουλλής



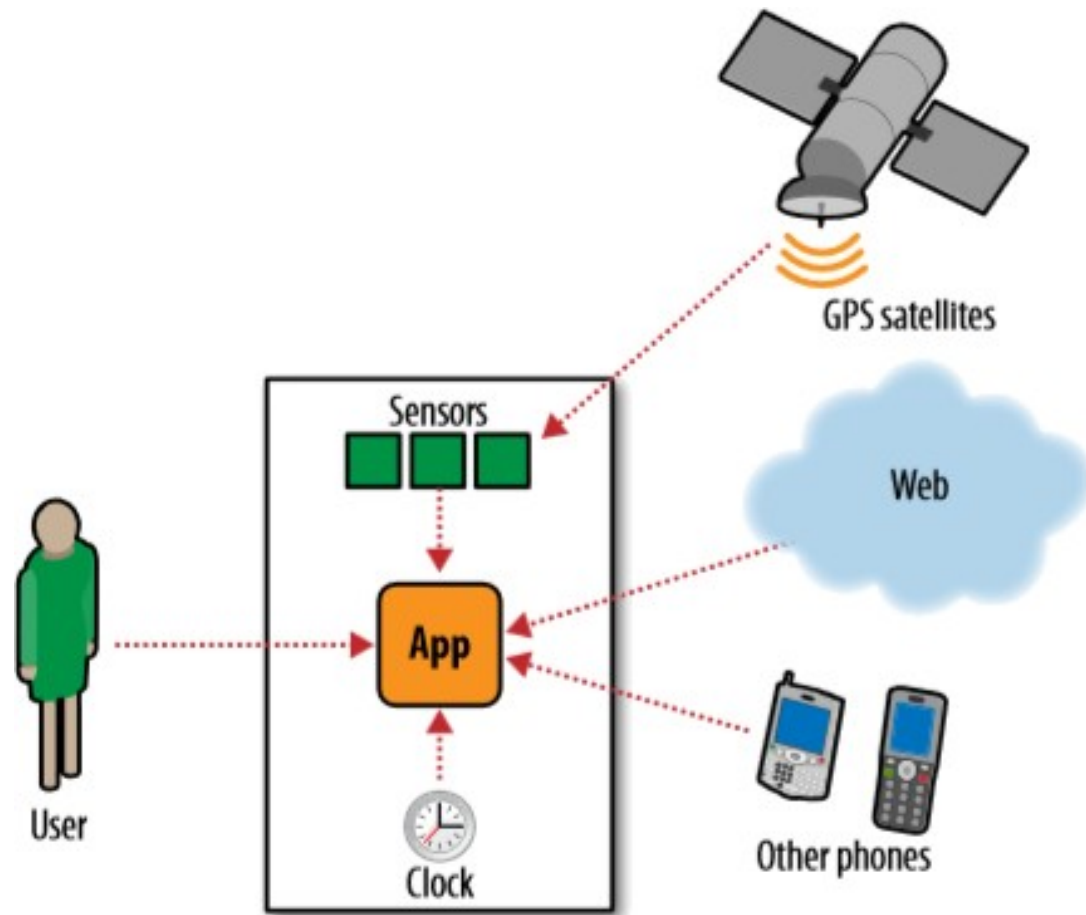
# An App As a Recipe



# An App As a Set of Event Handlers



# Event types

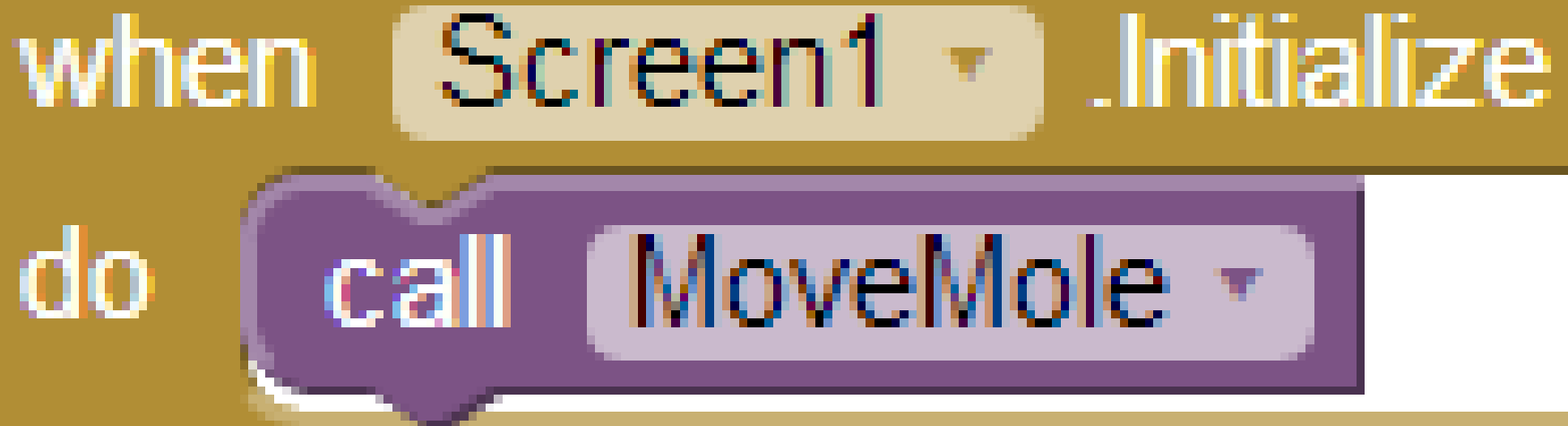


```
when SpeakItButton .Click
do call TextToSpeech1 .Speak
message TextBox1 .Text
```

```
when SpeakItButton .Click
do call TextToSpeech1 .Speak
message TextBox1 .Text
```

```
call TextToSpeech1 .Speak
message TextBox1 .Text
```

# Initialization Events



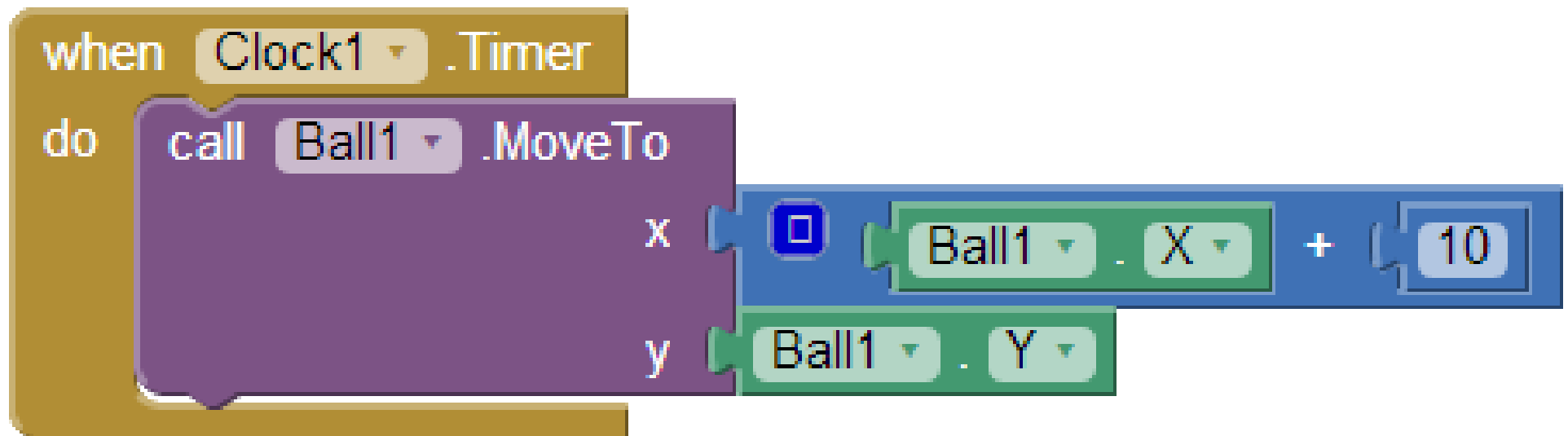
```
when Screen1 Initialize  
do call MoveMole
```

The image shows a Scratch code block with a gold background. The block starts with the word "when" in yellow. To its right is a dropdown menu containing "Screen1" with a small downward arrow. This is followed by the text ".Initialize" in yellow. Below this, the word "do" is in yellow, and to its right is a purple call block. The call block has the word "call" in white and a dropdown menu containing "MoveMole" with a small downward arrow.

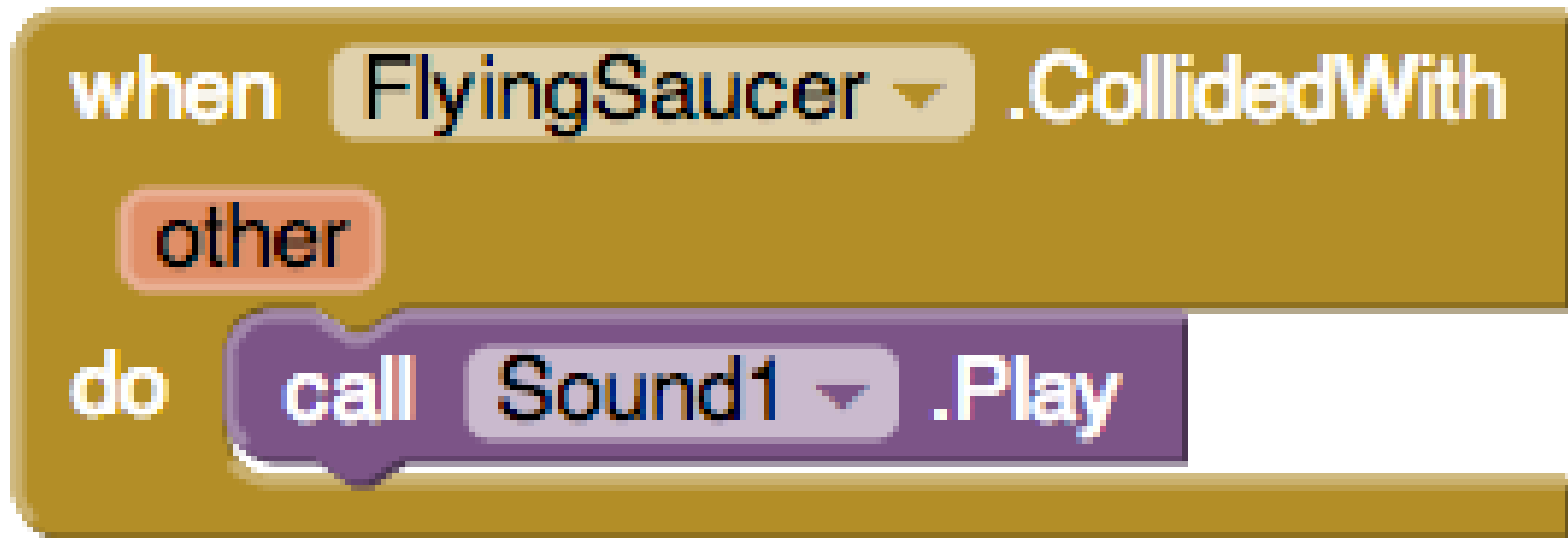


# Timer Events

```
when Clock1 .Timer  
do  
  call Ball1 .MoveTo  
    x Ball1 . X + 10  
    y Ball1 . Y
```

The image shows a sequence of Scratch code blocks. The first block is a yellow 'when green flag clicked' block with a dropdown menu set to 'Clock1' and the text '.Timer'. Below it is a purple 'do' block containing a 'call' block. The 'call' block has a dropdown menu set to 'Ball1' and the text '.MoveTo'. To the right of the 'MoveTo' block are two input fields: the top one is labeled 'x' and contains 'Ball1 . X + 10', and the bottom one is labeled 'y' and contains 'Ball1 . Y'.

# Animation Events



# External Events

```
when Texting1 ▾ .MessageReceived
```

```
  number  messageText
```

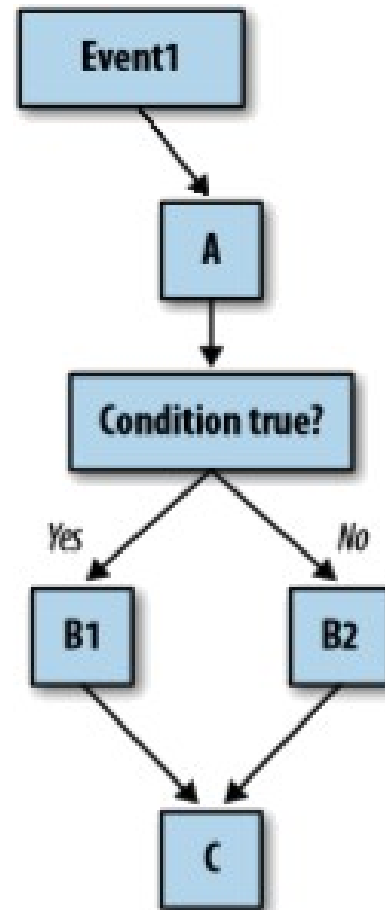
```
do
```

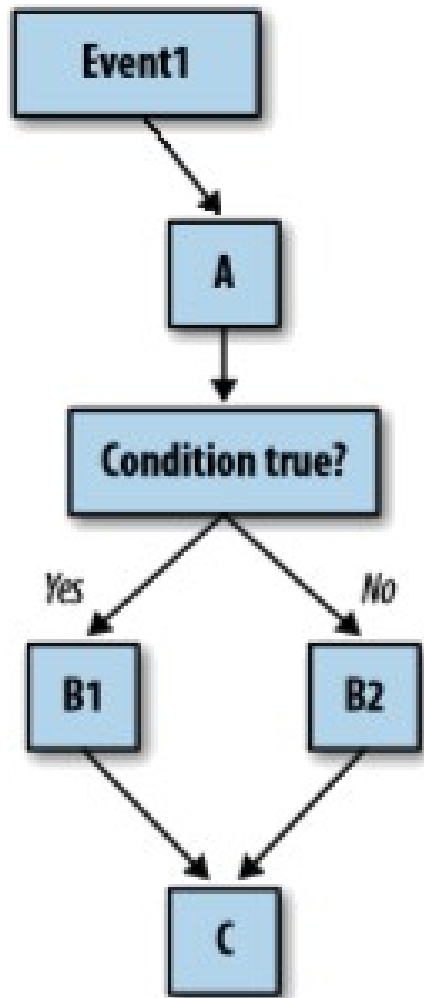
```
  set Texting1 ▾ . PhoneNumber ▾ to get number ▾
```

```
  set Texting1 ▾ . Message ▾ to " Stop texting me! "
```

```
  call Texting1 ▾ .SendMessage
```

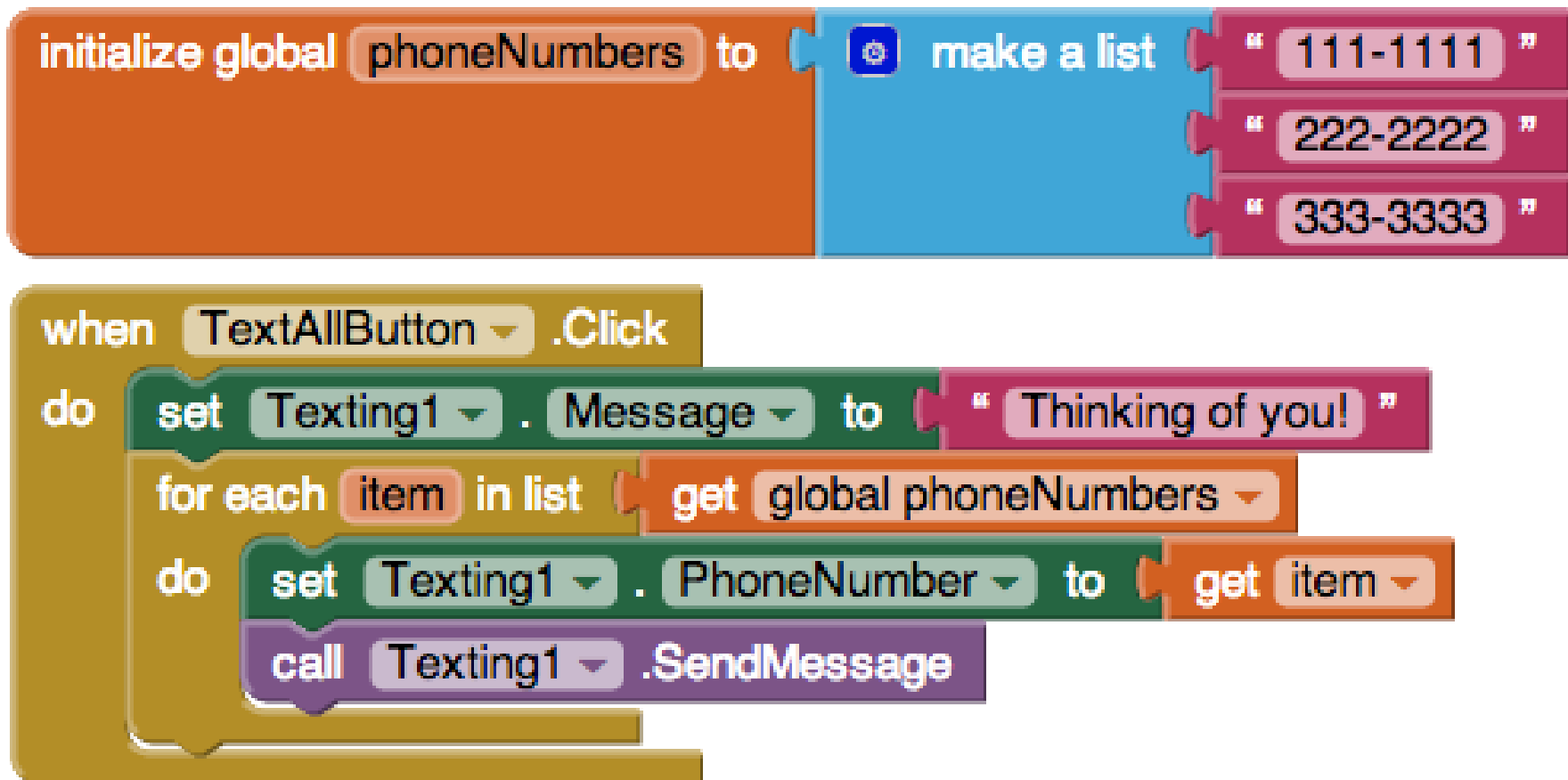
# Event Handlers Depending on Conditions



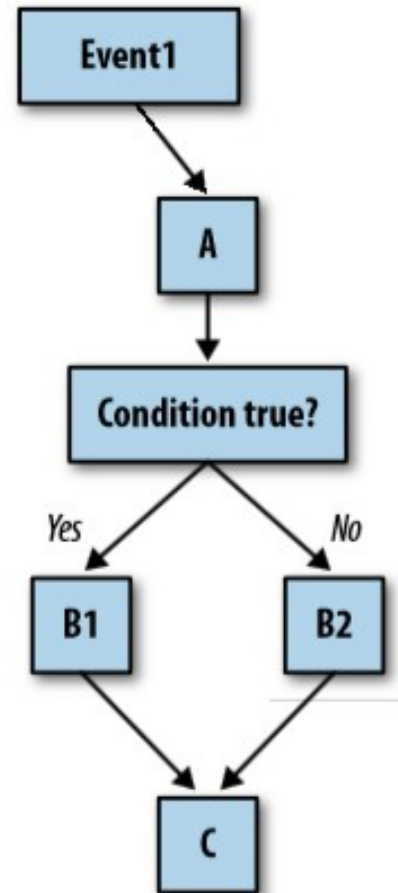


```
if [ ] then [get global score > 100] [set GameStatusLabel . Text to "You Win!"]
```

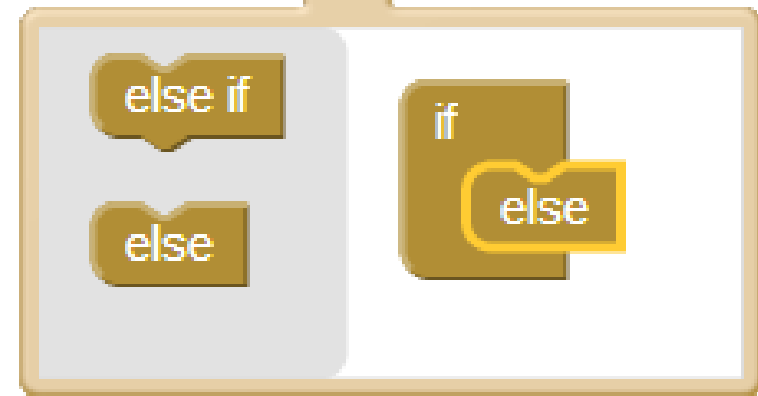
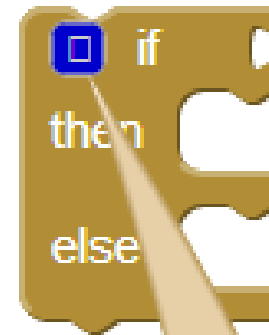
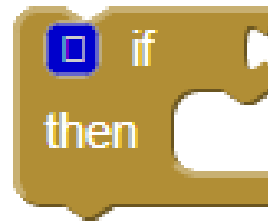
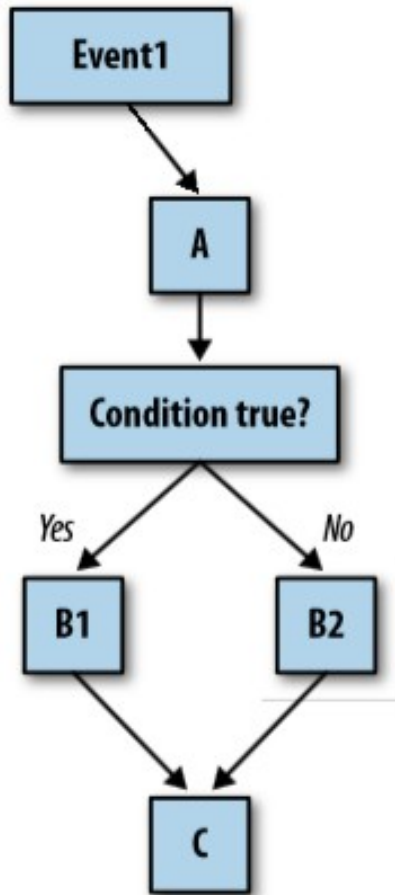
# Event Handlers with Repetition



# Conditional Blocks

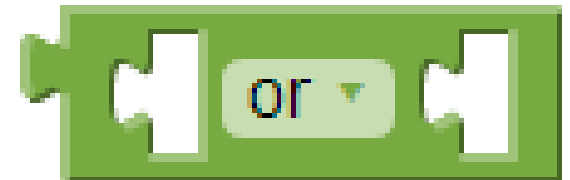
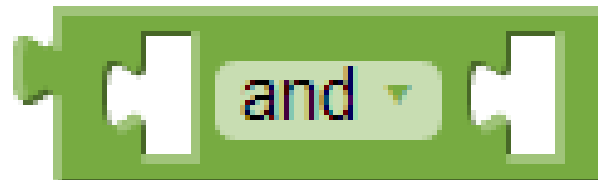
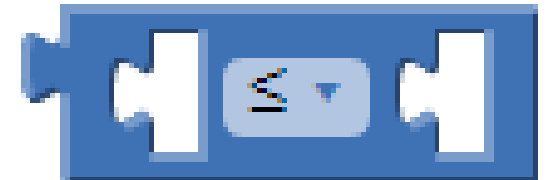
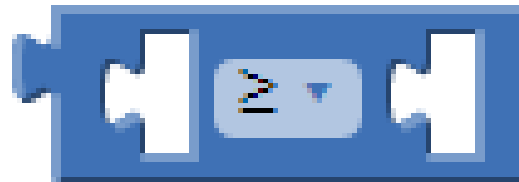
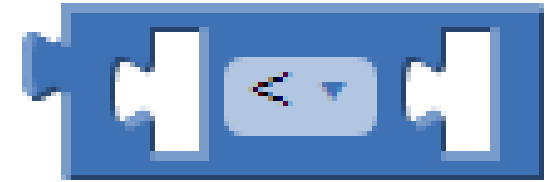
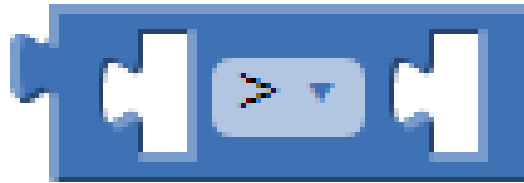
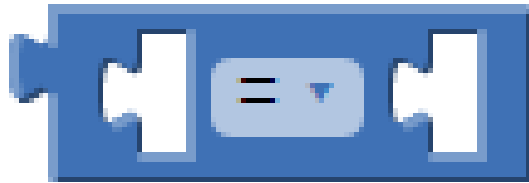


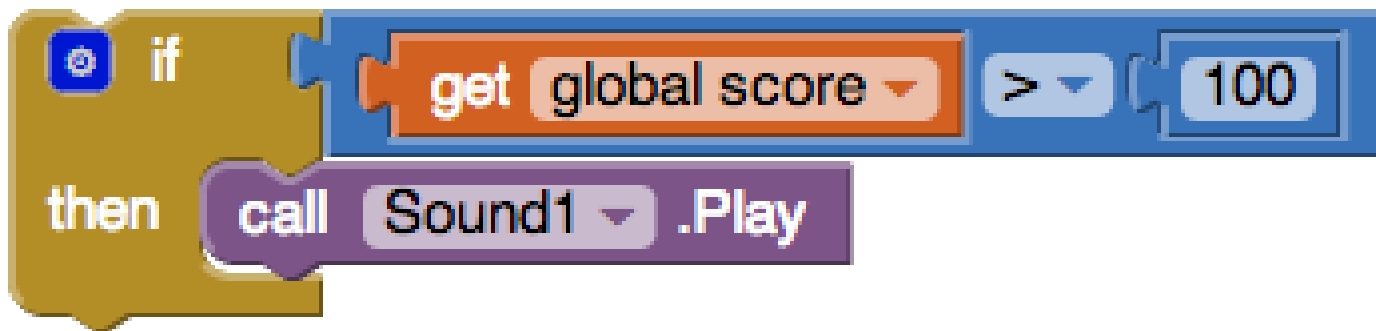
# Nesting Conditions with if and ifelse Blocks



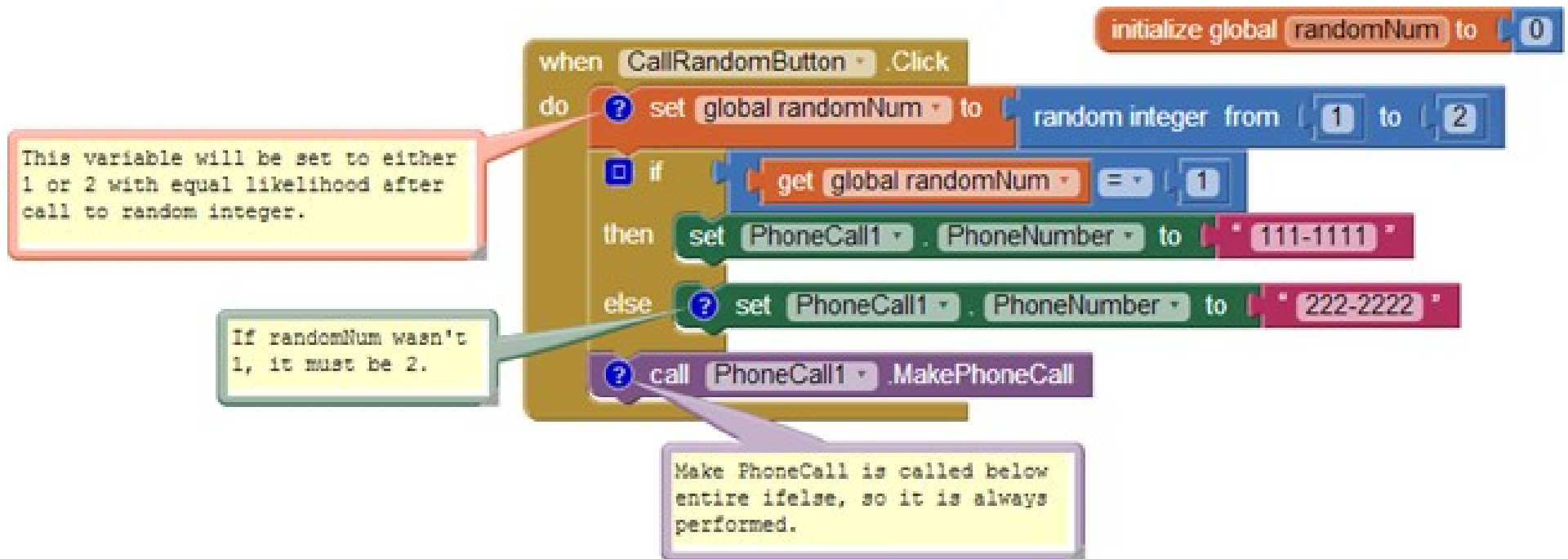


# Boolean Expressions

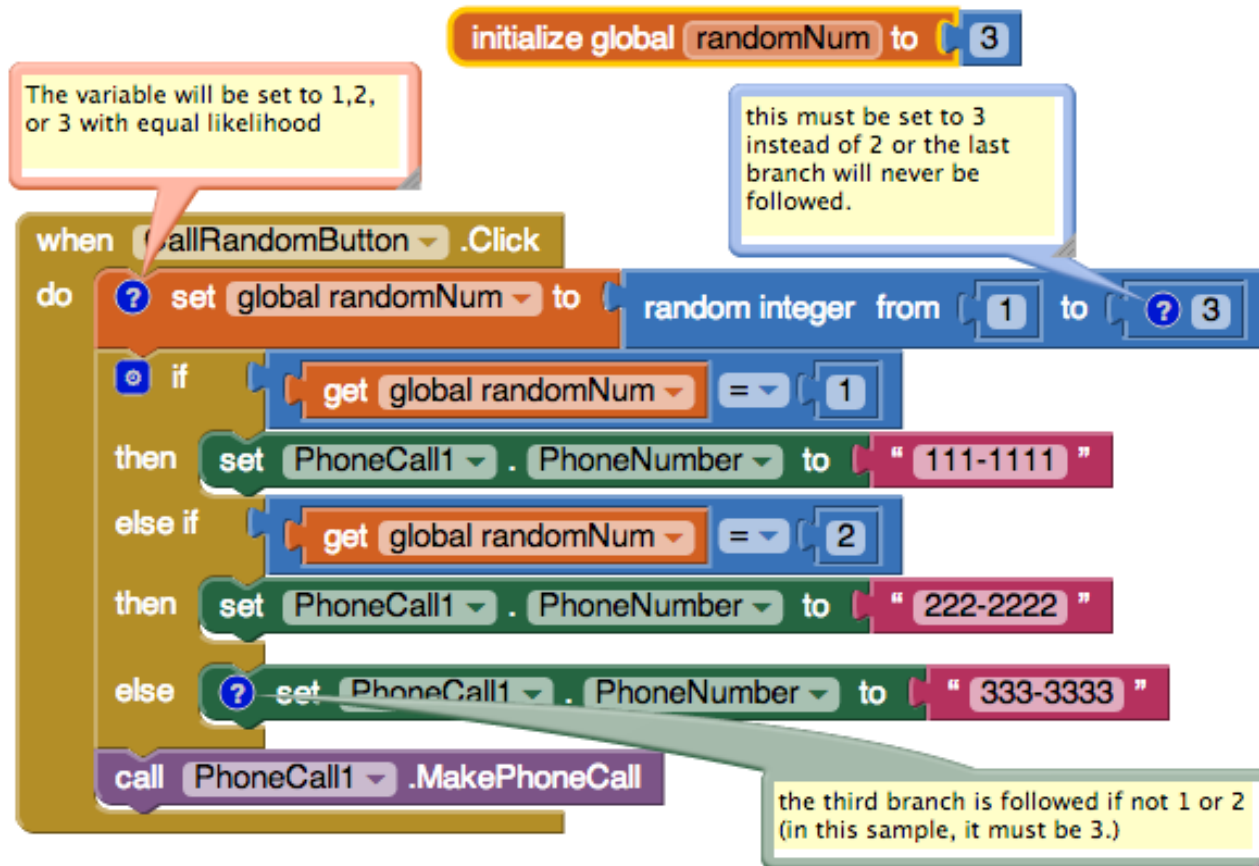




# Example 1

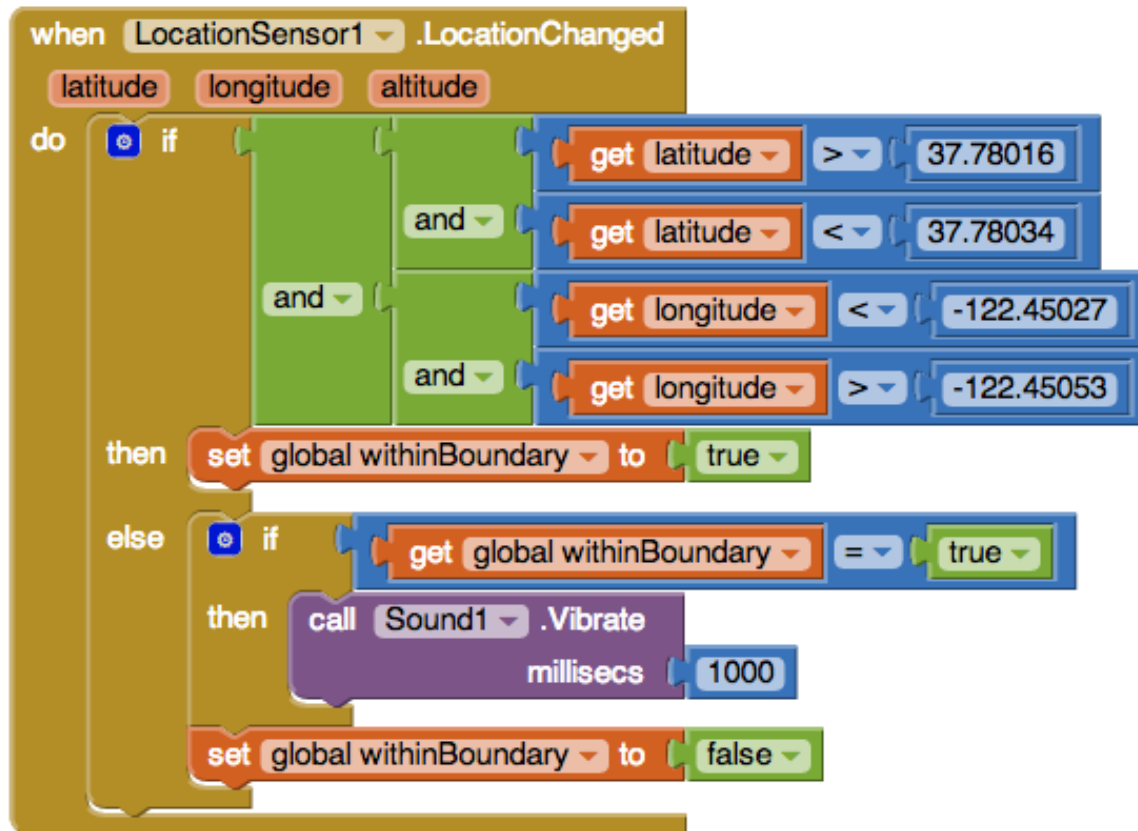


# Example 2



# Example 3

initialize global `withinBoundary` to `false`



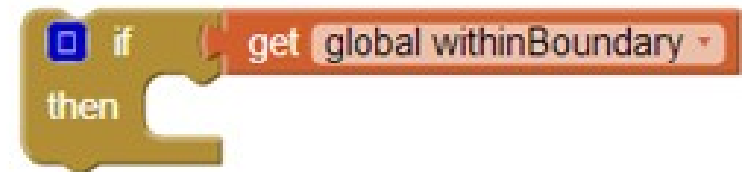
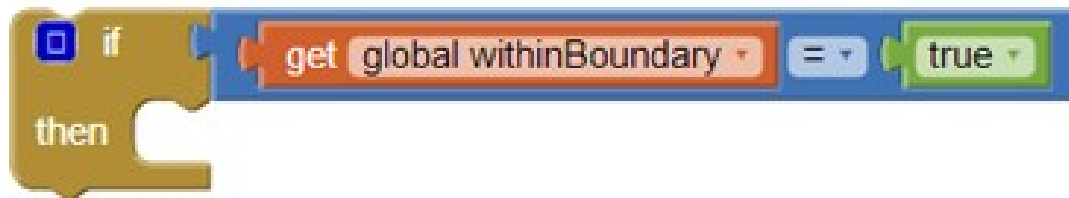
when `LocationSensor1` .LocationChanged

latitude longitude altitude

do

- if
  - and
    - get latitude > 37.78016
    - and
      - get latitude < 37.78034
      - and
        - get longitude < -122.45027
        - and
          - get longitude > -122.45053
- then
  - set global `withinBoundary` to `true`
- else
  - if
    - get global `withinBoundary` = `true`
    - then
      - call `Sound1` .Vibrate
        - millisecs 1000
    - set global `withinBoundary` to `false`

# Are these two equivalent?



# Ασκήσεις

- Event handling
  - <http://youtu.be/8BkmkQBODzc>
  - <http://youtu.be/BQYNFuQBNwM>
- Conditionals
  - <http://youtu.be/M1Wu1QzbJsE>
  - <http://youtu.be/YUjaMYJagn8>
- Άσκηση 2
  - Due date: **23 Σεπτεμβρίου 2014, 11:59μ.μ.**