


### **EXERCISE 1**

- |                |                     |               |                |
|----------------|---------------------|---------------|----------------|
| 1. direction   | 6. Alt              | 11. OnClick   | 16. OnColor    |
| 2. click       | 7. Painting/Clipart | 12. setsize   | 17. Animate    |
| 3. right click | 8. pd               | 13. Animation | 18. 180        |
| 4. head        | 9. project          | 14. pencil    | 19. OnTouching |
| 5. oriented    | 10. stamper         | 15. Shift     | 20. OnTick     |

### **EXERCISE 2**

- A) We select the **Create a Turtle**  tool and we click in any point inside the page. We repeat this step three times (one per each turtle).  
By typing the command **newturtle "name** we can create a new turtle with this particular name in the middle of the page. However, the turtle created is still hidden. To make the turtle visible we should also type the command **st** (show turtle).
- B) To rename a turtle, we **right click** on the turtle to open its backpack, and change its name inside the **Edit** field of the **State** tab.
- C) Turtle x1 puts the pen down and moves backward 150 steps  
Turtle x2 changes its size in 100 (magnified)  
Turtle x3 turns right 90 degrees  
Turtle x2 becomes invisible  
Turtle x2 moves forward 200 steps and becomes visible again





### **EXERCISE 3**

- A) These instructions make the turtle move repeatedly forward **10 steps** at a time and wait **0,5 second each time** (5/10 of second).
- B) We **right click** on the turtle to open its backpack, and then we open the **Rules** tab and we focus on the **OnClick** field.
- C) When we change the mode to **Once** we make the instructions to be executed only once instead of multiple times.
- D) We should increase the number of **forward (fd)** commands in order for the turtle to make greater steps forward each time or we decrease the number of **wait** commands in order for the turtle to pause for a shorter time interval e.g. `fd 20 wait 5, fd 10 wait 1`

#### EXERCISE 4

- A) There are 5 turtles
- B) Their names are: maria, george, nick, thomas, jenny
- C) The color of george is green (55) and the color of nick is red ("red")
- D) The turtle named jenny becomes invisible with `ht` command.
- E) The instruction `thomas bk 50` misses comma after the name of the turtle
- F) Error message: I don't know how to Thomas

#### EXERCISE 5

1. Create a turtle inside the page 
2. Open the **Painting/Clipart** palette 
3. Select the **Sets** button 
4. Click on the **1<sup>st</sup> bird** and while holding the **Shift** button click on the **2<sup>nd</sup> bird** 
5. After selecting those shapes, **click on** the turtle to **add** them
6. Right click on the turtle to **open its backpack**
7. Open the **Rules** tab to program the turtle
8. In the **OnClick** field we type the instruction `fd 0 wait 1`
9. We change the mode to **Forever** so the instruction to be executed repeatedly
10. **Click** on the turtle to make it move

#### EXERCISE 6

- A) The turtle **changes size** after a preset interval of 1 second.  
The turtle's size becomes equal to 40 (default size) plus a random number between 0 and 79.
- B) The turtle is programmed to **react** when it touches the **sky color**. When it touches this color, it becomes invisible, then it waits for 1 second, then it bounces (it rotates 180 degrees), then it moves forward 100 steps and finally it becomes visible again.
- C) The turtle is programmed to **react** when it touches **any other turtle**. When it touches one of the existent turtles inside the page, it changes its color to red (15) and stops everything.