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STEP by STEP

ROBOTICS

ServoMotor Flag

Lesson Objectives

- Know the servomotors or servos
- See how they differ from a normal engine
- Learn to handle them with a joystick
- Use analog input blocks with different pins
- Introduce the algorithm concept

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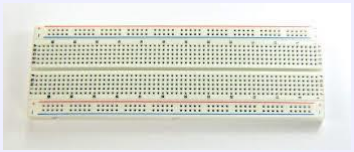
Material and resources to use

Nome	Figura	Descrição
Arduino		Arduino Uno or compatible and with the firmware for S4A loaded.
Breadboard		Breadboard with 840 pins
Joystick		A joystick is composed of a pair of potentiometers (one for the X axis and one for the Y)
ServoMotor		A servomotor does not rotate continuously, but what we do is control its position.

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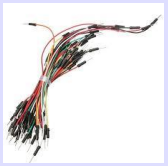
Material and resources to use

Nome	Figura	Descrição
Cables		Cables to connetions
Software S4A		Development Software
Tablet		Device build program
Computer		Device build program

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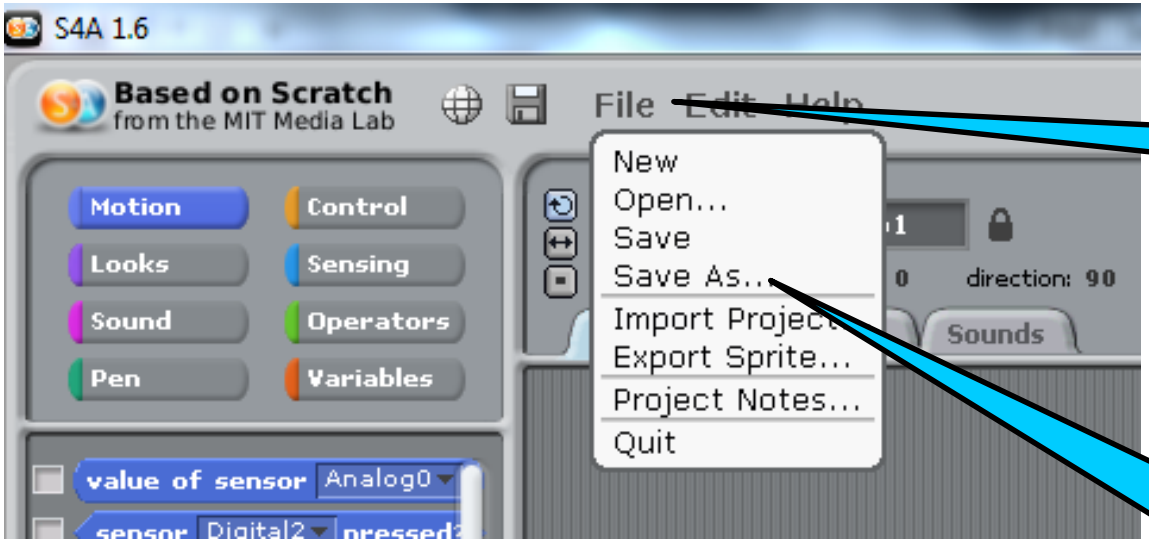
ServoMotor Flag drawing



Click in“File”

Click in“Save As” with name *ServoMotor_Flag*

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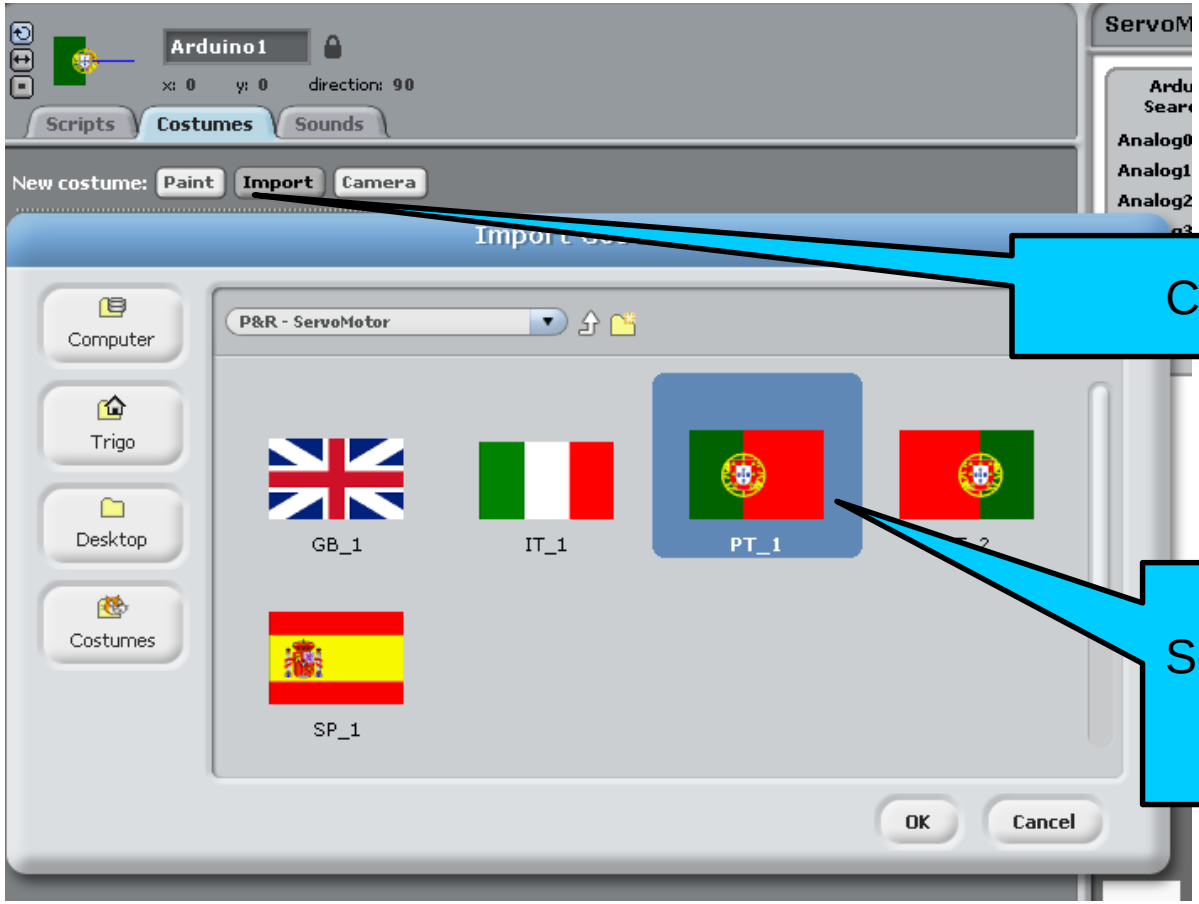
ServoMotor Flag drawing



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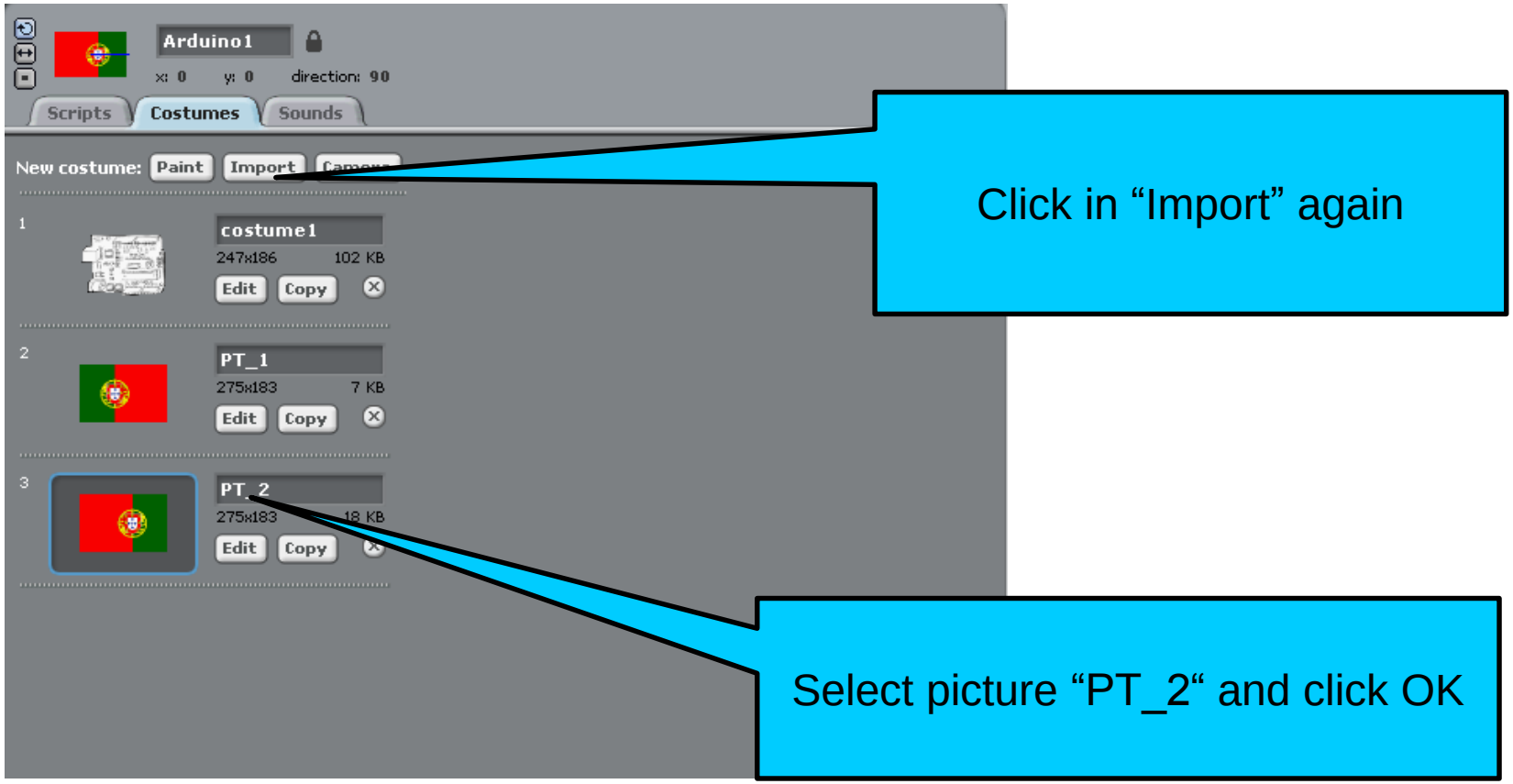
ServoMotor Flag drawing



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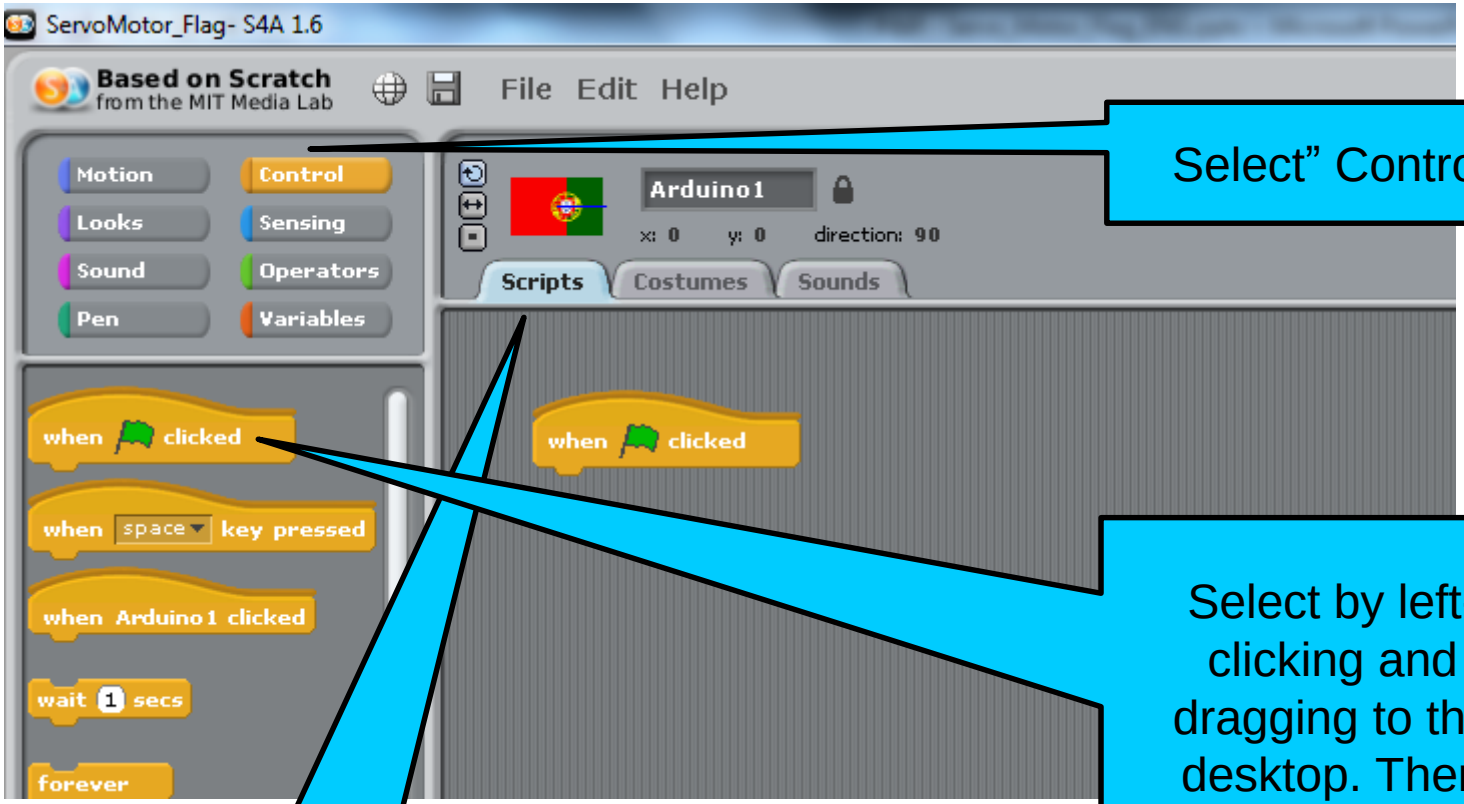
ROBOTICS - ServoMotor Flag

Programming



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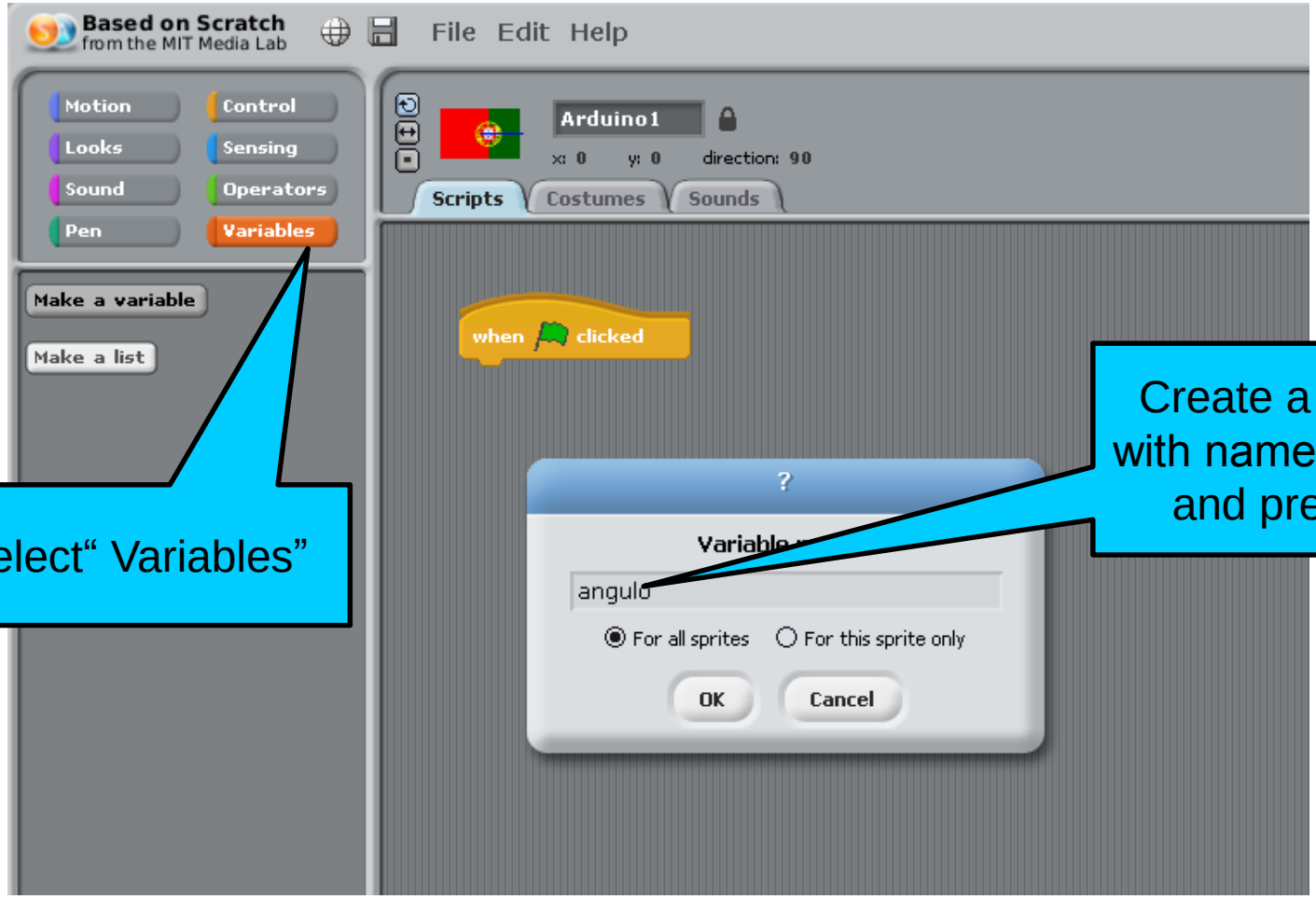
Programming



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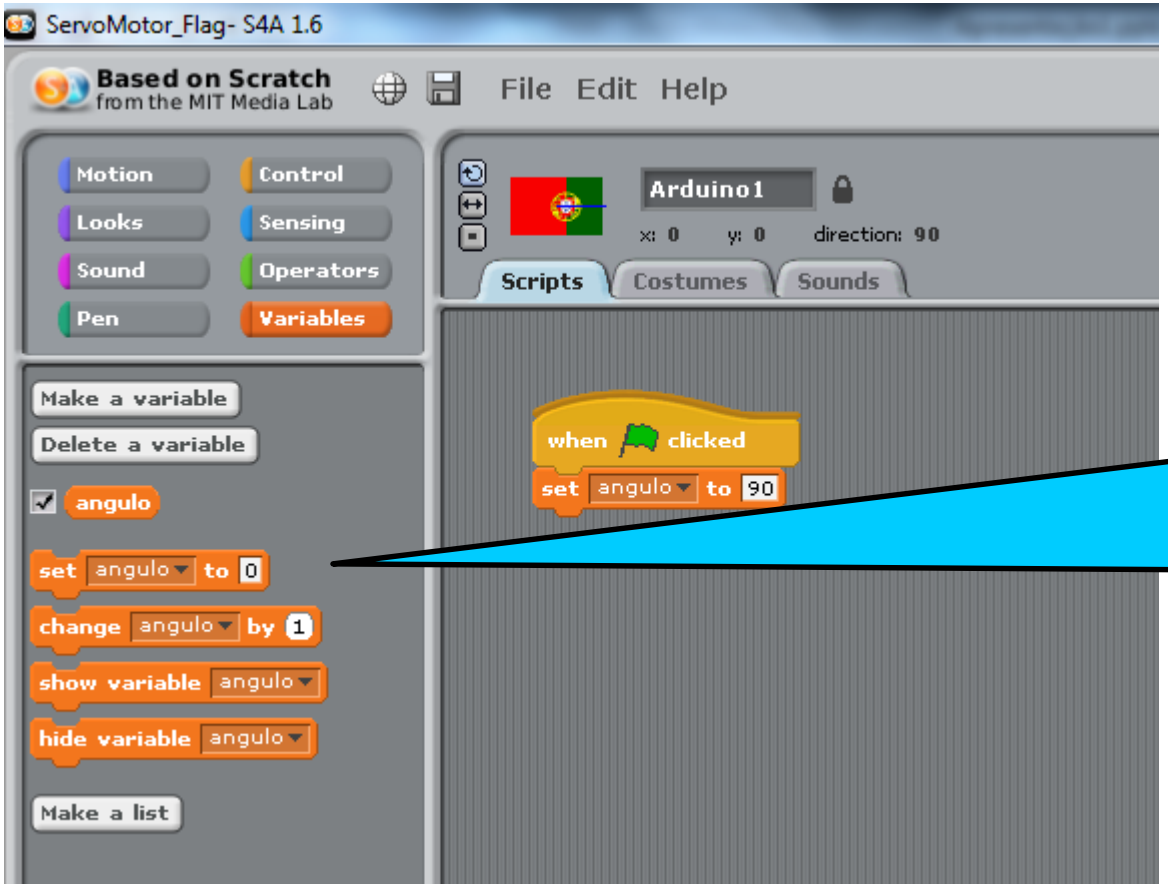
Programming



Select by left-clicking and dragging to the desktop. Then release the mouse button. Put the value 90

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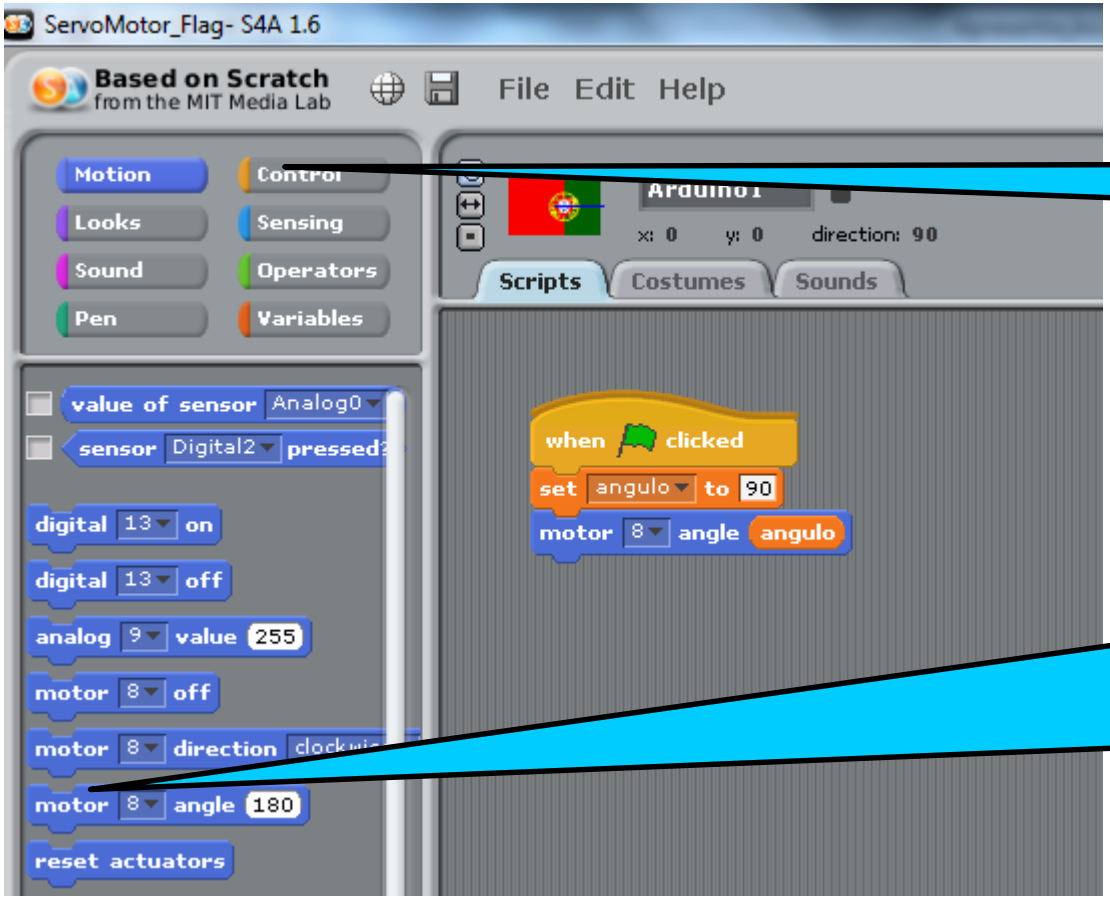
ROBOTICS - ServoMotor Flag

Programming



Select“ Control”

Select by left-clicking and dragging to the desktop. Then release the mouse button.Change de value to variable “angulo”

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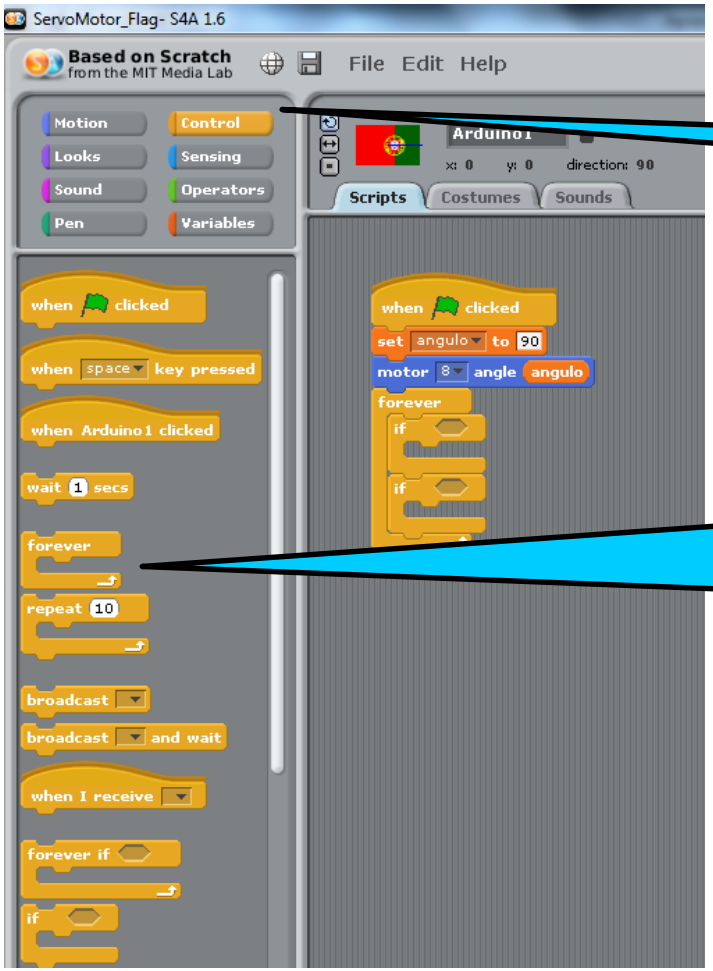
Programming



Select“ Control”

Select by left-clicking and dragging to the desktop. Then release the mouse button

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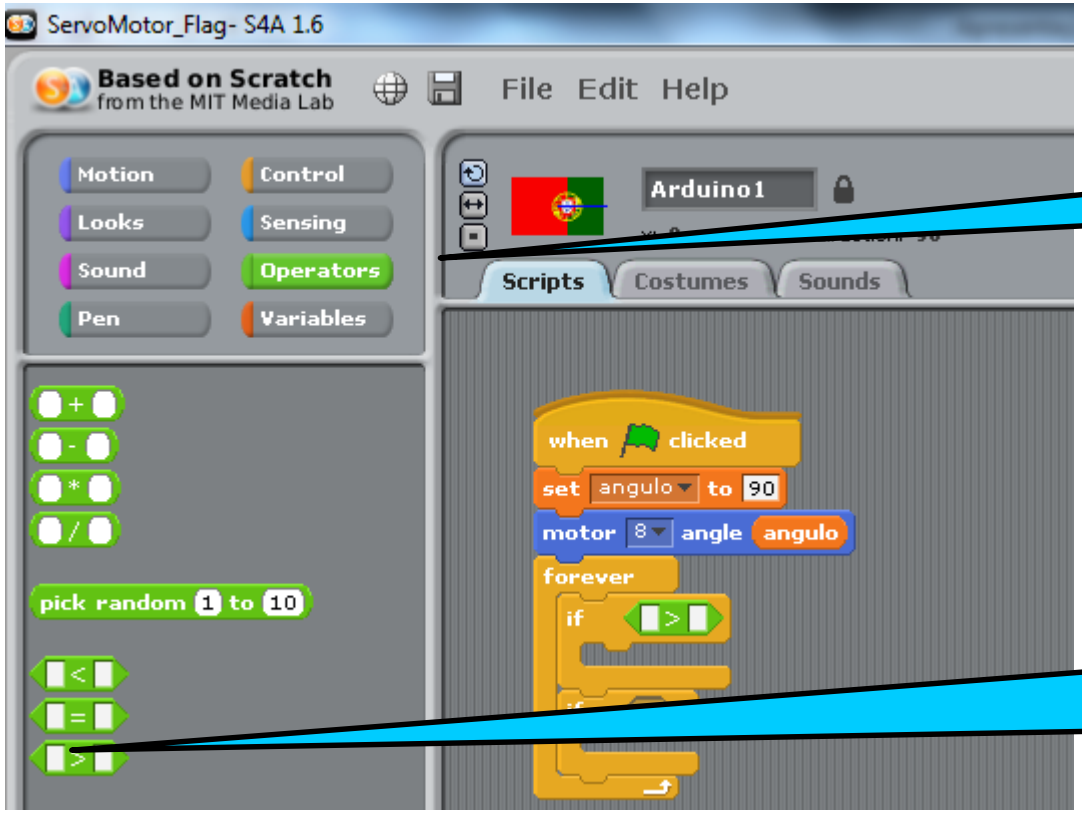
Programming



Select“ Operators”

Select this block and drag it to the desktop.

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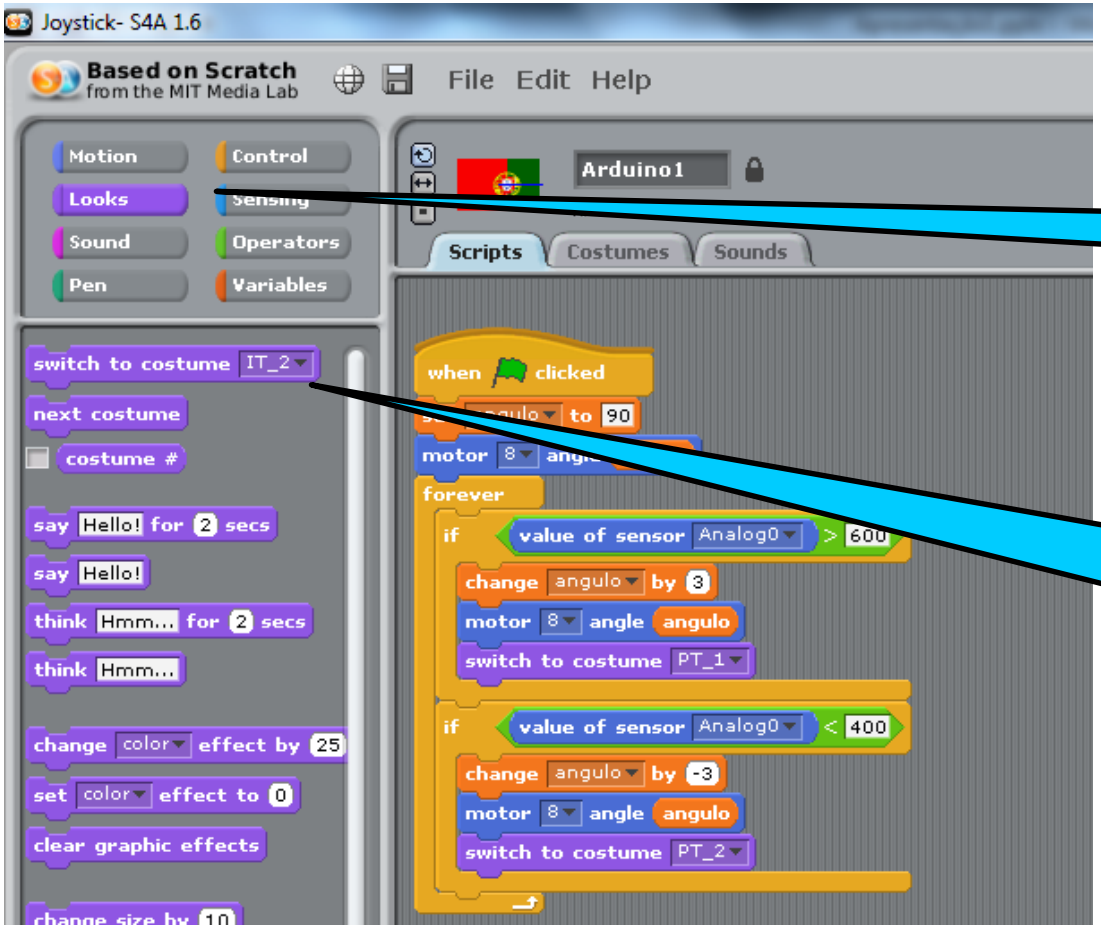
Programming



Select“ Looks”

Select this block and drag it to the desktop. Select “PT_1” and “PT_2”

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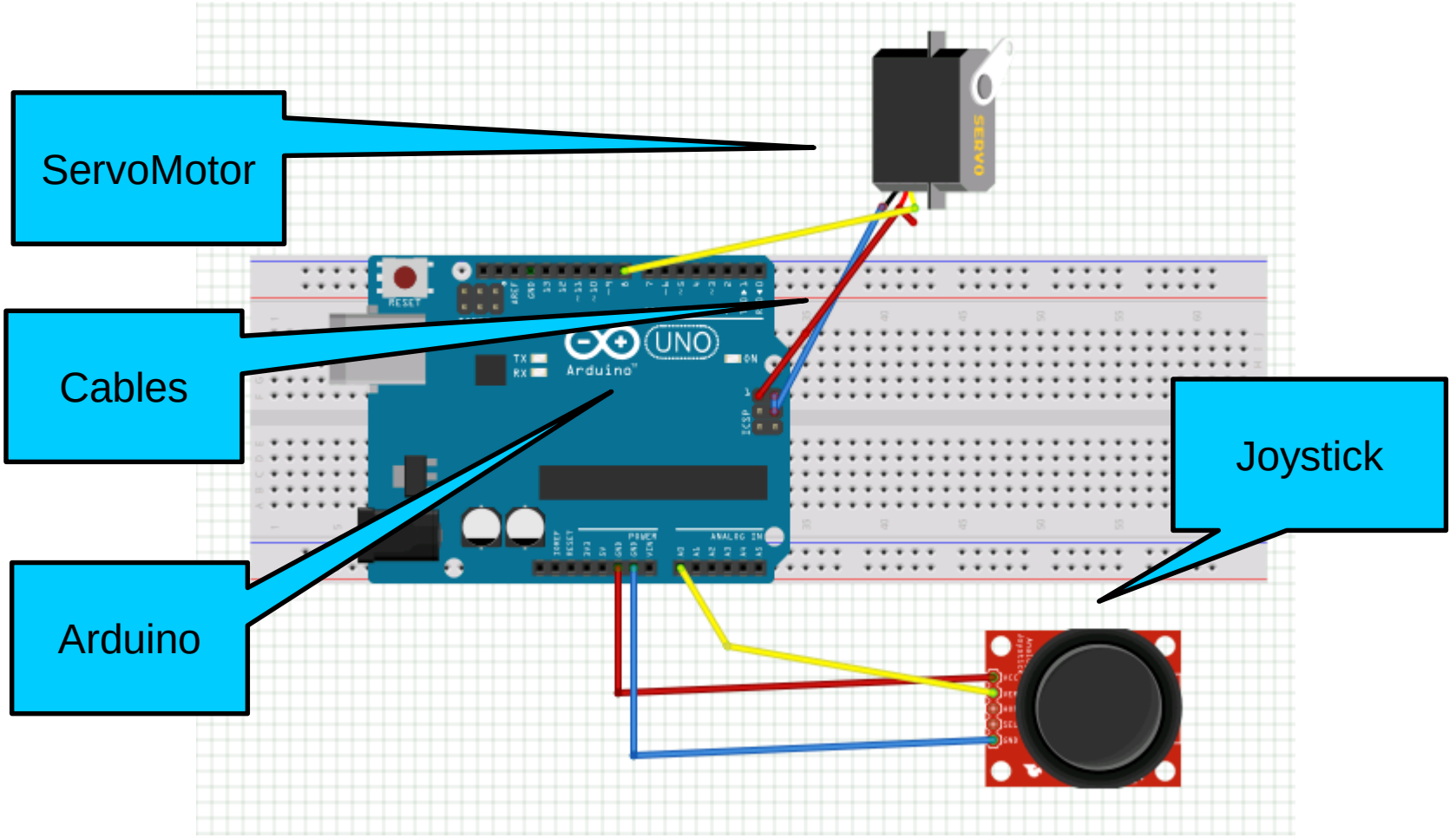
Circuit design



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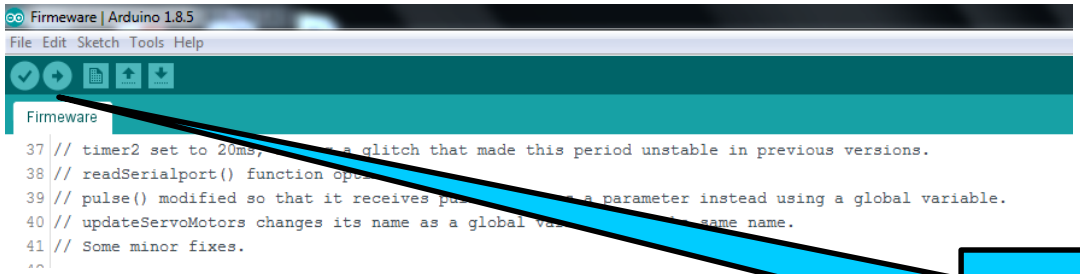
Upload the FirmeWare to Arduino



Open file “Firmeware“ and upload to arduino

```
  pinType type;       //Type of pin
  int state;         //State of an output
  //byte value;       //Value of an input. Not used by now. TODO
};

pin arduinoPins[14];  //Array of struct holding 0-13 pins information

unsigned long lastDataReceivedTime = millis();
```

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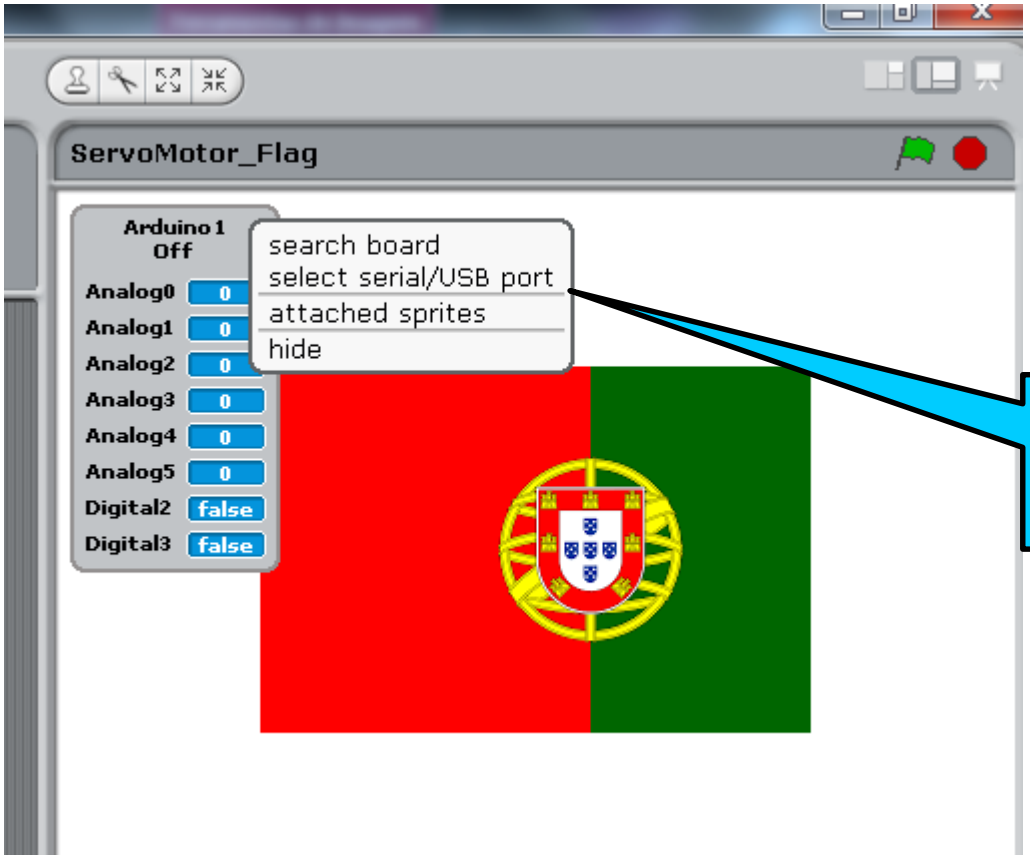
Connection



Click “Select serial/USB port"

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