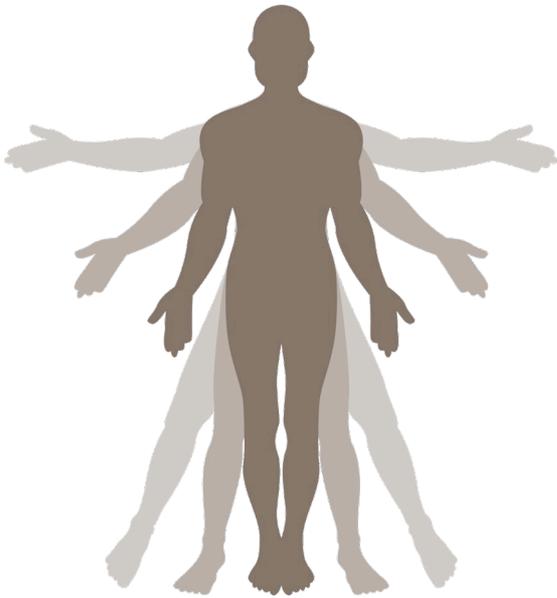# technocamps

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Kinect2Scratch
Top Tips

Kinect2Scratch is an application that allows Scratch to utilise the Microsoft Kinect sensor as visual input, a Scratch project could then be controlled using a person's motion. Scratch is a "drag and drop" programming environment (a programming language for kids from the MIT Media Laboratory) enabling you to learn the importance of certain aspects of programming without the difficulty of handing syntax errors or confusing code constructs. This includes learning about sequencing commands and the importance of clear, concise instructions for the computer to interpret. Kinect2Scratch was developed by Stephen Howell. The application can be downloaded via the following link:

www.scratch.saorog.com

The Kinect Sensor

The Kinect is a horizontal bar mounted to a base that allows the bar to pivot/move on it. It is web-cam style technology to enable users to control and interact with the Xbox console or in this case the Scratch interface on a computer. On the front of the Kinect, you will find a RGB (Red, Green, Blue) camera, an infrared laser projector and a sensor which combines to sense depth, and four microphones. Combining this hardware with the software allows the Kinect unit to tell how far away the person is (depth sensor) as well as where they are, see you like a normal camera, and respond to voice commands given by the user. For Kinect2Scratch, only the depth sensor with the RGB camera are important for controlling what is happening in the Scratch project.

Using the Kinect Sensor

The Kinect can distinguish certain parts of a person. In Kinect2Scratch, the hands are the methods of input that are of most importance. In the workshop for one particular Scratch project, it can be used to control a paddle up and down using the following code block found in the "Sensing" category:

`HandLeft_y ▼ sensor value`

When testing without the Kinect, you can use "mouse_y" instead to control the paddle. Alternatively, the keyboard arrows can be used to move the paddle up and down respectively.

Additional Features

Adding Sound

Within the "Sound" category there is a range of commands available to you to add to your game. Controls that could supply your game with background music or even give your characters voices. These can also be imported from a range already available to you on file, but there is the option to record your own voice or sounds.

Costume Change

The "Looks" category contains some handy commands you could use, especially if you want to do things like "collectables" for your game or even levels. By being able to change the costume you could design a new layer to "show" when a certain condition is met in your script. You could even simply "switch to the next costume".

Kinect2Scratch was developed by Stephen Howell.
It is available at http://scratch.saorog.com

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