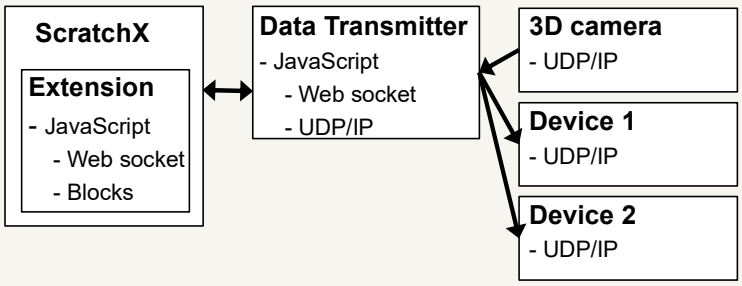
A Programming Environment for Kinba

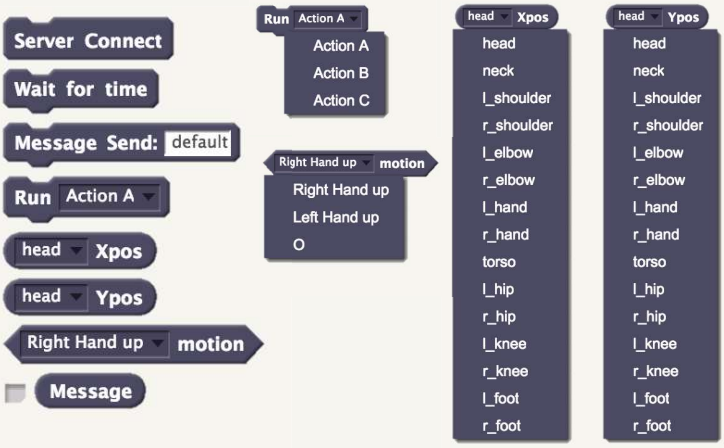
- To provide interactive program environment connect with Scratch and Kinba the finest receptionist robot installed in King's College London

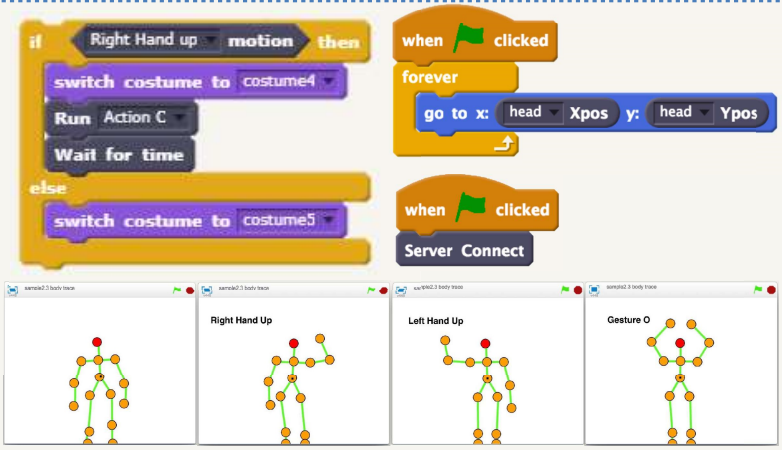
Through various projects, Kinba can realize many functions and visitors can indirect experience with the provided program.

Even if visitors do not have enough knowledge programming language and robotics, the Scratch Extension blocks can give an interactive experience to visitors and easy to produce unique programs.

Data Transmitter manages the transmission between the extension and devices. The extension sends data stream by WebSocket, the transmitter send messages to ROS (Robot Operating System) to control devices by the UDP/IP. 3D camera information is modified by OpenNI open source library to give joint position data.







The structure of the system can reduce modification of existing system, and it easy to establish another system.

The extension produces different type of the block, Control, Gesture, and Position block which have a list of option. Position block provides human body joint data from 3D camera, control block send pre-set messages through the Transmitter to the target device.

Above figures are demo project Skelton which present joint position data, each circle is located by Position blocks. Gesture block recognizes simple gesture and shows the text in top left corner. Control block possibly uses this circumstance.

This simple demo will help to understand how to use the system. Manual of the project and the other demo program has uploaded to the GitHub.