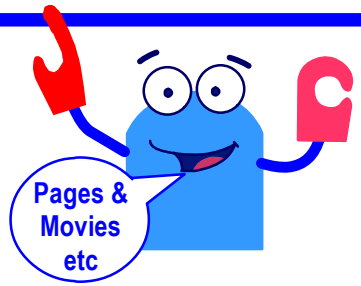
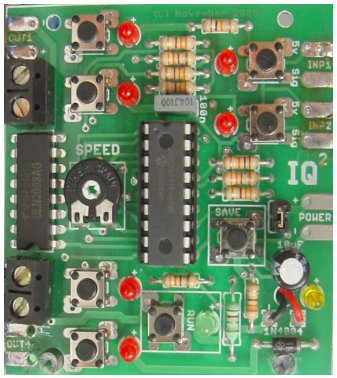
1 Using IQ2 microcontroller with Kre8® Robots etc

Contents



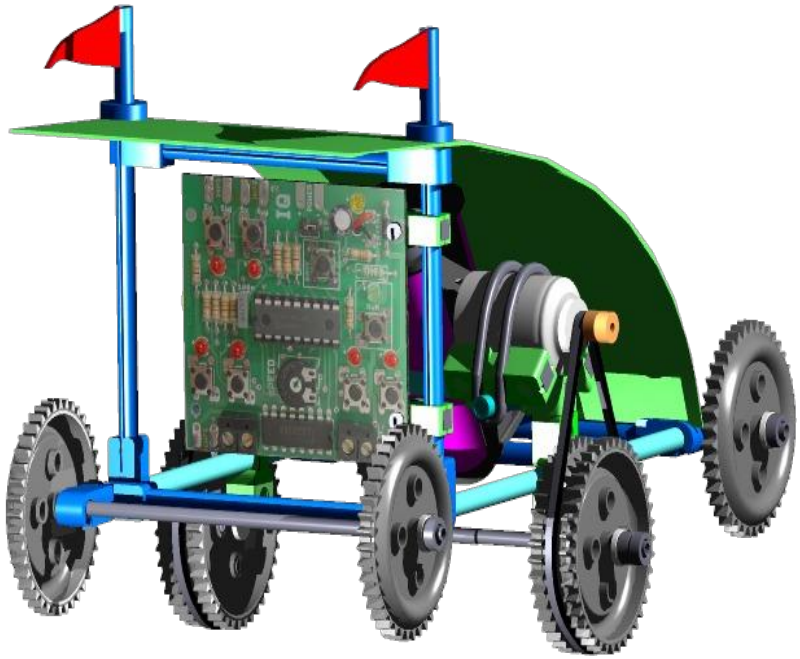
Keywords

Robot control, program, sequence LEDs, Input, process, output, reset, run, resistor, predicting, timing, PIC chip, driver chip, micro-controller, motor control, inputs, bulb, buzzer, design, assembly,



Micro-controller

Used here with Kre8 Cleverbot - see part list



Tasks

After making the Cleverbot - see separate instructions
Add the Micro-controller board using the instruction on page 2 and 3
Program the robot
Have fum making it dance about etc

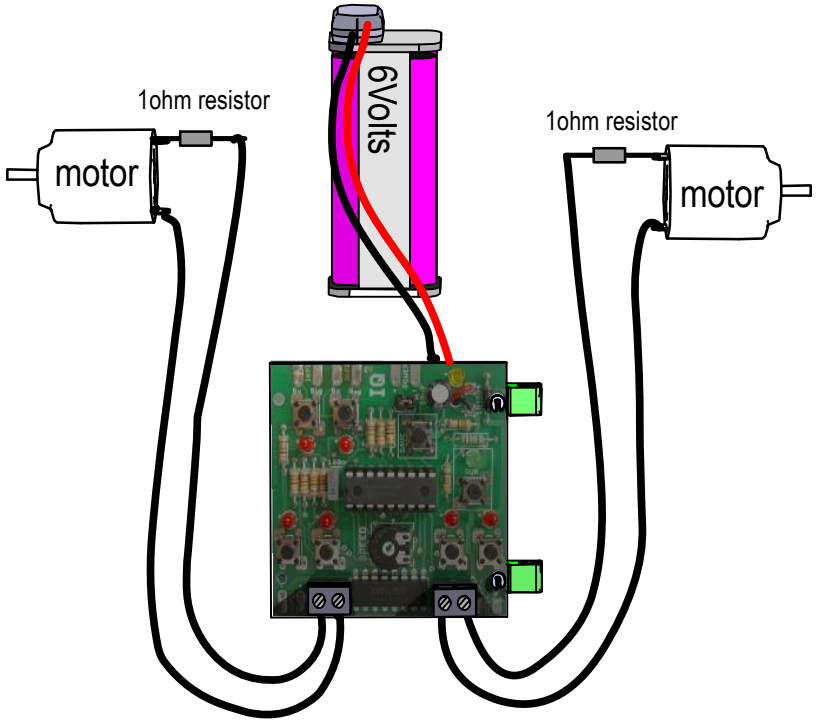
Extra Challenges

a) Set up a challenge for yourself
b) Set a challenge for a group of people
c) Redesign with your own theme

IQ2 microcontroller used with Kre8® Cleverbot
Wiring up and Parts List

Kre8® Making System

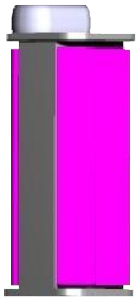
Wiring up the IQ2



Note - Switch wires over if the robot goes the wrong way]
(using screw connectors makes this easier

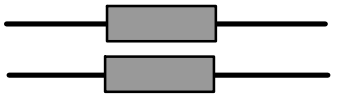
As this circuit does not use solar motors a 1.0 ohm resistor is needs to be placed in **series** with the motors as shown.

Parts Needed (+ Kre8 Cleverbot)



Note - The IQ2 Micro-controller is available from various suppiers such as Rapid Electronics and TEP and comes with its own basic instructions.

1 x 6Volt battery holder
(4 x AA battery type)

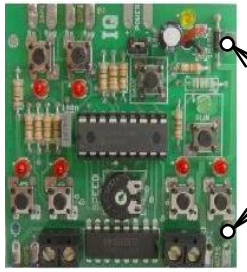


2 x 1.0 ohm resistors

1 x 8mm slit rod

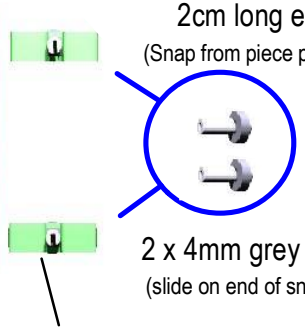
2 individual clip connectors
(cut from one uncut connector)

1 x IQ2 micro-controller



Drill these two holes 4mm dia.

2 x screw connectors
(or just solder wires in place)

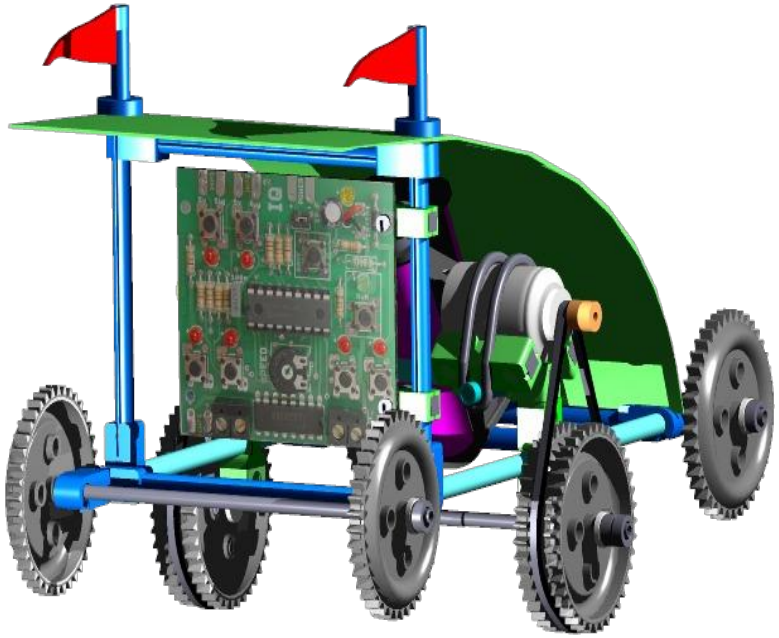


1 x 4mm snap rods
2cm long each
(Snap from piece provided)

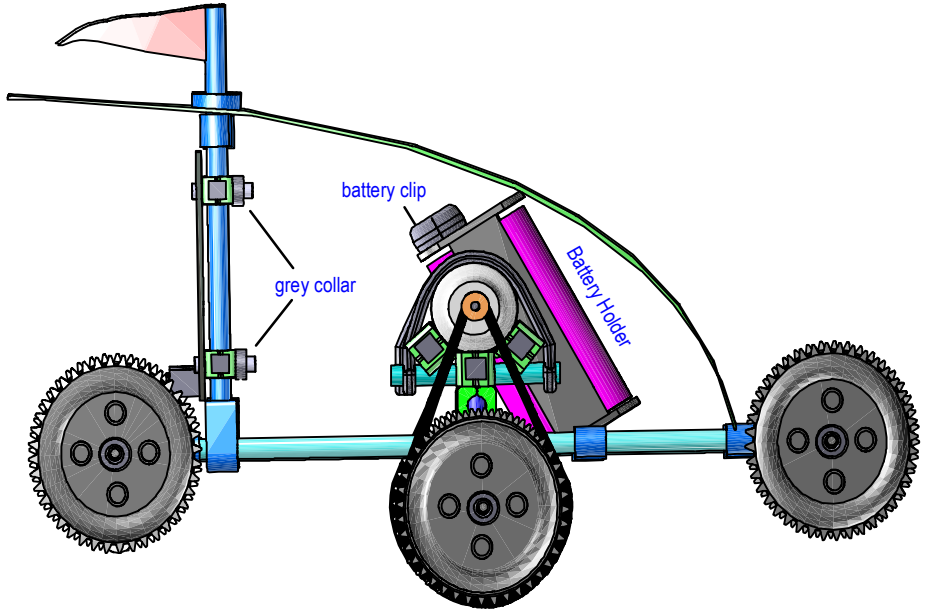
2 x 4mm grey collars
(slide on end of snap rods)

2 - green
Multiconnectors

3 The IQ2 shown added to Kre8® Cleverbot



The circuit board is held by two green multiblocks which have 4mm snap rods pushed into the 4mm diameter holes drilled into the PCB board.

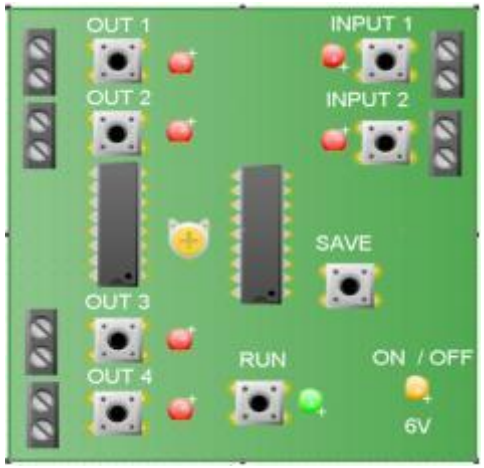


This side view shows how the battery rests on the extra rod held in place blue clup connectors. At the back the PCB board can be seen held by the grey collars.

4 IQ2 microcontroller with Kre8® Cleverbot

How to Program the Robot

Note - See instruction sheets supplied with the IQ2 for more help.



Simplied diagram

Simple Program

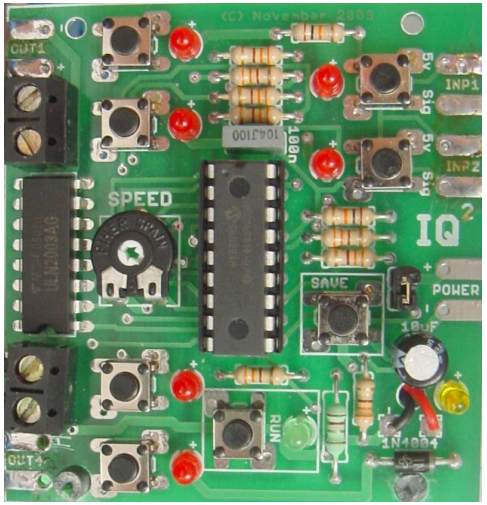
To turn Robot forward and turn

The Basic Idea-
Select each action wanted. SAVING each step
then RUN program.

Before starting press **RUN** to until the green led is **OFF**

Example

Action wanted	How to do it
TURN ON OUTPUT 1,2	**- press buttons so LED 1 and LED 2 are on**
Press **SAVE**	(this makes two motors work and go forward)
Repeat above	(this double the time going forward)
TURN OFF OUTPUT 1&2	**- press buttons so LED 1 and LED 2 are off**
Press **SAVE**	(this stops the action)
TURN ON OUTPUT 1	**- press buttons so LED 1 is on**
Press **SAVE**	(this turns a robot using just one motor)
To RUN	**- press RUN**



* *

Note - two screw connectors marked * have been added to make it easier to connect wires up.

Note - You will need to have the motors connected to OUTPUT 1 and OUTPUT 2 to make the ROBOT work
(if robot spins instead of moving straight forward you will need to switch one pair of wires over)