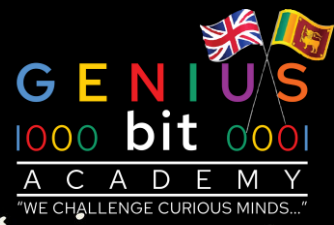


NEXT GENERATION ROBOTIC EDUCATION



ONLINE COURSE

"Work with real tools while you learn virtually"



GENIUS BIT ACADEMY

Certificate in Robotics & IoT
Level 1

COURSE **CONTENT**

WHO WE ARE

A bunch of disruptive critical thinkers who are determined to make a difference in young adults in Sri Lanka.

OUR VISION

Arming the next generation kids with the technical know-how and the innovative skill-set necessary to challenge the frontiers of world technologies.

OUR MISSION

Armed with a strong basic foundation on IOT and robotic principles we are determined to challenge dormant young minds to think differently and to shape them to be intuitive problem solvers in electronics who would independently recognize the need to adapt to the constantly challenging landscape.

Course Content

Programming Fundamentals

- Introduction to programming environment
- Introduction to the functions of Arduino IDE
- Introduction to C/C++ programming language
 - Types, operators and expressions
 - Decision Making (If, If - Else, If - Else If - Else, Switch)
 - Loops (While, Do - While, For)
 - Functions and program structure

```
    if (n) {
        if (a) {
            for (; o > i; i++)
                if (r = t.apply(e[i], n), r === !1) break
        } else
            for (i in e)
                if (r = t.apply(e[i], n), r === !1) break
        } else if (a) {
            for (; o > i; i++)
                if (r = t.call(e[i], i, e[i]), r === !1) break
        } else
            for (i in e)
                if (r = t.call(e[i], i, e[i]), r === !1) break;
        return e
    },
    trim: b && !b.call("\uffeff\u00a0") ? function(e) {
        return null == e ? "" : b.call(e)
    } : function(e) {
        return null == e ? "" : (e + "").replace(C, "")
    },
    makeArray: function(e, t) {
        var n = t || [];
        return null != e && (M(Object(e)) ? x.merge(n, "string" == typeof e ? [e] : e) : h.call(n, e)), n
    },
    isArray: function(e, t, n) {
        var r;
        if (t) {
            if (t) return e.call(t, e, n);
            for (r = t.length, n = n ? 0 > n ? Math.max(0, r + n) : n : 0; r > n; n++)
                if (n in t && t[n] === e) return n
        }
    }
```

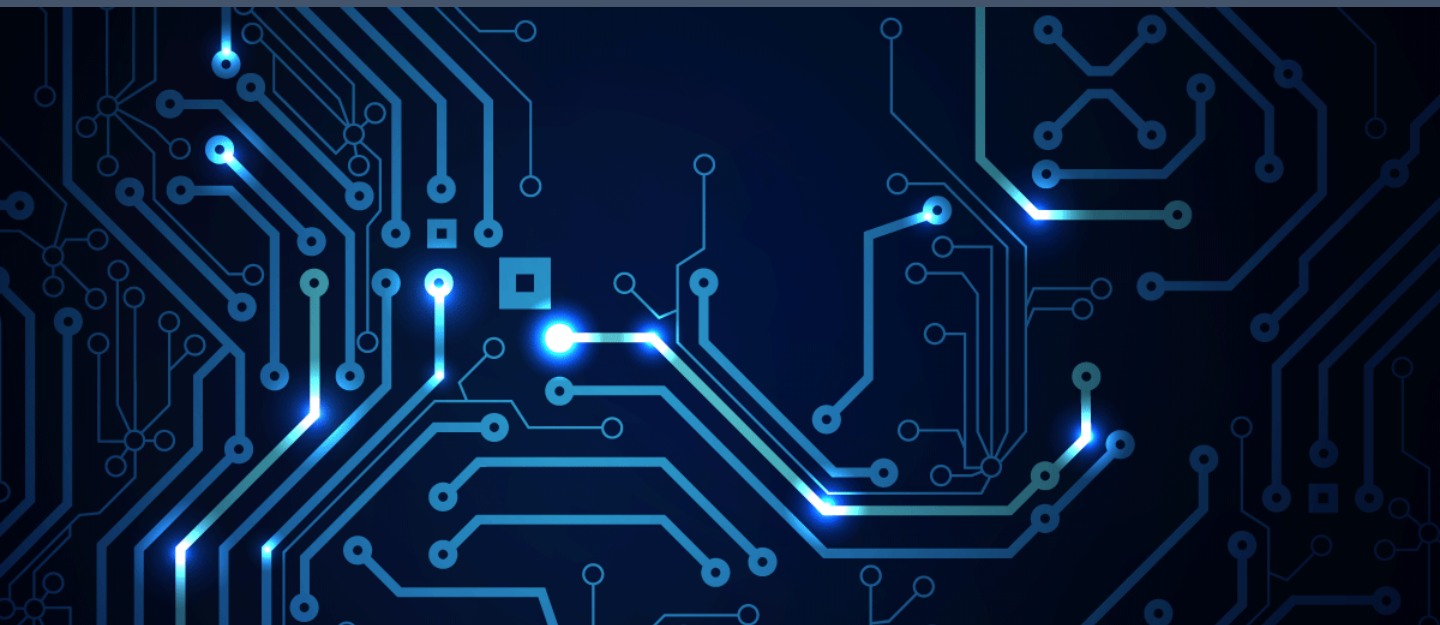

"The only way to do great work is love what you do"

- Steve Jobs -



Basic Electrical and Electronics

- Analog and Digital signals
- Logic gates
 - How logic gates work
 - Types of logic gates
- Introduction to Microcontrollers
- Introduction to Arduino
 - Explore the components of an Arduino UNO
- I/O control of a microcontroller
- Pulse Width Modulation
 - What is PWM?
 - How can PWM be useful with Arduino UNO?
- Sensors
 - What are sensors and why we use them?
 - Different types of sensors
 - Practicals with sensors





“Live your life as an Exclamation rather than an Explanation”

- Isaac Newton -

Internet of Things

- Introduction to IoT
 - What is IoT
 - Basic concepts of IoT
 - How can IoT be useful
- Practicals using IoT technology

Designing

- 3D modeling of sensor bracket designs





Entry Requirement	- Completion of Foundation in Robotics & IoT
Language	- English
Methodology	- Lectures / Practical
Duration	- 20 Sessions

