



Tape Guided Robotics Using BasicX Programming

About BasicX

The BasicX is a micro-controller, an inexpensive speck computer intelligence that one can program and embed in almost anything: homemade robots, toys, new-wave artwork, wacky inventions, custom cars, anything! At the end of the course, students able to get started building a mobile robot with BasicX micro-controller and understand the working principles and programming method to build a working mobile robot.

Requirement:

- Expressions
- Unsigned types

Participant must be at least Secondary 1 and above.

Introduction of flow chart

Course Outline

- Understanding the component of flow chart and how to draw flowchart
- How to produce flow chart for the given operation
- Write BasicX program based on designed flowchart

Introduction of BasicX

- What is computer systems
- Why Basic X is popular?
- What is the Downloader?
- Hardware introduction
- Hardware setup
- Hardware connection

Programme Development

- Write programs to read the states of input switches
- Write programs to make decision depending on the states of the inputs switches
- Design flow chart and write control programs using BasicX programming to control movement of the mobile robot based on the external limit switches
- Design flowcharts and write custom control programs using BasicX programming language to control movement of MAGIC with the help of the external sensory devices to detect presence of white tape on the black floor.

Invoking BasicX Development system software

- What is Editor and Compiler
- Chips configurations
- How to add a file to the project?
- What is header file?

BasicX Programming

- General
- Subprograms
- Control structures
- Variables, constants and data types