Program Schedule
Day1

Time	Session Topic
9:30 am - 9:45 am	General introduction of the program. Distribution of Microcontroller kits, tools and consumables, instruction notes to registered students.
9:45 am - 10:15 am	**Lecture and problem discussion on binary;** Introduction to different number systems and their applications: decimal number system, binary numbers, octal numbers, hexadecimal numbers, conversion of one number system to the other and vice-versa, importance of number system in digital computers and microcontrollers
10:15 am - 11:00 am	**Problem solving & discussion session on number system conversion.**
11:00 am - 11:15 am	-Tea Break-
11:15 am - 11:45 am	**Lecture and demonstration on electronics basics;** Introduction to Electronic circuit; electronic components like resistors, diodes, battery, printed circuit boards etc., schematic diagram and symbols, circuit building training using breadboard, series vs parallel connections, voltage drop across components, Ohm's Law demonstration, etc.
11:45 am - 12:45 pm	**Hands-on session and guided experiments on basic electronics**
12:45 pm - 1:30 pm	-Lunch Break-
1:30 pm - 2:15 pm	**Lecture and demonstration on programming concepts;** Introduction to the Graphical Programming interface, Concepts of programming like variables, loops, operations, etc. applications of coding concepts, inputting data into visual code, plotting data on a graph, etc. game controlling using sensors on phones like luminosity sensor and accelerometer.
2:15 pm - 3:00 pm	**Hands-on training session on graphical programming basics**
3:00 pm - 3:15 pm	-Tea Break-

3:15 pm - 3:45 pm	**Lecture and demonstration on microcontroller basics;** Introduction to Kuttypy+ microcontroller kit, microcontroller uses and functions, parts of a microcontroller board & its functionalities and input/output ports, register manipulation, code for LED animations like blinking LEDs, dancing LEDs, running LEDs, etc
3:45 pm - 4:15 pm	**Hands-on training session introducing microcontroller board**
4:15 pm - 4:30 pm	Conclusion and instructions for uploading the homeworks.

Day2

Time	Topic
9:30 am - 10:00 am	Homework discussion and doubt clearance.
10:00 am - 10:30 am	**Lecture and demonstration on programming;** Beyond the basics of programming, logical functions and operations like if-else, shift operator, real world application of code, more coding functions like labels, concepts of nested loops, etc.
10:30 am - 11:00 am	**Hands-on training session graphical programming**
11:00 am - 11:15 am	-Tea Break-
11:15 am - 11:45 am	**Lecture and problem solving on coding microcontrollers;** Coding microcontroller board using the KuttyPy+ board. LED animations with complex loops and functions, conversion of input signal and data into desired range (normalization), game control after normalizing.
11:45 am - 12:30 am	**Hands-on training session microcontroller coding**
12:30 am - 1:15 pm	**Lecture and demonstration on sensors;** Introduction to different types of sensors like LDR, Pressure sensor, temperature sensor, humidity sensor, LiDAR (laser distance sensor), accelerometer, magnetic sensor, etc, incorporating external sensors with visual code, connecting sensors with microcontroller board, game control using LDR, game control using accelerometer,

1:15 pm - 2:00 pm	-Lunch Break-
2:00 pm - 2:45 pm	**Hands-on Training Session of sensors integration**
2:45 pm - 3:00 pm	-Tea Break-
3:00 pm - 3:30 pm	**Demonstration and Hands-on training of Real-world applications;** Coding a program for automatic motor control using a pressure sensor as a water level indicator, Coding a program for smart light using an LDR sensor. Coding a program for contactless switch using LiDAR sensor.
3:30 pm - 4:15 pm	**Lecture and Hands-on training session on AI integration to code;** Introduction to gesture capture AI, Incorporating gesture capture to code, Game control using phone camera (Hand gestures) with aid gesture capture AI, Short class on 3-D printing and production process.
4:15 pm - 4:30 pm	Conclusion, short instruction on how to acquire more knowledge in the field using their own resources and collecting back the microcontroller kits.