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Python Raspberry Pi IOT Integration Program

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Shop No. C/20, 1st Floor, Amrita Sadan, Near Hotel Dwarka Nerul
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India

Has established and applies a Quality Management System
for following scope of activities:

Imparting Engineering Professional Training And Engineering
Project Exhibitions Engineering And Engineering Paper
Publication

The Management System of the above organization has been audited and found to be in
accordance with the requirements of management System Standards Detailed Below:

ISO 9001: 2015

Certificate Number: 14464

Issue Date : 21st September 2017

Expiry Date : 20nd September 2020

Certification Manager

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Govt. of India
सूक्ष्म, लघु और मध्यम उद्यम मंत्रालय
MINISTRY OF MICRO, SMALL & MEDIUM ENTERPRISES

उद्योग आधार **Udyog Aadhaar**

Type of Enterprise	Micro	Small	Medium
Manufacturing	A	B	C
Services	D	E	F
UAN	MH19E0006383		

Government of India (MSME)

Name of Enterprise : Embedded Technosolutions

Type of Organisation
Proprietary

Postal Address
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State - Maharashtra, 400706

Email
info@ embeddedtechnosolutions.com

Majority Activity
Services

District Industry Centre
Mumbai City

UAN
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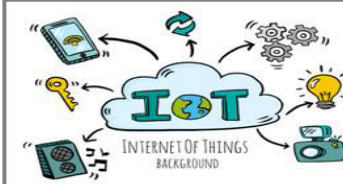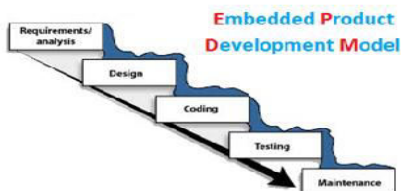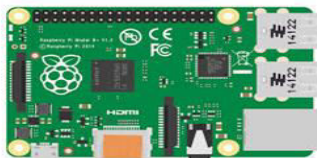**Venture of IIT Bombay & VJTI Alumni**

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COURSE SYLLABUS

Industrial Python Developer

Practical & Professional Training on

Python Raspberry Pi IOT

Chapter 1: Introduction

- Introduction to Python Language

- Industrial Importance of Python Language

- Features of Python Language

Chapter 2 : Environment Setup

- Getting Started with Python

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- Installing Python

- Unix and Linux Installation in Python

- Windows Installation

- Setting up PATH

- Setting path at Unix / Linux

- Setting path at Windows

Chapter 3 : Starting With Python Programs

- Script Programming

- Python Identifiers

- Python Keywords

- Python Lines and Indentation

- Python Multi-Line Statements

- Quotation in Python

- Comments in Python

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Chapter 6: LOOPS in Python Programming

- While loop

- The Infinite Loop

- Using else Statement with Loops

- For loop

- Nested loops

- Loop Control Statements

Chapter 7: Strings in Python Programming

- Accessing Values in Strings

- Updating Strings

- Escape Characters

- String Special Operators

- String Formatting Operator

- Triple Quotes

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Chapter 8: Lists in Python Programming

- Python Lists

- Accessing Values in Lists

- Updating Lists

- Delete List Elements

- Basic List Operations

- Indexing, Slicing, and Matrixes

- Built-in List Functions & Methods

Chapter 9 : Tuples in Python Programming

- Python Tuples

- Accessing Values in Tuples

- Updating Tuples

- Delete Tuple Elements

- Basic Tuples Operations

- Indexing, Slicing, and Matrixes

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- No Enclosing Delimiters

- Built-in Tuple Functions

Chapter 10 : Dictionary in Python Programming

- Python Dictionary

- Accessing Values in Dictionary

- Updating Dictionary

- Delete Dictionary Elements

- Properties of Dictionary Keys

- Built-in Dictionary Functions & Methods

Chapter 11 : Functions in Python Programming

- Calling a Function

- Pass by reference Vs. value

- Function Arguments

- Required arguments

- Keyword arguments

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- Default arguments

- Variable-length arguments

- The Anonymous Functions

- The return Statement

- Scope of Variables

- Global vs. Local variables

- The global statement

Chapter 12: Modules in Python Programming

- The import Statement

- The from...import Statement

- The from...import * Statement

- Locating Modules

- The PYTHON PATH Variable

- The time Module

- Getting current time

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- Getting formatted time

- The calendar Module

Embedded Linux With

Raspberry Pi IOT

Module 1 : Raspberry Pi Set up & Configurations

1.1 Program Raspberry Pi : a credit-card sized computer

1.2 Python programming for Raspberry Pi

1.3 Interacting and configuring the RPi OS

1.4 ARM 11 architecture

1.5 Porting of Linux Kernel and booting RPi

Module 2 : Linux Command for Application Execution

2.1 Linux programming basics

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Module 3 : Raspberry Pi GPIOs

3.1 Programming the GPIO and interfacing peripherals With Raspberry Pi

Module 4 : PWM Generation

4.1 Generating PWM signals through the Pi for Various applications

Module 5 : UART Protocol & Interfacing

5.1 Programming and work with UART protocol ,example Bluetooth

Module 6 : I2C Protocol Interfacing & Applications

6.1 Work with I2C protocol

Module 7 : Camera Interfacing & Applications Designing

7.1 Camera Libraries & Driver Installations

7.2 Camera based applications designing

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Module 8 : Raspberry Pi With IOT

8.1 Remote Login methods: HyperTerminal, Ethernet

8.2 LED Operation Using IOT

8.3 Embedded Webserver

Module 9 : Computer App Designing

9.1 Developing GUI with TKinter

	Live Projects : **Python Raspberry Pi IOT Based**
1	Traffic Light System
2	Environmental Parameters Measurement
3	Voice Control Home Automation
4	BlueSys using Bluetooth
5	Wireless Mobile Smart System
6	PWM Based Variable System
7	Camera based Surveillance System
8	GUI Based Home Automation using TKinter

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