



10. Internet of Things

10.1 IOT

Prerequisites:

1. Basics of programming in C/ C++, assembly, Java programming

Duration: 60 Lectures

Course Content:

1. Introduction

- 1.1. Introduction to SQL Server Integration Services
- 1.2. Product History
- 1.3. SSIS Package Architecture Overview
- 1.4. Development and Management Tools
- 1.5. Deploying and Managing SSIS
- 1.6. Packages
- 1.7. Source Control for SSIS Packages

2. Data and Connectivity

- 2.1. Using SQL Server Management Studio
- 2.2. The Import and Export Wizard
- 2.3. Importing and Exporting Data
- 2.4. Working with Packages
- 2.5. Database Maintenance Plans
- 2.6. Creating Database Maintenance Plans using SSMS

3. Architecture

- 3.1. Launching BIDS
- 3.2. Project templates
- 3.3. The package designer



- 3.4. The Toolbox
- 3.5. Solution Explorer
- 3.6. The Properties window
- 3.7. The Variables window
- 3.8. The SSIS menu

4. Device Design

- 4.1. Control Flow Overview
- 4.2. Precedence Constraints
- 4.3. The Execute SQL Task
- 4.4. The Bulk Insert Task
- 4.5. The File System Task
- 4.6. The FTP Task
- 4.7. The Send Mail Task

5. Communication Protocols

- 5.1. Containers grouping and looping
- 5.2. The Web Service Task
- 5.3. The WMI tasks
- 5.4. The Analysis Services tasks
- 5.5. The Execute Process Task
- 5.6. The Execute Package Task

6. Arduino

- 6.1. Data Flow Overview
- 6.2. Data Sources
- 6.3. Data Destinations
- 6.4. Data Transformations
- 6.5. The Copy Column Transformation
- 6.6. The Derived Column Transformation
- 6.7. The Data Conversion Transformation
- 6.8. The Conditional Split Transformation
- 6.9. The Aggregate Transformation



6.10. The Sort Transformation

6.11. Data Viewers

7. Hands on Arduino

7.1. Variables Overview

7.2. Variable scope

7.3. SSIS system variables

7.4. Using variables in control flow

7.5. Using variables in data flow

7.6. Using variables to pass information between packages

7.7. Property expressions

7.8. Configuration Overview

7.9. Configuration options

8. Networking

8.1. SSIS debugging overview

8.2. Breakpoints in SSIS

8.3. SSIS debugging windows

8.4. Control Flow: The OnError event

8.5. Handler

8.6. Data Flow: Error data flow

8.7. Configuring Package Logging

8.8. Built-in log providers

9. Online tools

9.1. Revisiting data sources and

9.2. Destinations

9.3. The Lookup Transformation

10. Arduino with ESP8266

10.1. Interfacing with Ethernet

10.2. Host program on local server

10.3. Understanding Cloud Servers



10.4. Cloud Computing and IOT

10.5. Projects & Examples

- Send Voltage & Analog Data on Cloud Server.
- Communicating with the Cloud using Web Services.
- Cloud Computing & IoT.
- Popular Cloud Computing Services for Sensor Management.
- Receive Automatic Call Notification on Mobile Phone for Burglar Alarm using IoT Platform.
- Control Electronic Devices from anywhere across the world using Internet & Mobile App.

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