Mirth Connect Advanced Certification Training
SYLLABUS

Mirth Connect Advanced Training (Days 1-3)

1. Course Introduction
   a. Introductions
   b. Course Overview
   c. Course Materials
2. Mirth Connect User API
   a. Overview
   b. Message Data
   c. Channel Data
   d. LAB: Programmatically affect channels using User API
   e. Routing
   f. Serialization
   g. Lists & Maps
   h. Other Uses
3. Java & JavaScript in Mirth Connect
   a. Using Java Classes in Mirth Connect
   b. Resources
   c. Code Templates
4. Advanced Database Concepts
   a. Database Operations in JavaScript
      i. Mirth Connect Database Classes
      ii. Database Code Templates
      iii. Parameterization
      iv. LAB: Executing an INSERT using parameterization
   b. Database Reader – JavaScript Mode
      i. Database Reader
      ii. Custom Message Sets
      iii. Advanced Updates
   c. Database Operations in Filters, Transformers
      i. Creating repeating segments from multiple rows in a table
      ii. LAB: Create an HL7 message with repeating segments from data in database
   d. Stored Procedures & Functions
   e. Storing Connections
      i. LAB: Create and use a code template for database operations with stored connection
5. Velocity Programming Concepts
   a. About Velocity
   b. The Velocity Template Language (VTL)
      i. References: Variable, Properties & Methods
      ii. Rendering
      iii. Directives/programming structures
      iv. DateTool and the ${date} object
      v. LAB: Dynamically format output using Velocity
6. In-Depth HL7 Processing
   a. Segment Groups
      i. Advanced Segment Repetitions
      ii. Extracting Data from Segment Groups
   b. Splitting Messages
   c. LAB: Split message with multiple orders
   d. Store-and-Forward
   e. LAB: Forward ORM only once corresponding ADT received
   f. Combining Messages
   g. Field Repetitions
      i. Accessing Data
      ii. Adding/Deleting Repetitions
   h. LAB: Extract data from repeating field
7. Encoded Data & Attachments
   a. Encapsulated Data
   b. Reading/Writing Binary Data
   c. Base64 Encoding
      i. Adding Base64 to HL7 Messages
      ii. Extracting Base64 from HL7
      iii. Base64 Across Multiple Segments
      iv. LAB: Processing messages with Base64-encoded data
   d. Attachments
      i. Overview
      ii. Attachment Handling
         A. Entire Message
         B. RegEx
         C. JavaScript
         D. Custom
      iii. Viewing Attachments
      iv. PDF & DICOM attachments
      v. LAB: Process messages with Base64 data as attachments
8. HTTP & Web Services
   a. SOAP Web Services
      i. Overview
   b. Web Service Connectors

     i.   Web Service Listener

     ii.   Web Service Sender

     iii.   LAB: Sending & receiving messages using Web Service connectors

c.   Processing SOAP Responses

     i.   Namespaces

     ii.   LAB: Process a SOAP response envelope

d.   HTTP Connectors

     i.   HTTP Listener

     ii.   HTTP Sender

     iii.   Processing HTTP Requests

e.   HTTP Authentication

f.   RESTful Web Services

     i.   Overview

        A.   Communicating with

        B.   Implementing

     ii.   JSON

     iii.   LAB: Implement RESTful web services using HTTP Connectors

9. Destination Sets

    a.   Overview

    b.   LAB: Perform routing in a channel using the destination set

10. Mirth Connect Client APIs

    a.   REST Client API

    b.   Java Client API

11. The Mirth Connect Database – A Closer Look

    a.   Database Schema

12. Mirth Connect Advanced Training Wrap-Up

    a.   Open Questions & Answers

Advanced Certification (Day 4)

1. Certification Overview/Agenda/Review
2. Multiple Choice Exam
3. Practical (Hands-On) Exam

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