Test Driven Development II - Advanced - Exercises
03 - FHIR Client (Peer-to-Peer)
Track lead: Richard Ettema

During this hands-on session of the Test Driven Development I - Intro tutorial we will explore FHIR Client or Peer-to-Peer testing capabilities within the Touchstone Project environment. This exercise examines a series of TestScripts that each focus on a single FHIR operation (create, update, read, history, vread, search and delete) where the FHIR Client system is external to Touchstone.

*TestScripts for this exercise are in the **FHIR3-0-1-DevDays17/TDD-2-Advanced/03-FHIRClient** Test Definitions.*

Related online document: https://touchstone.aegis.net/touchstone/TouchstoneUserGuide#page=18, *Section 'Client-side (Peer-to-Peer) Testing'.*

TestScripts
All TestScripts for this exercise:
Features
- ❖ Use the Patient resource type
- ❖ Define and use a single Origin and Destination FHIR system
- ❖ Where appropriate, Touchstone is used to initiate read or search operations for validation
- ❖ Use the FHIR resource base profiles; *asserts invoke the FHIR Validation Engine using profiles*
- ❖ Use both static and dynamic variables
- ❖ Use Rules and Rulesets that support complex asserts for conditional FHIR specification features

TDD-2-Adv-03-FHIRClient-01a-patient-create-client-id-[xxx]
Test an external FHIR Client creating a static Patient fixture containing a client-assigned resource id.

TDD-2-Adv-03-FHIRClient-01b-patient-create-server-id-[xxx]
Test an external FHIR Client creating a static Patient fixture that generates a server-assigned resource id.

TDD-2-Adv-03-FHIRClient-02-patient-update-[xxx]
Test an external FHIR Client updating a known Patient resource; the resource id is entered in the Test Setup.

TDD-2-Adv-03-FHIRClient-03-patient-read-[xxx]
Test an external FHIR Client reading a known Patient resource; the resource id is entered in the Test Setup.

TDD-2-Adv-03-FHIRClient-04-patient-history-[xxx]
Test an external FHIR Client retrieval of a known Patient's history; the resource id is entered in the Test Setup.

TDD-2-Adv-03-FHIRClient-01a-patient-search-[xxx]
Test an external FHIR Client search of Patient resources; the search parameters are entered in the Test Setup.

TDD-2-Adv-03-FHIRClient-01a-patient-delete-[xxx]
Test an external FHIR Client delete of a known Patient resource; the resource id is entered in the Test Setup.

Have fun, and remember to ask questions if you need help!

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⭐ **Key Concept: FHIR Client Test Setup**

  ➢ **An Origin as well as a Destination FHIR system must now be selected**
  ➢ **There may be additional items to select or fill-in; i.e. dynamic variables**
  ➢ **FHIR Client systems that are not publicly accessible (internet) will require the use of USER_KEY or ORG_KEY**

⭐ **Key Concept: TestScript Dynamic Variables**

  ➢ **A TestScript variable definition without an expression and source must have its value dynamically assigned (prompted for) by the FHIR Test Engine before the TestScript is executed**

⭐ **Key Concept: USER_KEY and ORG_KEY (Special) Placeholders**

  ➢ **USER_KEY and ORG_KEY may be used to assist Touchstone in identifying the external FHIR Client system(s) used in a test execution.**
  ➢ **They MUST be used when a FHIR Client system is not publicly accessible; e.g. when the FHIR Client system sits behind a firewall or proxy, or may only have a locally assigned IP address.**
  ➢ **The USER_KEY value is found on the My Placeholders page accessed from your user's "${} My Placeholders" menu item.**
    o **The value may be regenerated as a randomly generated alphanumeric 20-character string**
    o **The value may be entered manually**
    o **When saved (updated), the value will be verified as unique among all existing Touchstone users**
  ➢ **The ORG_KEY value is found on the My Placeholders page accessed from your user's "${} My Placeholders" menu item, or on your Edit Organization page.**
    o **The value may be regenerated as a randomly generated alphanumeric 20-character string**
    o **The value may be entered manually**
    o **When saved (updated), the value will be verified as unique among all existing Touchstone organizations**