Informatics for Integrating Biology at the Bedside

Workplace Functional Design Specification

Document Version: *1.0*

I2b2 Software Version: *1.3*

Table of Contents

1. INTRODUCTION

This document describes the requirements, technical functionality and the intended capabilities of the workplace. It is to be used as a guideline and continuing reference point as the developers write the code.

The Workplace Concept section includes three sections

1. Objectives section provides a high level outline of the goals for the work to be done.
2. Identification of Users section makes note of who the intended audience of the product is and how it will be used in practice.
3. Definition of Terms section is a glossary of terms used throughout the document.

2. WORKPLACE CONCEPT

2.1 OBJECTIVES OF WORKPLACE VIEW

Information in the workplace is related to the most common concepts and queries that an individual uses and in essence becomes their personal workplace. There are three main objectives of this new view.

(1) Save and organize user specific workplace.

(2) Share information with other project users.

(3) Workplace for all team members can be viewed only by the manager.

2.2 IDENTIFICATION OF USERS

2.2.1 Clinical Researcher

- Member of the research team who is setup with access to the project in i2b2.
- Their access role is “user”.
- Can create and organize own workplace.
- Share information from their workplace with other users.
- Access information shared by other users.

2.2.2 Manager of Clinical Researcher

- Manager of the research team.
- Their access role is “manager”.
- Can create and organize own workplace.
- Share information from their workplace with other users.
- Access information shared by other users.
- View workplace of employee(s).

2.3 DEFINITION OF TERMS

Concepts:

A locution or word given to represent a number of different items in the i2b2 realm. These items can include terms, providers and codes from standardized coding systems.

CRC:

Clinical Research Chart. Also referred to as the Data Repository.

Drag and Drop:

Phrase used to describe the action of moving or copying items (queries, patient sets, etc.) from one location to another. “*Drag*” is done by clicking on the item to be moved and while holding down the button on the mouse, move the mouse and in essence the item to the area on the screen in which you want to place it. “*Drop*” is the action of releasing the button and placing the item in the new location.

Dragable Item:

Only certain items can be to “dragged” to another location (see *drag and drop* definition).

Encounter:

This represents a “session” where observations were made. This “session” can involve a patient directly such as a visit to a doctor’s office, or it can involve the patient indirectly such as running several tests on a tube of the patient’s blood. Encounters, Events and Visits are all synonyms.

Events:

This represents a “session” where observations were made. This “session” can involve a patient directly such as a visit to a doctor’s office, or it can involve the patient indirectly such as running several tests on a tube of the patient’s blood. Encounters, Events and Visits are all synonyms.

Group Template:

Contains grouping of query items. It is also known as a panel. See panel for definition.

Item:

This is a subsection for panel in query definition xml. This represent metadata constrains like concept key, concept name, hlevel, etc.

NLP:

Natural Language Processing is a core cell in the i2b2 hive. It is an AI service, which extracts different concepts from patient notes.

Observations:

Observations are collections of phenotypic data and may contain values associated with a concept, such as a value of the systolic blood pressure.

Observation Fact:

The observation fact table represents the “fact” table of the RPDR Star Schema. The fact table can contain values associated with the concept, such as a value of the systolic blood pressure.

Observers:

The individual or items that is making the observation.

Panel:

This is one of the sections in query definition xml. Query Panel encloses group of Query items and contain constraints like inversion and total occurrences.

patient_coll

Patient collection

Patient Data Object:

A container of patient’s visits, provider and observation facts.

Patient Identifier

A unique code assigned to a patient that links the patient and the clinical data.

Patient Number:

An internal number in the CRC that is assigned to the patient. These numbers should not be modified.

Patient Set:

A collection of patients which the researcher is interested in for a particular study. Patient set is an ordered collection of patient numbers that should not be modified. The order is the

	set is maintained all the time.
PID:	Patient Identifier. See patient identifier for definition.
PDO:	Patient Data Object. See patient data object for definition.
Previous Query:	Once a user runs a query it is stored as a “query master” and it becomes the first level on the query tree. These queries can be accessed via the Previous Query View.
Query:	Mechanism for getting information from the database. Consists of concepts that are used as the search criteria to specify or narrow the results returned.
Query Definition:	Contains all the outer tag information where each group is represented in a query as panels.
Visit:	This represents a “session” where observations were made. This “session” can involve a patient directly such as a visit to a doctor’s office, or it can involve the patient indirectly such as running several tests on a tube of the patient’s blood. Encounters, Events and Visits are all synonyms.
Widget:	A generic name given to plug-ins for the i2b2 application.
XML_RESULTS	The returned data from a query that is in xml format.

3. REQUIREMENTS

3.1 FUNCTIONAL REQUIREMENTS

To assist with workflow and overall ease of use, individuals will now be able to easily save key concepts, common queries and valuable patient sets in one central location. In addition, they will be able to combine these areas as well as others to formulate templates to assist in the process of gathering information throughout the project. An outline of what can be stored in the workplace and the related functionality is listed below.

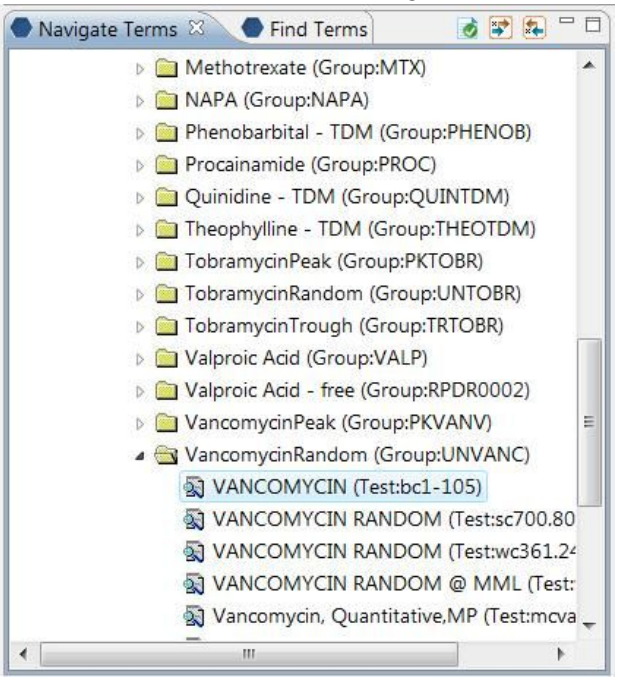
3.1.1 STORING CONCEPTS

Concepts are used throughout i2b2 for a number of things but they are primarily used in queries, defining a model for the timeline or in the image view.

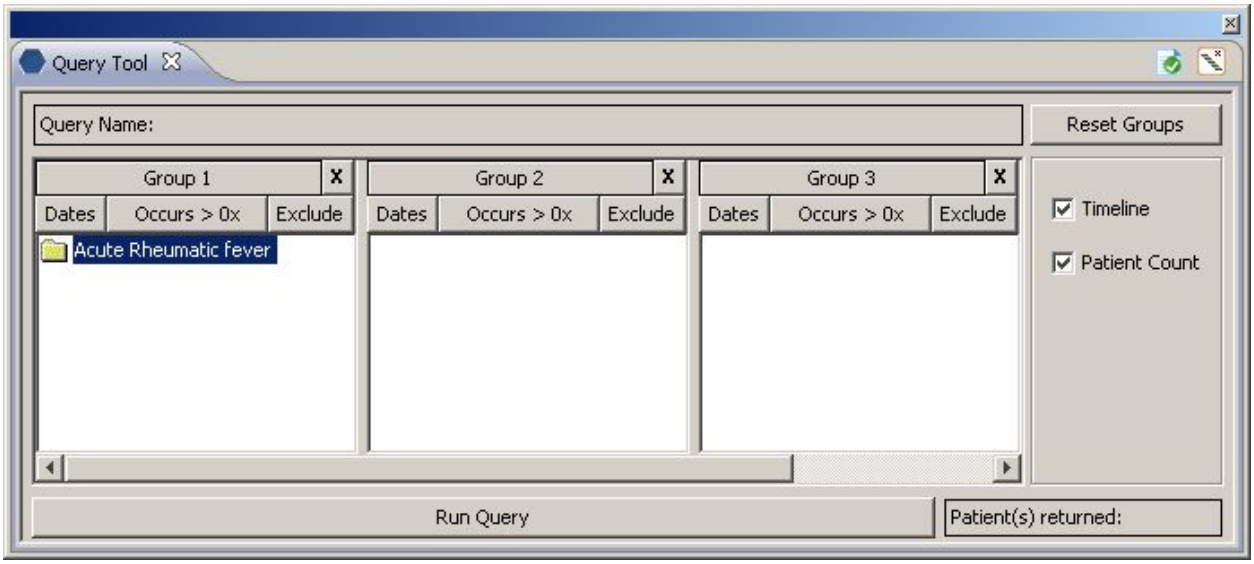
By using the mouse, users will be able to drag concepts from the Ontology, Query Tool or Timeline table views. You may drag a single or multiple concepts from the view to the workspace.

Ontology View

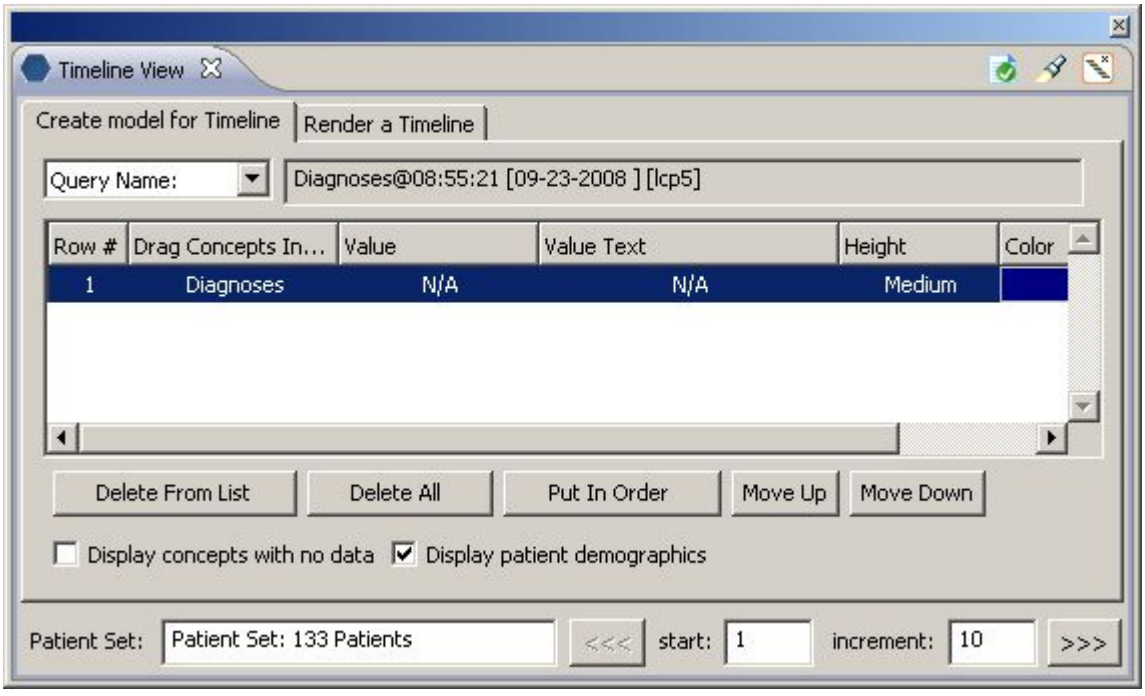
Note: This view includes both Navigate Terms and Find Terms.



Query Tool Panel



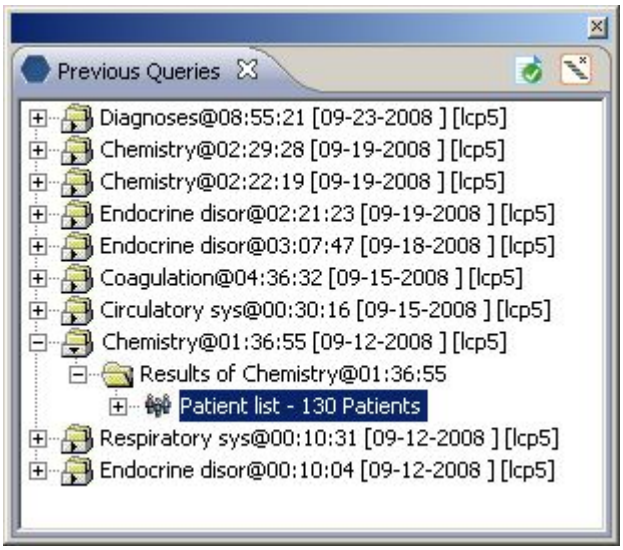
Timeline (table)



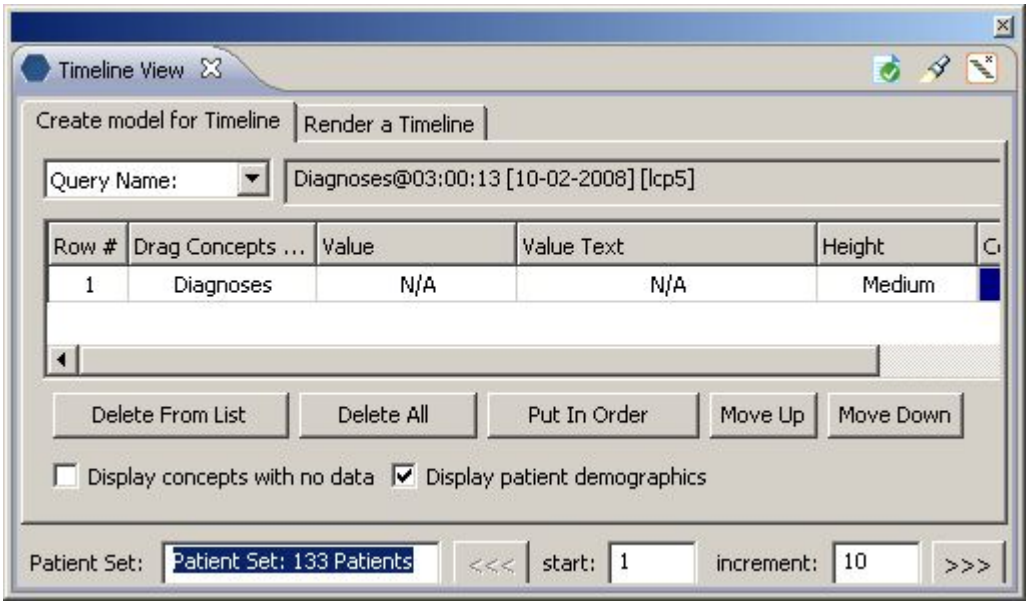
3.1.2 STORING PATIENT SETS or LISTS

By using the mouse, users will be able to drag patient sets from Previous Query View or Timeline View into their workplace.

Previous Query, patient list



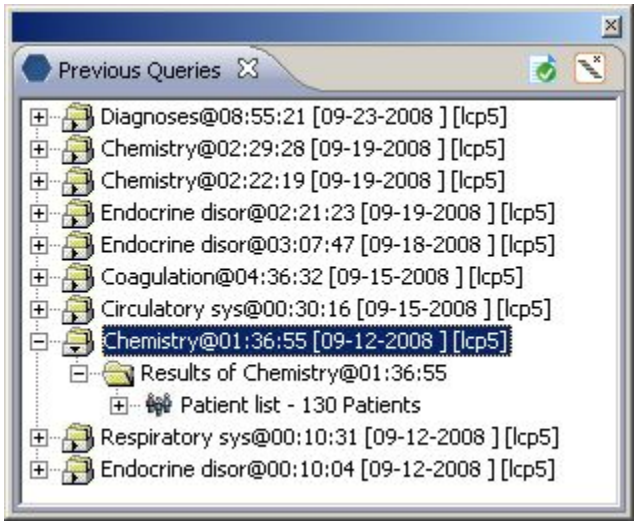
Timeline, patient set



3.1.3 STORING PREVIOUS QUERIES

Previous Queries can be dragged from Previous Queries into the workplace.

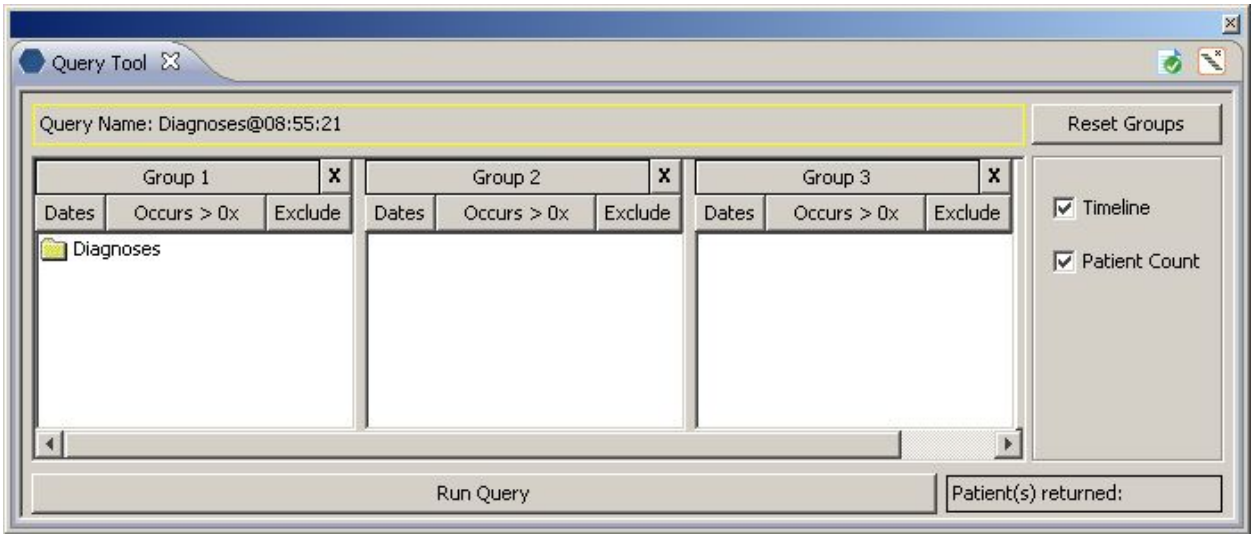
Previous Query



3.1.4 STORING QUERY DEFINITIONS

By using the mouse, users will be able to drag queries by their name from the locations listed below into their workplace.

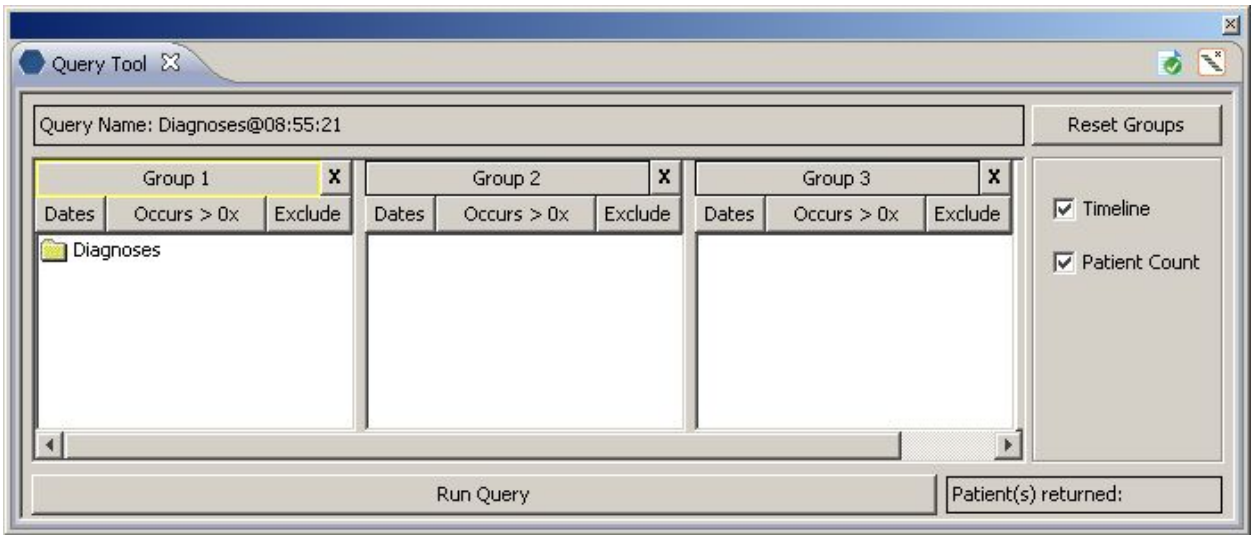
Query Tool Panel (Query Name field)



3.1.5 STORING GROUP TEMPLATES

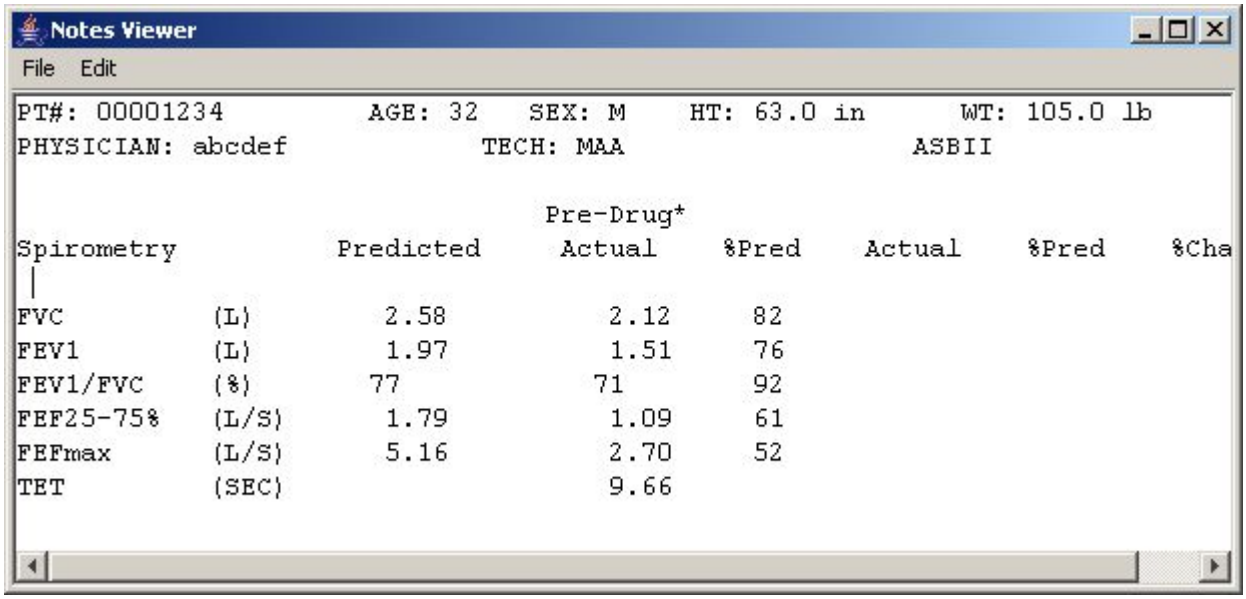
By using the mouse, users will be able to drag group templates from the locations listed below into their workplace.

Query Tool Panel (Group label)



3.1.6 STORING OBSERVATIONS

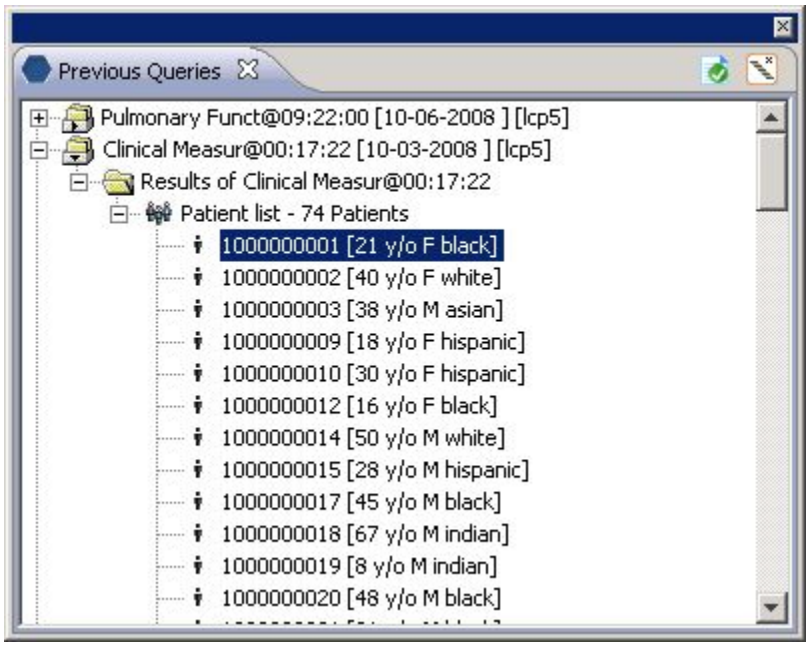
By using the mouse, users will be able to store Observations such as patient notes from the Timeline View's Note Viewer. Simply place the cursor within the Note Viewer and drag to the Workplace view.



3.1.7 STORING PATIENTS

A patient can be dragged from Previous Queries into the workplace.

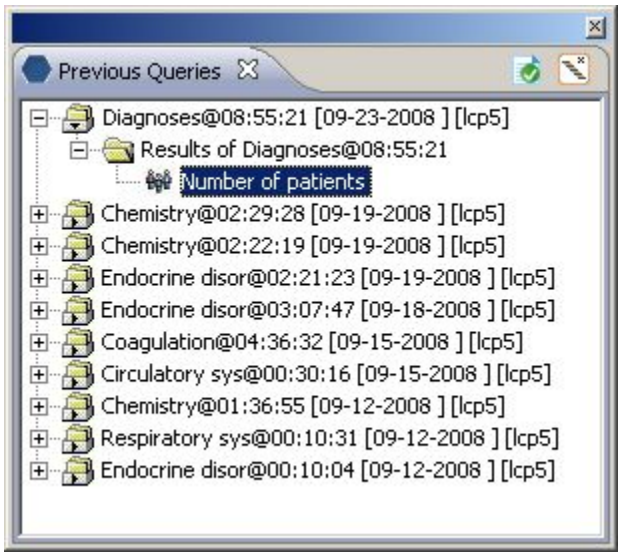
Previous Query



3.1.8 STORING XML RESULTS

By using the mouse, users will be able to store XML Results such as patient count from the Previous Query tool.

Previous Query (Number of patients)



3.2 DATA OBJECTS

Valid XML data objects that can be dragged from one area to another must be one of the following types:

Dragable Items:

WORK_XML I2B2 Type	Description/Name	From View
QUERY_DEFINITION	Query definition	Query Tool (Query Name)
PREV_QUERY	Query formulation	Previous Query
PATIENT_COLL	Patient list (internal)	Previous Query, Timeline
GROUP_TEMPLATE	Set of concept specifications	Query Tool (Group label)
CONCEPT	Single term	Ontology; Query Tool, Timeline
PATIENT	Single patient	Previous Query
OBSERVATION	Single patient observation	Timeline View: Note viewer
EVENT	Single patient event	TBD
OBSERVER	Single observer	TBD
PDO	Set of multiple patient data types	TBD
XML_RESULTS	Generic query result	Previous Query (Patient count)

3.3 TABLE USAGE

3.3.1 USER VIEWING THEIR WORKPLACE

The functionality for when a user views their workplace is described in this section.

User logs into i2b2

- The PM returns the roles for a given project
- Role = USER
- Query WORKPLACE_ACCESS table by USER_ID
- A list of all workplaces owned by that USER for the project they are logged into is returned. This list contains TableCd, TableName (\\demo, WORKPLACE, etc)

Returning Root level folders for the user and project

- A key (tableCd) from home workplace table will prepend the node's index string so that subsequent calls can be sent to the appropriate workplace table.

Double Click Root Level Folder

- Query WORKPLACE_ACCESS to perform key to table name translation.

- Query returns WORKPLACE_TABLE_NAME to get children of that root node.
- A key from home workplace table will prepend the child node's index string so that subsequent calls can be sent to the appropriate workplace table.

Drag a leaf…

- Extract WORK_XML contents (dnd xml) and drag to appropriate drop site.

3.3.2 MANAGER VIEWING THEIR EMPLOYEE'S WORKPLACE

The functionality for when a manager views the workplace of all of the users of a given project.

User logs into i2b2

- The PM returns the roles for a given project
- Role = MANAGER
- Query WORKPLACE_ACCESS table by PROJECT
- A list of all workplaces for the project they are logged into is returned. This list contains TableCd, TableName (\\demo, WORKPLACE, etc)

Returning Root level folders for the user and project

- A key (tableCd) from home workplace table will prepend the node's index string so that subsequent calls can be sent to the appropriate workplace table.

Double Click Root Level Folder

- Query WORKPLACE_ACCESS to perform key to table name translation.
- Query returned WORKPLACE_TABLE_NAME to get children of that root node.
- A key from home workplace table will prepend the child node's index string so that subsequent calls can be sent to the appropriate workplace table.

Drag a leaf

- Extract WORK_XML contents (dnd xml) and drag to appropriate drop site.

4. ARCHITECTURE AND DESIGN PRINCIPLES

This section provides a brief overview of the architecture and design principles. The architecture specification documents the information in detail. Please refer to this document if you require additional information.

4.1 METHODOLOGY

Workplace Management cell (WORK) is an optional i2b2 hive cell that manages project specific XML data objects for users of a given project. The project specific XML data objects originate in other views or cells and are stored in the WORK cell as a convenience.

Project specific XML data objects in the WORK cell are organized in hierarchical structures that represent the relationships between terms. The WORK cell accepts new XML data objects for storage and provides a listing of those items previously stored. It also allows users to organize, label and annotate the stored data objects however they choose.

4.2 DEVELOPMENT AND RUNTIME ENVIRONMENT

- Java 2 Standard Edition 5.0 version 11
- Oracle Server 10g database
- Xerces2 XML parser
- JBoss Application server version 4.0.3SP1
- Spring Web Framework 2.0
- Axis2 v1.1 web service (SOAP/REST messaging)

4.3 CONFIGURATION MANAGEMENT

The WORK system is transactional, leveraging the transaction management model fo the J2EE platform.

5. XML Data

The detailed information regarding xml messaging can be found in the messaging specification. This section contains information regarding stored xml content as it pertains to the functionality/usage of the workplace features.

5.1 Stored XML

Plug-ins developed for i2b2 must send xml formatted strings as drag/drop messages between plug-ins. The XML content stored by workplace consists of any xml content inside of a <plugin_drag_drop> tag. The namespace for the schema that defines the plugin_drag_drop XML is "http://www.i2b2.org/xsd/hive/plugin/"

```
<i2b2:plugin_drag_drop>
   <!-- any xml content -->
</i2b2:plugin_drag_drop>
```

The various XML content message formats and their drag source are described throughout the specification.

5.1.1 STORING CONCEPTS

Concepts may be dragged from the Ontology, Query Tool and Timeline views. The namespace for the schema that defines the Concepts XML content is http://www.i2b2.org/xsd/cell/ont/1.1/.

The plugin_drag_drop XML message for concepts is as follows:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/ont/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/hive/msg/1.1/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/plugin/">
   <ns4:concepts>
      <concept>
         <level>3</level>
         <key>\\i2b2\i2b2\Diagnoses\Circulatory system (390-459)\Acute
Rheumatic fever (390-392)</key>
         <name>Acute Rheumatic fever</name>
         <synonym_cd>N</synonym_cd>
         <visualattributes>FA</visualattributes>
         <totalnum>0</totalnum>
         <facttablecolumn>concept_cd</facttablecolumn>
         <tablename>concept_dimension</tablename>
         <columnname>concept_path</columnname>
         <columndatatype>T</columndatatype>
         <operator>LIKE</operator>
```

```
        <dimcode>\i2b2\Diagnoses\Circulatory system (390-459)\Acute
Rheumatic fever (390-392)</dimcode>
        <tooltip>Diagnoses \ Circulatory system \ Acute Rheumatic fever</tooltip>
      </concept>
   </ns4:concepts>
</ns2:plugin_drag_drop>
```

5.1.2 STORING PATIENT COLLECTIONS

A patient collection (or set) may be dragged from the Previous Query view. The namespace for the schema that defines the Patient Collection XML content is http://www.i2b2.org/xsd/cell/crc/psm/1.1/

The plugin_drag_drop XML message for a patient collection is as follows:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
xmlns:ns7="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/">
   <ns4:query_result_instance>
      <result_instance_id>804</result_instance_id>
      <query_instance_id>Chemistry@02:22:19 [09-19-2008 ] [lcp5]</query_instance_id>
      <query_result_type>
         <result_type_id>1</result_type_id>
         <name>PATIENTSET</name>
         <description>Patient list</description>
      </query_result_type>
      <set_size>130</set_size>
      <start_date>2008-09-19T14:22:21.000-04:00</start_date>
      <end_date>2008-09-19T14:22:22.000-04:00</end_date>
      <query_status_type>
         <status_type_id>3</status_type_id>
         <name>FINISHED</name>
         <description>FINISHED</description>
      </query_status_type>
   </ns4:query_result_instance>
</ns5:plugin_drag_drop>
```

5.1.3 STORING PREVIOUS QUERIES

Previous queries may be dragged from the Previous Query view. The namespace for the schema that defines the Previous Query XML content is http://www.i2b2.org/xsd/cell/crc/psm/1.1/.

The plugin_drag_drop XML message for a previous query is as follows:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
xmlns:ns7="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/">
   <ns4:query_master>
      <query_master_id>742</query_master_id>
      <name>Chemistry@02:22:19 [09-19-2008 ] [lcp5]</name>
      <user_id>lcp5</user_id>
      <group_id>BIRN</group_id>
   </ns4:query_master>
</ns5:plugin_drag_drop>
```

5.1.4 STORING QUERY DEFINITIONS

Query Definitions may be dragged from the Query Name field of the Query Tool view. The namespace for the schema that defines the Query Definition XML content is http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/.

The plugin_drag_drop XML message for a query definition is as follows:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/"
xmlns:ns8="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/">
   <ns8:query_definition>
      <query_name>Chemistry_nqVg</query_name>
      <specificity_scale>0</specificity_scale>
      <panel>
         <panel_number>1</panel_number>
         <panel_accuracy_scale>0</panel_accuracy_scale>
         <invert>0</invert>
         <total_item_occurrences>1</total_item_occurrences>
         <item>
            <hlevel>2</hlevel>
            <item_name>Chemistry</item_name>
            <item_key>\\i2b2\i2b2\Labtests\LAB\(LLB16) Chemistry</item_key>
            <tooltip>Labtests \ Chemistry</tooltip>
            <class>ENC</class>
            <item_is_synonym>false</item_is_synonym>
         </item>
      </panel>
   </ns8:query_definition>
</ns5:plugin_drag_drop>
```

5.1.5 STORING GROUP TEMPLATES

Group templates may be dragged from the Group label of the Query Tool view. The namespace for the schema that defines the Group template XML content is http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/.

The plugin_drag_drop XML message for a group template is as follows:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
xmlns:ns7="http://www.i2b2.org/xsd/cell/ont/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/"
xmlns:ns8="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/">
   <ns8:panel name="Chemistry_IJcW">
      <panel_number>1</panel_number>
      <panel_accuracy_scale>0</panel_accuracy_scale>
      <invert>0</invert>
      <total_item_occurrences>1</total_item_occurrences>
      <item>
         <hlevel>2</hlevel>
         <item_name>Chemistry</item_name>
         <item_key>\\i2b2\i2b2\Labtests\LAB\(LLB16) Chemistry</item_key>
         <item_icon>FA</item_icon>
         <tooltip>Labtests \ Chemistry</tooltip>
         <class>ENC</class>
         <item_is_synonym>false</item_is_synonym>
      </item>
      <item>
         <hlevel>2</hlevel>
         <item_name>Endocrine disorders</item_name>
         <item_key>\\i2b2\i2b2\Diagnoses\Endocrine disorders (240-
259)</item_key>
         <item_icon>FA</item_icon>
         <tooltip>Diagnoses \ Endocrine disorders</tooltip>
         <class>ENC</class>
         <item_is_synonym>false</item_is_synonym>
      </item>
   </ns8:panel>
</ns5:plugin_drag_drop>
```

5.1.6 STORING OBSERVATIONS

Currently the only place an observation can be dragged is from the Timeline View's Note Viewer. The namespace for the schema that defines the Observations XML content is http://www.i2b2.org/xsd/hive/pdo/1.1/.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
xmlns:ns7="http://www.i2b2.org/xsd/cell/ont/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/"
xmlns:ns8="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/">
   <ns2:observation_set>
      <observation>
         <event_id>1000000002</event_id>
         <patient_id>1000000002</patient_id>
         <concept_cd>LCS-I2B2:pul</concept_cd>
         <observer_cd>@</observer_cd>
         <start_date>2008-06-24T16:24:00.000-04:00</start_date>
         <modifier_cd>1</modifier_cd>
         <valuetype_cd>B</valuetype_cd>
         <tval_char></tval_char>
         <nval_num/>
         <valueflag_cd></valueflag_cd>
         <location_cd></location_cd>
         <observation_blob>PT#: 00001234        AGE: 32   SEX: M    HT: 63.0 in
WT: 105.0 lb
PHYSICIAN: abcdef          TECH: MAA              ASBII

                        Pre-Drug*
Spirometry        Predicted    Actual    %Pred    Actual    %Pred    %Change

FVC        (L)       2.58         2.12     82
FEV1       (L)       1.97         1.51     76
FEV1/FVC   (%)       77           71       92
FEF25-75%  (L/S)     1.79         1.09     61
FEFmax     (L/S)     5.16         2.70     52
TET        (SEC)                  9.66
</observation_blob>
      </observation>
   </ns2:observation_set>
</ns5:plugin_drag_drop>
```

5.1.7 STORING PATIENTS

Currently the only place a patient can be dragged is from the Previous Query view. The namespace for the schema that defines the Patient set XML content is http://www.i2b2.org/xsd/hive/pdo/1.1/.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
 xmlns:ns7="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/"
 xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
 xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
 xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
 xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/">
   <ns5:patient_set patient_set_name="Pulmonary Funct@09:22:00 [10-06-2008 ]
 [lcp5]" patient_set_id="122">
      <patient>
         <patient_id>1000000002</patient_id>
      </patient>
   </ns5:patient_set>
</ns5:plugin_drag_drop>
```

5.1.8 STORING GENERIC XML RESULTS

Generic XML Results such as Patient Count may be dragged from the Previous QueriesTool view. The namespace for the schema that defines the XML Results XML content is http://www.i2b2.org/xsd/cell/crc/psm/1.1/.

The plugin_drag_drop XML message for a Patient Count XML Result is as follows:

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns5:plugin_drag_drop xmlns:ns4="http://www.i2b2.org/xsd/cell/crc/psm/1.1/"
xmlns:ns7="http://www.i2b2.org/xsd/cell/crc/psm/querydefinition/1.1/"
xmlns:ns3="http://www.i2b2.org/xsd/cell/crc/pdo/1.1/"
xmlns:ns5="http://www.i2b2.org/xsd/hive/plugin/"
xmlns:ns2="http://www.i2b2.org/xsd/hive/pdo/1.1/"
xmlns:ns6="http://www.i2b2.org/xsd/hive/msg/1.1/">
   <ns4:query_result_instance>
      <result_instance_id>803</result_instance_id>
      <query_instance_id>Chemistry@02:22:19 [09-19-2008 ]
[lcp5]</query_instance_id>
      <query_result_type>
         <result_type_id>4</result_type_id>
         <name>PATIENT_COUNT_XML</name>
         <description>Number of patients</description>
      </query_result_type>
      <set_size>130</set_size>
      <start_date>2008-09-19T14:22:21.000-04:00</start_date>
      <end_date>2008-09-19T14:22:22.000-04:00</end_date>
      <query_status_type>
         <status_type_id>3</status_type_id>
         <name>FINISHED</name>
         <description>FINISHED</description>
      </query_status_type>
   </ns4:query_result_instance>
</ns5:plugin_drag_drop>
```

5.2 TABLES

5.2.1 WORKPLACE TABLE

The WORKPLACE table is organized by project and contains all information needed to store and access workplace items. There will be one table per project.

COLUMN NAME	DATA TYPE	DESCRIPTION
C_INDEX (PK)	**VARCHAR(255)**	**Unique index of workplace item**
C_NAME	**VARCHAR(255)**	**Name of workplace item**
C_USER_ID	**VARCHAR(255)**	**User id**
C_GROUP_ID	**VARCHAR(255)**	**Project name**
C_PARENT_INDEX	**VARCHAR(255)**	**Unique index of item's parent**
C_VISUALATTRIBUTES	**CHAR(3)**	**Code representing icon to display**
C_SHARE_ID	VARCHAR(255)	(null) or 'Y' or 'N'
C_PROTECTED_ACCESS	CHAR(1)	(null) or 'Y' or 'N'
C_TOOLTIP	VARCHAR(255)	I2b2Type:annotation (or name)
C_WORK_XML	CLOB	Dnd message contents
C_WORK_XML_SCHEMA	CLOB	Dnd schema contents
C_WORK_XML_I2B2_TYPE	VARCHAR(255)	Dnd i2b2 type
C_STATUS_CD	CHAR(1)	(null) or 'D' (deleted)
C_ENTRY_DATE	DATE	(null) or specified
C_CHANGE_DATE	DATE	(null) or specified

5.2.2 WORKPLACE_ACCESS TABLE

The WORKPLACE_ACCESS lists all workplaces assigned to a project. This includes information needed to display the root node of a user's workplace tree based upon the user's role.

COLUMN NAME	DATA TYPE	DESCRIPTION
C_INDEX (PK)	**VARCHAR(255)**	**Unique index of workplace item**
C_TABLE_CD	**VARCHAR(255)**	**Code mapping to workplace table**
C_TABLE_NAME	**VARCHAR(255)**	**Name of WORKPLACE table**
C_HLEVEL	**INTEGER**	**Number representing level in tree (0)**
C_NAME	**VARCHAR(255)**	**Name of workplace item**
C_USER_ID	**VARCHAR(255)**	**User id**
C_GROUP_ID	**VARCHAR(255)**	**Project name**
C_VISUALATTRIBUTES	**CHAR(3)**	**Code representing icon to display**
C_PROTECTED_ACCESS	CHAR(1)	(null) or 'Y' or 'N'
C_SHARE_ID	VARCHAR(255)	(null) or 'Y' or 'N'
C_PARENT_INDEX	VARCHAR(255)	(null)
C_TOOLTIP	VARCHAR(255)	I2b2Type:annotation (or name)
C_STATUS_CD	CHAR(1)	(null) or 'D' (deleted)
C_ENTRY_DATE	DATE	(null) or specified
C_CHANGE_DATE	DATE	(null) or specified

5.2.3 WORK_DB_LOOKUP TABLE

Workplace data is distributed to projects through the existence of independent databases (in SQL Server) or schemas (in Oracle). In order to support the i2b2 project distribution strategy, the user may be enrolled in numerous projects recorded within the i2b2 project management cell. The logic for selecting the correct database or schema for a project is embodied in the following table:

COLUMN NAME	DATA TYPE	DESCRIPTION
C_DOMAIN_ID (PK)	**VARCHAR(255)**	**Domain (or target location)**
C_PROJECT_PATH (PK)	**VARCHAR(255)**	**'Project name\'**
C_OWNER_ID (PK)	**VARCHAR(255)**	**User Id of owner**
C_DB_FULLSCHEMA	**VARCHAR(255)**	**Full schema name of workplace table**
C_DB_DATASOURCE	**VARCHAR(255)**	**Datasource pointing to workplace table location**
C_DB_SERVERTYPE	**VARCHAR(255)**	**Database type of workplace table (ORACLE or SQLSERVER)**
C_DB_NICENAME	VARCHAR(255)	Table name
C_DB_TOOLTIP	VARCHAR(255)	Workplace tooltip
C_COMMENT	VARCHAR(255)	Optional comment
C_STATUS_CD	CHAR(1)	(null) or 'D' (deleted)
C_ENTRY_DATE	DATE	(null) or specified
C_CHANGE_DATE	DATE	(null) or specified