

SMART Data Model

SMART Data Model

The latest [SMART platform](#) version defines a preliminary set of health care domain data types. These data types are described with RDF/XML examples at the [SMART developer's wiki](#). The philosophy behind the existing data model is outlined in a recent [JAMIA paper](#). A primary backend function of SMART i2b2 is transforming data between the i2b2 PDO and SMART RDF/XML data formats.

SMART i2b2 Demo Data

Overview

The SMART data model defines data types not found in the i2b2 demo data. To demonstrate the capabilities of SMART i2b2, additional tables and data are provided to supplement the existing i2b2 demo data. Installation scripts and a guide are provided in the SMART i2b2 release version 1.0. Below is a brief overview of the data.

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[#Clinical Notes](#)
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Vital Signs

Description

Sets of vital sign measurements totaling 34,668 observations are provided for all 133 i2b2 demo patients. Vital sign measurements are appended to preexisting encounters that have an associated diagnosis, medication, or lab test.

Vital Signs Set:

- BMI (LOINC:39156-5)
- Body Temperature (LOINC:8310-5)
- Heart Rate (LOINC:8867-4)
- Height (LOINC:8302-2)
- Oxygen Saturation (LOINC:2710-2)
- Respiration Rate (LOINC:9279-1)
- Systolic & Diastolic Blood Pressure (LOINC:8480-6 & LOINC:8462-4)
- Weight (LOINC:3141-9)

i2b2: Supplementary Data
CONCEPT_DIMENSION
I2B2
MODIFIER_DIMENSION
OBSERVATION_FACT*
TABLE_ACCESS

*OBSERVATION_FACT table data already released as part of i2b2 source version 1.6.03.

SMART i2b2: Additional Tables & Data
NA

SMART i2b2: APPs Using Data
BP Centiles

Clinical Notes

Description

Three plain text clinical notes are provided for i2b2 patient number 1000000001.

i2b2: Supplementary Data
CONCEPT_DIMENSION
I2B2
MODIFIER_DIMENSION
OBSERVATION_FACT
TABLE_ACCESS

SMART i2b2: Additional Tables & Data
NA

SMART i2b2: APPs Using Data
In development

Allergies

Description

Data not yet available

i2b2: Supplementary Data
CONCEPT_DIMENSION
I2B2
MODIFIER_DIMENSION
OBSERVATION_FACT
TABLE_ACCESS

SMART i2b2: Additional Tables & Data
NA

SMART i2b2: APPs Using Data

In development

Pharmacy

Description

A new mapping table and data are provided for pharmacy contact and location details. This table and data demonstrate the medication fulfillment capabilities of SMART i2b2. Details for three pharmacies are included.

i2b2: Supplementary Data

NA

SMART i2b2: Additional Tables & Data

SMART_PHARMACY_MAP

SMART i2b2: APPs Using Data

Meds List

Provider

Description

A new mapping table and data are provided for provider contact and location details. This table and data demonstrate the medication fulfillment capabilities in SMART i2b2. Details for eight providers are included.

i2b2: Supplementary Data

NA

SMART i2b2: Additional Tables & Data

SMART_PROVIDER_MAP

SMART i2b2: APPs Using Data

Meds List

Ontology Mapping

Description

The SMART API requires data coded using specific systems that may not already be in use by an i2b2 installation. A new table and data are provided with mappings between the coding systems required by SMART and those used in the i2b2 demo data. These mappings represent our best effort for demonstrative purposes; they are not end-all mappings. SMART i2b2 will map between systems during transformation of the i2b2 PDO into SMART RDF /XML format.

Coding system mappings:

Category	SMART	i2b2
Problems /Diagnoses	SNOMED	ICD9
Medications	RXNORM	NDC
Lab Tests	NA*	LOINC
Demographics	sp^	DEM DATE
	sp	DEM MARITAL
	sp	DEM RACE
	sp	DEM RELIGION
	sp	DEM SEX
	sp	DEM VITAL

*LOINC used by SMART
^SMART platforms

i2b2: Supplementary Data
NA

SMART i2b2: Additional Tables & Data
PROJECT_ONT_MAPPING
ONT_MAP_DB_LOOKUP

SMART i2b2: APPs Using Data
All