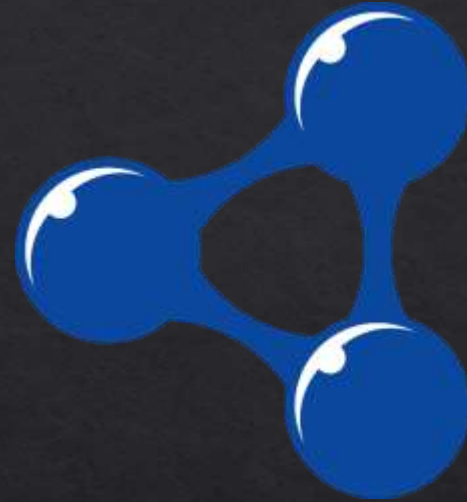


# Building a World-Model with RDF



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World IA Day Boise 2016

Think about  
a current or potential  
web-based architecture  
or design project.

Got it? Great.

Now, does your project  
meet any of the following  
3 criteria?

1. It involves some structured data.





2. Your data or content *just might* change over time.



3. At some point, you might like to re-use your data in a different format.



*Pro tip #1:*

Consider building  
an enterprise-wide  
world-model.

Taxonomy?

Ontology?

Vocabulary?

Controlled  
Vocabulary?

Thesaurus?

Folksonomy?



# WORLD-MODEL

# Examples of Published World-Models

- ◆ Art & Architecture Thesaurus (Getty)
- ◆ SNOMED-CT (IHTSDO)
- ◆ Dublin Core Terms (DCMI)
- ◆ Schema.org (Google/Bing/Yahoo/Yandex)

*Pro tip #2:*

Consider building it  
with RDF.

# RDF?

Resource  
Description  
Framework





# The triple.



# Remember middle school language arts class?

Subject	Predicate	Object
Taxonomists	like	beer.

We can make lots of these statements.

Subject	Predicate	Object
Taxonomists	like	beer
Taxonomists	like	Mountain Dew
Ontologists	like	beer
Ontologists	like	coffee
Information architects	hate	Mountain Dew
Information architects	enjoy	beer
Taxonomists	like	ponies
Kids named Jimmy	like	ponies
Ontologists	hate	ponies

# We can ask questions about the data.

```
SELECT ?subject ?predicate ?object  
WHERE { :Taxonomists :like ?object }
```

subject	predicate	object
Taxonomists	like	beer
Taxonomists	like	Mountain Dew
Taxonomists	like	ponies



# Or...

```
SELECT ?subject ?predicate ?object  
WHERE { ?subject ?predicate :Ponies }
```

subject	predicate	object
Taxonomists	like	ponies
Kids named Jimmy	like	ponies
Ontologists	hate	ponies

“

Anyone can say anything  
about anything.

”



Hey, I like ponies too!

# Introducing the Healthwise Consumer Vocabulary (HWCV)

- ◆ A world-model for health care & wellness
- ◆ An enterprise taxonomy for current and future Healthwise information products
- ◆ An RDF document with 300,000+ triples describing the concepts we care about and discuss in our content

# A few RDF triples from the HWCV

Subject	Predicate	Object
:HWCV_20705	skos:prefLabel	“Coronary Artery Disease”
:HWCV_20705	:abbreviation	“CAD”
:HWCV_20705	:caused_by	:HWCV_20703
:HWCV_20705	:causes	:HWCV_20706
:HWCV_20703	skos:prefLabel	“Atherosclerosis”
:HWCV_20706	skos:prefLabel	“Heart Failure”
content:abl3279	dct:subject	:HWCV_20705
content:abl3279	dct:title	“Heart Disease”



# How did we build it?



May 10, 1869

# The Golden Spike

Consumer-oriented  
faceted thesaurus

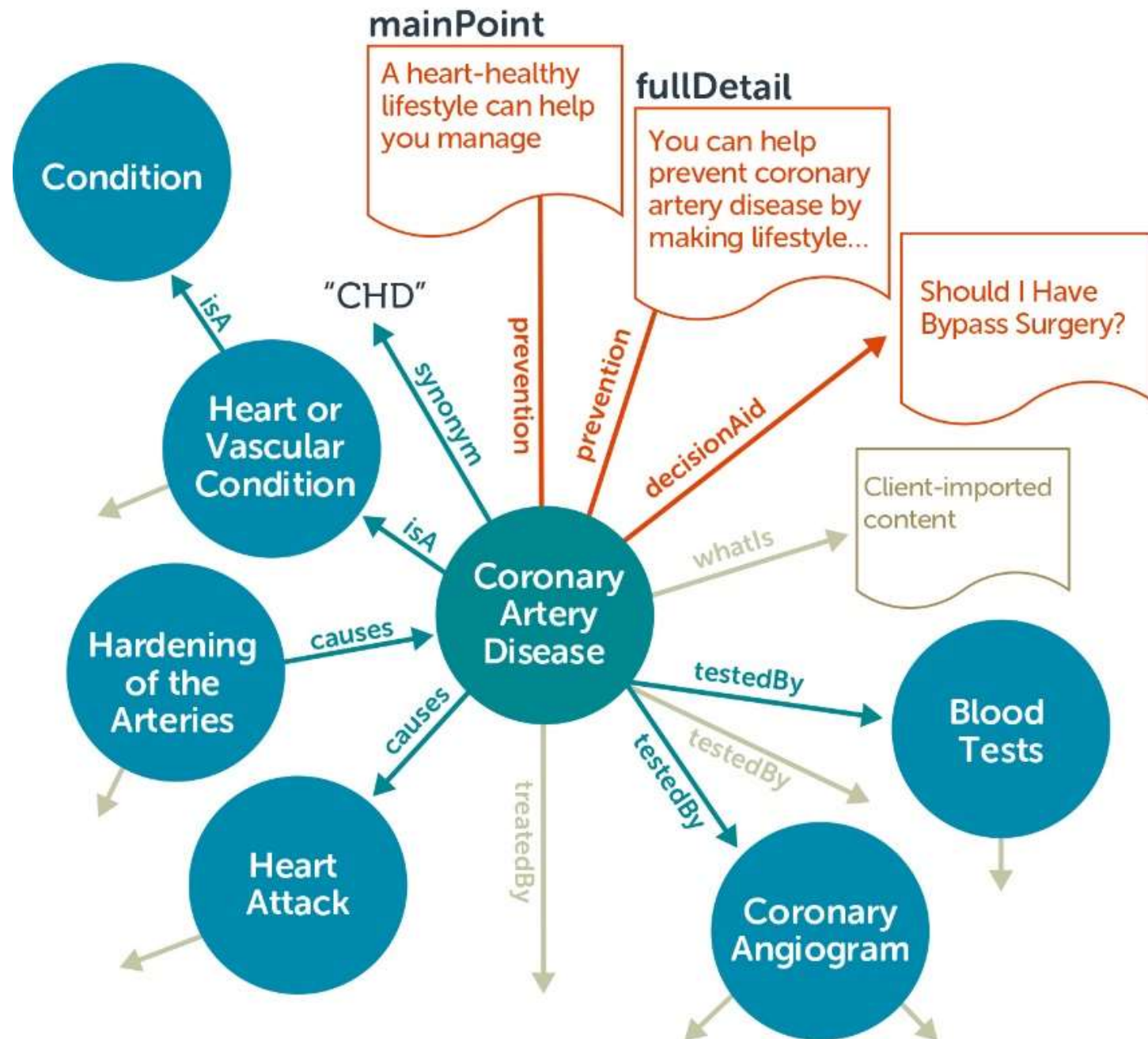
+

Clinically-oriented  
vocabulary with links  
to standard medical  
codes and terms



# What is it good for?

- ◆ Describing our content [now]
- ◆ Taxonomy, content & search APIs [now]
- ◆ Coach, Communicate, EMR module [future]
- ◆ Knowledgebase [future]
- ◆ Health campaigns [future]





## CONTENT CONFIGURATIONS

Cam

Cdc

Conversation

Csp

DecisionPoint

Fdb

Kb

Lesson

Multum

Nci

Nord

Pi

Symptom

Video

## BEHAVIOR CHANGE FILTERS

none/all

Awareness

Learning

Behavior

Motivation

Sustainability

## DEMOGRAPHIC FILTERS

coron|

coronary angiogram  
coronary calcium scan  
coronary heart disease  
coronary artery bypass graft (cabg)  
coronary artery disease (cad)  
acute coronary syndrome

## Flu Complications

Although most cases of influenza (flu) get better without causing other problems, complications sometimes develop.

hw121808 special [en-us]

## Medical History and Physical Exam for Nearsightedness

During an exam for nearsightedness, your doctor will ask questions about your health, lifestyle, medicines you are taking, and past eye problems. Answers to questions about your family members can help determine whether you may have...

hw121851 special [en-us]

## Eye and Vision Tests for Children and Teens

Use the guidelines below to schedule routine vision checks and eye exams with your pediatrician or family doctor.

hw121865 special [en-us]

## Eye Exams for Adults

# A knowledge graph for CAD

## Coronary Artery Disease (CAD)

### Condition

#### About

Coronary artery disease happens when fatty deposits called plaque (say "plak") build up inside your coronary arteries. Those are the blood vessels that supply blood and oxygen to your heart. Plaque buildup may reduce the amount of blood that gets to your heart. Coronary artery disease can cause angina symptoms, such as chest pain or pressure. It can lead to a heart attack

Coronary artery disease (also called CAD) is the most common type of heart disease. It's also the number one killer of both men and women in the United States.

#### Resources

##### Decision Aids

- [Should I Have Bypass Surgery?](#)
- [Should I Have an Angiogram?](#)
- [Should I Have Angioplasty for Stable Angina?](#)

#### Related

**Other names:** [CHD](#), [Coronary Heart Disease](#), [CAD](#), [Coronary Artery Disease](#)

**Tests:** [Blood Tests](#), [Coronary Angiogram](#), [Electrocardiogram](#), [Physical exam and medical history](#), [Chest X-ray](#)

**Symptoms:** [Angina](#), [Shortness of Breath](#)

**Risks:** [Family history of a disease](#), [High Cholesterol](#), [Diabetes](#), [High Blood Pressure](#)

**Treatments:** [Lifestyle Changes](#), [Beta Blockers](#), [ARBs](#), [ACE Inhibitors](#), [Cardiac Rehab Program](#), [Diuretics](#), [Calcium Channel Blockers](#), [Coronary Angioplasty](#), [Coronary Artery Bypass Surgery](#)

#### Explore

- [Heart and Vascular Conditions](#)

## To review...

1. If you want your structured data to be reusable and scalable, build an enterprise world-model.
2. If you want to integrate data from different sources or share it with the world, build your model using semantic web technologies (RDF).



What could you build  
with a world-model  
representing *your* domain?