Big Data in Medical Informatics
Assignment #1

Due on November 19, 2016

Prof. Dr. Stefan Decker

Dr. Oya Deniz Beyan
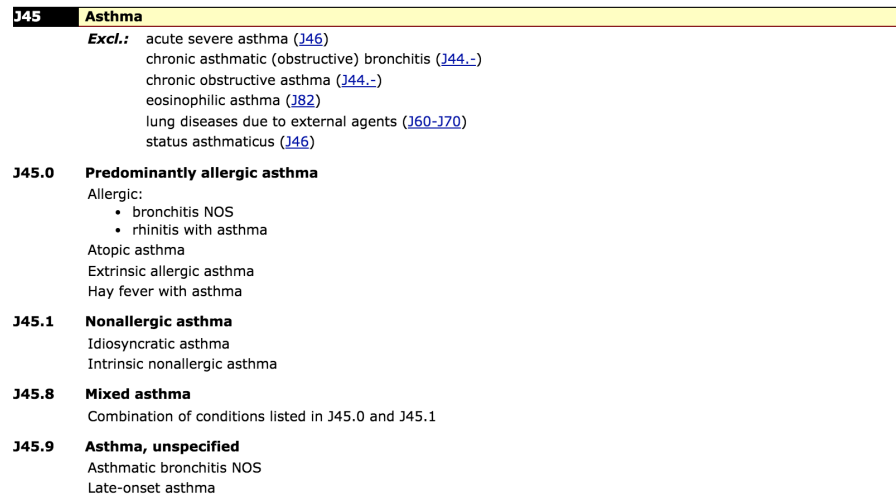
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Problem 1

Solution

(a) The ICD-10 code for Asthma is **J45**. The screenshot is displayed in *Figure 1*.

J45	Asthma

Excl.: acute severe asthma (J46)
chronic asthmatic (obstructive) bronchitis (J44.-)
chronic obstructive asthma (J44.-)
eosinophilic asthma (J82)
lung diseases due to external agents (J60-J70)
status asthmaticus (J46)

J45.0   Predominantly allergic asthma
Allergic:
 • bronchitis NOS
 • rhinitis with asthma
Atopic asthma
Extrinsic allergic asthma
Hay fever with asthma

J45.1   Nonallergic asthma
Idiosyncratic asthma
Intrinsic nonallergic asthma

J45.8   Mixed asthma
Combination of conditions listed in J45.0 and J45.1

J45.9   Asthma, unspecified
Asthmatic bronchitis NOS
Late-onset asthma

Figure 1: ICD-10 Codes for Asthma

(b) The SCDID for Asthma is **195967001**. The screenshot is displayed in *Figure 2.*

(c) The terminologies for the given codes are illustrated in *Figure 3 & 4.*

Problem 2

Solution

a In the TMO Ontology, the subclasses of the *Protein* entity are **Enzyme** and **Protein Target**

b Figure 5 illustrates the visualization of the **aixTour** ontology which I have created for the task. The ontology will also be uploaded in the RDF/XML format.

Figure 2: SCDID Codes for Asthma

Topographical Code   Morphological Code

C 34.9 - 8140/3 1

Bronchus and Lung   Subsite: Lung, NOS   Adenocarcinoma, NOS   Differentiation - Well-differentiated
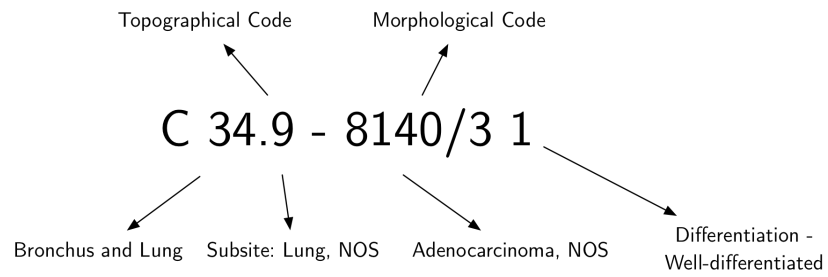
Figure 3: OCD-O-3 Terminology - 1

Topographical Code   Morphological Code

C 34.9 - 8140/0

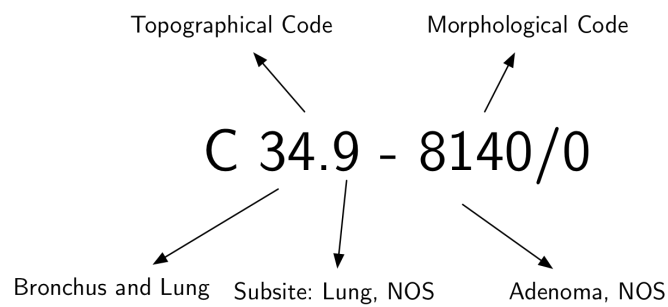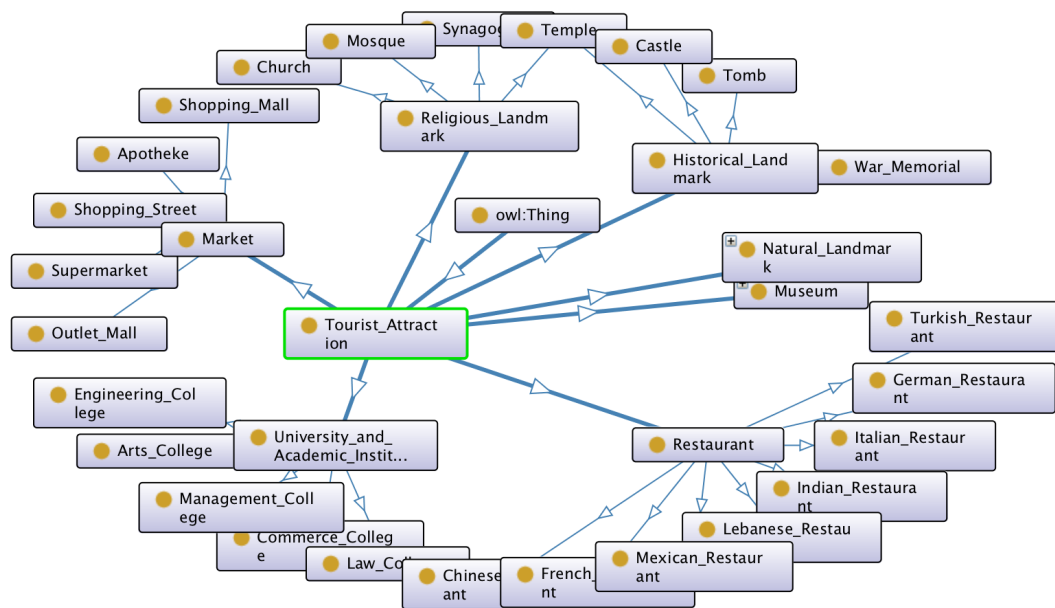Bronchus and Lung   Subsite: Lung, NOS   Adenoma, NOS

Figure 4: OCD-O-3 Terminology - 2

Figure 5: Visualization of the aixTour ontology