

Big Data in Medical Informatics

Assignment #1

Due on November 19, 2016

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Submitted by:

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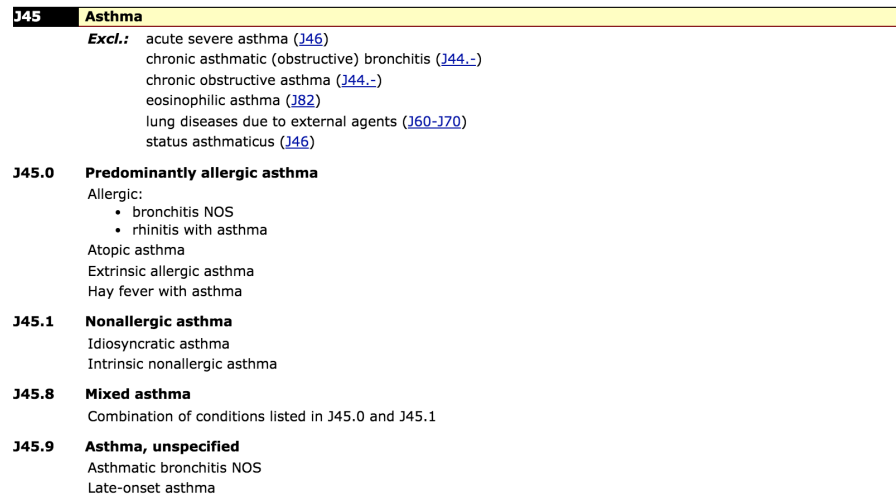
MSc. Software Systems Engineering

Matrikelnummer : 359831

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: <ul style="list-style-type: none">• 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.

Parents
➤  Disorder of respiratory system (disorder)

 **Asthma (disorder)** ☆ 
SCTID: 195967001
195967001 | Asthma (disorder) |
Airway hyperreactivity
Asthmatic
Bronchial asthma
Bronchial hyperreactivity
BHR - Bronchial hyperreactivity
Bronchial hyperresponsiveness
Bronchial hypersensitivity
Asthma
Asthma (disorder)
Hyperreactive airway disease

Finding site → Airway structure












Children (24)
➤  Acute asthma (disorder)
➤  Allergic asthma (disorder)
-  Asthma in mother complicating childbirth (disorder)
-  Asthma with irreversible airway obstruction (disorder)
➤  Asthma without status asthmaticus (disorder)
➤  Asthma-chronic obstructive pulmonary disease overlap syndrome (disorder)
➤  Asthmatic bronchitis (disorder)
-  Brittle asthma (disorder)
-  Childhood asthma (disorder)
-  Cough variant asthma (disorder)
➤  Exacerbation of asthma (disorder)

Figure 2: SCDID Codes for Asthma

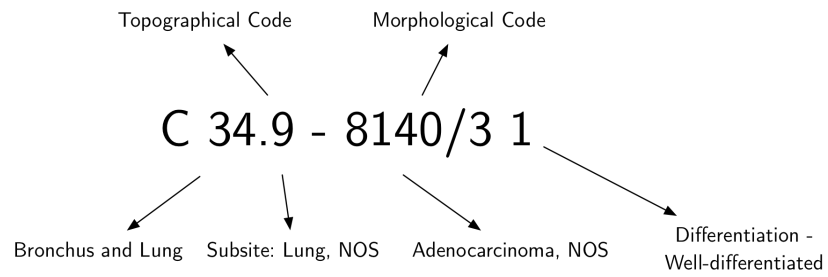


Figure 3: OCD-O-3 Terminology - 1

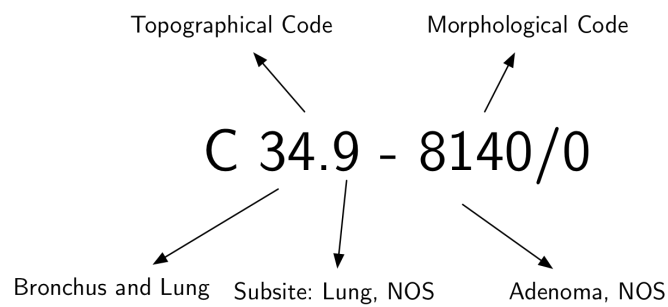


Figure 4: OCD-O-3 Terminology - 2

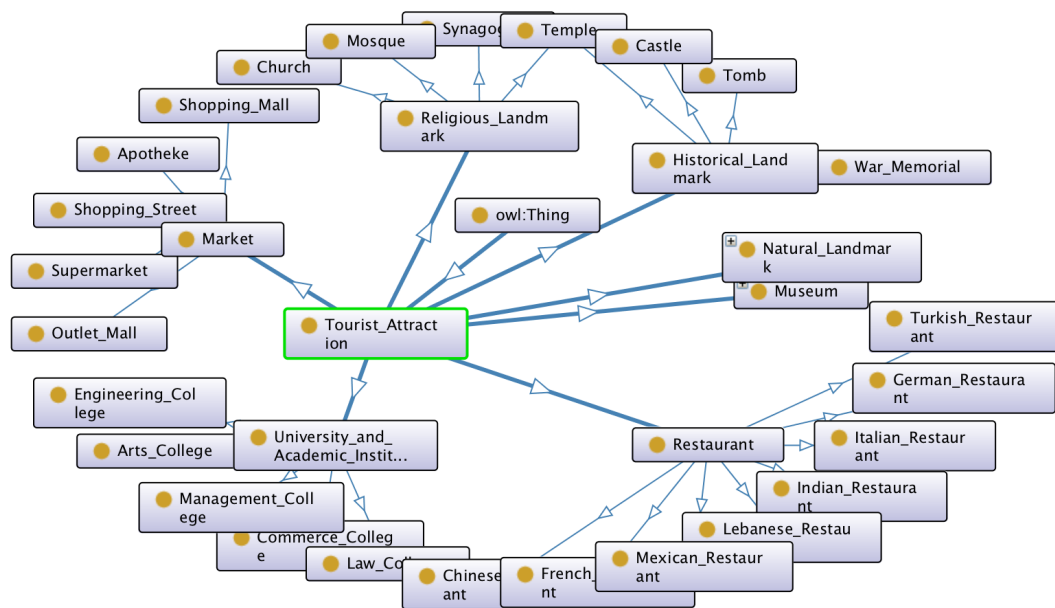


Figure 5: Visualization of the aixTour ontology