

Assignment#1

Note: Assignment#1 contributes to 10% of the total mark of the course.

Deadline: 10 April, 2021 before 00:00

Submission: Send your work as an A#1-XXX.zip file for XXX your student ID via the PedagogySquare platform.

Q1. Given the following ontology definition (5 marks)

Class: PetOwner

SubClassOf: Person that has Pet some Cat and hasPet only (Cat or Dog)

Class: Cat

SubClassOf: Animal

Class: Dog

SubClassOf: Animal

Individual: Fred

Types: PetOwner

Facts: hasPet Tibbs

Individual: Tibbs

Types: (not Dog)

What additional information do we know about Tibbs?

Q2. Given the following ontology definition (5 marks)

Class: PetOwner

SubClassOf: Person that hasPet some Cat and hasPet some Dog

Class: Cat

SubClassOf: Animal

Class: Dog

SubClassOf: Animal

Individual: Fred

Types: PetOwner

Facts: hasPet Tibbs has Pet Fido

Individual: Tibbs

Types: Cat

Individual: Fido

Is Fido a Dog?

Q3. Given the following definition (5 marks)

Class: PetOwner

SubClassOf: Person that hasPet some Cat

Is owning a Cat enough to recognize a Person as a petOwner?

Q4. Given the following definition (5 marks)

Class: PetOwner

SubClassOf: Person that hasPet some Cat and hasPet only Cat

How many Cats does a petOwner have as Pets?

***Note: Solutions to Q1 – Q4 are written in PDF.**

Q5. Use your own words to describe what it means for knowledge representation (KR) to play a role of surrogate? (100 - 200 words in PDF) (10 marks)

Q6. Consider an application for a restaurant that supports a customer ordering sushi and that makes use of your sushi ontology. Discuss how post-coordination might be used within that application. Give concrete examples. (100 - 200 words in PDF) (10 marks)

Q7. For this assignment you are to define a basic asserted hierarchy of sushi ingredients from the Yo! Sushi core menu. The hierarchy should be defined an OWL ontology using Protégé. All classes should be labelled appropriately. Submit the owl file as A1-hierarchy-XXX.owl, where XXX denotes your student ID. (40 marks)

Q8. Write a short essay describing the techniques (learnt from the lectures; see the slides) you use in developing your sushi ontology. Justify each technique with examples (why do you choose to use this technique?). (approx. 500 words in PDF) (20 marks)