

CS6852:Theory and Application Of Ontologies

March 31, 2022

Ankit Thawal CS21M004

Priya Lakra CS21M047

Lavi Junwal CS21M032

Lava Bottada CS21M031

ASSIGNMENT 1 : ONTOLOGY DESIGN

1 CONCEPT NAMES

The Concept names used in this assignment are listed below:

1. Event
2. Time
3. Platform
4. Order
5. List
6. Customer
7. Product
8. Bill
9. AppOnlyDiscount
10. MobileApp
11. SpecialDiscount
12. Complaint
13. Comment
14. User
15. Credentials
16. PrimeMember
17. PrimeMembership

18. Sponsor
19. Organization
20. Advertisement
21. AwarenessPoster
22. Poster
23. Hashtag
24. SocialMedia
25. Wishlist
26. Cart
27. FreeDelivery
28. EntertainmentActivity
29. Agent
30. DeliveryAgent
31. Helpline
32. Bestseller
33. Review

2 ROLE NAMES

The role names used in this assignment are listed below.

1. scheduledAt
2. hasStartTime
3. hasEndTime
4. hasBeenPlacedBy
5. belongsTo
6. hasGenerated
7. heldOn
8. raisedBy
9. valid

10. hasManufactured
11. has
12. purpose
13. isAdvertisedBy
14. hasMotive
15. usedFor
16. usedIn
17. selectedBy
18. accessTo
19. assists
20. delivers
21. handles
22. hasRating
23. unitsSold
24. manufacturedBy (reverse of hasManufactured)
25. postedBy

3 CONCEPT DESCRIPTIONS

The concept descriptions are given below. The concepts for which there is no description given are assumed to be primitive concepts.

3.1

$\text{EVENT} \equiv \text{scheduledAt.PLATFORM} \sqcap \text{hasStartTime.TIME} \sqcap \text{hasEndTime.TIME}$

Explanation : Event is something which is scheduled at a Platform(website or mobile app) and has start time and end time.

Motivating Example : There can be events like special discount and festival offers.

3.2

$\text{ORDER} \equiv \text{LIST} \sqcap \text{hasBeenPlacedBy.CUSTOMER} \sqcap \geq 1 \text{belongsTo.PRODUCT} \sqcap \text{hasGenerated.Bill.}$

Explanation : Order is placed by Customer and has one or more products in it and also has generated a bill.

3.3

$\text{APPONLYDISCOUNT} \equiv \text{EVENT} \sqcap \text{heldOn.MOBILEAPP} \sqcap \exists \text{belongsTo.SPECIALDISCOUNT}$

Explanation : App only discount is special event which occurs only on Mobile App.

3.4

COMPLAINT \equiv COMMENT $\sqcap \exists$ raisedBy.(USER $\sqcap \exists$ valid.CREDENTIALS)

Explanation: Complaint is a statement which is raised by a user who has valid credentials.

3.5

VENDOR \equiv USER $\sqcap \exists$ valid.CREDENTIALS $\sqcap \exists$ hasManufactured.PRODUCT

Explanation : Vendor is a user who has valid credentials and has made some products.

3.6

CUSTOMER \equiv USER $\sqcap \exists$ valid.CREDENTIALS

Explanation : Customer is a user who has valid credentials.

3.7

PRIMEMEMBER \equiv CUSTOMER \sqcap has.PRIMEMEMBERSHIP

Explanation : Prime Member is a customer who has prime membership.

3.8

SPONSOR \equiv ORGANIZATION $\sqcap \exists$ has.PRODUCT $\sqcap \exists$ purpose.ADVERTISEMENT

Explanation : Sponsor is an organization that has some products and its purpose is for the advertisement.

3.9

AWARENESSPOSTER \equiv POSTER \sqcap isAdvertisedBy.SPONSOR \sqcap hasMotive.ADVERTISEMENT

Explanation : Awareness poster is a poster which is advertised by a sponsor and whose motive is advertisement.

3.10

HASHTAG \equiv usedFor.EVENT $\sqcap \forall$ usedIn.SOCIALMEDIA

Explanation : Hashtags are used for an event and all of them are used in social media platforms.

3.11

WISHLIST \equiv LIST \sqcap has.PRODUCT $\sqcap \neg$ ORDER

Explanation : Wishlist is a list which has some products which are not ordered yet (not a part of ORDER yet).

3.12

CART \equiv LIST \sqcap has.PRODUCT \sqcap selectedBy.CUSTOMER

Explanation : Cart is a list which has some products which are selected for purchase by a customer.

3.13

PRIMEMEMBERSHIP \equiv has.SPECIALDISCOUNT \sqcup has.FREEDELIVERY \sqcup accessTo.ENTERTAINMENTACTIVITY

Explanation : Prime Membership is something which has a special discount on something, free delivery on all products and access to the entertainment activities.

3.14

$\text{AGENT} \equiv \text{USER} \sqcap \exists \text{assists.CUSTOMER}$

Explanation: Agent is a user who assists the customers.

3.15

$\text{DELIVERYAGENT} \equiv \text{AGENT} \sqcap \text{delivers.ORDER}$

Explanation: Delivery agent is an agent who delivers the orders.

3.16

$\text{HELPLINE} \equiv \text{AGENT} \sqcap \text{handles.COMPLAINT}$

Explanation: Helpline is an agent who handles the queries of the customers.

3.17

$\text{BESTSELLER} \equiv \text{PRODUCT} \sqcap \geq 4 \text{hasRating.REVIEW} \sqcap \geq 5000 \text{unitsSold.PRODUCT}$

Explanation: Bestseller is a product which has 4 or more stars as a rating in reviews and 5000 or more units sold already.

3.18

$\text{PRODUCT} \equiv \text{manufacturedBy.VENDOR}$

Explanation: A product is something which is manufactured by a vendor.

3.19

$\text{REVIEW} \equiv \text{COMMENT} \sqcap \text{postedBy.CUSTOMER}$

Explanation: Review is a comment which is posted by a customer.