

CS343 Graph Data Science

Spring 2024

Quiz 1

Your ID & Name : _____

1. (1 point) Which modeling culture roughly coincides with modern Machine Learning and its industrial offshoots?
 - A. Generative modeling
 - B. Predictive modeling
 - C. Bayesian modeling
 - D. Stochastic modeling
2. (1 point) What is a super node in a graph?
 - A. A node that has a lot of properties
 - B. A node that has a lot of labels
 - C. A node that has a lot of relationships
 - D. A node that has a lot of indexes
3. (1 point) Which aspect of data science involves choosing appropriate data formats, structures, and applying mathematical or computational tools for manipulation?
 - A. Data Modeling
 - B. Data Exploration and Preparation
 - C. Data Representation and Transformation
 - D. Data Visualization and Presentation

4. (7 points) We have to build a graph property model for the following scenario:

An e-commerce store is interested to build a real-time recommendation systems that based on the user's current shopping cart. It will recommend products that are frequently bought together with the products in the cart. For this purpose, we need to build a graph model that represents the products and their relationships. The products are identified by their SKU (Stock Keeping Unit) and each product has a name, its price, belongs to a category, and is manufactured by a brand. A user can like a product, view a product, or buy a product.

We would like to answer the following queries efficiently:

- Which products are frequently bought together for a given product?
- Which products are usually bought in a specific month?
- Which categories are usually bought together?
- Which brands are usually bought together?
- Which products are usually bought together by a specific user?
- etc.