CSE 300 Final

Olcay Taner YILDIZ

I. QUESTION (20 POINTS)

Although you always wanted to be an artist, you ended up being an expert on databases because you love to cook data and you somehow confused database with data baste. Your old love is still there, however, so you setup a database company, Art Base, that builds a product for art galleries. The core of this product is a database with a schema that captures all the information that galleries need to maintain. Galleries keep information about artists, their names (which are unique), birth places, age, and style of art. For each piece of art work, the artist, the year it was made, its unique title, its type of art (e.g., painting, lithograph, sculpture, photograph), and its price must be stored. Pieces of art work are also classied into groups of various kinds, for example, portraits, still lifes, works by Picasso, or works of the 19th century; a given piece may belong to more than one group. Each group is identied by a name (like those above) that describes the group. Finally, galleries keep information about customers. For each customer, galleries keep their unique name, address, total amount of dollars they have spent in the gallery (very important!), and the artists and groups of art that each customer tends to like. Draw the ER diagram for the database.

II. QUESTION (20 POINTS)

Consider the following relations about the suppliers-parts-projects database. The significance of an shipment row is that the specified supplier supplies the specified part to the specified project in the specified quantity.

Suppliers(sid:integer, sname:string, status:integer, city:string)

Parts(pid:integer, pname:string, color:string, weight:integer, city:string)

Projects(prjid:integer, prjname:string, city:string)

Shipment(sid:integer, pid:integer, prjid:integer, quantity:integer)

Given the relations above, write the following queries in SQL.

1) Get full details of all projects in London.
2) Get full details for parts supplied by a supplier in London.
3) Get all cities in which at least one supplier, part, or project is located.
4) Get the sids of all suppliers who have supplied red parts to projects but not green parts.
5) Get total quantity supplied by a supplier in London to a project in London.

III. QUESTION (15 POINTS)

Given a table named city with the following fields

- name(string) stores the name of the city.
- year(integer) stores the establishment year of the city.
- mayor(string) stores the name of the mayor of the city.
- budget(integer) stores total budget of the city.
- numberofcitizens(integer) stores the number of citizens living in the city.

Create an html file and a servlet that asks the user to enter a threshold t and displays all cities that have a budget larger than t. The names of the files will be question3.html for html, question3.servlet for the servlet.

IV. QUESTION (15 POINTS)

Create an interface to get data from user and use java server pages to insert that data into the city table. The names of the files will be question4.html for html, question4.jsp for the jsp.

V. QUESTION (15 POINTS)

Create an html file and a servlet such that from the html file you will take a character and the width / length of that character as pixels. You will display characters using '*''s in the screen. The names of the files will be question5.html for html, question5.servlet for the servlet. Possible characters are:

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VI. QUESTION (15 POINTS)

Create an html file and a jsp file such that from the html file you will take an integer number and return the prime factors of that number using the jsp file. The names of the files will be question6.html for html, question6.jsp for the jsp.