

CSE 300 Bütünleme

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I. QUESTION (20 POINTS)

A company database needs to store information about employees (identified by *ssn*, with salary and phone as attributes), departments (identified by *dno*, with *dname* and budget as attributes), and children of employees (with name and age as attributes). Employees work in departments; each department is managed by an employee; a child must be identified by name when the parent (who is an employee; assume that only one parent works for the company) is known. We are not interested in information about a child once the parent leaves the company. Draw the ER diagram for the database.

II. QUESTION (20 POINTS)

Consider the following relations about the sailors-boats-reserves database. The significance of a reserves row is that the specified sailor reserved the specified boat at the specified day.

Sailors(sid:integer, sname:string, rating:integer, age:real)

Boats(bid:integer, pname:string, color:string)

Reserves(sid:integer, pid:integer, day:date)

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

- 1) Find all sailors with a rating above 7.
- 2) Find the ages of sailors whose names begins and ends with B.
- 3) Find the sids of all sailors who have reserved both a red and a green boat.
- 4) Find the names of sailors who have reserved all boats.
- 5) Find the age of youngest sailor for each rating level.

III. QUESTION (15 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)

Create an html file and a servlet that asks the user to enter a quantity q , and a status number s and displays all shipments that are shipped by a supplier with status q and have a quantity larger than t . The names of the files will be question3.html for html, question3.java 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 projects 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 shapes using '*'s in the screen. The names of the files will be question5.html for html, question5.servlet for the servlet. Possible shapes are:

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*****
*      *
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*****
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*      *
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*      *
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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 smallest and largest 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.