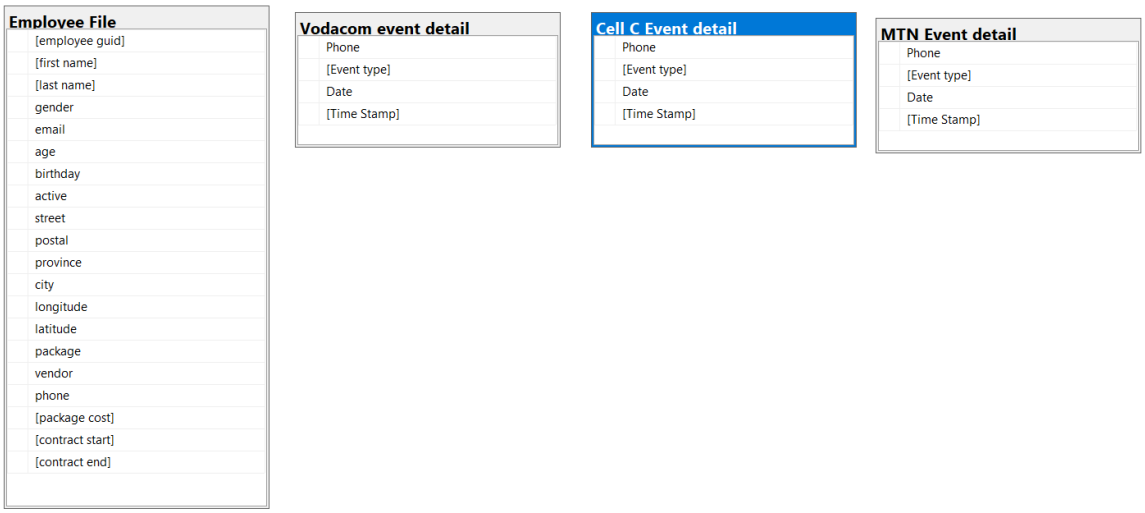
Database Challenges Answers

Question 1 Answers

Attached ERD Diagram Picture



Question 2 Answer

```sql
UPDATE [Employee File]
SET email = CONCAT(LEFT(email, CHARINDEX('@', email)), 'company.com');
```

Back-end Code Challenges

Question 1 Answers

```
static void Main(string[] args)
        {
           var Likes = new List<string> { "Peter", "Jacob", "Mark", "Max"};

            foreach ( string like in Likes)
            {
                if (Likes.Count == 0)
                {
                    Console.WriteLine("no one likes this");
                }
                else if (Likes.Count() == 1)
                {
                    Console.WriteLine("Peter likes this");
                }
                else if (Likes.Count() == 2)
                {
                    Console.WriteLine("Jacob and Alex like this");
                }
                else if (Likes.Count() == 3)
                {
                    Console.WriteLine("Max, John and Mark like this");
                }
                else
                {
                    Console.WriteLine("Alex, Jacob and 2 others like this");
                }


            }

        }
```

Question 2 answer

```
public class Factory
{
    private RobotService _robotService;
    private PartsService _partsService;
    private CarService _carService;

    public Factory(RobotService robotService, PartsService partsService)
    {
        _robotService = new RobotService();
        _partsService = new PartsService();
        _carService = new CarService();
    }

    public Robot BuildRobot(Enum RobotType)
    {
        if (RobotType == RoboticDog)
            var parts = GetRobotPartsFor(RoboticDog);
        return _robotService.BuildRobotDog(parts);
        else if (RobotType == RoboticCat)
            var parts = GetRobotPartsFor(RoboticCat);
        return _robotService.BuildRobotCat(parts);
        else if (RobotType == RoboticDrone)
            var parts = GetRobotPartsFor(RoboticDrone);
        return _robotService.BuildRobotDrone(parts);
        else if (RobotType == RoboticCar)
            var parts = GetRobotPartsFor(RoboticCar);
        return _robotService.BuildRobotCar(parts);
        else
            return null;
    }

    public Car BuildCar(Enum CarType)
    {
        if (CarType == Toyota)
            var parts = GetCarPartsFor(Toyota);
        return _carService.BuildCar(parts);
        else if (RobotType == Ford)
            var parts = GetCarPartsFor(Ford);
        return _carService.BuildCar(parts);
        else if (RobotType == Opel)
            var parts = GetCarPartsFor(Opel);
        return _carService.BuildCar(parts);
        else if (RobotType == Honda)
            var parts = GetCarPartsFor(Honda);
        return _carService.BuildCar(parts);
        else
            return null;

    }



    public List<Parts> GetRobotPartsFor(Enum RobotType)
    {
        return _partsService.GetParts(RobotType);
    }

    public List<Parts> GetCarPartsFor(Enum CarType)
    {
        return _partsService.GetParts(CarType);
    }
```

Front-end Code Challenges

Question 1 Answers

1. **The color for Both Div Elements will be Orange**
2. **Code Snippets for changing first div to pink**

```
<div id="firstDiv" class="red-card">
<div id="secondDiv" class="red-card">

<style>

  #firstDiv  div {
    background: pink;
  }


  #secondDiv  {
    background: orange;
  }

  div {
    height: 150px;
    width: 150px;
    background: green;
  }


  .red-card {
    background: red;
  }


  .yellow-card {
    background: yellow;
  }
</style>
```

3 **Code snippet for targeting the second div**

```
<div id="firstDiv" class="red-card">

<div id="secondDiv" class="yellow-card">


<style>
   #secondDiv   div {
      background: orange;
   }
   div {
      height: 150px;
      width: 150px;
      background: green;
   }
   .red-card {
      background: red;
   }
   .yellow-card {
      background: yellow;
   }
</style>
```

Question 2 Answers

1. **The double == operator compares two variables irrespective of data type**
2. **Add the third equal operator to make them three ===**

```
function compareIt(num1, num2) {
   return num1 === num2;
}


compareIt(5, "5");
```

Question 3

1.

- A responsive layout allows a website to rescale itself according to the device being used to view it. This makes the website adapt to different screen sizes without any

rendering issues. Responsive Design works well for both mobile and desktop platforms as the website realigns its appearance accordingly. Incorporating the Meta tag lets developers control the viewport's width and scaling so that the website is sized correctly on all devices.

- The viewport meta tag instructs the browser to resize the web page width according to the device screen size it is viewed on.

- Make images and CSS as light as possible
- Change button size and placement According to screen sizes

2. Bundling .js reduces the number of individual HTTP requests to server.
3. you must first convert it to CSS using the sass compiler.
4. Use JavaScript Transpiling: Transpiling converts JS code using the latest features (ES6/7)