

**Question 1:**

```
/*
 * Create a class from the Aggregate interface below and implement all of its methods
 * Do not use any .NET collections
 */

using System;

namespace Interview
{
    interface Aggregate
    {
        void Reset();      // Initialize the Aggregate
        void NewElement(double value); // Add the "value" to the current Aggregate
        int Elements();   // Return how many numbers have been added to the Aggregate since
                          // object creation or Reset()
        double Mean();    // Return the Average of all of the numbers that have been added
                          // to the Aggregate
        double Min();     // Return the Minimum of all of the numbers that have been added
                          // to the Aggregate
        double Max();     // Return the Maximum of all of the numbers that have been added
                          // to the Aggregate
    }
}
```

**Question 2:**

The following lists have employees and tasks and how they are mapped. Some Employees have no tasks, some have one or multiple and some tasks aren't assigned to anyone. Please answer the three questions based on these lists.

Employee	Task(s)
Susie Unknown	-
George Forgettable	-
Kevin Bacon	Kill Worms, Dance
Harrison Ford	Fly Ship, Find Relics, Hunt Replicants
Tom Hanks	Fly Rocket
-	Find Oz
-	Return a Ring

1. Define a MS-SQL database (tables, column name, data types, constraints...) to store this information.
2. Write a query that lists all Employees and include all of their tasks
3. Write a query that lists all Tasks that are not assigned to any Employee

**Bonus Question:**

A company has a SQL table that stores employee's name, hire date and end date. When a new employee is hired, a new record is added to the table with the employee's name and hire date are set. The end date is set to NULL. When an employee leaves the company, the end date is set to their last day of employment.

As the company grows, HR needs to know when certain thresholds occurred. For example, what was the first date when the company had 100 active employees? Please write a SQL stored procedure that calculates this date. The number of employees that HR wants know about should be a parameter to the stored procedure.