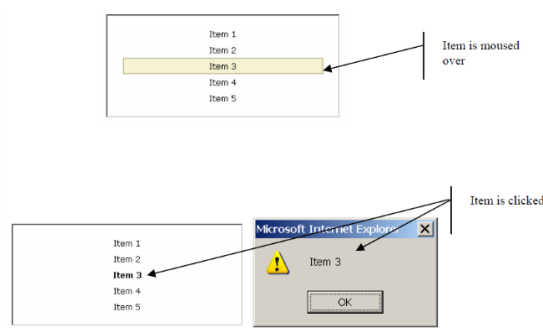


## Technical Questionnaire

### Web

---

1. Create a HTML page with a list of items from which users can choose one at a time. Items in the list must be horizontally centred within the list, and the list itself must be centred both horizontally and vertically on the page. When any item in the list is mouse over, it is highlighted. When item is clicked, it is shown in bold and a prompt is raised to display the item's content. When a new item is clicked, formatting from the previous item must be removed first. Please see below for illustration, and the look and feel that should be matched by your CSS. Cross-browser compatibility with minimally Internet Explorer (v10) and Chrome browsers should be maintained.



Please provide your answer as a single HTML file.

### SQL

---

1. Insert 100 rows into the following table:

```
CREATE TABLE #TEST1 (TEST_ID INT IDENTITY(1,1))
```

2. Write SELECT query to list latest record for each [Id]:

```
CREATE TABLE #TEST2 ([Id] VARCHAR(10), [Data] VARCHAR(250),  
[Date] SMALLDATETIME)  
INSERT INTO #TEST2 VALUES  
('A', 'abc', '2016-10-01'),  
('A', 'def', '2015-05-20'),  
('B', 'xyz', '2014-05-20'),  
('B', 'uvw', '2016-10-01'),  
('B', 'rst', '2015-10-01')
```

3. Write a single SELECT statement to list all unique values of attribute "z":

```
CREATE TABLE #TEST3 ([Data] XML)  
INSERT INTO #TEST3 VALUES  
('<r><a z="1" /><a z="2" /></r>'),  
('<r><b z="2" /><b z="3" /></r>'),  
('<r><c z="3"><c z="4" /></c></r>')
```

4. Consider a table with an [Id] column as well as BIT columns named [A] to [E] and some initial values:

```
CREATE TABLE #TEST5 ([Id] INT, [A] BIT, [B] BIT, [C] BIT, [D]
BIT, [E] BIT)
INSERT INTO #TEST5 ([Id], [A], [C], [E]) VALUES (1, 'true',
'false', 'true')
INSERT INTO #TEST5 ([Id], [A], [B], [C]) VALUES (2, 'true',
'true', 'true')
INSERT INTO #TEST5 ([Id], [C], [D], [E]) VALUES (1, 'false',
'false', 'true')
```

Create a procedure which will accept parameters ([Id] INT, [Column] CHAR (1)) and then invert the value in table #TEST5 for row matched by [Id] and column named [Column]. No change is made if existing value is NULL.

5. Programmatically find the least number of hops needed to get from Id=1 to Id=15 using the grid provided below. For example, to get from Id=1 to Id=4 will require 2 hops - (1,3) followed by (3,4).

```
CREATE TABLE #TEST6 ([FromId] INT, [ToId] INT)
INSERT INTO #TEST6 VALUES
(1,2), (1,3), (3,4), (4,5), (5,6), (5,7), (1,7), (2,8),
(8,9),
(9,11), (9,10), (7,10), (10,12), (10,14), (12,13), (14,15)
```

## Coding

---

1. What is a class?  
Ans:
2. What is an object?  
Ans:
3. Explain this Ruby idiom: `x ||= y`.  
Ans:
4. What is the primary difference in these two code snippets?

```
// Java
public boolean isEmpty(String s) {
    return s.length() == 0;
}
```

```
# ruby
def empty?(s)
    return s.size == 0
end
```

Ans:



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5. What reasons require Refactoring of code?

Ans:

6. How would you measure the quality of a source code?

Ans:

7. What do you feel is the most promising new technology in web / software development and why?

Ans: