

1. Using SQL Create a database that reflects the **Data (On page 2)** note: each client has a head office
2. Create an extension method that translates English to **Dev Magic**.
3. Create an extension method that translates **Dev Magic** to English.
4. Create a Web API that returns
  - An employee's Star Sign.
  - Their Bio as Dev Magic
  - The following Dev Magic "evday agicmay isyay osay easyyay , iyay ovelay ityay ! it'syay efinitelyday otnay ayay opycay andyay astepay ofyay igpay atinlay!" to English.
  - A Client with a list of their offices, the Head Office needs to be at the top of the list
5. Create a Web Application (using Angular) that displays all Clients, their offices (including Head Office) and all their employees (including star sign, bio as Dev Magic) as well the following Dev Magic "evday agicmay isyay osay easyyay , iyay ovelay ityay ! it'syay efinitelyday otnay ayay opycay andyay astepay ofyay igpay atinlay!" to English.
6. Create unit tests to test WebAPI and Web Application functionality.

**Data:**

**Clients**

Name: Client A

- Offices:
  - i. 123 Street
  - ii. 66 Road
  - iii. 11 Spooner Road (Head Office)
- Employees
  - i. Sam Fisher
  - ii. John Fisher
  - iii. Peter Fisher

Name: Client B

- Offices:
  - i. 123 Flight Street
  - ii. 64 Zoo Lane (Head Office)
  - iii. 22 Round Tree Road
- Employees
  - i. Sam Kemp
  - ii. John Kemp
  - iii. Peter Kemp

Name: Client C

- Offices:
  - i. 33 Mile Street (Head Office)
  - ii. 66 Road
  - iii. 44 Sprinkle Road
- Employees
  - i. John Doe
  - ii. Jane Doe
  - iii. Peter Doe

## Employees

- Sam Fisher
  - i. Bio: I love snowboarding and dogs
  - ii. Date Of Birth: 11/02/2001
- John Fisher
  - i. Bio: I live in a yellow submarine
  - ii. Date Of Birth: 14/01/1992
- Peter Fisher
  - i. Bio: Flowers are great!
  - ii. Date Of Birth: 11/08/1995
- Sam Kemp
  - i. Bio: Fish are friends, not food.
  - ii. Date Of Birth: 14/01/1992
- John Kemp
  - i. Bio: I live in a blue submarine
  - ii. Date Of Birth: 16/03/1980
- Peter Kemp
  - i. Bio: Coffee is the best!
  - ii. Date Of Birth: 14/08/1997
- John Doe
  - i. Bio: I hate robots!
  - ii. Date Of Birth: 16/04/1982
- Jane Doe
  - i. Bio: Life is like a house of cards
  - ii. Date Of Birth: 19/09/1991
- Peter Doe
  - i. Bio: Birds fly around my head!
  - ii. Date Of Birth: 22/07/1995

## Dev Magic

### Words Beginning With Consonants/Consonant Clusters

Pick any English word. The name could start with a consonant or consonant cluster or a vowel.

If you've got a word starting with a consonant cluster or consonant, move the consonant or consonant cluster from the initial location of that particular word to the last position of the name.

Add a suffix the suffix "-ay" to the end of the word.

Example:

Duck becomes uckd+ay to form **uckday**

Move become ovem+ay to form **ovemay**

Scratch becomes atchscr+ay to form **atchscray**

### Words Beginning With Vowels

If you want to create a Dev Magic word from an English word starting with a vowel, add the suffix "-yay", "-way", or "-ay" at the end of the original word. For instance:

Oval becomes **ovalyay**

Ultimate become **ultimateyay**

Odd becomes **oddyay**

### For Words Starting With the Letter 'Y'

The letter 'Y' creates a tricky situation when forming words in Dev Magic. Users have to determine whether the letter is a vowel or consonant based on its location in a name. Here are some essential facts to remember:

i) When the latter 'Y' comes at the beginning of an English word, you consider it a consonant. This means you move it to the end of the term and then add suffix -ay. For instance;

Yellow becomes ellowy+ay to form **ellowyay**

Year becomes eary+ay to form **earyay**

When the letter 'Y' appears in the second position of a word, the standard rules for word formation apply. E.g

Dyke becomes yked+ay to form **ykeday**

If you have a consonant cluster at the beginning of the word and the letter 'Y' comes at the end of this cluster, you treat it as a vowel and hence doesn't move with the consonant cluster. Example:

Rhythm becomes ythmrh+ay to form **ythmrhay**

### **Creating Dev Magic words from Compound Words**

You should first separate the compound word into individual words and apply the appropriate rules. For instance,

Bathroom becomes **athbayoomray**

Toothbrush becomes **oothtayushbray**

Here are some more examples:

I love snowboarding and dogs will become **iyay ovelay owboardingsnay andyay ogsday**

I live in a yellow submarine will become **iyay ivelay inyay ayay elloway ubmarinesay**