# Required features

• Provide 2 http endpoints (/v1/diff//left and /v1/diff//right) that accept JSON containing base64 encoded binary data on both endpoints.

• The provided data needs to be diff-ed and the results shall be available on a third endpoint (/v1/diff/). The results shall provide the following info in JSON format: o If equal return that o If not of equal size just return that o If of the same size provide insight into where the diff is, actual diffs are not needed. So mainly offsets + length in the data Note, that we are not looking for the ideal diffing algorithm.

# What's in it

* Input Web API (api/DiffService/GetRequestData/{id}/Left)
* Input Web API (api/DiffService/GetRequestData/{id}/Right)
* Result Web API (api/DiffService/GetResponseData)
* Unit Testing
* Integration Testing

# Running it

This project is developed in Visual studio 2019 in C# with target framework 5.0.

Open project in VS2019 and on execution swagger will be opened to test API and Unit test and integration is integrated with the same project.

# Testing

1. Create a new diff of left side

POST api/DiffService/GetRequestData/{id}/Left

----------------------------------------

HTTP/1.1 201 Created

{

“Id”: “1”,

“InputString”: “abc”

}

1. Create a new diff of left side

POST api/DiffService/GetRequestData/{id}/Right

----------------------------------------

HTTP/201 Created

{

“Id”: “1”,

“InputString”: “abc”

}

1. Get the results for the diff you created

GET api/DiffService/GetResponseData

----------------------------------------

HTTP/200 OK

{

"StatusCode": 200",

"DiffResultType": "Equals|SizeDoNotMatch|ContentDoNotMatch|Not Found",

"diffs": [

{

"offset": 0,

"length": 6

}

]

}

# Unit and Integration Tests

Unit Testing:

1. TestPostLeftRequestData**: Test the output of API of inserting data to the left side.**
2. TestPostRightRequestData**: Test the output of API of inserting data to the right side.**
3. TestGetResponseDataforEqualData**: Test the output of API of strings of input key are equal.**
4. TestGetResponseDataforEqualSize**: Test the output of API of strings size of input key are equal.**
5. TestGetResponseDataforEqualSizeDiffString**: Test the output of API of strings of the input key, it gives the difference between two strings with needed changes to match it.**

Integration Testing:

1. **TestPostLeftRequestDataAsync: Test the output of API of inserting data to the left side.**
2. **TestPostRightRequestDataAsync: Test the output of API of inserting data to the right side.**
3. **TestGetResponseDataforEqualDataAsync: Test the output of API of strings of input key are equal.**
4. **TestPGetResponseDataforEqualSizeAsync: Test the output of API of strings size of input key are equal.**

# Diff-ed Assumption

This function checks the difference between input and provides number changes required to match the document.

Example

Left String="Car Lexus" and Right String="Cur Lexas"

Expected Output will be

diifs[0]:{ offset=1 , Length=1},diifs[1]:{ offset=7 , Length=2}

Note:

**Offset** is presenting the length of the string and **Length** is representing the number of changes required to match the string till that offset.