**Details of applications**

* A simple front end javascript page that uses jquery ajax to consume the web service
* A simple web api application that exposes a service

Note : Authentication has not been implemented

**Details of applications/frameworks/tools required**

* Visual Studio
* IIS
* .net framework 4.6.2

**Programming technique used (Algorithm)**

The principle of recursion is used for the solution , the number that is to be converted is split recursively into three’s from the right before the decimal point . The reason to split it into three’s is that every three numbers have a pattern that they are spelt out the same , the only addition will be the unit (i.e) thousands , millions etc

Eg:

456 – Four hundred and fifty six

456456 – Four hundred and fifty six ***thousand*** and Four hundred and fifty six

456456456 - Four hundred and fifty six ***million*** Four hundred and fifty six **thousand** and Four hundred and fifty six

456456456456 - Four hundred and fifty six ***billion*** and Four hundred and fifty six ***million*** and Four hundred and fifty six **thousand** and Four hundred and fifty six

The pattern noticed here is that the three digits always have the same value – “*Four hundred and fifty six “* , the only addition to each iteration will be the unit place (i.e) thousand , million , billion

We define the numbers as an array for 1 to 19 as they are unique and all the tens (i.e) twenty , thirty , forty ……etc and the units (i.e) thousand , million , billion ….etc .

The initial check will be whether the number id below 100 and if its below 20 then pick the word value for it , if its below 100 then form the word value , this pattern is repeated for every three digits from the right of the decimal.

**API**

The api is a web REST api and it acceps the serialized json object , and returns the json result .

CORS is implemented to allow cross origin request and cross domain requests

Authentication has not been implemented .

Validations are to be done.

**Limitations of the solution**

* The biggest number that can be processed will be a “long” value (i.e) -**2,147,483,648** to **2,147,483,647**