Automated Logic Internship Opportunity

Here is my solution to the attached problems. The system was programmed in a C# console project, in the Visual Studios 2013 edition. I first created a general power factor check that will check if a given input is a power factor of a second input integer. I simply divided the input by the power and if it is greater than the power, loop in recursion until it is equal to power or less. After a few test cases, it seems to have worked.

Then the conversion to pig Latin required first to split the English phrase into words and punctuations. I decided to use Regular Expressions to separate the input string into two arrays, one for words and one for punctuations and numbers. I then convert the words into pig Latin while taking into account the vowels exception. Finally, I concatenated all the translated words and punctuations back together. After a few trial and errors, I seem to have it down.

The console project required only two basic system dependencies: System and System.Text.RegularExpressions.

Here are the test cases used:

Power Tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test # | Input | Expected Output | Actual Output | Details |
| 1 | Input: 4 power: 2 | true | true |  |
| 2 | Input: 5 power: 2 | false | false |  |
| 3 | Input:0 power:5 | true | true |  |
| 4 | Input:-25 power: 5 | false | false |  |
| 5 | Input: 25 power: -5 | true | true | Assumed power = 5 not -5  Took abs of power |
| 6 | Input:-25 power: -5 | false | false |
| 7 | Input: 29.16 power: 5.4 | Fail non-integer | Prompts user | False tryParse result  Unrecognized input  Exits to main menu |
| 8 | Input: 10 power: 2.1 | Fail non-integer | Prompts user |
| 9 | Input: 1 power: a | Fail non-integer | Prompts user |
| 10 | Input:10 power: 0 | false | false |  |
| 11 | Input:10 power: 1 | false | false |  |
| 12 | Input: 1 power: 1 | true | true |  |
| 13 | Input: 0 power: 0 | false | false |  |
| 14 | Input: 256 power: 2 | true | true |  |
| 15 | Input:81 power: 3 | true | true |  |

Pig Latin Tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test # | Input | Expected Output | Actual Output | Details |
| 1 | Alex, how did you do question 21? | Alexyay, owhay idday ouyay oday uestionqay 21? | Alexyay, owhay idday ouyay oday uestionqay 21? | Vowels aren’t rearranged, just added “yay” |
| 2 | Do you speak Pig Latin? | oDay ouyay peaksay igPay atinLay? | oDay ouyay peaksay igPay atinLay? | Capital letters at the beginning doesn’t need to be lowercased from example |
| 3 | My hovercraft is full of eels. Now it doesn’t work anymore. | yMay overcrafthay isyay ullfay ofyay eelsyay. owNay ityay oesnday’tay orkway anymoreyay. | yMay overcrafthay isyay ullfay ofyay eelsyay. owNay ityay oesnday'tay orkway anymoreyay. | Apostrophes in a word are considered two separate instances of words to translate |
| 4 | Mr. John, you’re the new teacher for this class? | rMay. ohnJay, ouyay’eray hetay ewnay eachertay orfay histay lasscay? | rMay. ohnJay, ouyay'eray hetay ewnay eachertay orfay histay lasscay? | Sur names are also treated as separate words |
| 5 | If there are 52 marbles in the jar and 24 marbles outside the jar, how many marbles are there altogether? 76 | Ifyay heretay areyay 52 arblesmay inyay hetay arjay andyay 24 arblesmay outsideyay hetay arjay, owhay anymay arblesmay areyay heretay altogetheryay? 76 | Ifyay heretay areyay 52 arblesmay inyay hetay arjay andyay 24 arblesmay outsideyay hetay arjay, owhay anymay arblesmay areyay heretay altogetheryay? 76 | Here is another example of numbers being excluded |
| 6 | The program should be able to : 1) handle punctuation 2) Ignore numbers (i.e. if “500” is passed in, “500” is passed back) 3) Handle multiple sentences | heTay orgrampay houldsay ebay ableyay otay: 1) andlehay unctuationpay 2) Ignoreyay umbersnay (iyay.eyay. ifyay “500” isyay assedpay inyay, “500” isyay assedpay ackbay) 3) andleHay ultiplemay entencessay | heTay rogrampay houldsay ebay ableyay otay : 1) andlehay unctuationpay 2) Ignoreyay umbersnay (iyay.eyay. ifyay "500" isyay assedpay inyay, "500" isyay assedpay ackbay) 3) andleHay ultiplemay entencessay | Just for fun, here is a copy from the instructions being translated containing multiple instances of odd punctuations |

If you have any questions, please contact me through email: [slim13@students.kennesaw.edu](mailto:slim13@students.kennesaw.edu) or [slanimero@gmail.com](mailto:slanimero@gmail.com)