Chem/Stat3240: Homework 8b
Matlab

October 24, 2015

4 Write a function `[arrayOut]=arrayBoundary(arrayIn,n)` that takes input data array (matrix) `arrayIn`, and an integer `n` that specifies the boundary width, and produces an output array `arrayOut` that contains the original `arrayIn` with an n-element boundary around all sides of the original `arrayIn`. If the input `arrayIn` had dimensions `(nrows, ncols)` output `arrayOut` will have dimensions `(nrow+2*n, ncols+2*n)`. The elements in the boundary array will be a reflection of the elements of `arrayIn` about the border elements of `arrayIn` as shown in the examples below:

```
>> array=randi(50,5,5)
array =
    41     5     8     8    33
    46    14    49    22     2
     7    28    48    46    43
    46    48    25    40    47
    32    49    41    48    34
>> array1=arrayBoundary(array,1)
array1 =
    14    46    14    49    22     2    22
     5    41     5     8     8    33     8
    14    46    14    49    22     2    22
    28     7    28    48    46    43    46
    48    46    48    25    40    47    40
    49    32    49    41    48    34    48
    48    46    48    25    40    47    40
>> array1=arrayBoundary(array,2)
array1 =
    48    28     7    28    48    46    43    46    48
    49    14    46    14    49    22     2    22    49
     8     5    41     5     8     8    33     8     8
    49    14    46    14    49    22     2    22    49
    48    28     7    28    48    46    43    46    48
    25    48    46    48    25    40    47    40    25
    41    49    32    49    41    48    34    48    41
    25    48    46    48    25    40    47    40    25
    48    28     7    28    48    46    43    46    48
```

5 Modify the function `arrayboundary` to create a new function `arrayboundary1` thats uses the built-in Matlab function `padarray` with appropriate options, to achieve a similar effect. Note that `padarray` also duplicates the boundary elements of the original array as well.

See the following link on matrix indexing for further information:
www.mathworks.com/company/newsletters/articles/matrix-indexing-in-matlab.html

Submit both `arrayBoundary` and `arrayBoundary1` to Cody as well as to the collab site.

Yet to come.