CS 381: Assignment #4

Due on Thursday, October 30th, 2014

Prof. Grigorescu 12:00pm

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Problem 1

(a) the trend is 1 999999 2 3 4 5
The algorithm will return 2, while the correct answer is 5
(b)
for every element: if element is less than the first one, remove it ... $O(n)$
Do LIS $O(n^2)$

Create LIS[i], that tracks the length of the longest increasing subsequence that ends at location i LIS[0] = 1 (subsequence of length one) LIS[i] = max(LIS[j] + 1) for all j < i, such that value[i] > value[j]

Problem 2

```
1
2  import sys
3
4
5  def main():
6      n=input('Enter the number of nodes ')
7      n=int(n)
8      r=input('Enter R ')
9      c=input('Enter C ')
10     array=[]
11     for i in range(0,n):
12         inpu=input()
13         array.append(inpu)
14     value=[999999]*n
15
16     for i in range(0,n):
17         if i==0:
18             value[i]=array[i]*r
19         elif i<4:
20             value[i]=value[i-1]+array[i]*r
21         else:
22             value[i]=min(value[i-1]+array[i]*r,value[i-4]+4*c)
23
24     print value[n-1]
25
26
27 if __name__ == "__main__":
28    main()
29
```