Project_Euler_008

February 4, 2018

1 Project Euler Problem 8

The four adjacent digits in the 1000-digit number that have the greatest product are 9 Œ 9 Œ 8 Œ 9 = 5832.

73167176531330624919225119674426574742355349194934 96983520312774506326239578318016984801869478851843 85861560789112949495459501737958331952853208805511 12540698747158523863050715693290963295227443043557 66896648950445244523161731856403098711121722383113 62229893423380308135336276614282806444486645238749 30358907296290491560440772390713810515859307960866 70172427121883998797908792274921901699720888093776 65727333001053367881220235421809751254540594752243 52584907711670556013604839586446706324415722155397 53697817977846174064955149290862569321978468622482 83972241375657056057490261407972968652414535100474 82166370484403199890008895243450658541227588666881 16427171479924442928230863465674813919123162824586 17866458359124566529476545682848912883142607690042 24219022671055626321111109370544217506941658960408 07198403850962455444362981230987879927244284909188 84580156166097919133875499200524063689912560717606 05886116467109405077541002256983155200055935729725

Find the thirteen adjacent digits in the 1000-digit number that have the greatest product. What is the value of this product?

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In [1]: largenumstr = """
        73167176531330624919225119674426574742355349194934
        96983520312774506326239578318016984801869478851843
        85861560789112949495459501737958331952853208805511
        12540698747158523863050715693290963295227443043557
        66896648950445244523161731856403098711121722383113
        62229893423380308135336276614282806444486645238749
        30358907296290491560440772390713810515859307960866
        70172427121883998797908792274921901699720888093776
        65727333001053367881220235421809751254540594752243
        52584907711670556013604839586446706324415722155397
        53697817977846174064955149290862569321978468622482
        83972241375657056057490261407972968652414535100474
        82166370484403199890008895243450658541227588666881
        16427171479924442928230863465674813919123162824586
        17866458359124566529476545682848912883142607690042
        24219022671055626321111109370544217506941658960408
        07198403850962455444362981230987879927244284909188
        84580156166097919133875499200524063689912560717606
        05886116467109405077541002256983155200055935729725
```

```
        7163626956188267042825248360082325753042075296345 0
        """

        largenumstr = ''.join(largenumstr.split())
        largenumlist = list(largenumstr)

        biggest_product = 0
        for i in range(1000-13):
            new_product = 1
            for j in range(i, i+13):
                new_product *= int(largenumlist[j])
            if new_product > biggest_product:
                biggest_product = new_product

        print(biggest_product)
```

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23514624000
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