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| CIS 3120: Programming for Analytics  Mid-term Exam | |
| Kannan Mohan  Department of CIS, Baruch College | Duration: 1 hour 15 minutes  Max points: 100 |

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Please go to** [**the INSTRUCTIONS**](https://blogs.baruch.cuny.edu/cis3120/deliverables/midterm-exam-instructions/) **page and read the instructions before proceeding.**

Answer all questions. Use jupyter notebook to write your code.

1. Write code to get a number from the user and calculate the square of sum for 1 to that number. For example, if user enters 10, the square of sum of the first ten natural numbers is, (1+2+3+….+10)2 = 552 = 3025. (10 points)
2. Use scores.txt file provided to answer this question. Find and list all the even numbers from that file. (10 points) [next week]
3. A **palindromic number** reads the same both ways. Write code to find the largest palindrome made from the product of two 2-digit numbers. (20 points) [string]
4. Ask the user for a number. Find the **prime factors** for that number. (30 points) [factor;prime]
5. 145 is a curious number, as 1! + 4! + 5! = 1 + 24 + 120 = 145. That is, the sum of the factorial of each of its digits equals the number itself. Write code to display all numbers below 1000 for which this is true. (30 points) [20 - 30 min]