Basecamp Challenge Treasure Hunt

Part IV

31.Try to find the ‘system’ in this number series and calculate the sum of the first 1000numbers:

1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 0, 1, 1, 1, 2, 1, 3, ……….

1. Look at this number grid:

[24, 93, 87, 41, 44, 89, 77, 87, 77, 21, 54, 27, 31, 56, 15, 75, 17, 59, 40, 73, 81, 17, 70, 40, 82]

[28, 44, 20, 59, 16, 66, 47, 83, 93, 51, 60, 35, 19, 28, 43, 39, 81, 63, 74, 34, 78, 86, 70, 19, 59]

[89, 40, 30, 25, 68, 30, 63, 42, 38, 78, 47, 96, 39, 20, 62, 41, 91, 71, 17, 95, 52, 93, 63, 64, 44]

[59, 91, 45, 50, 37, 52, 66, 26, 81, 53, 25, 95, 36, 94, 73, 25, 57, 43, 48, 78, 91, 62, 19, 37, 47]

[40, 99, 12, 91, 74, 54, 62, 54, 32, 74, 24, 71, 42, 30, 37, 31, 25, 28, 31, 69, 48, 95, 32, 97, 43]

[34, 63, 69, 64, 42, 73, 73, 69, 66, 49, 69, 93, 49, 95, 40, 85, 61, 36, 42, 88, 46, 90, 78, 68, 16]

[88, 48, 69, 51, 38, 29, 52, 44, 99, 96, 92, 40, 30, 97, 61, 20, 38, 62, 37, 37, 82, 43, 57, 84, 30]

[15, 28, 67, 16, 89, 79, 37, 51, 27, 71, 56, 39, 66, 95, 40, 93, 72, 74, 83, 97, 38, 88, 55, 23, 31]

[50, 83, 16, 38, 56, 25, **15**, 27, 73, 39, 86, 56, 45, 22, 72, 51, 84, 85, 85, 55, 17, 93, 25, 18, 83]

[52, 17, 71, 67, 70, 99, 41, 40, 50, 94, 25, 74, 78, 17, 32, 61, 13, 43, 95, 12, 75, 50, 80, 85, 56]

[83, 97, 12, 18, 79, 89, 61, 88, 76, 62, 21, 46, 20, 22, 38, 15, 49, 24, 93, 60, 21, 96, 92, 34, 69]

[41, 32, 32, 26, 18, 91, 32, 54, 90, 24, 74, 71, 77, 19, 57, 98, 13, 19, 25, 24, 21, 20, 35, 80, 86]

[96, 25, 27, 52, 48, 92, 79, 34, 51, 62, 80, 73, 86, 28, 38, 68, 48, 48, 47, 71, 43, 58, 82, 45, 90]

[35, 18, 21, 67, 34, 33, 33, 57, 32, 30, 90, 25, 64, 83, 60, 72, 66, 88, 64, 31, 34, 53, 70, 35, 93]

[53, 25, 82, 98, 18, 30, 46, 74, 74, 64, 43, 52, 81, 71, 79, 50, 95, 61, 64, 22, 13, 42, 67, 34, 14]

[38, 38, 29, 85, 58, 66, 83, 18, 31, 65, 37, 94, 23, 30, 85, 44, 43, 47, 51, 46, 17, 18, 85, 37, 58]

[96, 40, 90, 79, 95, 31, 41, 19, 87, 55, 97, 17, 95, 93, 15, 53, 36, 14, 41, 88, 21, 98, 14, 76, 75]

[38, 78, 27, 43, 70, 96, 95, 85, 12, 44, 94, 69, 46, 51, 66, 86, 66, 54, 80, 57, 54, 39, 34, 54, 51]

[35, 16, 20, 80, 59, 42, 83, 69, 17, 92, 41, 96, 93, 40, 85, 32, 83, 87, 14, 61, 97, 94, 36, 65, 86]

[98, 46, 98, 77, 70, 81, 95, 32, 87, 17, 55, 97, 84, 60, 84, 53, 28, 62, 26, 89, 44, 61, 21, 31, 92]

[17, 26, 20, 68, 13, 13, 80, 45, 57, 78, 17, 90, 55, 22, 70, 35, 89, 42, 15, 29, 66, 37, 36, 22, 85]

[38, 55, 63, 80, 73, 66, 16, 51, 48, 65, 62, 65, 74, 40, 95, 87, 88, 59, 43, 79, 47, 54, 99, 46, 39]

[89, 15, 51, 30, 33, 74, 33, 29, 48, 79, 64, 71, 12, 88, 59, 86, 72, 55, 46, 42, 79, 27, 39, 39, 91]

[36, 15, 43, 92, 94, 35, 15, 85, 51, 94, 17, 66, 29, 40, 18, 86, 14, 14, 90, 45, 70, 24, 34, 51, 36]

[96, 75, 39, 39, 35, 23, 32, 66, 66, 82, 58, 48, 96, 92, 22, 33, 83, 44, 26, 64, 20, 40, 56, 62, 74]

[66, 70, 19, 70, 26, 95, 39, 17, 79, 87, 64, 99, 18, 25, 22, 15, 83, 67, 68, 55, 70, 73, 42, 62, 95]

[37, 86, 93, 58, 34, 87, 52, 30, 29, 86, 26, 51, 84, 30, 89, 82, 30, 23, 61, 77, 25, 20, 82, 79, 40]

[55, 84, 61, 85, 27, 65, 51, 16, 37, 45, 74, 64, 25, 19, 36, 32, 44, 72, 98, 84, 62, 36, 90, 75, 49]

[43, 66, 23, 31, 63, 29, 90, 66, 22, 99, 87, 17, 96, 30, 17, 98, 79, 54, 44, 50, 75, 76, 52, 76, 14]

[88, 73, 82, 48, 43, 49, 69, 66, 79, 88, 90, 17, 14, 62, 80, 83, 72, 24, 44, 17, 56, 14, 92, 27, 49]

[21, 97, 83, 70, 47, 78, 91, 25, 65, 30, 70, 97, 71, 94, 80, 90, 63, 46, 16, 21, 91, 79, 27, 90, 72]

[72, 85, 18, 28, 76, 82, 31, 92, 70, 52, 96, 74, 65, 40, 73, 22, 25, 73, 60, 31, 67, 12, 91, 87, 24]

[23, 14, 29, 46, 32, 95, 76, 42, 45, 73, 71, 63, 24, 79, 39, 56, 29, 37, 32, 45, 19, 73, 60, 32, 87]

[15, 15, 82, 34, 22, 73, 36, 65, 41, 50, 95, 16, 15, 23, 39, 37, 83, 93, 44, 47, 57, 25, 99, 68, 25]

[59, 19, 84, 84, 22, 32, 17, 88, 21, 22, 57, 57, 29, 29, 45, 73, 67, 42, 75, 96, 15, 17, 87, 58, 18]

[13, 70, 13, 77, 72, 95, 29, 41, 22, 99, 56, 41, 94, 92, 71, 25, 69, 50, 67, 71, 73, 85, 50, 89, 27]

[15, 56, 30, 86, 62, 81, 50, 31, 68, 81, 32, 63, 40, 36, 72, 45, 15, 42, 74, 14, 29, 47, 56, 16, 24]

[13, 53, 50, 75, 64, 78, 99, 54, 71, 14, 31, 53, 53, 90, 21, 67, 88, 75, 33, 19, 23, 27, 73, 12, 90]

[37, 90, 60, 56, 61, 37, 27, 93, 21, 29, 82, 92, 73, 42, 28, 19, 40, 71, 57, 82, 83, 12, 79, 35, 25]

[59, 59, 75, 84, 13, 55, 90, 14, 48, 45, 30, 25, 33, 63, 57, 80, 66, 88, 26, 81, 44, 27, 29, 13, 96]

We call 15 a **dip** because it is surrounded by **8** higher numbers. What is the product of the largest dip and the smallest dip?

1. At a birthday party 50 people were present. The guest list is in the file names.py. Some of them were friends, others didn’t know each other. There was something strange happening: two people were friends only if there were no common letters in their names. One of the guests had only 2 friends. How many different friends had these two friends in common? Make the sum of the lengths of the names of the common friends.
2. 100 athletes run a race with 5 stages. Every stage the passing order is registered in a list of the ‘rugnummers’. You can find this in the file passages.py. If the runner passes first (s)he gets 100 points, second 99 points, etc. For each runner the scores of the 5 stages are summed up. How many points had the winner?
3. Alice, Bob, Carol and Dave have ordered pizza in a restaurant (everyone eats one pizza, not necessarily all different). The total amount was 62 euro. Which pizzas did they eat? Make a word of the first letters of the pizzas, i.e. CAFE

Americano 13.45

Beef 15.80

Calzone 11.95

Diet 11.55

Extra 15.75

Fantasia 14.70

1. A turtle makes a long trip. When he is finished, what is his distance to the starting point?

See: turtle3.py

1. A not very well known system in cryptography is BCS (base camp scramble)

It uses a 5-digit key (for example 37294)

Suppose you want to encrypt:

SECRET MEETING AT FIVE OCLOCK

Remove the spaces

SECRETMEETINGATFIVEOCLOCK

Make groups of 3

SEC RET MEE TIN GAT FIV EOC LOC K

Reverse

CES TER EEM NIT TAG VIF COE COL K

Combine

CESTEREEMNITTAGVIFCOECOLK

Repeat with 7,2, 9 and 4

End result:

SACTETEEEFCRIEMOLCTNIKGOV

Now try to find the key of this message:

TRIEHERTSUOSELCEHAOTHTESNRUIOEABWR

1. The skills of the programmers of the Coding Company are available in this dict:

from ict\_skills import skills1

The company needs a team of three people with the following skills present in the team:

wishlist = {'Python','SQL','Java','Blockchain'} (actually it’s a wishset)

How many **different** teams are possible?

1. Count the dots of all the dominos on the table:

table = **'''  
🂇 🁩 🂇 🁔 🁴 🀻 🁅 🀴 🂀 🁷 🁙 🁃 🁋 🁠 🀳 🁕 🂆 🁴 🁃 🂁 🁦 🂈 🂁 🂐 🁀 🂍   
🁅 🂋 🂐 🂎 🀶 🁩 🂍 🁴 🁝 🁨 🁍 🁩 🂆 🂋 🂈 🁇 🁎 🁆 🁸 🂊 🀱 🁼 🁩 🁑 🂇 🂒 🀽   
🂅 🀳 🁧 🀲 🁊 🀺 🂆 🁯 🁌 🀻 🁞 🁒 🀼 🁉 🁱 🁔 🀸 🁬 🂈 🁊 🁅 🀺 🁵 🁎 🂉 🀴   
🁦 🂎 🁥 🀲 🁆 🁎 🀼 🀳 🁷 🀵 🁂 🁅 🁮 🁞 🁡 🂐 🁁 🂓 🁙 🁏 🁋 🂌 🂅 🀸 🂋 🁭 🁬 🀴   
🁙 🂀 🂏 🁒 🁔 🁔 🁄 🁛 🁩 🁹 🂋 🁅 🁚 🀷 🁉 🂄 🁀 🁧 🁎 🁯 🁱 🁔 🁪 🀺 🁓 🁹 🁷 🁄   
🂐 🀾 🁍 🂁 🀺 🂋 🁊 🁝 🁌 🂎 🁀 🀽 🂈 🁏 🂈 🁷 🁁 🀵 🁝 🁵 🂐 🁘 🁫 🁴 🂓 🂐 🀿 🁁 🁣 🁫   
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🂀 🁯 🁛 🁲 🁛 🁊 🀺 🁪 🁯 🁻 🂍 🁅 🁲 🁋 🁊 🁻 🁲 🁾 🀾 🁣 🂂 🁻 🁼 🁥 🂑 🁦 🂊 🁭   
🀷 🁧 🀸 🁜 🂈 🁎 🂃 🀼 🁭 🁚 🁁 🀿 🁥 🁓 🁚 🂁 🁧 🁩 🁇 🁞 🂓 🁼 🁼 🀶 🂒 🁂 🁎 🁙 🁫   
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1. ???????

char(86)char(69)char(82)char(76)char(73)char(69)char(80)