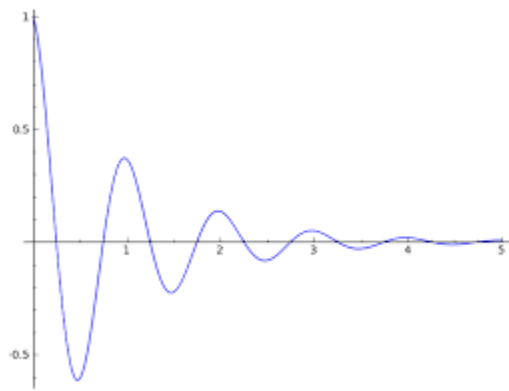


Your analysis should look at the relationship between all data fields and their changes over time. In a brief statement, describe any changes or patterns you observe, and propose an explanation for them. Include this in your GitHub repository.

The factor element increases over time in a cubic relationship, starting at 1 at the beginning of the hour, then 8 a minute later, then 27, then 64, and so on, until it reaches 205379/the end of the hour, upon which the factor element resets to 1. The number that is cubed is the minute at the time the API is called, so there is a relationship between the time column and the factor column. The only exception is 0, which has the factor as 1 when it “should” be 0. Additionally, when the factor element is 1, the pi element is equal to 4.0. Then with each subsequent increase in the factor element, the pi element oscillates between being slightly below the true value of pi and slightly above the true value of pi. It alternates in a below-above-below-above pattern. As the factor increases, it gets ever closer to the true value of pi until the hour changes, the factor resets to 1, and the pi element goes back to 4. The pi value may have something to do with whether the factor is an even or an odd number. When the factor is an odd number, the pi element is above true pi. When the factor is an even number, the pi element is below true pi. There may be some sort of decreasing sine curve pattern as shown below using factor in its calculation, except with pi as the “zero” line.



Documentation/Process: I ran a for loop that executed 60 times by running requests.get on the API and appended it to a pandas data frame. To ensure it only ran once every minute, I included a time.sleep(60) statement at the end of the for loop.

	factor	pi	time	
0	39304	3.141567	2024-04-30	01:34:31
1	42875	3.141616	2024-04-30	01:35:32
2	46656	3.141571	2024-04-30	01:36:32
3	50653	3.141612	2024-04-30	01:37:32
4	54872	3.141574	2024-04-30	01:38:32
5	59319	3.141610	2024-04-30	01:39:32
6	64000	3.141577	2024-04-30	01:40:33
7	68921	3.141607	2024-04-30	01:41:33
8	74088	3.141579	2024-04-30	01:42:33
9	79507	3.141605	2024-04-30	01:43:33
10	85184	3.141581	2024-04-30	01:44:34
11	91125	3.141604	2024-04-30	01:45:34
12	97336	3.141582	2024-04-30	01:46:34
13	103823	3.141602	2024-04-30	01:47:35
14	110592	3.141584	2024-04-30	01:48:35
15	117649	3.141601	2024-04-30	01:49:35
16	125000	3.141585	2024-04-30	01:50:35
17	132651	3.141600	2024-04-30	01:51:36
18	140608	3.141586	2024-04-30	01:52:36
19	148877	3.141599	2024-04-30	01:53:37
20	157464	3.141586	2024-04-30	01:54:37
21	166375	3.141599	2024-04-30	01:55:37
22	175616	3.141587	2024-04-30	01:56:38
23	185193	3.141598	2024-04-30	01:57:38
24	195112	3.141588	2024-04-30	01:58:39
25	205379	3.141598	2024-04-30	01:59:40
26	1	4.000000	2024-04-30	02:00:40
27	1	4.000000	2024-04-30	02:01:40
28	8	3.017072	2024-04-30	02:02:40
29	27	3.178617	2024-04-30	02:03:40
30	64	3.125969	2024-04-30	02:04:40

31	125	3.149593	2024-04-30 02:05:41
32	216	3.136963	2024-04-30 02:06:41
33	343	3.144508	2024-04-30 02:07:41
34	512	3.139640	2024-04-30 02:08:41
35	729	3.142964	2024-04-30 02:09:41
36	1000	3.140593	2024-04-30 02:10:41
37	1331	3.142344	2024-04-30 02:11:41
38	1728	3.141014	2024-04-30 02:12:41
39	2197	3.142048	2024-04-30 02:13:41
40	2744	3.141228	2024-04-30 02:14:41
41	3375	3.141889	2024-04-30 02:15:42
42	4096	3.141349	2024-04-30 02:16:42
43	4913	3.141796	2024-04-30 02:17:42
44	5832	3.141421	2024-04-30 02:18:42
45	6859	3.141738	2024-04-30 02:19:42
46	8000	3.141468	2024-04-30 02:20:42
47	9261	3.141701	2024-04-30 02:21:42
48	10648	3.141499	2024-04-30 02:22:42
49	12167	3.141675	2024-04-30 02:23:42
50	13824	3.141520	2024-04-30 02:24:43
51	15625	3.141657	2024-04-30 02:25:43
52	17576	3.141536	2024-04-30 02:26:43
53	19683	3.141643	2024-04-30 02:27:43
54	21952	3.141547	2024-04-30 02:28:43
55	24389	3.141634	2024-04-30 02:29:43
56	27000	3.141556	2024-04-30 02:30:43
57	29791	3.141626	2024-04-30 02:31:43
58	32768	3.141562	2024-04-30 02:32:44
59	35937	3.141620	2024-04-30 02:33:44