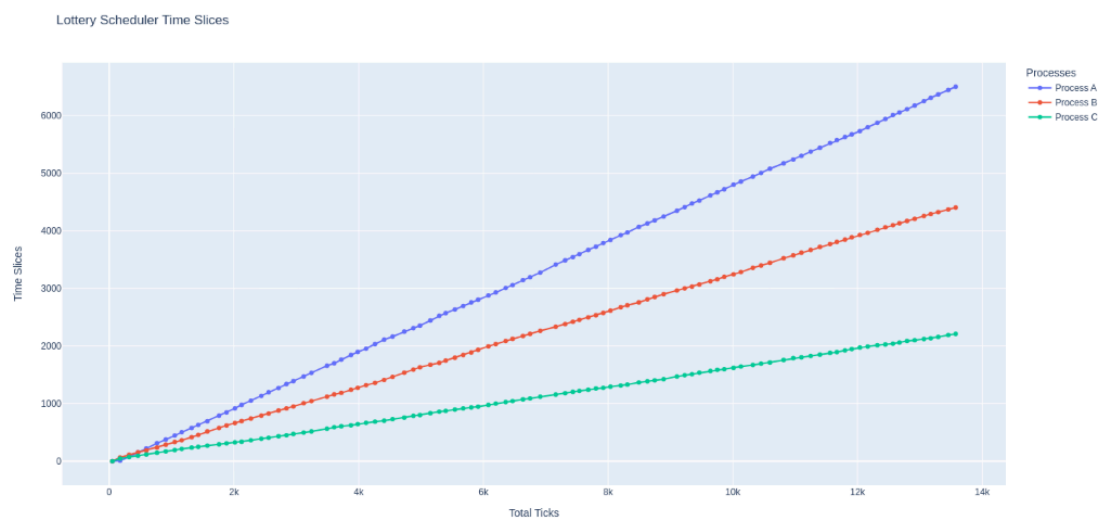


Lottery Scheduler Analysis

Sunday, October 27, 2024 3:44 PM

Consider processes A, B and C with 30, 20 and 10 tickets respectively. The plot below shows the number of time slices(ticks) they use over time.



Preview 'data.csv' - Project2 - Visual Studio Code

Total_ticks	Process A_ticks	Process B_ticks	Process C_ticks
50	0	0	0
174	9	63	46
318	75	109	72
461	152	152	94
595	224	187	117
766	312	237	148
906	375	285	169
1051	445	332	194
1162	502	363	212
1321	578	417	237
1428	629	458	250
1572	693	515	271
1760	791	578	293
1881	848	621	309
2016	917	664	327
2122	977	695	337
2272	1051	741	362
2439	1133	791	390
2556	1195	827	407
2715	1271	879	432
2842	1339	916	451
2953	1390	951	472
3118	1470	1006	497
3243	1533	1043	517
3492	1657	1118	562
3607	1698	1158	590
3721	1763	1185	608
3877	1843	1241	624
3985	1895	1273	643
4119	1953	1320	668
4262	2033	1358	686
4408	2108	1409	704
4544	2162	1464	729
4732	2249	1535	755

powered by: Wijmo FlexGrid

Observation

Initially, the number of time slices given to Process A is lower than both B and C even though A has more tickets. However, after around 500 ticks, Process A starts getting more ticks and eventually the number of total ticks given to each process becomes proportional to the tickets assigned.

Inference

Lottery scheduler is not the definitive model to give processes proportional time slices. However, over time, the randomness of process selection makes lottery scheduler a surrogate for proportional scheduling.