

# PREVIEW

Research on Russell3000

**UML** 

Class Declaration

Calculation

**Data Structure** 



#### Research on Russells3000

The Russell 3000® Index measures the performance of the largest 3,000 US companies representing approximately 96% of the investable US equity market, as of the most recent reconstitution. The Russell 3000 Index is constructed to provide a comprehensive, unbiased and stable barometer of the broad market and is completely reconstituted annually to ensure new and growing equities are included.

#### Index characteristics

(As of 4/30/2024)

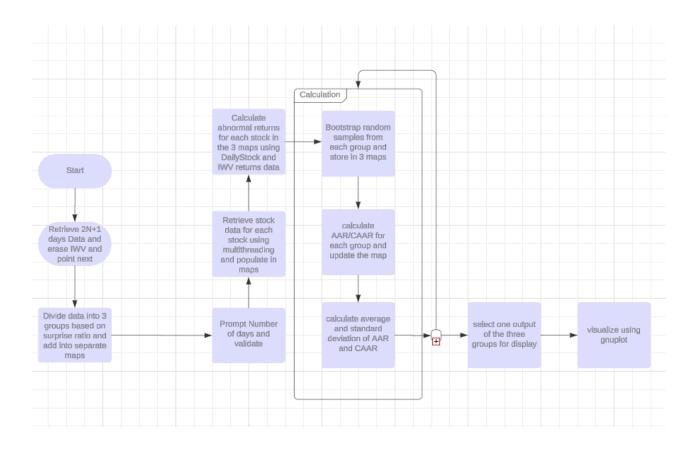
	Russell 3000®	Russell 3000E™
Price/Book	4.12	4.12
Dividend Yield	1.42	1.42
P/E Ex-Neg Earnings	23.08	23.07
EPS Growth - 5 Years	14.72	14.72
Number of Holdings	2,943	3,487

# Market capitalization (in billions USD) (As of 4/30/2024)

	Russell 3000®	Russell 3000E™
Average Market Cap (\$-WTD)	\$687.604	\$687.009
Median Market Cap	\$2.115	\$1.378
Largest Stock by Market Cap	\$2894.859	\$2894.859

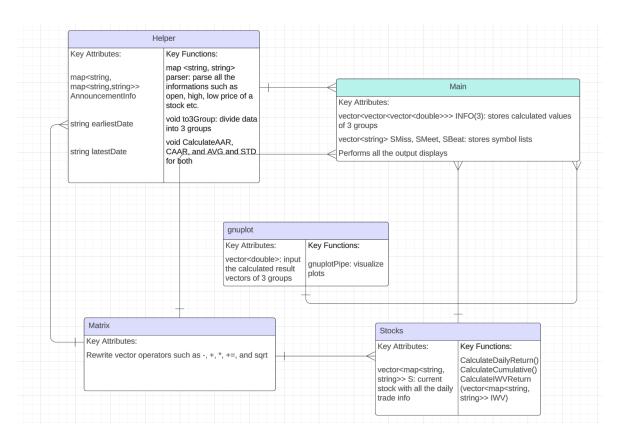


## **UML**





#### Class Declaration





Daily return for each stock:  $R_{it} = log(Price_t/Price_{t-1})$  (adjusted daily closing price used for calculation)

Benchmark: IWV

Daily return for IWV: R<sub>mt</sub>

Abnormal return:  $AR_{it} = R_{it} - R_{mt}$ 



Average daily abnormal return for each group for 2N

reference days: 
$$AARt = \frac{1}{M} \sum_{i=1}^{M} ARit$$

(M-number of stocks, 30 in this case)

Avg AAR is the mean of 40 sampling:

$$\mathbf{Avg} \ \mathbf{AAR} = \frac{1}{40} \sum_{i=1}^{40} AARt_i$$



Cumulate the returns on the first T days:

CAAR = 
$$\sum_{t=-N+1}^{T}$$
 AARt, T could be -N+1, -N+2, ..., N-2, N-1, N

Then, calculate the average of CAAR using arithmetic mean for each group and each sampling



Lastly, calculate the standard deviation of AAR and CAAR by applying the following equation:

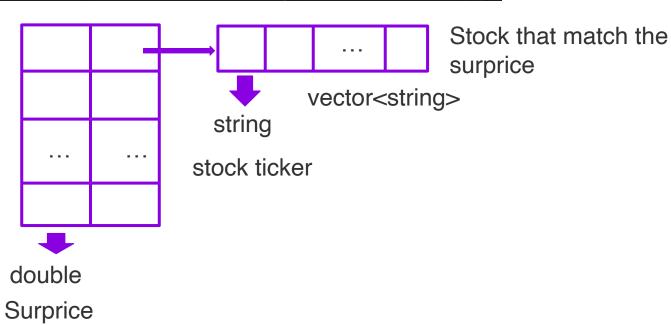
$$\mathbf{STD} = \frac{1}{\sqrt{N-1}} \sqrt{\frac{1}{N} \sum_{i=1}^{N} \mathbf{AARt}^2 - (\frac{1}{N} \sum_{i=1}^{N} \mathbf{AARt})^2}$$

$$\mathbf{STD} = \frac{1}{\sqrt{N-1}} \sqrt{\frac{1}{N} \sum_{i=1}^{N} \mathbf{CAAR}^2 - (\frac{1}{N} \sum_{i=1}^{N} \mathbf{CAAR})^2}$$

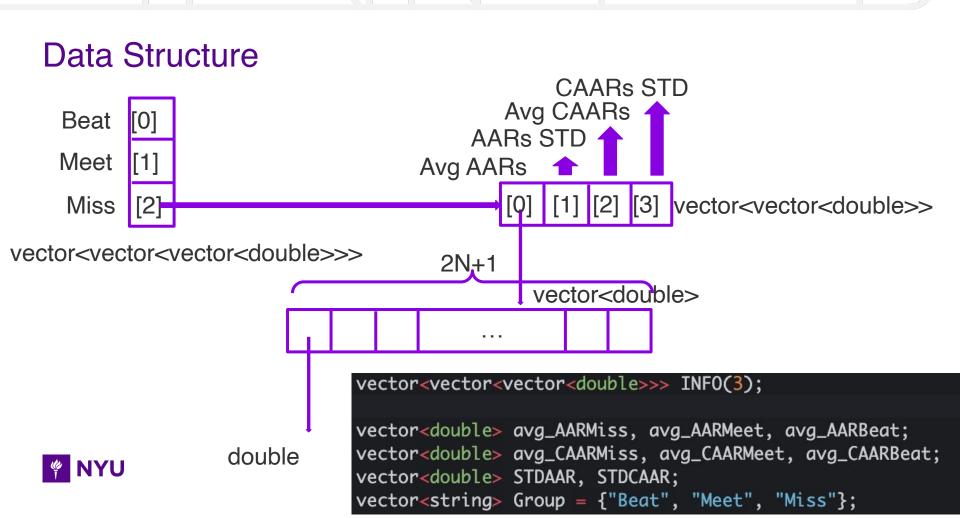


#### **Data Structure**

## map<double, vector<string>>> SupriseMap;







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                                                                                                                     X xterm
 :"/environment/fre6883-finalproject-pointer-poincers-sylvia $ ./FinalProject
  - Enter N to retrieve 2N+1 days of historical price data for all stocks.
2 - Pull information for one stock from one group.
3 - Show AAR, AAR-STD, CAAR and CAAR-STD for one group.
4 - Plot Avg CAAR for 3 groups.
5 - Plot STD CAAR for 3 groups.
6 - Plot Avg AAR for 3 groups.
7 - Plot STD AAR for 3 groups.
8 - Identify stocks with bad prices.
9 - Exit.
Enter your choice and press return: 1
Enter N (N must be between 60 and 90): 90
Fetching Daily Price Data for Stocks.. (Please be patient)
Warning: Not Enough Data for CART.
Time taken to fetch and populate all the stock data: 105 seconds
Proceed Stock Abnormal Return and AAR and CAAR calculation...
Time taken to for all calculation: 4 seconds
1 - Enter N to retrieve 2N+1 days of historical price data for all stocks.
2 - Pull information for one stock from one group.
3 - Show AAR, AAR-STD, CAAR and CAAR-STD for one group.
4 - Plot Avg CAAR for 3 groups.
5 - Plot STD CAAR for 3 groups.
6 - Plot Ava AAR for 3 groups.
7 - Plot STD AAR for 3 groups.
8 - Identify stocks with bad prices.
9 - Exit.
Enter your choice and press return: 2
Enter Symbol for Detailed Information: AAPL
Ticker: AAPL
Earning Announcement Date: 2023-11-02
Earning Period Ending: Sep 2023
Earning Estimate: 1.39
Reported Earning Per Share: 1.46
Earning Suprise: 0.07
Earning Suprise Percentage: 5.04
Group: Meet
No Enough Daily Price Data: False
Stock Daily Price Dates:
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2 - Pull 3 - Show 4 - Plot 5 - Plot 7 - Plot 8 - Ident 9 - Exit Enter you Enter Gro	N to retrieve information for ARR, ARR-STD, AW9 CAAR for 3 STD CAAR for 3 STD AAR for ST	r one stock CAAR and CAA groups, groups. groups. groups, n bad prices	from one gr AR-STI for o	oup. ne group.		ocks.						
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AARs STD for 0.4070	Group BEAT 0,3859	0.4594	0,6970	0,5041	0,4150	0,5792	0,5239	0,4204	0,4269	0.3826
0.4351	0,5288	0.4693	0.4302	0.4549	0.5113	0.3720	0.5970	0,3957	0.3998	0.4545
0.4993 0.3689	0.6554	0.6137 0.3051	0.8476 0.6626	1,5948	1.1620 0.4766	0.7521 0.2581	0.5369	0.4498	0.4455	0.3239 0.3716
0.3283 0.4398	0.3818	0.4055	0.4664	0.4361	0.5476	0.3987	0.3760	0.3457	0.4019	0.3643
0,4398 0,4641	0.4707	0.4420 0.4946	0.4064 0.5305	0,3983 0,5932	0.4214	0.3811 0.5620	0,5320 0,6722	0.3415	0,5125 0,8312	0.4486 0.3912
0,5759	0.3985	0.4598	0.2904	0.4628	0.3756	0.4221	0.4358	0.4741	0.6913	0.4677
0.4507	0.5291	1.0451	1.7610	0.7528	0.5313	0.5512 0.4316	1,1239	0.5345	0.4896	0.4908
0,3832 0,4957	0.4255	0.5406 0.7325	0.3804 0.5580	0.3954 0.5571	0.4182 0.4394	0.4316	0,5239 0,6291	0,4214	0.4554	0.5334 0.4345
0.5151	0.3784	0.3774	0.4311	0.4767	0.4527	0.4018	0.5106	0,5270	1,2500	0.5226
0.3565 0.3948	0.4116	0.5797	0.3910	0.4523	0,5621 0,3884	0.3803 0.4529	0,3791	0,4169	0.5409	0.4791 0.4043
0.4343	0.4654	0.6478	0.6592	0.5072	0.5626	0,6343	0,6914	0.5670	0.5513	0,6563
0.9580	0.9049	0.5003	0.5554	0.5472	0,5132	0,6529	0.5465	0,3796	0.4789	0.5476
Avg CAARs fo	r Group BEAT									
0.0516	0.0285	-0.1005	0.2214	0,5129	0.6471	0.4099	0.3413	0,6092	0.6833	0,6520
0.4829 0.1881	0.2224	0.0361 0.5395	0.0972 -0.0851	0.2125 -0.7684	-0.0947 -1.0436	0.0859 -1.2126	0.2849	0.2438 -1.2147	0.3463 -1.1842	0.3687 -1.2178
-1.1876	-1.3031	-1.4575	-1.7842	-1.8790	-2.1150	-2.3747	-1,2059 -2,5270	-2,8064	-2.6593	-2,6642
-2,9009 -5,6368	-3.1812 -5.7180	-3.4682 -5.8738	-3.6246 -6.1761	-3,9298 -6,2160	-4.2269 -6.1396	-4.4395 -6.1260	-4.5680 -6.3732	-4.9912 -6.5100	-5.1892 -6.8705	-5.5767 -6.9261
-6,8756	-7,2102	-7.3841 -10.3494	-7.7987	-7,9834	-8,6173	-9.0822	-9,0898	-9,1819	-9.6137	-9,9639
-10.4884	-10,2864	-10.3494	-10.3589	-10,6708	-10.7955	-10.8095 -7.8481	-10.9474 -8.0078	-11.0612 -7.9553	-10.7720	-10.8274
-10,6724 -7,4290	-11.1059 -7.5128	-9.8831 -7.6001	-8.0984 -7.3805	-8,1930 -7,3055	-8.0625 -7.3653	-7.8481 -7.0686	-8,0078 -6,7263	-7.9553 -6.5352	-7.9193 -6.4021	-7.6431 -6.6979
-6.3887	-6.1544	-5,9291	-5.7906	-5,4190	-4.9807	-4.5454	-4,2517	-4,2538	-3.7502	-3,3028
-2.9822 -3.1755	-2.6566 -3.4711	-2.5124 -3.7533	-2.4016 -3.9664	-2.1878 -4.3551	-2.4209 -4.5742	-2.5474 -4.4844	-2.7095 -4.5199	-2.7176 -4.8274	-2.5887 -4.9191	-2.8025 -5.2388
-5.0702	-4.8150	-4.9869	-5.1437	-5,2978	-5.3407	-5.5791	-5.8277	-5,6343	-6,0057	-5.9048
-6.1102 -7.1572	-6.2419 -7.2865	-6.4077 -7.2660	-6.0983 -7.1301	-5.9640 -7.4370	-6.3560 -7.5191	-6.6236 -7.3274	-6.9451 -7.3648	-7,2576 -7,6352	-6.9255 -7.8478	-7.0658 -8.3220
-8,4606	-8,9544	-9.1393	-9,2653	-9.4272	-7.5151	-7.5274	-7.3040	7,0002	7.0470	-0.3220
CAARs STD for	r Group BEAT 0.5630		0.0770	1 0500	4 4754	1 1507	1.0410	1 1757	1 0077	4 4004
0.4070 1.2204	1,3912	0.5542 1.4509	0.8736 1.6318	1.0568 1.6934	1.1351 1.6404	1.1593 1.6042	1.0412 1.6565	1,1757	1.0977 1.7321	1.1624 1.7949
1,8876	2,0217	2,0951	2,3293	2,8625	3,0243	3,0169	3,2677	3,2631	3,3076	3,3355
3,3050 3,7286	3,3840 3,7996	3.4023 3.8146	3.4015 3.8442	3,3809 4,0626	3.4263 4.1541	3.4777 4.0958	3,6191 4,0284	3,6615 4,0469	3,6254 4,0710	3.7173 4.0986
4,1554	4.0299	4.1112	4.1814	4.2154	4.3088	4.3067	4.3354	4.3789	4.5620	4.5276
4,5563 5,3050	4.5714 5.3130	4,6741 5,2688	4,7007 5,2889	4.7197 5.4259	4.7267 5.3656	4.9046 5.4253	4,9818 5,3751	4,9426 5,3384	5,2664 5,1276	5,2593 5,0823
5.0196	4,9976	4.9555	5.7648	5.8750	5.9746	5,8690	6,2697	6,5120	6.3771	6.3246
6.3361	6.3295	6.3654	6.3814 6.5216	6.3649	6.3784	6,2938	6.3321	6.4547	6.3418	6.3851
6,3730 6,6016	6,3375 6,6293	6,5549 6,6124	6,6727	6,4805 6,4939	6,4262 6,7010	6,4001 6,6413	6,4948 6,6370	6,5022 6,6584	6,5509 6,5687	6,6097 6,5433
6,5718	6,5842	6.8370	6.7934	6,8059	6,6916	6.7618	6,6719	6,7939	6,7162	6,8239
6,8213 7,3026	6.8629 7.2451	6.8719 7.3058	7.0652 7.4928	7.0246 7.4554	7.1023 7.4347	7.1889 7.3796	7,2217 7,3096	7.2419 7.4398	7.3194 7.4807	7.3305 7.3713
7,6630	7,6166	7.6734	7.7651	7.7898	7.7613	7.6905	7,6258	7,6898	7.6208	7.7180

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7 - Plot STD										
8 - Identify 9 - Exit.	stocks with	bad prices								
Enter your ch	noice and pr	ess return:	3							
Enter Group (	Beat, Meet			ormation: M	leet					
Avg AARs for	Group MEET									
0,0048 -0,1586	-0.0353 0.0113	-0.1124 0.0287	0,0007	0,1555 -0,0136	0.0921	-0.0393 0.0282	-0,0121 0,0408	0.0809	-0.0451 0.0634	-0.0629 0.0425
-0.1226	-0.0612	-0.1240	0.3046	-0.4059	-0.3580	0.0767	-0.0924	0.1618	-0.1021	0.0892
0.0567	-0.0044	-0.0043	-0.0505	-0.0070	-0.1952	-0.0633	-0.1037	0.0428	0.0079	-0.3320
-0,1776	-0,2628	-0.0256	0.0544	-0,4311	-0,2914	-0,2153	-0,1807	-0,0990	-0,1686	-0,2898
-0.1212 0.0500	0.0022 -0.4190	-0.0697 -0.0578	-0.0932 -0.0490	0.0221 -0.4445	-0.0918 -0.0725	0.0570 -0.2467	-0.0979 -0.1225	-0.1049 -0.1874	-0.1291 -0.2217	0.0250 -0.2516
-0.1880	-0.4190	-0.1099	-0.0490	-0.4445	-0.0725	0.0909	-0.1225	-0.1874	0.1553	-0.2516
-0,0298	0.0196	0.1335	-0.0521	-0,2548	-0.1418	0.1870	-0.0121	0,1773	-0,1150	0.0934
-0.0514	-0.1930	0.1056	0.0264	0.1926	0.0644	-0.0731	0.1453	-0.0075	0.0780	0.2562
0.4843 0.3241	0.2020	-0,2521	-0.0066 0.2356	0.1709	0.4223	0.5205 -0.1299	0.1102	0.3906	0.0902	0.0899
-0,1988	-0,2000	0.1650 -0.2104	-0.2520	0,1761 -0,2957	-0.3309	-0.1299	0,1332 -0,2652	-0.1596	-0.1607	0.0002 -0.3489
0.0084	-0.0733	-0,1831	-0,0049	-0,1818	-0.1068	-0.0640	-0.3970	0.0681	-0.1899	0.0278
0.1317	-0,2309	0.1377	-0.2948	-0.3132	-0.0906	-0,2220	-0.0931	-0.0858	0.0162	0.2186
-0.0815	-0.1066	0.0593	0.0144	-0.1169	-0,2922	-0,0772	-0.0807	0.0519	-0,1822	-0,1840
-0,1404	-0,1427	0.0174	-0.0111	-0,2165						
AARs STD for										
0.2743	0.3929	0.3657	0.3196	0.3084	0.2154	0.3433	0.3729	0.4055	0.3001	0.3122
0.3125	0,4027	0.3119	0.3959	0,2977	0.3940	0.2477 0.3629	0.5219	0,3591	0.3147	0.3369
0.4408 0.3665	0,2479	0.2961 0.3054	0.4610	0.6959	0.7630 0.2531	0.3629	0.3670	0.4026	0.4109	0.3851 0.2586
0.2581	0.2190	0.2944	0.3577	0.6406	0.4002	0.3838	0.3170	0.3456	0.4540	0.3608
0.3534	0.3434	0.2713	0.5345	0.3519	0,3392	0.3387	0.3465	0,3052	0.2373	0.4288
0.3189 0.3351	0.4711	0.3050 0.3951	0.4525 0.3056	0.6505	0.5992 0.3379	0.3744	0.3308	0.4001	0.4245 0.3653	0.3923
0.3850	0.3459	0.7847	1.2837	0.4105	0.3472	0.3731	0.4586	0.3137	0.3818	0.3198 0.4156
0,3767	0.3464	0.3213	0.3754	0,4163	0.3480	0.2651	0.2594	0.3479	0.3494	0.3608
0.3455	0.2707	0.5325	0.2825	0.6185	0.4192	0.3709	0.3501	0.3912	0.6069	0.5862
0.5169 0.4438	0.3726	0.3871 0.3142	0.3512 0.3299	0.3960	0.2729	0.4296	0.3545	0.3345	0.3554	0.4318 0.3754
0.4784	0.3800	0.3467	0.3499	0.3529	0.2775	0.3057 0.3581	0.4559	0,5336	0.4098	0.4588
0.5980	0.5092	0.4982	0.6655	0.4188	0.4075	0.3701	0.4071	0.5546	0.3541	0.4841
0.5400	0.3901	0.5022	0.4187	0,4498	0.5257	0.4812	0.3012	0.3803	0.3563	0.3689
0.3620	0,3997	0.3382	0.3509	0,3692						
Avg CAARs for	Group MEET									
0,0048	-0.0304	-0.1429	-0,1421	0.0133	0,1054	0.0661	0.0540	0,1349	0.0897	0.0268
-0,1318	-0,1205	-0.0918	0.0369	0.0233	0.0519	0.0800	0,1208	0,2295	0,2930	0.3355
0,2129 -0,2418	0.1518 -0.2463	0.0278 -0.2506	0.3323 -0.3011	-0.0736 -0.3082	-0.4316 -0.5033	-0.3549 -0.5667	-0.4473 -0.6703	-0.2856 -0.6275	-0.3877 -0.6196	-0.2985 -0.9516
-1,1292	-1.3920	-1.4176	-1.3633	-1.7943	-2.0858	-2.3010	-2.4818	-2.5808	-2.7494	-3.0391
-3,1603	-3,1581	-3,2278	-3,3210	-3,2989	-3,3907	-3,3337	-3,4316	-3,5365	-3,6656	-3,6406
-3,5906	-4.0095	-4.0673	-4,1163	-4,5608	-4,6333	-4,8799	-5,0024	-5,1898	-5.4115	-5.6632
-5.8512 -6.1002	-5.8720 -6.0806	-5.9820 -5.9471	-6.0115 -5.9992	-6.0526 -6.2541	-6.0604 -6.3959	-5,9695 -6,2088	-6,0816 -6,2209	-6.1511 -6.0436	-5.9958 -6.1586	-6.0704 -6.0652
-6,1165	-6.3095	-6,2039	-6.1775	-5,9849	-5.9205	-5,9937	-5.8483	-5,8558	-5,7778	-5.5216
-5.0373	-4.8353	-5.0874	-5.0940	-4,9231	-4.5007	-3,9802	-3,8700	-3,4794	-3,3893	-3,2993
-2,9753	-2,6876	-2,5226	-2.2870	-2,1109	-2.0605	-2.1904	-2.0571	-1.8357	-1.7613	-1.7612
-1,9599 -4,2545	-2.1599 -4.3277	-2.3703 -4.5108	-2.6222 -4.5158	-2.9180 -4.6976	-3.2489 -4.8044	-3.3285 -4.8684	-3.5938 -5.2654	-3.7533 -5.1973	-3.9140 -5.3872	-4.2628 -5.3594
-5,2277	-5.4585	-5.3209	-5.6156	-5,9288	-6.0194	-6.2414	-6.3345	-6.4203	-6,4041	-6.1855
-6.2670	-6,3736	-6,3143	-6,2999	-6,4167	-6,7089	-6.7861	-6,8668	-6,8150	-6,9972	-7.1812



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CAARS STD for 0.2743 1.4278 1.2045 1.2045 1.4511 1.6463 2.1395 2.4906 2.8528 3.0170 3.1577 3.1442 3.1199 3.5284 3.9858 4.2579	0,4979 1,3834 1,2836 1,4363 1,6841 2,1611 2,5004 2,9698 2,9895 3,0804 3,1382 3,1784 4,0599 4,1789	0.7026 1.4734 1.2883 1.4495 1.6114 2.1944 2.5347 3.0070 3.1531 3.1585 3.0014 3.2080 4.0002 4.1579	0.8197 1.4215 1.2289 1.3630 1.6765 2.2647 2.3811 3.0027 3.2940 3.1742 3.0421 3.0421 3.9574 4.0897	0.9399 1.4921 1.2839 1.4192 1.8245 2.3526 2.3401 2.9577 3.2745 3.0833 3.2962 3.3282 3.6188 3.9635 4.1035	1,0167 1,5247 1,2807 1,4837 1,8061 2,3497 2,5642 2,9312 3,2510 3,1329 3,2787 3,3904 3,5855 4,0357	1.0261 1.5072 1.3879 1.4662 1.8179 2.3495 2.6340 2.9628 3.1031 3.0653 3.2550 3.2783 3.5538 4.0417	1,1714 1,4992 1,5356 1,5343 1,8907 2,4530 2,7106 2,8775 3,0800 3,0671 3,2739 3,4306 3,6131 3,9802 4,0211	1,2542 1,4313 1,4322 1,5513 1,9762 2,4448 2,7511 2,9800 3,0856 3,0615 3,1412 3,4286 3,5768 4,1451	1.3358 1.3098 1.4094 1.5262 2.1508 2.4794 2.7563 2.9966 3.1478 3.0915 3.2031 3.4779 3.7588 4.1638 4.1101	1.3974 1.2737 1.4618 1.5500 2.1294 2.1294 2.5172 2.7429 2.9847 3.1794 3.1014 3.2044 3.5767 4.0647 4.1437
4,1664 4,4192	4.2795 4.4128	4.2469 4.3857	4.1894 4.3462	4.2025	4.3137	4,2945	4,3380	4,3728	4.3517	4.4294
1 - Enter N t 2 - Pull info 3 - Show AAR, 4 - Plot Avg 5 - Plot STD 6 - Plot STD 8 - Identify 9 - Exit. Enter your ch	rmation for AAR-STD, C CAAR for 3 CAAR for 3 AAR for 3 g AAR for 3 g stocks with	one stock AAR and CAA groups. groups. roups. roups. bad prices	from one gr R-STD for o	oup.						
Enter Group (	Beat, Meet			ormation: M	liss					
Avg ARRS for 0,0195 -0,0851 -0,0851 -0,0112 -0,2381 -0,1487 -0,0202 -0,1021 -0,1616 -0,2515 -0,3630 -0,0987 -0,4854 -0,1081 -0,4296 -0,1081 -0,4296 -0,1081 -0,4296 -0,1081 -0,4296 -0,1081 -0,4296 -0,1081 -0,4296 -0,1081	Group MISS 0.1118 -0.0329 -0.2026 -0.2103 -0.3223 -0.1442 -0.4728 -0.2198 -0.0041 0.4850 0.2290 -0.1973 -0.2101 -0.3639 -0.6571 Group MISS	-0.0711 -0.2670 -0.0593 -0.2861 -0.2431 -0.1390 -0.3794 -1.6195 0.1508 -0.1512 -0.2448 -0.4404 -0.2163 -0.1758 -0.1073 -0.0414	0,1738 -0,0127 -0,6113 -0,2060 -0,1773 -0,0474 -0,3848 -0,1662 -2,8017 0,0206 -0,0255 0,3273 -0,4006 -0,1806 -0,2222 0,0677 -0,4728	0.1761 0.1664 -0.2113 -0.1055 -0.2459 -0.2530 -0.5578 -0.0372 -0.1863 0.0073 0.1959 0.3222 -0.3803 -0.1019 -0.1242 0.0942	0,2671 -0,3702 -0,7359 -0,2724 -0,2069 -0,0888 -0,2893 -0,4551 -0,0400 0,1909 0,5972 -0,0095 -0,4933 -0,0726 -0,4937 -0,5967	-0,0756 0,0441 -0,1412 -0,2600 -0,2946 0,2751 -0,3903 0,4391 0,2891 0,0038 0,0602 -0,1486 -0,2329 -0,7089	-0,2471 -0,3971 -0,0354 -0,1441 -0,3542 -0,3433 -0,2930 -0,3473 0,0252 0,8859 0,3463 -0,2476 -0,2692 -0,3376 -0,1630 0,0019	0.2378 0.0461 0.0557 -0.1722 -0.2784 -0.1340 0.1050 0.1050 0.0617 -0.1946 0.0617 -0.2183 -0.2409 0.0128	0.1889 0.1561 -0.1831 -0.07700 -0.2095 -0.3250 -0.4778 0.1034 -0.1239 0.4323 0.4323 0.8869 -0.2272 -0.2655 0.1443 -0.1533	0.0606 -0.2162 -0.2162 -0.0463 -0.2700 -0.4235 -0.2420 -0.3536 -0.1585 -0.1585 -0.1585 -0.0936 -0.4231 -0.4044 -0.2727 -0.4044
0,4012 0,5130 0,3944 0,5459 0,4024 0,4940 0,6371 0,4449 1,1045 0,5594	0,4621 0,4580 0,8631 0,4153 0,3538 0,4785 0,4736 0,6594 0,4554	0,5140 0,6830 0,5816 0,5212 0,3934 0,5232 0,4853 0,4860 1,0884 0,5242	0.4677 0.5295 0.9250 0.3885 0.3549 0.3519 0.4232 0.5399 2.0442 0.4524	0,4126 0,4742 1,1518 0,2992 0,3897 0,4418 0,5113 0,4042 0,6006 0,5581	0,6989 0,6556 1,0619 0,2962 0,3763 0,3706 0,5783 0,6931 0,7215 0,4423	0.5715 0.4787 0.7075 0.3962 0.4111 0.6775 0.5869 0.4655 0.7669	0.7170 1.4790 0.5416 0.4461 0.4042 0.3822 0.8591 0.4572 0.6426 0.5048	0,4585 0,4764 0,3347 0,4490 0,5475 0,5198 0,4389 0,5126 1,2076 0,5358	0.3453 0.4195 0.4311 0.5086 0.4603 0.3945 0.5330 0.5589 0.4926 0.5927	0,5083 0,4992 0,3758 0,4931 0,4180 0,4169 0,4585 0,4773 0,6137



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000										X xterm	
-0,1791 -0,4296 -0,1081	-0.3639 0.0678 -0.6571	-0.1758 -0.1073 -0.0414	-0,2222 0,0677 -0,4728	-0.1019 -0.1242 0.0942	-0.4972 -0.5967	-0.2329 -0.7089	-0.1630 0.0019	-0.2409 0.0128	0.1443 -0.1533	-0.1595 -0.2419	
ARR STD for 0,4012 0,5130 0,3344 0,5459 0,4024 0,4394 1,1045 0,5594 0,5439 0,5288 0,6243 0,4072 1,0655 0,6850 0,6847	Group MISS 0,4621 0,4580 0,8631 0,4153 0,3538 0,4785 0,4785 0,6594 0,5543 0,5211 0,4836 0,3648 0,3648 1,0036 1,0036 0,9624	0,5140 0,6830 0,5816 0,5212 0,3932 0,4853 0,4860 1,0884 0,5242 0,5017 0,3869 0,6733 0,5958 0,6588 0,6213	0,4677 0,5295 0,9250 0,3885 0,3549 0,3519 0,4232 0,5399 2,0442 0,4030 0,4180 0,5109 0,4967 0,7972 0,6278 0,5056	0,4126 0,4742 1,1518 0,2992 0,3897 0,4418 0,5113 0,4042 0,6006 0,5581 0,4810 0,5079 0,4313 0,5975 0,5720 0,5292	0,6989 0,6556 1,0619 0,2962 0,3763 0,3706 0,5783 0,6931 0,7215 0,4423 0,8406 0,4748 0,6164 0,6468 0,6727 0,6636	0,5715 0,4787 0,7075 0,3962 0,4111 0,6775 0,5889 0,4655 0,7669 0,4561 0,8931 0,6021 0,5739 0,6181 0,7406	0,7170 1,4790 0,5416 0,4461 0,4042 0,3822 0,8591 0,4572 0,6426 0,5048 0,5494 0,4820 0,5889 0,4795 0,6791 0,6032	0,4585 0,4764 0,3947 0,4490 0,5475 0,5198 0,4389 0,5126 1,2076 0,5388 1,2611 0,5867 0,4774 0,7704 0,5553 0,4843	0,3453 0,4195 0,4311 0,5086 0,4603 0,3945 0,5330 0,5589 0,4926 0,5927 0,4437 0,4211 0,4912 0,7915 0,5594 0,9692	0,5083 0,4992 0,3758 0,4931 0,4180 0,4189 0,4895 0,4773 0,6137 0,6137 0,4171 0,5140 0,4021 0,6224 0,5247	
Avg CARRs for 0,0195 -0,0195 -0,0955 -2,4129 -4,5583 -7,2583 -8,9644 -12,325 -14,2789 -18,2485 -15,8381 -12,3374 -12,3344 -12,3344 -15,6329 -17,9396 -20,0421 -21,3324			0,2340 0,4641 -0,9687 -3,1153 -5,3010 -7,6236 -10,2018 -13,3779 -18,9210 -18,0813 -15,5887 -11,5362 -13,3728 -16,3000 -18,3615 -20,0139 -23,1037	0,4101 0,6306 -1,1799 -3,2208 -5,5469 -7,8765 -10,7996 -13,4151 -19,1073 -18,0740 -15,3929 -11,2140 -13,9530 -16,6831 -18,4633 -20,1381 -23,0096	0,6772 0,2604 -1,9158 -3,4932 -5,7539 -17,9653 -11,0889 -13,8702 -19,1473 -17,8831 -14,7957 -11,2235 -14,4463 -16,7557 -18,9605 -20,7348	0,6016 0,3045 -2,0570 -3,7532 -6,0485 -7,6902 -11,4792 -13,8206 -18,7083 -17,5940 -14,7869 -11,1633 -14,5844 -17,1033 -19,1934 -21,4437	0,3545 -0,0926 -2,0924 -3,8974 -6,4027 -8,0335 -11,7722 -14,16831 -16,9080 -14,4405 -11,4108 -14,8636 -17,4409 -19,3564 -21,4418	0,5923 -0,0465 -2,0387 -4,0696 -6,6811 -8,1675 -11,8890 -14,0632 -18,7273 -16,8031 -13,8465 -11,3491 -15,0581 -17,6592 -19,5973 -21,4291	0,7812 0,1096 -2,2218 -4,1395 -6,8896 -8,4926 -12,3668 -13,9599 -18,8512 -16,3708 -12,9597 -11,5763 -15,3217 -17,8248 -19,4530 -21,5824	0,8618 -0,1066 -2,1748 -4,4095 -7,3132 -7,7346 -12,7204 -14,1183 -18,5000 -16,26511 -12,450 -11,5409 -17,4206 -17,4206 -21,8245	
CARRS STD for 0, 4012 1, 15342 2, 7993 3, 1168 3, 2710 3, 5200 4, 0288 4, 3874 4, 17751 4, 1610 4, 1521 8, 6680 5, 6678 5, 9687 5, 9687 5, 9687 5, 9687 5, 9687 5, 9687	Group MIS: 0.5889 1.6137 2.9870 3.0941 3.2569 3.6385 3.8953 4.4942 4.6351 4.5019 4.0884 4.6027 4.8157 5.6033 5.9102 5.4926 6.7594	S 0.6184 1.8635 3.0034 3.2663 3.1723 3.7073 4.0858 4.5564 4.5295 4.5366 4.1427 4.6206 4.9641 5.8091 5.8091	0,7056 2,0083 3,2668 3,2980 3,7664 3,9648 4,4521 4,8699 4,5137 4,1820 4,6343 4,9880 5,7045 5,6711 5,6807	0.7544 2.1472 3.4670 3.3456 3.1266 3.7930 3.9699 4.4552 4.2377 4.6601 5.0379 5.7761 5.76949 5.7531 6.6013	1.0606 2.3134 3.3179 3.2214 3.2525 3.7231 4.0238 4.4852 4.7571 4.4888 4.3824 4.6241 5.1599 5.7707 5.5751 5.5844	1.3009 2.3729 3.2493 3.1464 3.2785 3.6350 4.0854 4.7275 4.4789 4.5650 4.7208 5.3234 5.8814 5.4863 5.8256	1.2219 2.5198 3.3137 3.1170 3.2743 3.7624 4.3088 4.4269 4.6716 4.4218 4.4656 4.5843 5.3568 5.8578 5.5506 5.9540	1.3457 2.4820 3.3001 3.1120 3.5369 3.8121 4.2471 4.3710 4.5276 4.4035 4.5462 4.6741 5.4324 5.7753 5.4937 5.9427	1.3532 2.6486 3.2423 3.1597 3.5655 3.8957 4.2375 4.4366 4.5211 4.3165 4.5326 4.5826 5.5744 5.7428 5.5110 6.2716	1, 4695 2, 6768 3, 2059 3, 2278 3, 6347 3, 9386 4, 2893 4, 2878 4, 2878 4, 5320 4, 8197 5, 6236 5, 9345 5, 5505	



