

ESERCIZIO 2	MARCHIORI	LUCA	05/02/21	ALGORITMI E STRUTTURE DATI
EXP 1				
MAX RANDOM NUMBER	1000			
MIN OPERATIONS	100			
MAX OPERATIONS	5000			
STEP	100			
NUM EXP	1000			
INSERTIONS	40			
SEARCHES	60,00			
SIZE HASHTABLE	25,00			
OP	HASHTABLE	RBT		
100	20,72	34,53		
200	27,71	49,91		
300	23,98	42,97		
400	33,81	59,37		
500	43,22	74,48		
600	58,69	98,96		
700	68,47	112,52		
800	79,70	128,57		
900	89,75	142,54		
1000	108,78	169,08		
1100	159,17	242,44		
1200	148,21	222,09		
1300	174,96	256,21		
1400	175,72	251,58		
1500	252,23	354,43		
1600	230,76	319,92		
1700	303,70	407,74		
1800	259,76	347,41		
1900	302,28	400,39		
2000	303,52	395,32		
2100	265,62	339,86		
2200	285,24	358,44		
2300	299,71	372,12		
2400	350,54	424,82		
2500	396,42	469,83		
2600	346,58	406,90		
2700	370,26	426,70		
2800	412,04	467,45		
2900	436,99	487,55		
3000	469,38	515,29		
3100	500,50	540,60		
3200	537,68	572,13		
3300	552,57	580,23		
3400	579,55	600,50		
3500	594,43	607,62		
3600	601,80	608,40		
3700	698,66	728,58		
3800	673,85	699,89		
3900	694,12	713,00		
4000	694,75	707,06		
4100	701,49	707,27		
4200	713,76	712,56		
4300	763,96	756,71		
4400	799,63	784,54		
4500	820,62	796,70		
4600	851,98	823,73		
4700	889,96	854,84		
4800	937,41	894,25		
4900	934,69	884,87		
5000	955,40	897,76		
EXP 2				

MAX RANDOM NUMBER	1000
MIN OPERATIONS	100
MAX OPERATIONS	5000
STEP	100
NUM EXP	1000
INSERTIONS	40
SEARCHES	60,00
SIZE HASHTABLE	13,00

OP	HASHTABLE	RBT
100	21,57	34,00
200	30,72	48,87
300	26,33	40,48
400	42,23	62,27
500	51,39	72,92
600	63,33	86,24
700	92,24	121,21
800	106,60	134,19
900	127,75	154,96
1000	149,88	176,46
1100	199,76	230,42
1200	203,58	226,21
1300	200,25	215,79
1400	221,57	232,39
1500	242,93	248,91
1600	265,18	265,48
1700	296,81	290,76
1800	320,06	307,19
1900	334,46	314,44
2000	362,36	330,98
2100	375,45	337,93
2200	425,53	371,40
2300	461,49	393,59
2400	487,23	404,89
2500	517,63	418,99
2600	538,48	426,46
2700	572,24	442,24
2800	607,71	459,79
2900	680,91	504,04
3000	694,71	502,81
3100	724,14	514,45
3200	797,37	555,75
3300	820,40	560,33
3400	862,16	578,53
3500	885,67	583,35
3600	960,93	624,20
3700	986,14	629,78
3800	1.024,47	677,51
3900	1.119,99	732,14
4000	1.179,99	761,86
4100	1.235,58	789,41
4200	1.212,44	763,05
4300	1.227,11	765,51
4400	1.295,26	796,43
4500	1.334,89	811,91
4600	1.370,51	828,95
4700	1.410,35	841,49
4800	1.527,86	908,03
4900	1.514,41	892,58
5000	1.544,55	901,23

### HASHTABLE

The graph shows two data series: HASHTABLE (blue line) and RBT (red line). The y-axis is labeled 'HASHTABLE' and ranges from 0,00 to 2.000,00. The x-axis represents the number of operations from 0 to 5000. Both series show an upward trend, with HASHTABLE consistently higher than RBT after the initial phase.

Operations	HASHTABLE	RBT
100	21,57	34,00
1000	149,88	176,46
2000	362,36	330,98
3000	724,14	514,45
4000	1.179,99	761,86
5000	1.544,55	901,23

EXP 3

MAX RANDOM NUMBER	1000								
MIN OPERATIONS	100								
MAX OPERATIONS	5000								
STEP	100								
NUM EXP	250								
INSERTIONS	40								
SEARCHES	60,00								
SIZE HASHTABLE	3,00								
OP	HASHTABLE	RBT							
100	26,62	33,02							
200	74,15	72,36							
300	120,43	97,86							
400	103,19	72,47							
500	111,76	70,29							
600	151,17	86,16							
700	216,65	120,20							
800	248,80	125,15							
900	318,22	151,16							
1000	373,33	165,19							
1100	438,68	183,30							
1200	496,92	198,30							
1300	556,84	211,35							
1400	641,97	234,04							
1500	700,54	246,25							
1600	788,50	267,50							
1700	865,08	284,22							
1800	867,36	275,28							
1900	987,21	302,14							
2000	1.050,60	314,58							
2100	1.179,07	340,72							
2200	1.242,01	346,60							
2300	1.317,26	356,56							
2400	1.452,64	379,56							
2500	1.606,60	405,86							
2600	1.810,59	439,15							
2700	1.987,47	468,75							
2800	2.132,04	485,07							
2900	2.401,93	524,82							
3000	2.574,69	547,90							
3100	2.698,12	555,96							
3200	2.926,55	587,43							
3300	3.109,26	608,00							
3400	3.300,61	628,43							
3500	3.466,21	643,34							
3600	3.489,36	637,11							
3700	3.693,99	659,15							
3800	3.891,16	710,70							
3900	4.212,52	759,02							
4000	4.437,05	784,99							
4100	4.652,42	812,22							
4200	5.158,08	895,54							
4300	4.864,98	829,01							
4400	4.926,76	839,49							
4500	5.470,22	922,73							
4600	5.217,36	874,44							
4700	6.132,86	1.004,76							
4800	7.347,85	1.177,41							
4900	7.512,95	1.201,96							
5000	7.672,95	917,80							

