**חלק ראשון – טבלאות וגרפים**

**ADD FUNCTION**

|  |  |  |
| --- | --- | --- |
| **גודל הקלט** | **רשימה מקושרת** | **עץ חיפוש מאוזן** |
| 50 | 9 | 102 |
| 150 | 8 | 85 |
| 250 | 7 | 85 |
| 350 | 7 | 90 |
| 450 | 8 | 111 |
| 550 | 11 | 111 |
| 650 | 8 | 108 |
| 750 | 8 | 98 |
| 850 | 7 | 115 |
| 950 | 17 | 160 |
| 1050 | 7 | 125 |
| 1150 | 10 | 112 |
| 1250 | 8 | 110 |
| 1350 | 7 | 126 |
| 1450 | 8 | 112 |
| 1550 | 8 | 110 |
| 1650 | 8 | 109 |
| 1750 | 11 | 117 |
| 1850 | 8 | 157 |
| 1950 | 7 | 127 |
| 2050 | 11 | 114 |
| 2150 | 7 | 124 |
| 2250 | 7 | 120 |
| 2350 | 10 | 125 |
| 2450 | 7 | 121 |
| 2550 | 7 | 128 |
| 2650 | 7 | 117 |
| 2750 | 7 | 117 |
| 2850 | 9 | 133 |
| 2950 | 10 | 122 |
| 3050 | 8 | 122 |
| 3150 | 8 | 118 |
| 3250 | 8 | 117 |
| 3350 | 7 | 126 |
| 3450 | 10 | 121 |
| 3550 | 7 | 119 |
| 3650 | 7 | 118 |
| 3750 | 8 | 118 |
| 3850 | 8 | 126 |
| 3950 | 8 | 127 |
| 4050 | 10 | 136 |
| 4150 | 7 | 136 |
| 4250 | 8 | 128 |
| 4350 | 8 | 128 |
| 4450 | 7 | 128 |
| 4550 | 7 | 128 |
| 4650 | 9 | 132 |
| 4750 | 12 | 129 |
| 4850 | 8 | 161 |
| 4950 | 7 | 133 |
| 5050 | 7 | 129 |
| 5150 | 7 | 129 |
| 5250 | 10 | 132 |
| 5350 | 7 | 130 |
| 5450 | 8 | 136 |
| 5550 | 8 | 129 |
| 5650 | 9 | 137 |
| 5750 | 7 | 130 |
| 5850 | 10 | 134 |
| 5950 | 7 | 132 |
| 6050 | 7 | 130 |
| 6150 | 7 | 133 |
| 6250 | 7 | 128 |
| 6350 | 9 | 136 |
| 6450 | 9 | 130 |
| 6550 | 7 | 154 |
| 6650 | 7 | 128 |
| 6750 | 8 | 137 |
| 6850 | 8 | 133 |
| 6950 | 10 | 132 |
| 7050 | 7 | 137 |
| 7150 | 7 | 146 |
| 7250 | 7 | 181 |
| 7350 | 7 | 129 |
| 7450 | 7 | 131 |
| 7550 | 9 | 150 |
| 7650 | 9 | 129 |
| 7750 | 7 | 147 |
| 7850 | 7 | 131 |
| 7950 | 7 | 128 |
| 8050 | 7 | 132 |
| 8150 | 9 | 138 |
| 8250 | 7 | 142 |
| 8350 | 7 | 139 |
| 8450 | 12 | 164 |
| 8550 | 8 | 139 |
| 8650 | 7 | 141 |
| 8750 | 9 | 161 |
| 8850 | 8 | 145 |
| 8950 | 7 | 139 |
| 9050 | 7 | 139 |
| 9150 | 7 | 14155 |
| 9250 | 7 | 142 |
| 9350 | 11 | 142 |
| 9450 | 7 | 139 |
| 9550 | 7 | 141 |
| 9650 | 7 | 139 |
| 9750 | 7 | 140 |
| 9850 | 10 | 157 |
| 9950 | 7 | 140 |

**DELETE FUNCTION**

|  |  |  |
| --- | --- | --- |
| **גודל הקלט** | **רשימה מקושרת** | **עץ חיפוש מאוזן** |
| 50 | 39 | 49 |
| 150 | 113 | 71 |
| 250 | 40 | 64 |
| 350 | 262 | 69 |
| 450 | 48 | 65 |
| 550 | 1436 | 85 |
| 650 | 45 | 58 |
| 750 | 530 | 92 |
| 850 | 39 | 67 |
| 950 | 1680 | 84 |
| 1050 | 39 | 64 |
| 1150 | 1795 | 81 |
| 1250 | 39 | 81 |
| 1350 | 1927 | 89 |
| 1450 | 46 | 27099 |
| 1550 | 2066 | 85 |
| 1650 | 40 | 66 |
| 1750 | 2216 | 87 |
| 1850 | 47 | 82 |
| 1950 | 3379 | 94 |
| 2050 | 40 | 75 |
| 2150 | 2461 | 89 |
| 2250 | 39 | 83 |
| 2350 | 3628 | 89 |
| 2450 | 39 | 74 |
| 2550 | 3793 | 87 |
| 2650 | 40 | 89 |
| 2750 | 3912 | 88 |
| 2850 | 41 | 89 |
| 2950 | 4008 | 94 |
| 3050 | 40 | 73 |
| 3150 | 4203 | 89 |
| 3250 | 42 | 83 |
| 3350 | 5441 | 91 |
| 3450 | 49 | 72 |
| 3550 | 4456 | 92 |
| 3650 | 40 | 84 |
| 3750 | 5628 | 126 |
| 3850 | 53 | 73 |
| 3950 | 5734 | 134 |
| 4050 | 40 | 106 |
| 4150 | 6174 | 90 |
| 4250 | 45 | 96 |
| 4350 | 6163 | 89 |
| 4450 | 45 | 86 |
| 4550 | 7435 | 85 |
| 4650 | 40 | 102 |
| 4750 | 6271 | 95 |
| 4850 | 40 | 79 |
| 4950 | 6446 | 104 |
| 5050 | 48 | 104 |
| 5150 | 7860 | 93 |
| 5250 | 40 | 88 |
| 5350 | 8019 | 90 |
| 5450 | 40 | 86 |
| 5550 | 9186 | 93 |
| 5650 | 39 | 86 |
| 5750 | 8143 | 102 |
| 5850 | 48 | 89 |
| 5950 | 8315 | 101 |
| 6050 | 48 | 115 |
| 6150 | 9727 | 102 |
| 6250 | 41 | 95 |
| 6350 | 8444 | 96 |
| 6450 | 1051 | 103 |
| 6550 | 9052 | 95 |
| 6650 | 40 | 91 |
| 6750 | 11188 | 102 |
| 6850 | 40 | 96 |
| 6950 | 8733 | 111 |
| 7050 | 40 | 85 |
| 7150 | 9836 | 95 |
| 7250 | 40 | 110 |
| 7350 | 10952 | 87 |
| 7450 | 40 | 88 |
| 7550 | 10100 | 95 |
| 7650 | 40 | 91 |
| 7750 | 10237 | 102 |
| 7850 | 40 | 97 |
| 7950 | 10362 | 111 |
| 8050 | 39 | 86 |
| 8150 | 11555 | 104 |
| 8250 | 40 | 101 |
| 8350 | 11629 | 97 |
| 8450 | 40 | 100 |
| 8550 | 11844 | 97 |
| 8650 | 40 | 94 |
| 8750 | 12043 | 102 |
| 8850 | 40 | 92 |
| 8950 | 12228 | 111 |
| 9050 | 39 | 99 |
| 9150 | 16308 | 13655 |
| 9250 | 40 | 110 |
| 9350 | 20427 | 97 |
| 9450 | 40 | 98 |
| 9550 | 19103 | 105 |
| 9650 | 49 | 95 |
| 9750 | 20743 | 105 |
| 9850 | 40 | 96 |
| 9950 | 14874 | 124 |

**FIND FUNCTION**

|  |  |  |
| --- | --- | --- |
| **גודל הקלט** | **רשימה מקושרת** | **עץ חיפוש מאוזן** |
| 100 | 38 | 12 |
| 100 | 39 | 11 |
| 200 | 101 | 15 |
| 200 | 39 | 14 |
| 300 | 172 | 13 |
| 300 | 36 | 15 |
| 400 | 235 | 16 |
| 400 | 36 | 15 |
| 500 | 321 | 15 |
| 500 | 36 | 16 |
| 600 | 375 | 14 |
| 600 | 36 | 16 |
| 700 | 455 | 14 |
| 700 | 36 | 17 |
| 800 | 513 | 16 |
| 800 | 38 | 16 |
| 900 | 594 | 16 |
| 900 | 38 | 15 |
| 1000 | 655 | 16 |
| 1000 | 36 | 16 |
| 1100 | 717 | 15 |
| 1100 | 36 | 16 |
| 1200 | 801 | 18 |
| 1200 | 36 | 22 |
| 1300 | 2856 | 15 |
| 1300 | 36 | 17 |
| 1400 | 2926 | 16 |
| 1400 | 38 | 17 |
| 1500 | 1991 | 15 |
| 1500 | 41 | 16 |
| 1600 | 2064 | 17 |
| 1600 | 37 | 17 |
| 1700 | 2114 | 18 |
| 1700 | 36 | 17 |
| 1800 | 3198 | 16 |
| 1800 | 36 | 16 |
| 1900 | 2249 | 16 |
| 1900 | 37 | 17 |
| 2000 | 2306 | 17 |
| 2000 | 36 | 18 |
| 2100 | 3428 | 16 |
| 2100 | 36 | 19 |
| 2200 | 2442 | 16 |
| 2200 | 36 | 17 |
| 2300 | 3522 | 16 |
| 2300 | 36 | 18 |
| 2400 | 3630 | 17 |
| 2400 | 36 | 18 |
| 2500 | 2649 | 21 |
| 2500 | 37 | 21 |
| 2600 | 4482 | 21 |
| 2600 | 37 | 22 |
| 2700 | 3787 | 17 |
| 2700 | 36 | 17 |
| 2800 | 3848 | 16 |
| 2800 | 36 | 18 |
| 2900 | 3918 | 16 |
| 2900 | 37 | 17 |
| 3000 | 3993 | 22 |
| 3000 | 36 | 24 |
| 3100 | 4050 | 23 |
| 3100 | 36 | 18 |
| 3200 | 4137 | 18 |
| 3200 | 37 | 25 |
| 3300 | 4188 | 18 |
| 3300 | 37 | 18 |
| 3400 | 4254 | 7044 |
| 3400 | 36 | 25 |
| 3500 | 5321 | 19 |
| 3500 | 36 | 19 |
| 3600 | 4387 | 23 |
| 3600 | 36 | 18 |
| 3700 | 5453 | 23 |
| 3700 | 36 | 18 |
| 3800 | 4539 | 17 |
| 3800 | 36 | 18 |
| 3900 | 5588 | 22 |
| 3900 | 40 | 21 |
| 4000 | 5667 | 17 |
| 4000 | 37 | 18 |
| 4100 | 5733 | 17 |
| 4100 | 39 | 18 |
| 4200 | 4779 | 17 |
| 4200 | 36 | 19 |
| 4300 | 5855 | 17 |
| 4300 | 37 | 19 |
| 4400 | 5929 | 18 |
| 4400 | 36 | 18 |
| 4500 | 6001 | 23 |
| 4500 | 36 | 23 |
| 4600 | 7204 | 30 |
| 4600 | 38 | 19 |
| 4700 | 6126 | 18 |
| 4700 | 36 | 19 |
| 4800 | 6216 | 18 |
| 4800 | 42 | 18 |
| 4900 | 6260 | 17 |
| 4900 | 36 | 19 |
| 5000 | 7342 | 17 |
| 5000 | 37 | 34 |
| 5100 | 6394 | 24 |
| 5100 | 36 | 25 |
| 5200 | 7469 | 18 |
| 5200 | 36 | 19 |
| 5300 | 6536 | 18 |
| 5300 | 37 | 18 |
| 5400 | 7624 | 18 |
| 5400 | 37 | 24 |
| 5500 | 7856 | 29 |
| 5500 | 37 | 24 |
| 5600 | 7856 | 19 |
| 5600 | 37 | 19 |
| 5700 | 8087 | 18 |
| 5700 | 45 | 18 |
| 5800 | 8210 | 18 |
| 5800 | 37 | 19 |
| 5900 | 9319 | 18 |
| 5900 | 37 | 19 |
| 6000 | 8424 | 18 |
| 6000 | 38 | 30 |
| 6100 | 9573 | 18 |
| 6100 | 43 | 19 |
| 6200 | 8539 | 19 |
| 6200 | 37 | 19 |
| 6300 | 9738 | 20 |
| 6300 | 42 | 19 |
| 6400 | 8984 | 24 |
| 6400 | 36 | 23 |
| 6500 | 9347 | 20 |
| 6500 | 37 | 19 |
| 6600 | 8298 | 21 |
| 6600 | 36 | 19 |
| 6700 | 9475 | 20 |
| 6700 | 36 | 19 |
| 6800 | 8532 | 20 |
| 6800 | 37 | 18 |
| 6900 | 9622 | 19 |
| 6900 | 37 | 18 |
| 7000 | 9672 | 20 |
| 7000 | 37 | 18 |
| 7100 | 8732 | 23 |
| 7100 | 36 | 26 |
| 7200 | 9817 | 25 |
| 7200 | 37 | 23 |
| 7300 | 9872 | 20 |
| 7300 | 37 | 18 |
| 7400 | 9937 | 20 |
| 7400 | 36 | 19 |
| 7500 | 12327 | 20 |
| 7500 | 37 | 19 |
| 7600 | 10269 | 25 |
| 7600 | 37 | 21 |
| 7700 | 9506 | 20 |
| 7700 | 36 | 23 |
| 7800 | 9768 | 25 |
| 7800 | 37 | 24 |
| 7900 | 13289 | 19 |
| 7900 | 36 | 19 |
| 8000 | 10349 | 20 |
| 8000 | 36 | 19 |
| 8100 | 11411 | 21 |
| 8100 | 36 | 19 |
| 8200 | 10474 | 20 |
| 8200 | 37 | 19 |
| 8300 | 11542 | 19 |
| 8300 | 36 | 21 |
| 8400 | 10605 | 19 |
| 8400 | 36 | 22 |
| 8500 | 11686 | 25 |
| 8500 | 36 | 27 |
| 8600 | 11849 | 20 |
| 8600 | 37 | 20 |
| 8700 | 11694 | 24 |
| 8700 | 36 | 21 |
| 8800 | 11928 | 20 |
| 8800 | 37 | 20 |
| 8900 | 11984 | 26 |
| 8900 | 37 | 23 |
| 9000 | 12010 | 24 |
| 9000 | 36 | 20 |
| 9100 | 12082 | 19 |
| 9100 | 36 | 20 |
| 9200 | 12149 | 19 |
| 9200 | 36 | 21 |
| 9300 | 12204 | 20 |
| 9300 | 36 | 20 |
| 9400 | 12842 | 20 |
| 9400 | 37 | 21 |
| 9500 | 13348 | 19 |
| 9500 | 36 | 20 |
| 9600 | 12410 | 23 |
| 9600 | 36 | 25 |
| 9700 | 13488 | 20 |
| 9700 | 36 | 24 |
| 9800 | 12538 | 20 |
| 9800 | 36 | 19 |
| 9900 | 13616 | 20 |
| 9900 | 38 | 20 |
| 10000 | 13581 | 19 |
| 10000 | 36 | 19 |