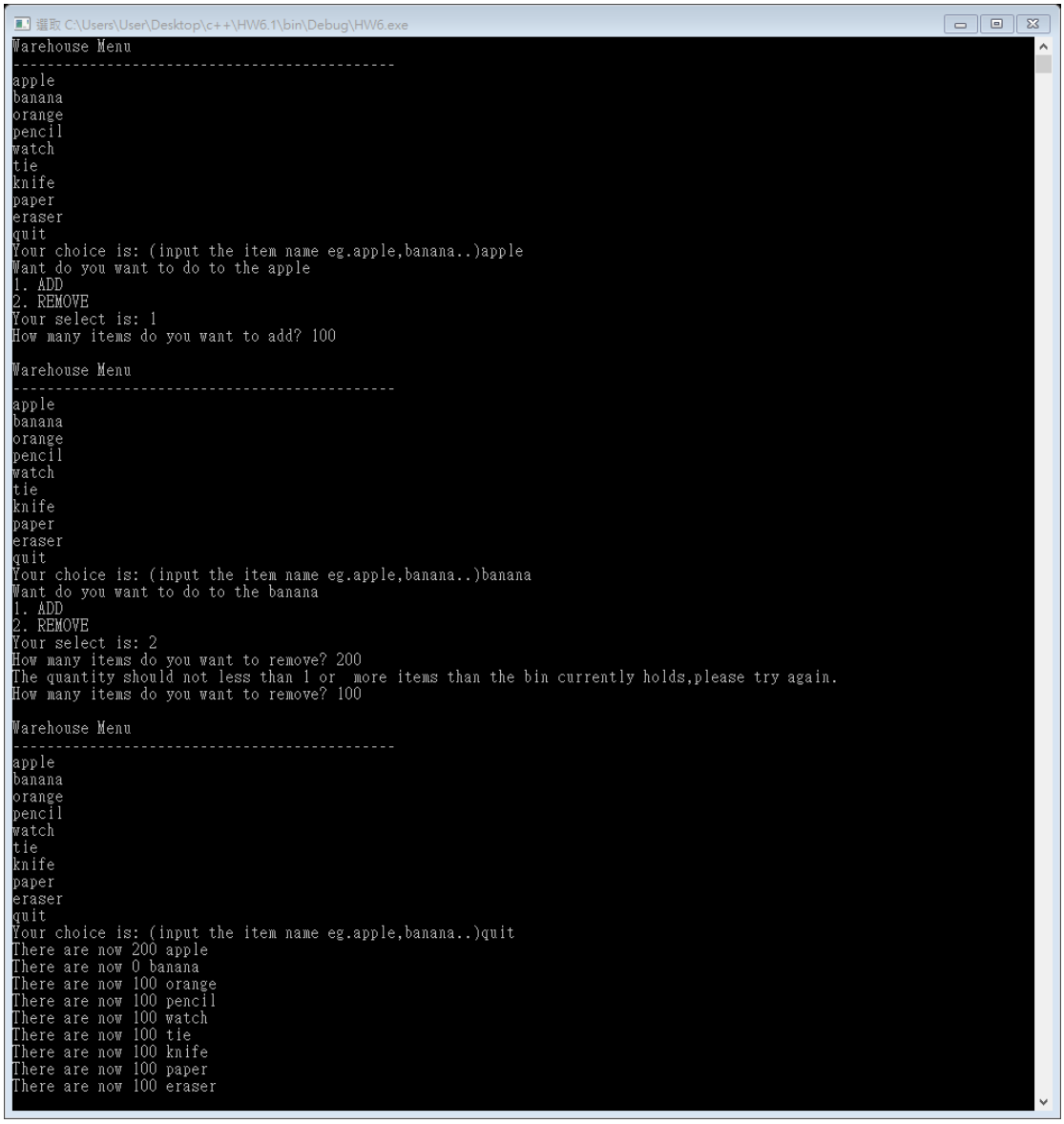
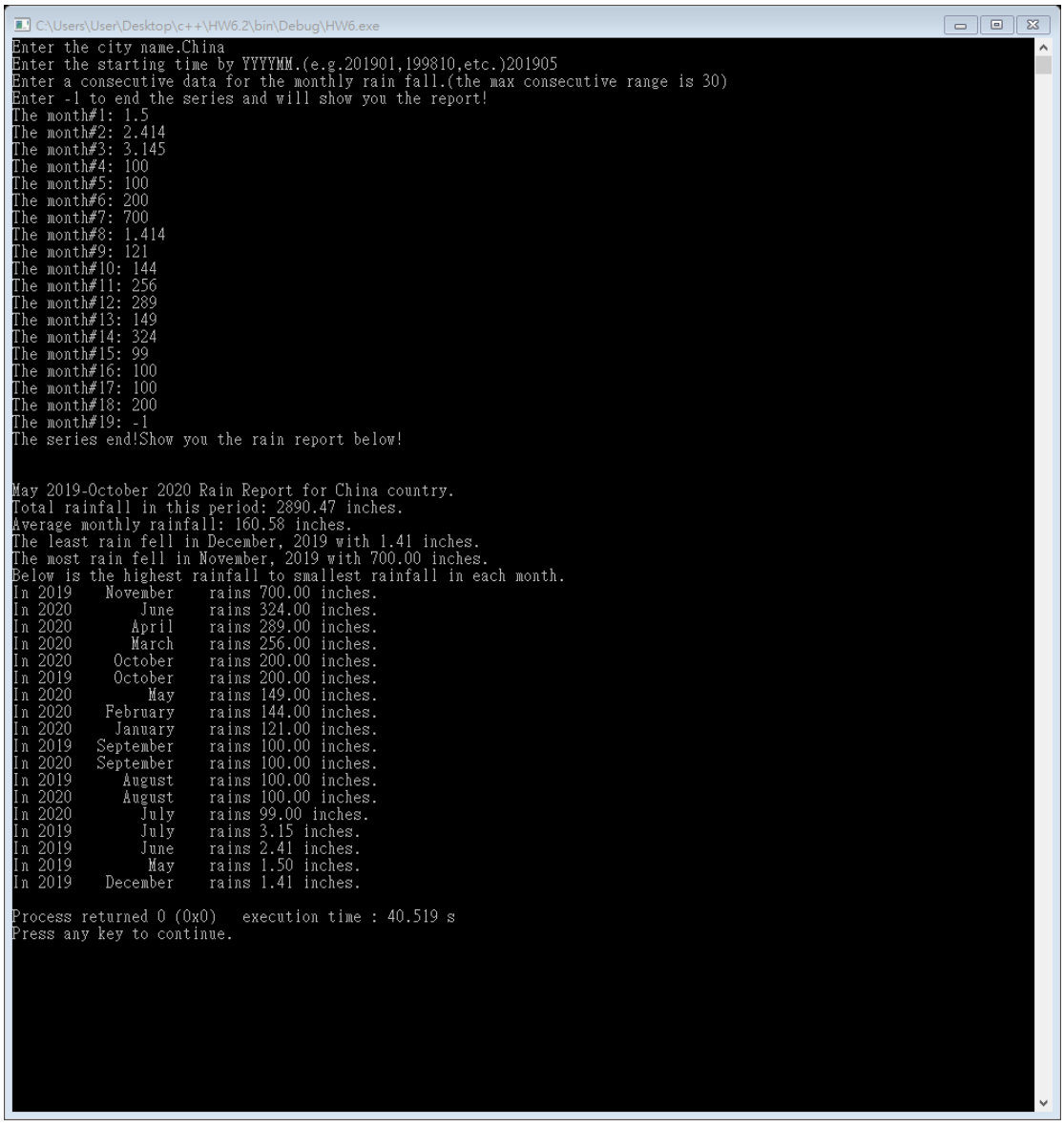
Part 3, Coding 程式題

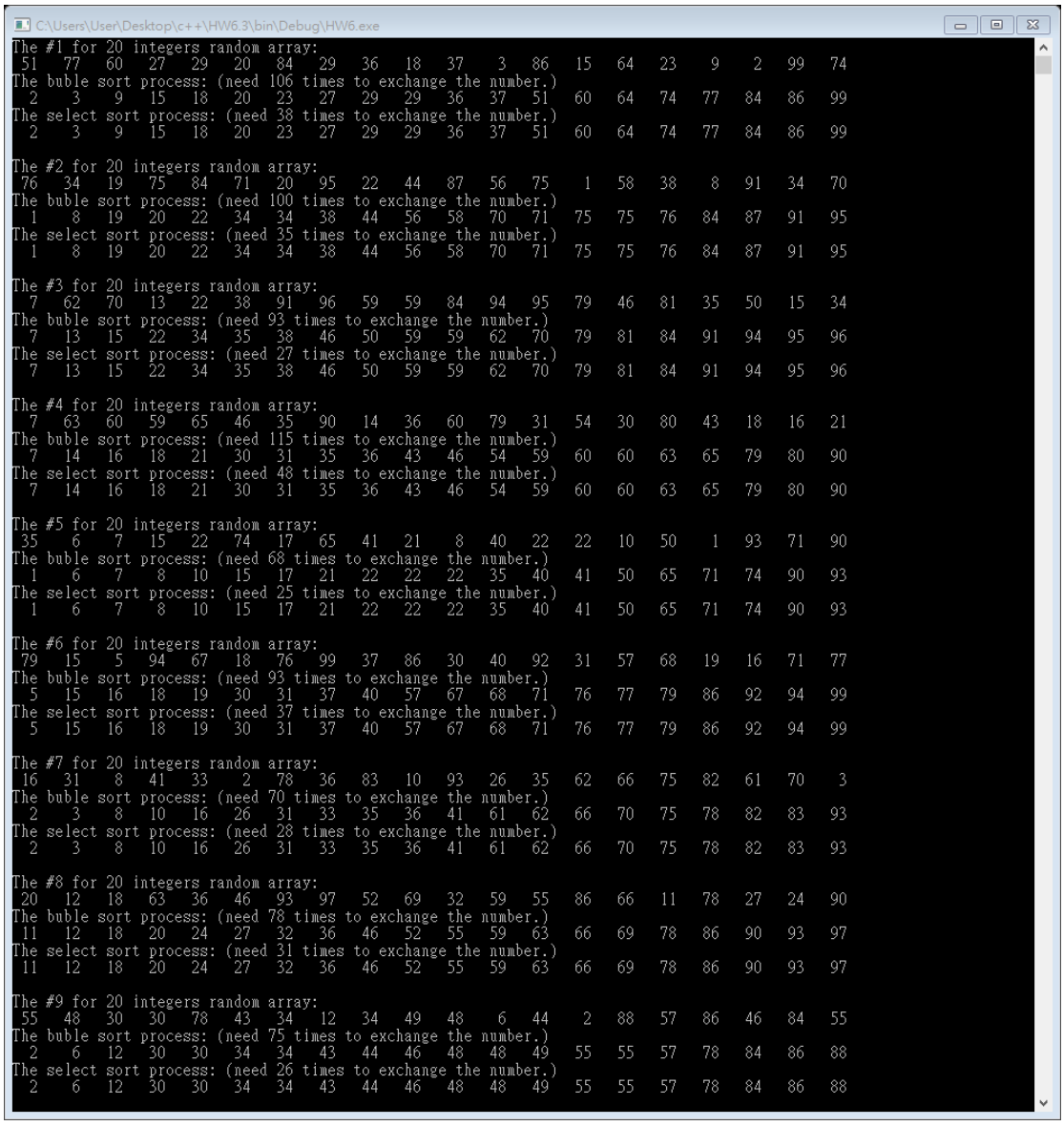
1.

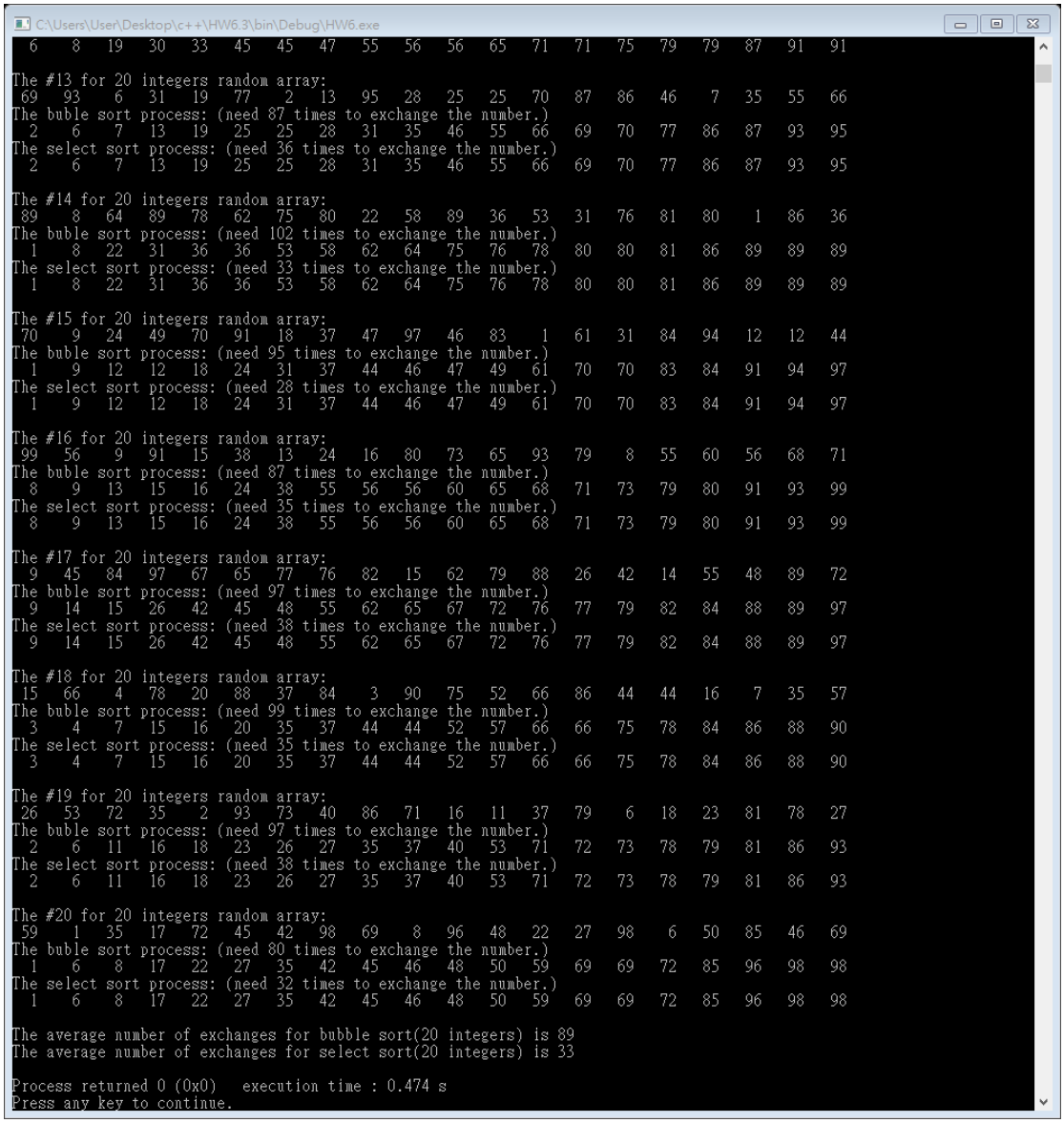


2.


C:\Users\User\Desktop\c++\HW6.2\bin\Debug\HW6.exe
Enter the city name.China
Enter the starting time by YYYYMM.(e.g.201901,199810,etc.)201905
Enter a consecutive data for the monthly rain fall.(the max consecutive range is 30)
Enter -1 to end the series and will show you the report!
The month#1: 1.5
The month#2: 2.414
The month#3: 3.145
The month#4: 100
The month#5: 100
The month#6: 200
The month#7: 700
The month#8: 1.414
The month#9: 121
The month#10: 144
The month#11: 256
The month#12: 289
The month#13: 149
The month#14: 324
The month#15: 99
The month#16: 100
The month#17: 100
The month#18: 200
The month#19: -1
The series end!Show you the rain report below!
May 2019-October 2020 Rain Report for China country.
Total rainfall in this period: 2890.47 inches.
Average monthly rainfall: 160.58 inches.
The least rain fell in December, 2019 with 1.41 inches.
The most rain fell in November, 2019 with 700.00 inches.
Below is the highest rainfall to smallest rainfall in each month.
In 2019 November rains 700.00 inches.
In 2020 June rains 324.00 inches.
In 2020 April rains 289.00 inches.
In 2020 March rains 256.00 inches.
In 2020 October rains 200.00 inches.
In 2019 October rains 200.00 inches.
In 2020 May rains 149.00 inches.
In 2020 February rains 144.00 inches.
In 2020 January rains 121.00 inches.
In 2019 September rains 100.00 inches.
In 2020 September rains 100.00 inches.
In 2019 August rains 100.00 inches.
In 2020 August rains 100.00 inches.
In 2020 July rains 99.00 inches.
In 2019 July rains 3.15 inches.
In 2019 June rains 2.41 inches.
In 2019 May rains 1.50 inches.
In 2019 December rains 1.41 inches.
Process returned 0 (0x0) execution time : 40.519 s
Press any key to continue.

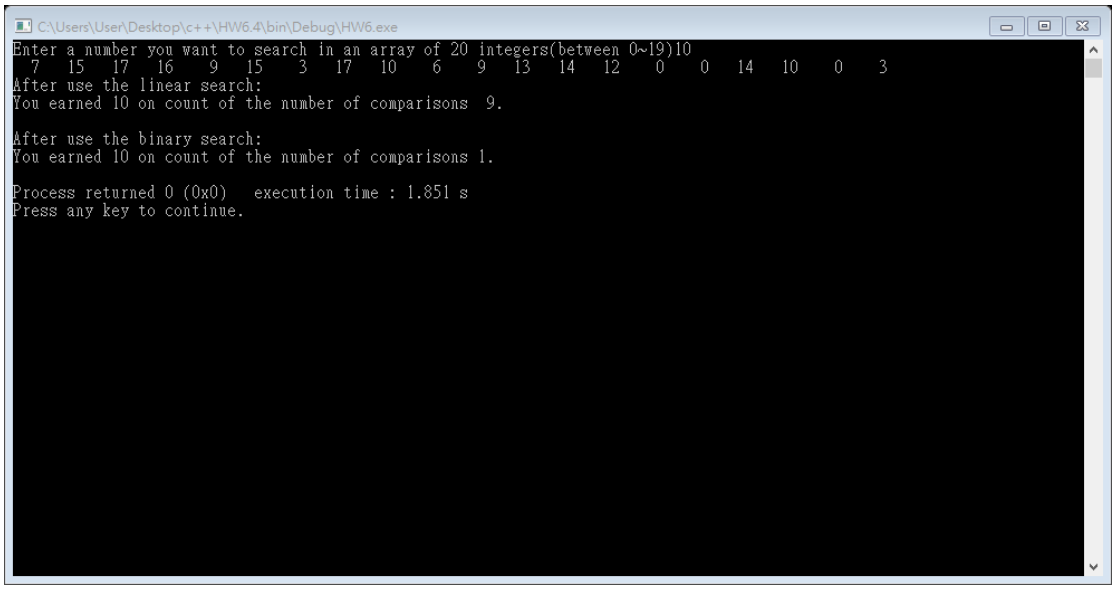
3.


C:\Users\User\Desktop\c++\HW6.3\bin\Debug\HW6.exe
The #1 for 20 integers random array:
51 77 60 27 29 20 84 29 36 18 37 3 86 15 64 23 9 2 99 74
The buble sort process: (need 106 times to exchange the number.)
2 3 9 15 18 20 23 27 29 29 36 37 51 60 64 74 77 84 86 99
The select sort process: (need 38 times to exchange the number.)
2 3 9 15 18 20 23 27 29 29 36 37 51 60 64 74 77 84 86 99
The #2 for 20 integers random array:
76 34 19 75 84 71 20 95 22 44 87 56 75 1 58 38 8 91 34 70
The buble sort process: (need 100 times to exchange the number.)
1 8 19 20 22 34 34 38 44 56 58 70 71 75 75 76 84 87 91 95
The select sort process: (need 35 times to exchange the number.)
1 8 19 20 22 34 34 38 44 56 58 70 71 75 75 76 84 87 91 95
The #3 for 20 integers random array:
7 62 70 13 22 38 91 96 59 59 84 94 95 79 46 81 35 50 15 34
The buble sort process: (need 93 times to exchange the number.)
7 13 15 22 34 35 38 46 50 59 59 62 70 79 81 84 91 94 95 96
The select sort process: (need 27 times to exchange the number.)
7 13 15 22 34 35 38 46 50 59 59 62 70 79 81 84 91 94 95 96
The #4 for 20 integers random array:
7 63 60 59 65 46 35 90 14 36 60 79 31 54 30 80 43 18 16 21
The buble sort process: (need 115 times to exchange the number.)
7 14 16 18 21 30 31 35 36 43 46 54 59 60 60 63 65 79 80 90
The select sort process: (need 48 times to exchange the number.)
7 14 16 18 21 30 31 35 36 43 46 54 59 60 60 63 65 79 80 90
The #5 for 20 integers random array:
35 6 7 15 22 74 17 65 41 21 8 40 22 22 10 50 1 93 71 90
The buble sort process: (need 68 times to exchange the number.)
1 6 7 8 10 15 17 21 22 22 22 35 40 41 50 65 71 74 90 93
The select sort process: (need 25 times to exchange the number.)
1 6 7 8 10 15 17 21 22 22 22 35 40 41 50 65 71 74 90 93
The #6 for 20 integers random array:
79 15 5 94 67 18 76 99 37 86 30 40 92 31 57 68 19 16 71 77
The buble sort process: (need 93 times to exchange the number.)
5 15 16 18 19 30 31 37 40 57 67 68 71 76 77 79 86 92 94 99
The select sort process: (need 37 times to exchange the number.)
5 15 16 18 19 30 31 37 40 57 67 68 71 76 77 79 86 92 94 99
The #7 for 20 integers random array:
16 31 8 41 33 2 78 36 83 10 93 26 35 62 66 75 82 61 70 3
The buble sort process: (need 70 times to exchange the number.)
2 3 8 10 16 26 31 33 35 36 41 61 62 66 70 75 78 82 83 93
The select sort process: (need 28 times to exchange the number.)
2 3 8 10 16 26 31 33 35 36 41 61 62 66 70 75 78 82 83 93
The #8 for 20 integers random array:
20 12 18 63 36 46 93 97 52 69 32 59 55 86 66 11 78 27 24 90
The buble sort process: (need 78 times to exchange the number.)
11 12 18 20 24 27 32 36 46 52 55 59 63 66 69 78 86 90 93 97
The select sort process: (need 31 times to exchange the number.)
11 12 18 20 24 27 32 36 46 52 55 59 63 66 69 78 86 90 93 97
The #9 for 20 integers random array:
55 48 30 30 78 43 34 12 34 49 48 6 44 2 88 57 86 46 84 55
The buble sort process: (need 75 times to exchange the number.)
2 6 12 30 30 34 34 43 44 46 48 48 49 55 55 57 78 84 86 88
The select sort process: (need 26 times to exchange the number.)
2 6 12 30 30 34 34 43 44 46 48 48 49 55 55 57 78 84 86 88

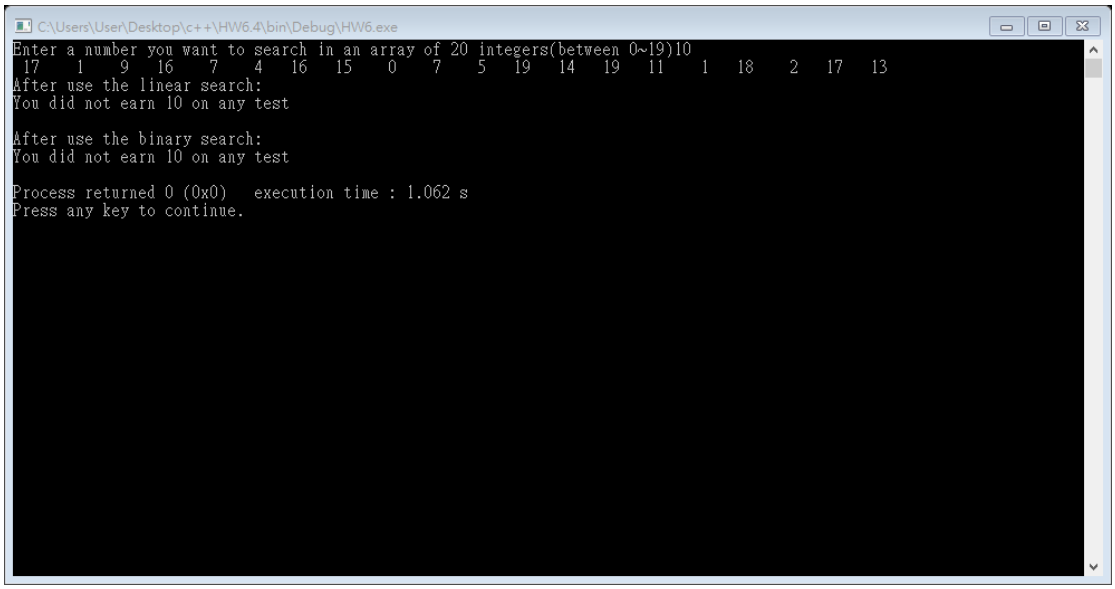

C:\Users\User\Desktop\c++\HW6.3\bin\Debug\HW6.exe
6 8 19 30 33 45 45 47 55 56 56 65 71 71 75 79 79 87 91 91
The #13 for 20 integers random array:
69 93 6 31 19 77 2 13 95 28 25 25 70 87 86 46 7 35 55 66
The buble sort process: (need 87 times to exchange the number.)
2 6 7 13 19 25 25 28 31 35 46 55 66 69 70 77 86 87 93 95
The select sort process: (need 36 times to exchange the number.)
2 6 7 13 19 25 25 28 31 35 46 55 66 69 70 77 86 87 93 95
The #14 for 20 integers random array:
89 8 64 89 78 62 75 80 22 58 89 36 53 31 76 81 80 1 86 36
The buble sort process: (need 102 times to exchange the number.)
1 8 22 31 36 36 53 58 62 64 75 76 78 80 80 81 86 89 89 89
The select sort process: (need 33 times to exchange the number.)
1 8 22 31 36 36 53 58 62 64 75 76 78 80 80 81 86 89 89 89
The #15 for 20 integers random array:
70 9 24 49 70 91 18 37 47 97 46 83 1 61 31 84 94 12 12 44
The buble sort process: (need 95 times to exchange the number.)
1 9 12 12 18 24 31 37 44 46 47 49 61 70 70 83 84 91 94 97
The select sort process: (need 28 times to exchange the number.)
1 9 12 12 18 24 31 37 44 46 47 49 61 70 70 83 84 91 94 97
The #16 for 20 integers random array:
99 56 9 91 15 38 13 24 16 80 73 65 93 79 8 55 60 56 68 71
The buble sort process: (need 87 times to exchange the number.)
8 9 13 15 16 24 38 55 56 56 60 65 68 71 73 79 80 91 93 99
The select sort process: (need 35 times to exchange the number.)
8 9 13 15 16 24 38 55 56 56 60 65 68 71 73 79 80 91 93 99
The #17 for 20 integers random array:
9 45 84 97 67 65 77 76 82 15 62 79 88 26 42 14 55 48 89 72
The buble sort process: (need 97 times to exchange the number.)
9 14 15 26 42 45 48 55 62 65 67 72 76 77 79 82 84 88 89 97
The select sort process: (need 38 times to exchange the number.)
9 14 15 26 42 45 48 55 62 65 67 72 76 77 79 82 84 88 89 97
The #18 for 20 integers random array:
15 66 4 78 20 88 37 84 3 90 75 52 66 86 44 44 16 7 35 57
The buble sort process: (need 99 times to exchange the number.)
3 4 7 15 16 20 35 37 44 44 52 57 66 66 75 78 84 86 88 90
The select sort process: (need 35 times to exchange the number.)
3 4 7 15 16 20 35 37 44 44 52 57 66 66 75 78 84 86 88 90
The #19 for 20 integers random array:
26 53 72 35 2 93 73 40 86 71 16 11 37 79 6 18 23 81 78 27
The buble sort process: (need 97 times to exchange the number.)
2 6 11 16 18 23 26 27 35 37 40 53 71 72 73 78 79 81 86 93
The select sort process: (need 38 times to exchange the number.)
2 6 11 16 18 23 26 27 35 37 40 53 71 72 73 78 79 81 86 93
The #20 for 20 integers random array:
59 1 35 17 72 45 42 98 69 8 96 48 22 27 98 6 50 85 46 69
The buble sort process: (need 80 times to exchange the number.)
1 6 8 17 22 27 35 42 45 46 48 50 59 69 69 72 85 96 98 98
The select sort process: (need 32 times to exchange the number.)
1 6 8 17 22 27 35 42 45 46 48 50 59 69 69 72 85 96 98 98
The average number of exchanges for bubble sort(20 integers) is 89
The average number of exchanges for select sort(20 integers) is 33
Process returned 0 (0x0) execution time : 0.474 s
Press any key to continue.

4.

找到值:


C:\Users\User\Desktop\c++\HW6.4\bin\Debug\HW6.exe
Enter a number you want to search in an array of 20 integers(between 0~19)10
7 15 17 16 9 15 3 17 10 6 9 13 14 12 0 0 14 10 0 3
After use the linear search:
You earned 10 on count of the number of comparisons 9.
After use the binary search:
You earned 10 on count of the number of comparisons 1.
Process returned 0 (0x0) execution time : 1.851 s
Press any key to continue.

未找到值:


C:\Users\User\Desktop\c++\HW6.4\bin\Debug\HW6.exe
Enter a number you want to search in an array of 20 integers(between 0~19)10
17 1 9 16 7 4 16 15 0 7 5 19 14 19 11 1 18 2 17 13
After use the linear search:
You did not earn 10 on any test
After use the binary search:
You did not earn 10 on any test
Process returned 0 (0x0) execution time : 1.062 s
Press any key to continue.