

hepsort.cpp - Code::Blocks 20.03

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Start here X hepsort.cpp X

```
38 int main()
39 {
40     int n = 10000;
41     vector<int> vec(n);
42
43     random_device rd;
44     mt19937 gen(rd());
45     uniform_int_distribution<> dis(1, n);
46     for (int i = 0; i < n; i++)
47         vec[i] = dis(gen);
48
49
50
51     for (int i = 0; i < n; i++)
52         vec[i] = n - i;
53
54
55     ofstream decFileIn("dec.txt");
56     for (int num : vec) {
57         decFileIn << num << " ";
58     }
59     decFileIn.close();
60
61     ifstream decFileOut("dec.txt");
62     for (int& it : vec) {
63         decFileOut >> it;
64     }
65     decFileOut.close();
66
67     heapSort(vec);
68
69     return 0;
70 }
71
```

Select "D:\CSE-31\algorithm design and analysis\lab-2\hepsort.exe"

Process returned 0 (0x0) execution time : 0.078 s  
Press any key to continue.

dec.txt - Notepad

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10000 9999 9998 9997 9996 9995 9994 9993 9992 9991 9990 9989 9988 9987  
9986 9985 9984 9983 9982 9981 9980 9979 9978 9977 9976 9975 9974 9973  
9972 9971 9970 9969 9968 9967 9966 9965 9964 9963 9962 9961 9960 9959  
9958 9957 9956 9955 9954 9953 9952 9951 9950 9949 9948 9947 9946 9945  
9944 9943 9942 9941 9940 9939 9938 9937 9936 9935 9934 9933 9932 9931  
9930 9929 9928 9927 9926 9925 9924 9923 9922 9921 9920 9919 9918 9917  
9916 9915 9914 9913 9912 9911 9910 9909 9908 9907 9906 9905 9904 9903  
9902 9901 9900 9899 9898 9897 9896 9895 9894 9893 9892 9891 9890 9889  
9888 9887 9886 9885 9884 9883 9882 9881 9880 9879 9878 9877 9876 9875  
9874 9873 9872 9871 9870 9869 9868 9867 9866 9865 9864 9863 9862 9861  
9860 9859 9858 9857 9856 9855 9854 9853 9852 9851 9850 9849 9848 9847  
9846 9845 9844 9843 9842 9841 9840 9839 9838 9837 9836 9835 9834 9833  
9832 9831 9830 9829 9828 9827 9826 9825 9824 9823 9822 9821 9820 9819  
9818 9817 9816 9815 9814 9813 9812 9811 9810 9809 9808 9807 9806 9805  
9804 9803 9802 9801 9800 9799 9798 9797 9796 9795 9794 9793 9792 9791  
9790 9789 9788 9787 9786 9785 9784 9783 9782 9781 9780 9779 9778 9777  
9776 9775 9774 9773 9772 9771 9770 9769 9768 9767 9766 9765 9764 9763  
9762 9761 9760 9759 9758 9757 9756 9755 9754 9753 9752 9751 9750 9749  
9748 9747 9746 9745 9744 9743 9742 9741 9740 9739 9738 9737 9736 9735  
9734 9733 9732 9731 9730 9729 9728 9727 9726 9725 9724 9723 9722 9721  
9720 9719 9718 9717 9716 9715 9714 9713 9712 9711 9710 9709 9708 9707  
9706 9705 9704 9703 9702 9701 9700 9699 9698 9697 9696 9695 9694 9693  
9692 9691 9690 9689 9688 9687 9686 9685 9684 9683 9682 9681 9680 9679  
9678 9677 9676 9675 9674 9673 9672 9671 9670 9669 9668 9667 9666 9665  
9664 9663 9662 9661 9660 9659 9658 9657 9656 9655 9654 9653 9652 9651

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Start here X hepsort.cpp X

```
38 int main()
39 {
40     int n = 100000;
41     vector<int> vec(n);
42
43     random_device rd;
44     mt19937 gen(rd());
45     uniform_int_distribution<> dis(1, n);
46     for (int i = 0; i < n; i++)
47         vec[i] = dis(gen);
48
49
50
51     for (int i = 0; i < n; i++)
52         vec[i] = n - i;
53
54
55     ofstream decFileIn("dec.txt");
56     for (int num : vec) {
57         decFileIn << num << " ";
58     }
59     decFileIn.close();
60
61     ifstream decFileOut("dec.txt");
62     for (int& it : vec) {
63         decFileOut >> it;
64     }
65     decFileOut.close();
66
67     heapSort(vec);
68
69     return 0;
70 }
71
```

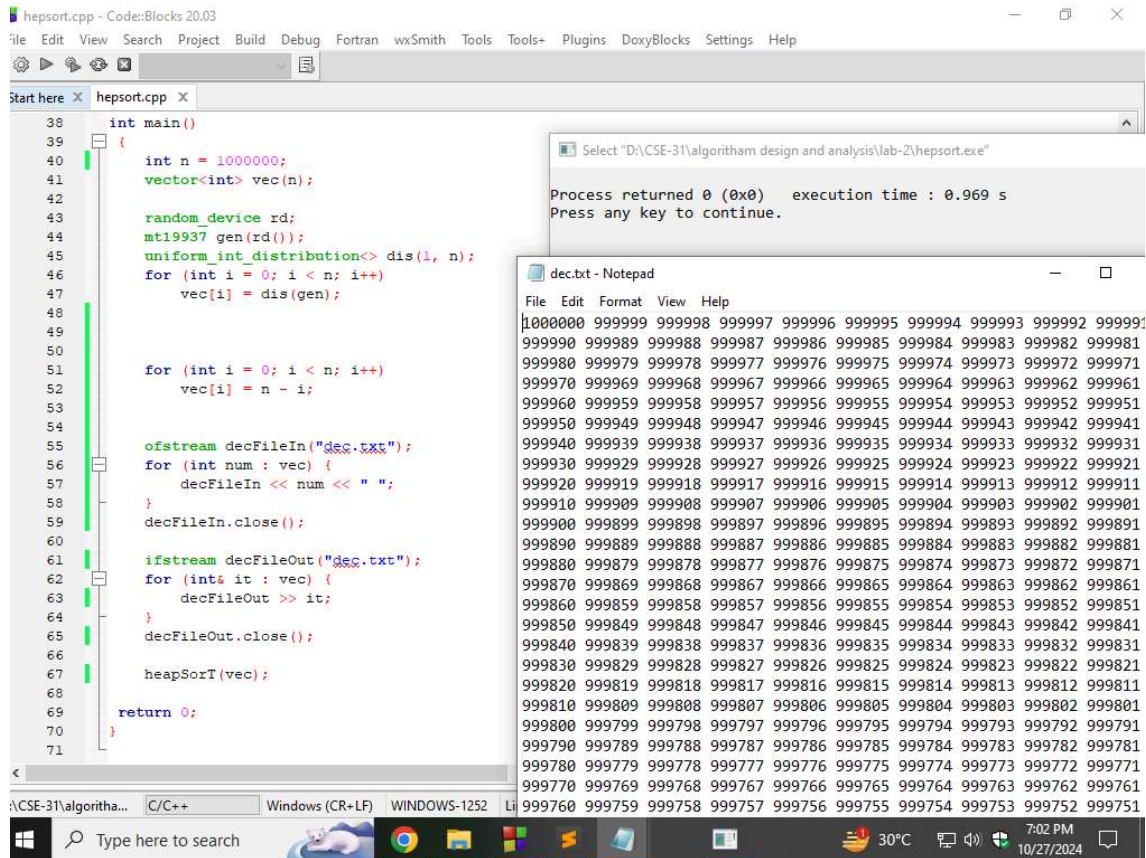
Select "D:\CSE-31\algorithm design and analysis\lab-2\hepsort.exe"

Process returned 0 (0x0) execution time : 0.156 s  
Press any key to continue.

dec.txt - Notepad

File Edit Format View Help

100000 99999 99998 99997 99996 99995 99994 99993 99992 99991 99990  
99989 99988 99987 99986 99985 99984 99983 99982 99981 99980 99979 99978  
99977 99976 99975 99974 99973 99972 99971 99970 99969 99968 99967 99966  
99965 99964 99963 99962 99961 99960 99959 99958 99957 99956 99955 99954  
99953 99952 99951 99950 99949 99948 99947 99946 99945 99944 99943 99942  
99941 99940 99939 99938 99937 99936 99935 99934 99933 99932 99931 99930  
99929 99928 99927 99926 99925 99924 99923 99922 99921 99920 99919 99918  
99917 99916 99915 99914 99913 99912 99911 99910 99909 99908 99907 99906  
99905 99904 99903 99902 99901 99900 99899 99898 99897 99896 99895 99894  
99893 99892 99891 99890 99889 99888 99887 99886 99885 99884 99883 99882  
99881 99880 99879 99878 99877 99876 99875 99874 99873 99872 99871 99870  
99869 99868 99867 99866 99865 99864 99863 99862 99861 99860 99859 99858  
99857 99856 99855 99854 99853 99852 99851 99850 99849 99848 99847 99846  
99845 99844 99843 99842 99841 99840 99839 99838 99837 99836 99835 99834  
99833 99832 99831 99830 99829 99828 99827 99826 99825 99824 99823 99822  
99821 99820 99819 99818 99817 99816 99815 99814 99813 99812 99811 99810  
99809 99808 99807 99806 99805 99804 99803 99802 99801 99800 99799 99798  
99797 99796 99795 99794 99793 99792 99791 99790 99789 99788 99787 99786  
99785 99784 99783 99782 99781 99780 99779 99778 99777 99776 99775 99774  
99773 99772 99771 99770 99769 99768 99767 99766 99765 99764 99763 99762  
99761 99760 99759 99758 99757 99756 99755 99754 99753 99752 99751 99750  
99749 99748 99747 99746 99745 99744 99743 99742 99741 99740 99739 99738  
99737 99736 99735 99734 99733 99732 99731 99730 99729 99728 99727 99726  
99725 99724 99723 99722 99721 99720 99719 99718 99717 99716 99715 99714





hepsort.cpp - Code::Blocks 20.03

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Start here x hepsort.cpp x

```
38 int main()
39 {
40     int n = 100;
41     vector<int> vec(n);
42
43     random_device rd;
44     mt19937 gen(rd());
45     uniform_int_distribution<> dis(1, n);
46     for (int i = 0; i < n; i++)
47         vec[i] = dis(gen);
48
49
50
51     for (int i = 0; i < n; i++)
52         vec[i] = n - i;
53
54
55     ofstream decFileIn("dec.txt");
56     for (int num : vec) {
57         decFileIn << num << " ";
58     }
59     decFileIn.close();
60
61     ifstream decFileOut("dec.txt");
62     for (int& it : vec) {
63         decFileOut >> it;
64     }
65     decFileOut.close();
66
67     heapSort(vec);
68
69     return 0;
70 }
71
```

Select "D:\CSE-31\algorithm design and analysis\lab-2\hepsort.exe"

Process returned 0 (0x0) execution time : 0.047 s  
Press any key to continue.

dec.txt - Notepad

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```
100 99 98 97 96 95 94 93 92 91 90 89 88 87 86 85 84 83 82 81 80 79 78
77 76 75 74 73 72 71 70 69 68 67 66 65 64 63 62 61 60 59 58 57 56 55 54
53 52 51 50 49 48 47 46 45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30
29 28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4
3 2 1
```

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hepsort.cpp - Code::Blocks 20.03

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Start here x hepsort.cpp x

```
38 int main()
39 {
40     int n = 1000;
41     vector<int> vec(n);
42
43     random_device rd;
44     mt19937 gen(rd());
45     uniform_int_distribution<> dis(1, n);
46     for (int i = 0; i < n; i++)
47         vec[i] = dis(gen);
48
49
50
51     for (int i = 0; i < n; i++)
52         vec[i] = n - i;
53
54
55     ofstream decFileIn("dec.txt");
56     for (int num : vec) {
57         decFileIn << num << " ";
58     }
59     decFileIn.close();
60
61     ifstream decFileOut("dec.txt");
62     for (int& it : vec) {
63         decFileOut >> it;
64     }
65     decFileOut.close();
66
67     heapSort(vec);
68
69     return 0;
70 }
71
```

Select "D:\CSE-31\algorithm design and analysis\lab-2\h..."

Process returned 0 (0x0) execution time : 0.047 s  
Press any key to continue.

dec.txt - Notepad

File Edit Format View Help

```
1000 999 998 997 996 995 994 993 992 991 990 989 988 987 986 985 984
983 982 981 980 979 978 977 976 975 974 973 972 971 970 969 968 967 966
965 964 963 962 961 960 959 958 957 956 955 954 953 952 951 950 949 948
947 946 945 944 943 942 941 940 939 938 937 936 935 934 933 932 931 930
929 928 927 926 925 924 923 922 921 920 919 918 917 916 915 914 913 912
911 910 909 908 907 906 905 904 903 902 901 900 899 898 897 896 895 894
893 892 891 890 889 888 887 886 885 884 883 882 881 880 879 878 877 876
875 874 873 872 871 870 869 868 867 866 865 864 863 862 861 860 859 858
857 856 855 854 853 852 851 850 849 848 847 846 845 844 843 842 841 840
839 838 837 836 835 834 833 832 831 830 829 828 827 826 825 824 823 822
821 820 819 818 817 816 815 814 813 812 811 810 809 808 807 806 805 804
803 802 801 800 799 798 797 796 795 794 793 792 791 790 789 788 787 786
785 784 783 782 781 780 779 778 777 776 775 774 773 772 771 770 769 768
767 766 765 764 763 762 761 760 759 758 757 756 755 754 753 752 751 750
749 748 747 746 745 744 743 742 741 740 739 738 737 736 735 734 733 732
731 730 729 728 727 726 725 724 723 722 721 720 719 718 717 716 715 714
713 712 711 710 709 708 707 706 705 704 703 702 701 700 699 698 697 696
695 694 693 692 691 690 689 688 687 686 685 684 683 682 681 680 679 678
677 676 675 674 673 672 671 670 669 668 667 666 665 664 663 662 661 660
659 658 657 656 655 654 653 652 651 650 649 648 647 646 645 644 643 642
641 640 639 638 637 636 635 634 633 632 631 630 629 628 627 626 625 624
623 622 621 620 619 618 617 616 615 614 613 612 611 610 609 608 607 606
605 604 603 602 601 600 599 598 597 596 595 594 593 592 591 590 589 588
```

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