selection.c ● | toh.c | gcd_recursive.c

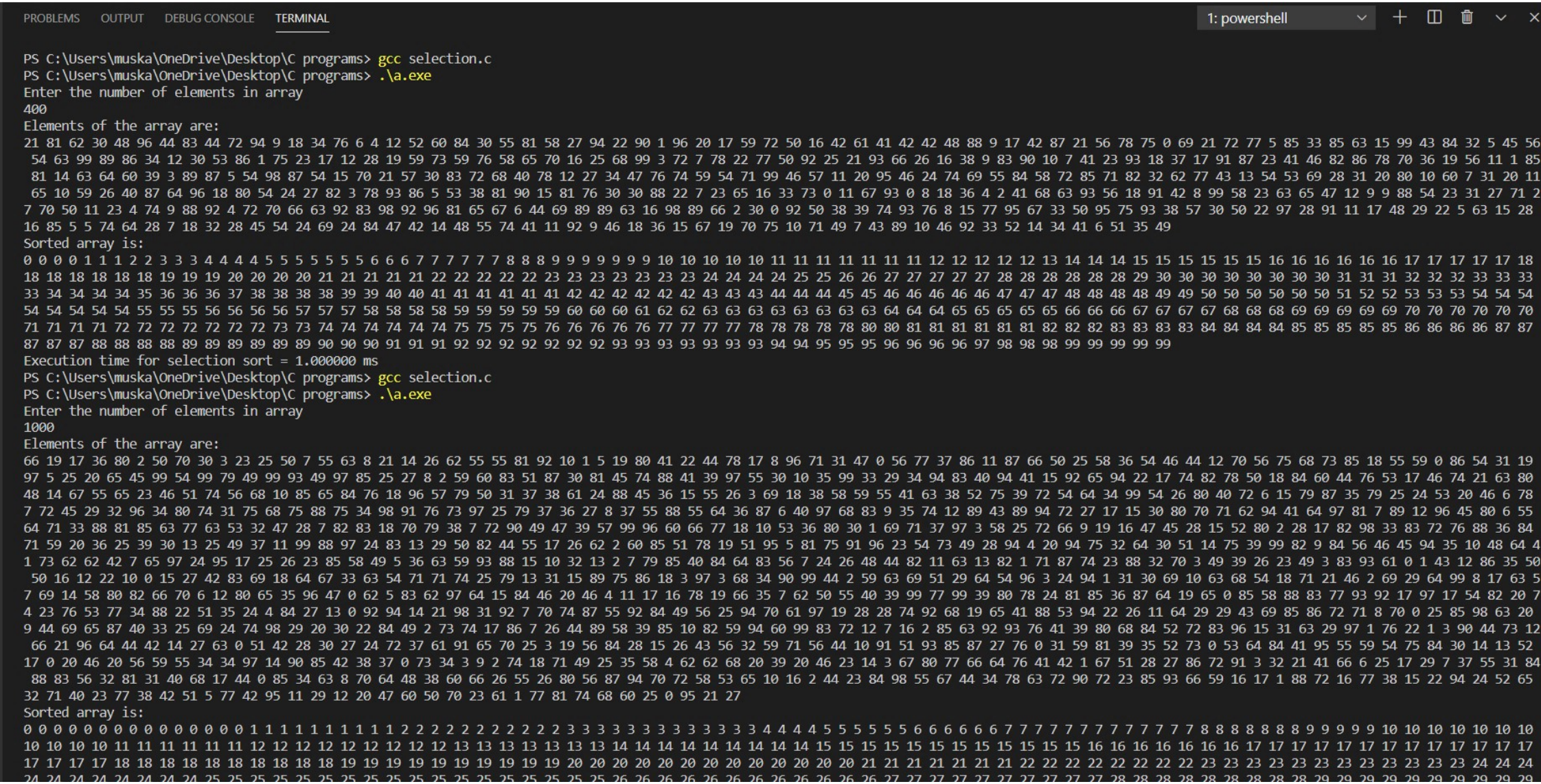
selection.c

```c
#include<stdio.h>
#include <stdlib.h>
#include <time.h>
clock_t start, end;
double cpu_time;
int main()
{
    int n,i,j,pos,temp,small,arr[10000],c,d;
    srand(time(0));
    printf("Enter the number of elements in array \n");
    scanf("%d", &n);
    printf("Elements of the array are:\n");
    for (i= 0; i<n; i++)
    {
       arr[i]=rand()%100;
       printf("%d ",arr[i]);
    }
    start = clock();
    for(i=0;i<=n-2;i++)
    {
        small=arr[i];
        pos=i;
        for(j=i+1;j<=n-1;j++)
        {
            if(arr[j]<small)
            {
                small=arr[j];
                pos=j;
            }s
        }
        temp=arr[i];
        arr[i]=arr[pos];
        arr[pos]=temp;
    }
    end = clock();
    cpu_time = (double)(end - start) / CLOCKS_PER_SEC;
    printf("\nSorted array is:\n");
    for(i=0;i<n;i++)
```

selection.c ● | toh.c | gcd_recursive.c

selection.c

```c
        small=arr[i];
        pos=i;
        for(j=i+1;j<=n-1;j++)
        {
            if(arr[j]<small)
            {
                small=arr[j];
                pos=j;
            }s
        }
        temp=arr[i];
        arr[i]=arr[pos];
        arr[pos]=temp;
    }
    end = clock();
    cpu_time = (double)(end - start) / CLOCKS_PER_SEC;
    printf("\nSorted array is:\n");
    for(i=0;i<n;i++)
    {
        printf("%d ",arr[i]);
    }
    printf("\nExecution time for selection sort = %f ms\n", cpu_time*1000);
}
```


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
1: powershell
PS C:\Users\muska\OneDrive\Desktop\C programs> gcc selection.c
PS C:\Users\muska\OneDrive\Desktop\C programs> .\a.exe
Enter the number of elements in array
400
Elements of the array are:
21 81 62 30 48 96 44 83 44 72 94 9 18 34 76 6 4 12 52 60 84 30 55 81 58 27 94 22 90 1 96 20 17 59 72 50 16 42 61 41 42 42 48 88 9 17 42 87 21 56 78 75 0 69 21 72 77 5 85 33 85 63 15 99 43 84 32 5 45 56
54 63 99 89 86 34 12 30 53 86 1 75 23 17 12 28 19 59 73 59 76 58 65 70 16 25 68 99 3 72 7 78 22 77 50 92 25 21 93 66 26 16 38 9 83 90 10 7 41 23 93 18 37 17 91 87 23 41 46 82 86 78 70 36 19 56 11 1 85
81 14 63 64 60 39 3 89 87 5 54 98 87 54 15 70 21 57 30 83 72 68 40 78 12 27 34 47 76 74 59 54 71 99 46 57 11 20 95 46 24 74 69 55 84 58 72 85 71 82 32 62 77 43 13 54 53 69 28 31 20 80 10 60 7 31 20 11
65 10 59 26 40 87 64 96 18 80 54 24 27 82 3 78 93 86 5 53 38 81 90 15 81 76 30 30 88 22 7 23 65 16 33 73 0 11 67 93 0 8 18 36 4 2 41 68 63 93 56 18 91 42 8 99 58 23 63 65 47 12 9 9 88 54 23 31 27 71 2
7 70 50 11 23 4 74 9 88 92 4 72 70 66 63 92 83 98 92 96 81 65 67 6 44 69 89 89 63 16 98 89 66 2 30 0 92 50 38 39 74 93 76 8 15 77 95 67 33 50 95 75 93 38 57 30 50 22 97 28 91 11 17 48 29 22 5 63 15 28
16 85 5 5 74 64 28 7 18 32 28 45 54 24 69 24 84 47 42 14 48 55 74 41 11 92 9 46 18 36 15 67 19 70 75 10 71 49 7 43 89 10 46 92 33 52 14 34 41 6 51 35 49
Sorted array is:
0 0 0 0 1 1 1 2 2 3 3 3 4 4 4 4 5 5 5 5 5 5 5 6 6 6 7 7 7 7 7 7 8 8 8 9 9 9 9 9 9 9 10 10 10 10 10 11 11 11 11 11 11 11 12 12 12 12 12 13 14 14 14 15 15 15 15 15 15 16 16 16 16 16 16 17 17 17 17 17 18
18 18 18 18 18 18 19 19 19 20 20 20 20 21 21 21 21 21 22 22 22 22 22 23 23 23 23 23 23 23 24 24 24 24 25 25 26 26 27 27 27 27 27 28 28 28 28 28 28 29 30 30 30 30 30 30 30 30 31 31 31 32 32 32 33 33 33
33 34 34 34 34 35 36 36 36 37 38 38 38 38 39 39 40 40 41 41 41 41 41 41 42 42 42 42 42 42 42 43 43 43 44 44 44 45 45 46 46 46 46 46 47 47 47 48 48 48 48 49 49 50 50 50 50 50 50 51 52 52 53 53 53 54 54 54
54 54 54 54 54 55 55 55 56 56 56 56 57 57 57 58 58 58 58 59 59 59 59 59 60 60 60 61 62 62 63 63 63 63 63 63 63 63 64 64 64 65 65 65 65 65 66 66 66 66 67 67 67 67 68 68 68 69 69 69 69 69 70 70 70 70 70 70
71 71 71 71 72 72 72 72 72 72 72 73 73 74 74 74 74 74 74 75 75 75 75 76 76 76 76 76 77 77 77 77 78 78 78 78 78 80 80 81 81 81 81 81 81 82 82 82 83 83 83 83 84 84 84 84 85 85 85 85 85 86 86 86 86 87 87
87 87 87 88 88 88 88 89 89 89 89 89 89 90 90 90 91 91 91 92 92 92 92 92 92 92 93 93 93 93 93 93 93 94 94 95 95 95 96 96 96 96 97 98 98 98 99 99 99 99 99
Execution time for selection sort = 1.000000 ms
PS C:\Users\muska\OneDrive\Desktop\C programs> gcc selection.c
PS C:\Users\muska\OneDrive\Desktop\C programs> .\a.exe
Enter the number of elements in array
1000
Elements of the array are:
66 19 17 36 80 2 50 70 30 3 23 25 50 7 55 63 8 21 14 26 62 55 55 81 92 10 1 5 19 80 41 22 44 78 17 8 96 71 31 47 0 56 77 37 86 11 87 66 50 25 58 36 54 46 44 12 70 56 75 68 73 85 18 55 59 0 86 54 31 19
97 5 25 20 65 45 99 54 99 79 49 99 93 49 97 85 25 27 8 2 59 60 83 51 87 30 81 45 74 88 41 39 97 55 30 10 35 99 33 29 34 94 83 40 94 41 15 92 65 94 22 17 74 82 78 50 18 84 60 44 76 53 17 46 74 21 63 80
48 14 67 55 65 23 46 51 74 56 68 10 85 65 84 76 18 96 57 79 50 31 37 38 61 24 88 45 36 15 55 26 3 69 18 38 58 59 55 41 63 38 52 75 39 72 54 64 34 99 54 26 80 40 72 6 15 79 87 35 79 25 24 53 20 46 6 78
7 72 45 29 32 96 34 80 74 31 75 68 75 88 75 34 98 91 76 73 97 25 79 37 36 27 8 37 55 88 55 64 36 87 6 40 97 68 83 9 35 74 12 89 43 89 94 72 27 17 15 30 80 70 71 62 94 41 64 97 81 7 89 12 96 45 80 6 55
64 71 33 88 81 85 63 77 63 53 32 47 28 7 82 83 18 70 79 38 7 72 90 49 47 39 57 99 96 60 66 77 18 10 53 36 80 30 1 69 71 37 97 3 58 25 72 66 9 19 16 47 45 28 15 52 80 2 28 17 82 98 33 83 72 76 88 36 84
71 59 20 36 25 39 30 13 25 49 37 11 99 88 97 24 83 13 29 50 82 44 55 17 26 62 2 60 85 51 78 19 51 95 5 81 75 91 96 23 54 73 49 28 94 4 20 94 75 32 64 30 51 14 75 39 99 82 9 84 56 46 45 94 35 10 48 64 4
1 73 62 62 42 7 65 97 24 95 17 25 26 23 85 58 49 5 36 63 59 93 88 15 10 32 13 2 7 79 85 40 84 64 83 56 7 24 26 48 44 82 11 63 13 82 1 71 87 74 23 88 32 70 3 49 39 26 23 49 3 83 93 61 0 1 43 12 86 35 50
50 16 12 22 10 0 15 27 42 83 69 18 64 67 33 63 54 71 71 74 25 79 13 31 15 89 75 86 18 3 97 3 68 34 90 99 44 2 59 63 69 51 29 64 54 96 3 24 94 1 31 30 69 10 63 68 54 18 71 21 46 2 69 29 64 99 8 17 63 5
7 69 14 58 80 82 66 70 6 12 80 65 35 96 47 0 62 5 83 62 97 64 15 84 46 20 46 4 11 17 16 78 19 66 35 7 62 50 55 40 39 99 77 99 39 80 78 24 81 85 36 87 64 19 65 0 85 58 88 83 77 93 92 17 97 17 54 82 20 7
4 23 76 53 77 34 88 22 51 35 24 4 84 27 13 0 92 94 14 21 98 31 92 7 70 74 87 55 92 84 49 56 25 94 70 61 97 19 28 28 74 92 68 19 65 41 88 53 94 22 26 11 64 29 29 43 69 85 86 72 71 8 70 0 25 85 98 63 20
9 44 69 65 87 40 33 25 69 24 74 98 29 20 30 22 84 49 2 73 74 17 86 7 26 44 89 58 39 85 10 82 59 94 60 99 83 72 12 7 16 2 85 63 92 93 76 41 39 80 68 84 52 72 83 96 15 31 63 29 97 1 76 22 1 3 90 44 73 12
66 21 96 64 44 42 14 27 63 0 51 42 28 30 27 24 72 37 61 91 65 70 25 3 19 56 84 28 15 26 43 56 32 59 71 56 44 10 91 51 93 85 87 27 76 0 31 59 81 39 35 52 73 0 53 64 84 41 95 55 59 54 75 84 30 14 13 52
17 0 20 46 20 56 59 55 34 34 97 14 90 85 42 38 37 0 73 34 3 9 2 74 18 71 49 25 35 58 4 62 62 68 20 39 20 46 23 14 3 67 80 77 66 64 76 41 42 1 67 51 28 27 86 72 91 3 32 21 41 66 6 25 17 29 7 37 55 31 84
88 83 56 32 81 31 40 68 17 44 0 85 34 63 8 70 64 48 38 60 66 26 55 26 80 56 87 94 70 72 58 53 65 10 16 2 44 23 84 98 55 67 44 34 78 63 72 90 72 23 85 93 66 59 16 17 1 88 72 16 77 38 15 22 94 24 52 65
32 71 40 23 77 38 42 51 5 77 42 95 11 29 12 20 47 60 50 70 23 61 1 77 81 74 68 60 25 0 95 21 27
Sorted array is:
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 3 3 3 3 3 3 3 4 4 4 4 5 5 5 5 5 5 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 8 8 8 8 8 8 8 9 9 9 9 9 10 10 10 10 10 10 10
10 10 10 10 11 11 11 11 11 11 12 12 12 12 12 12 12 12 12 13 13 13 13 13 13 13 14 14 14 14 14 14 14 14 15 15 15 15 15 15 15 15 15 15 15 16 16 16 16 16 16 16 17 17 17 17 17 17 17 17 17 17 17 17 17 17 17
17 17 17 17 18 18 18 18 18 18 18 18 18 19 19 19 19 19 19 19 19 19 20 20 20 20 20 20 20 20 20 20 20 20 21 21 21 21 21 21 22 22 22 22 22 22 22 23 23 23 23 23 23 23 23 23 23 23 24 24 24
24 24 24 24 24 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25 26 26 26 26 26 26 26 26 26 26 26 26 27 27 27 27 27 27 27 27 27 28 28 28 28 28 28 28 28 29 29 29 29 29 29 29 29 29

N value	TIME IN ms
500	0.444
1000	1.704
1500	2.976
2000	5.645
2500	8.385
3000	13.519
3500	16.68