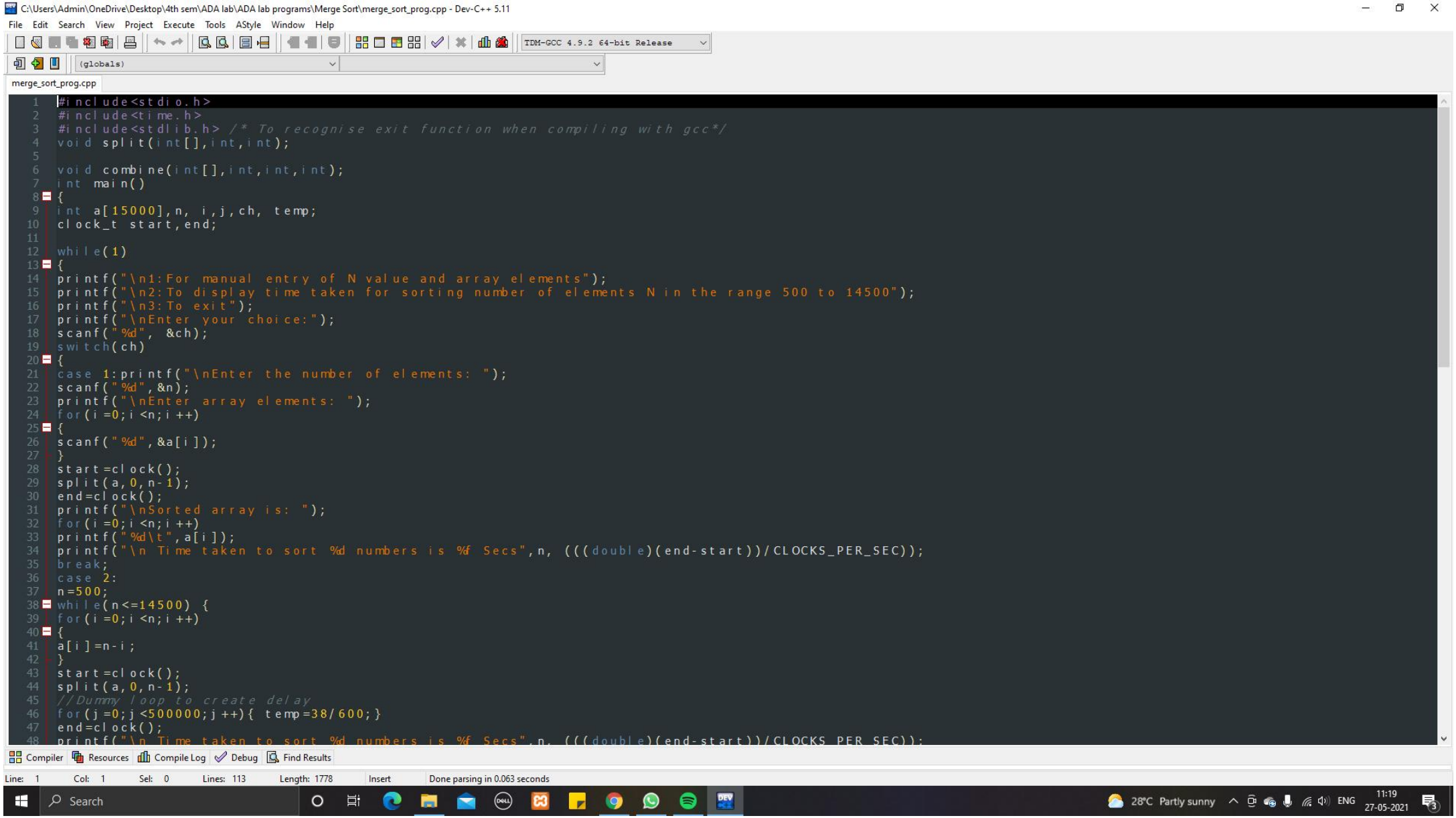
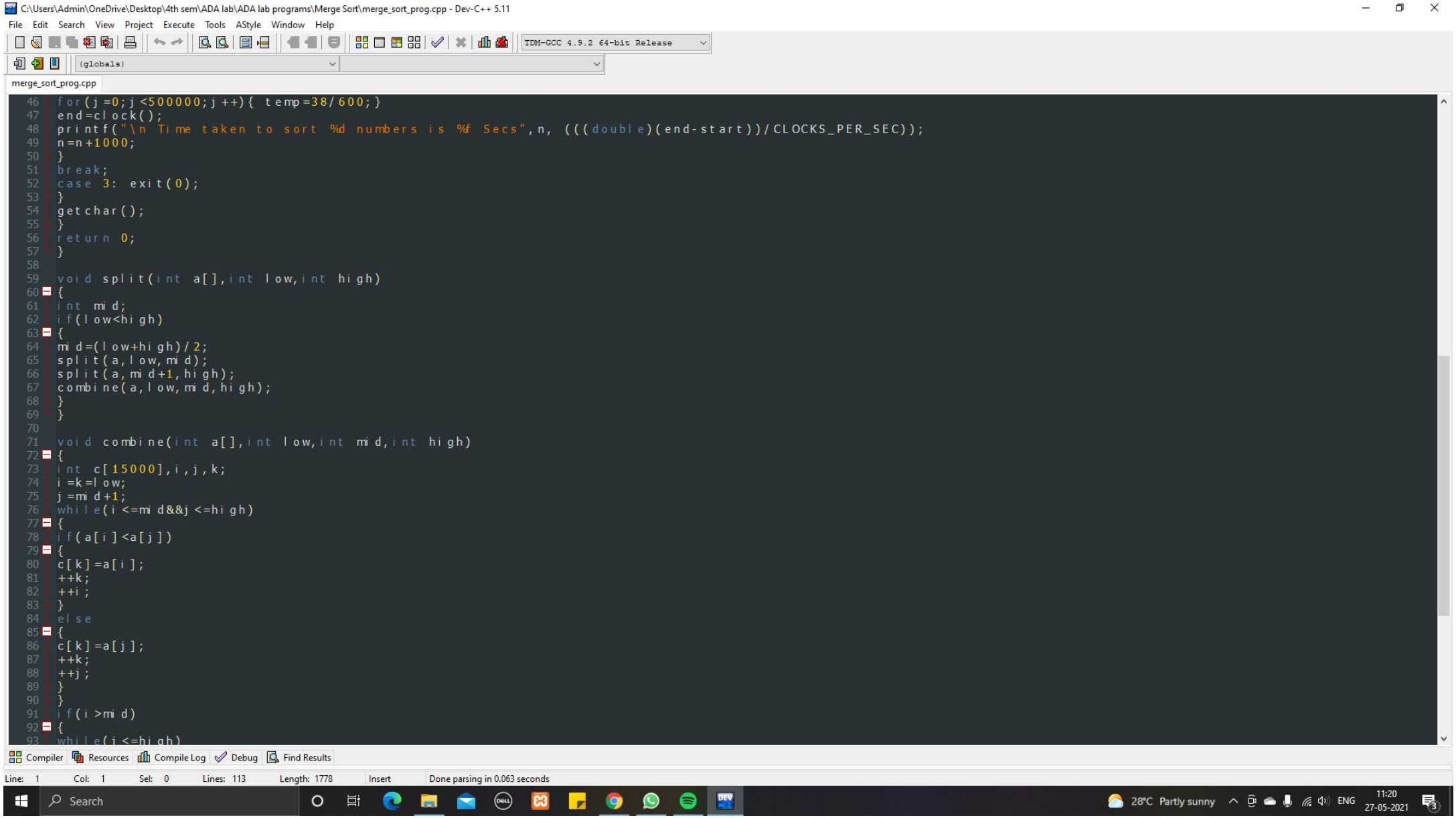
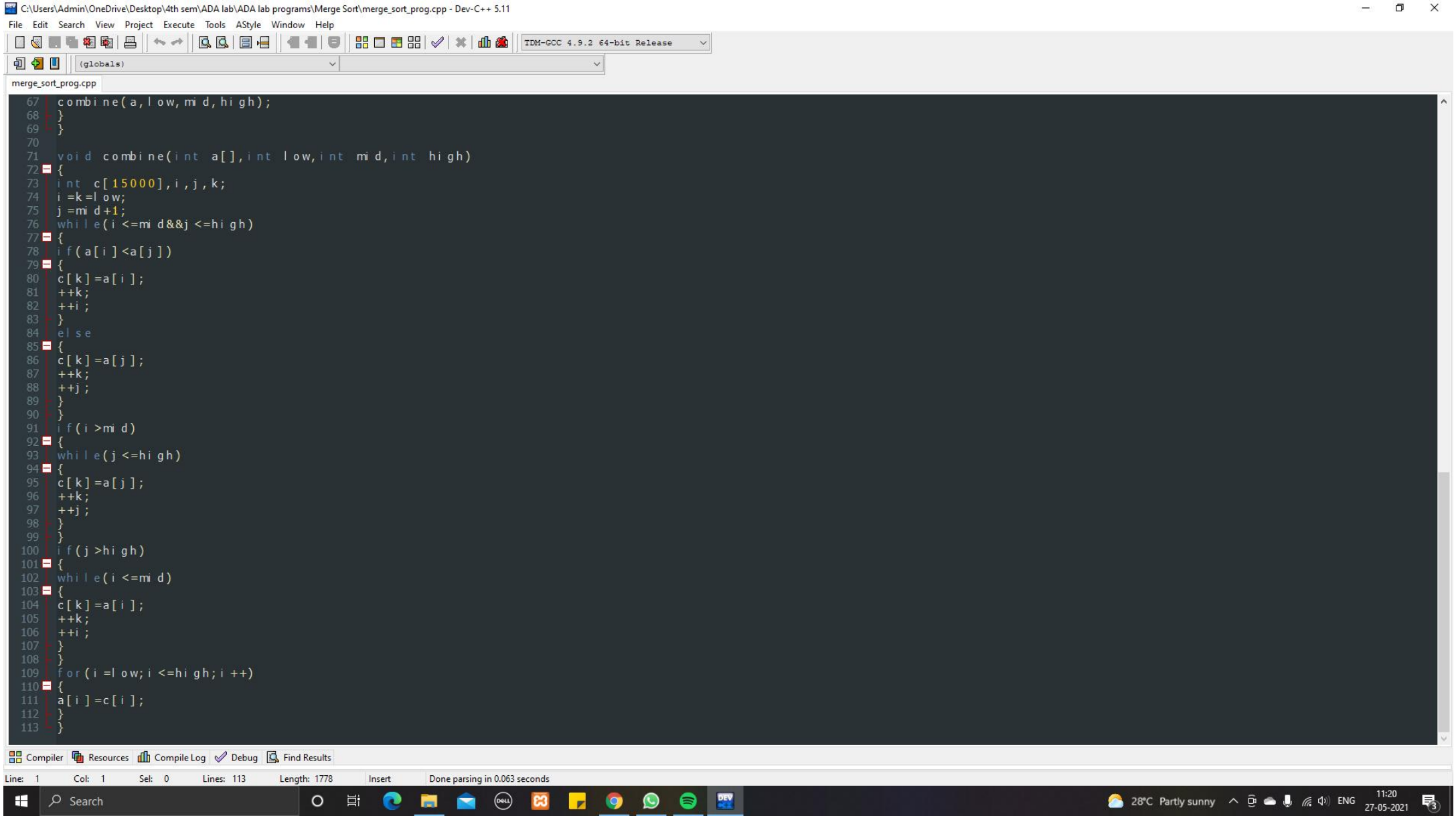
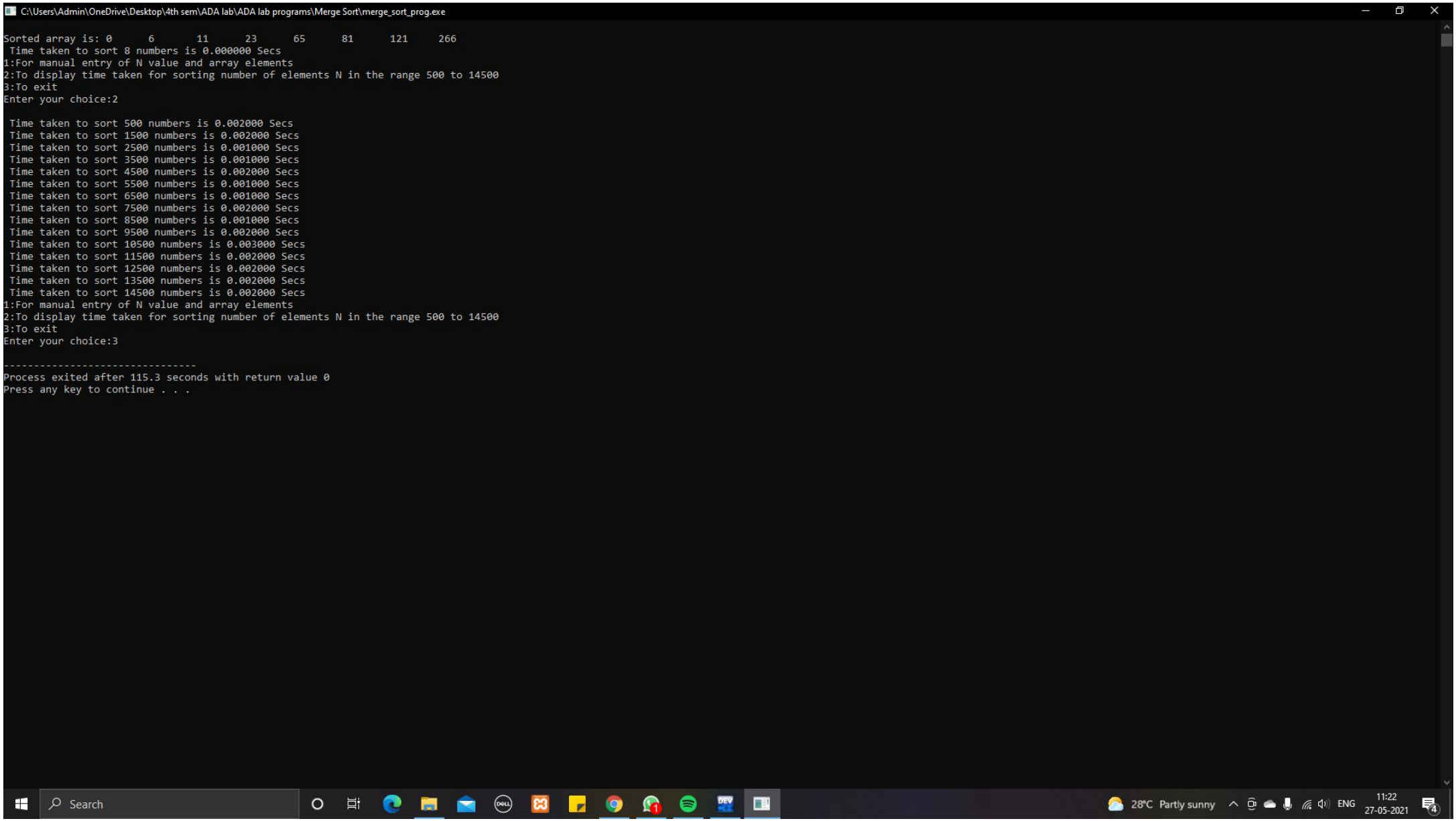

C:\Users\Admin\OneDrive\Desktop\4th sem\ADA lab\ADA lab programs\Merge Sort\merge_sort_prog.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
merge_sort_prog.cpp
#include<stdio.h>
#include<time.h>
#include<stdlib.h> /* To recognise exit function when compiling with gcc*/
void split(int[],int,int);
void combine(int[],int,int,int);
int main()
{
int a[15000],n, i,j,ch, temp;
clock_t start,end;
while(1)
{
printf("\n1:For manual entry of N value and array elements");
printf("\n2:To display time taken for sorting number of elements N in the range 500 to 14500");
printf("\n3:To exit");
printf("\nEnter your choice:");
scanf("%d", &ch);
switch(ch)
{
case 1:printf("\nEnter the number of elements: ");
scanf("%d",&n);
printf("\nEnter array elements: ");
for(i=0;i<n;i++)
{
scanf("%d",&a[i]);
}
start=clock();
split(a,0,n-1);
end=clock();
printf("\nSorted array is: ");
for(i=0;i<n;i++)
printf("%d\t",a[i]);
printf("\n Time taken to sort %d numbers is %f Secs",n, (((double)(end-start))/CLOCKS_PER_SEC));
break;
case 2:
n=500;
while(n<=14500) {
for(i=0;i<n;i++)
{
a[i]=n-i;
}
start=clock();
split(a,0,n-1);
//Dummy loop to create delay
for(j=0;j<500000;j++){ temp=38/600;}
end=clock();
printf("\n Time taken to sort %d numbers is %f Secs",n, (((double)(end-start))/CLOCKS_PER_SEC));
Compiler Resources Compile Log Debug Find Results
Line: 1 Col: 1 Sel: 0 Lines: 113 Length: 1778 Insert Done parsing in 0.063 seconds
Search
28°C Partly sunny
ENG
11:19
27-05-2021


C:\Users\Admin\OneDrive\Desktop\4th sem\ADA lab\ADA lab programs\Merge Sort\merge_sort_prog.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
merge_sort_prog.cpp
for(j=0;j<500000;j++){ temp=38/600;}
end=clock();
printf("\n Time taken to sort %d numbers is %f Secs",n, (((double)(end-start))/CLOCKS_PER_SEC));
n=n+1000;
}
break;
case 3: exit(0);
}
getchar();
}
return 0;
}
void split(int a[],int low,int high)
{
int mid;
if(low<high)
{
mid=(low+high)/2;
split(a,low,mid);
split(a,mid+1,high);
combine(a,low,mid,high);
}
}
void combine(int a[],int low,int mid,int high)
{
int c[15000],i,j,k;
i=k=low;
j=mid+1;
while(i<=mid&&j<=high)
{
if(a[i]<a[j])
{
c[k]=a[i];
++k;
++i;
}
else
{
c[k]=a[j];
++k;
++j;
}
}
if(i>mid)
{
while(j<=high)
Compiler Resources Compile Log Debug Find Results
Line: 1 Col: 1 Sel: 0 Lines: 113 Length: 1778 Insert Done parsing in 0.063 seconds
Search
28°C Partly sunny
ENG
11:20
27-05-2021


C:\Users\Admin\OneDrive\Desktop\4th sem\ADA lab\ADA lab programs\Merge Sort\merge_sort_prog.cpp - Dev-C++ 5.11
File Edit Search View Project Execute Tools AStyle Window Help
TDM-GCC 4.9.2 64-bit Release
(globals)
merge_sort_prog.cpp
combine(a,low,mid,high);
}
}
void combine(int a[],int low,int mid,int high)
{
int c[15000],i,j,k;
i=k=low;
j=mid+1;
while(i<=mid&&j<=high)
{
if(a[i]<a[j])
{
c[k]=a[i];
++k;
++i;
}
else
{
c[k]=a[j];
++k;
++j;
}
}
if(i>mid)
{
while(j<=high)
{
c[k]=a[j];
++k;
++j;
}
}
if(j>high)
{
while(i<=mid)
{
c[k]=a[i];
++k;
++i;
}
}
for(i=low;i<=high;i++)
{
a[i]=c[i];
}
}
Compiler Resources Compile Log Debug Find Results
Line: 1 Col: 1 Sel: 0 Lines: 113 Length: 1778 Insert Done parsing in 0.063 seconds
Search
28°C Partly sunny
ENG
11:20
27-05-2021


C:\Users\Admin\OneDrive\Desktop\4th sem\ADA lab\ADA lab programs\Merge Sort\merge_sort_prog.exe
Sorted array is: 0 6 11 23 65 81 121 266
Time taken to sort 8 numbers is 0.000000 Secs
1:For manual entry of N value and array elements
2:To display time taken for sorting number of elements N in the range 500 to 14500
3:To exit
Enter your choice:2
Time taken to sort 500 numbers is 0.002000 Secs
Time taken to sort 1500 numbers is 0.002000 Secs
Time taken to sort 2500 numbers is 0.001000 Secs
Time taken to sort 3500 numbers is 0.001000 Secs
Time taken to sort 4500 numbers is 0.002000 Secs
Time taken to sort 5500 numbers is 0.001000 Secs
Time taken to sort 6500 numbers is 0.001000 Secs
Time taken to sort 7500 numbers is 0.002000 Secs
Time taken to sort 8500 numbers is 0.001000 Secs
Time taken to sort 9500 numbers is 0.002000 Secs
Time taken to sort 10500 numbers is 0.003000 Secs
Time taken to sort 11500 numbers is 0.002000 Secs
Time taken to sort 12500 numbers is 0.002000 Secs
Time taken to sort 13500 numbers is 0.002000 Secs
Time taken to sort 14500 numbers is 0.002000 Secs
1:For manual entry of N value and array elements
2:To display time taken for sorting number of elements N in the range 500 to 14500
3:To exit
Enter your choice:3
Process exited after 115.3 seconds with return value 0
Press any key to continue . . .
Search
28°C Partly sunny
ENG
11:22
27-05-2021

N value	Time Taken(Secs)
500	0.002
1500	0.002
2500	0.001
3500	0.001
4500	0.002
5500	0.001
6500	0.001
7500	0.002
8500	0.001
9500	0.002
10500	0.003
11500	0.002
12500	0.002
13500	0.002
14500	0.002