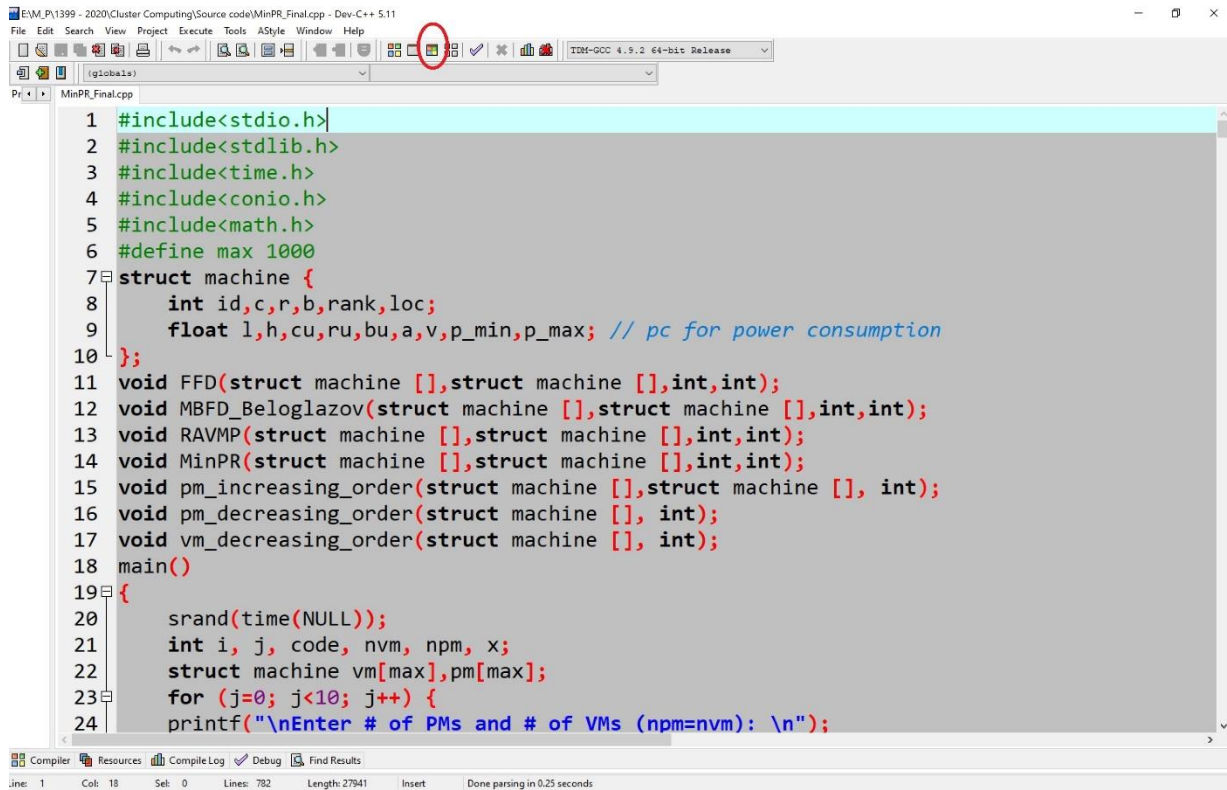


1- Download and Install Dev-C++ (A free, portable, fast and simple C/C++ IDE) from the following website:

<https://sourceforge.net/projects/orwelldevcpp>

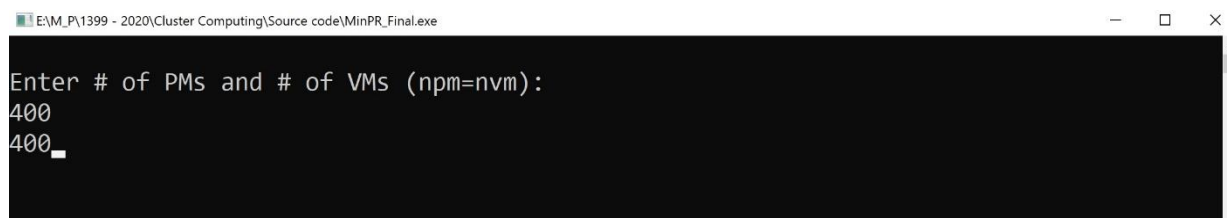
2- Open MinPR_Final

3- Run the source code using the specified icon or (press F11)



```
1 #include<stdio.h>
2 #include<stdlib.h>
3 #include<time.h>
4 #include<conio.h>
5 #include<math.h>
6 #define max 1000
7 struct machine {
8     int id,c,r,b,rank,loc;
9     float l,h,cu,ru,bu,a,v,p_min,p_max; // pc for power consumption
10 };
11 void FFD(struct machine [],struct machine [],int,int);
12 void MBFD_Beloglazov(struct machine [],struct machine [],int,int);
13 void RAVMP(struct machine [],struct machine [],int,int);
14 void MinPR(struct machine [],struct machine [],int,int);
15 void pm_increasing_order(struct machine [],struct machine [], int);
16 void pm_decreasing_order(struct machine [], int);
17 void vm_decreasing_order(struct machine [], int);
18 main()
19 {
20     srand(time(NULL));
21     int i, j, code, nvm, npm, x;
22     struct machine vm[max],pm[max];
23     for (j=0; j<10; j++) {
24         printf("\nEnter # of PMs and # of VMs (npm=nvm): \n");
```

4- Now enter the number of PMs and VMs
(Ex: 400 400)



```
Enter # of PMs and # of VMs (npm=nvm):
400
400
```

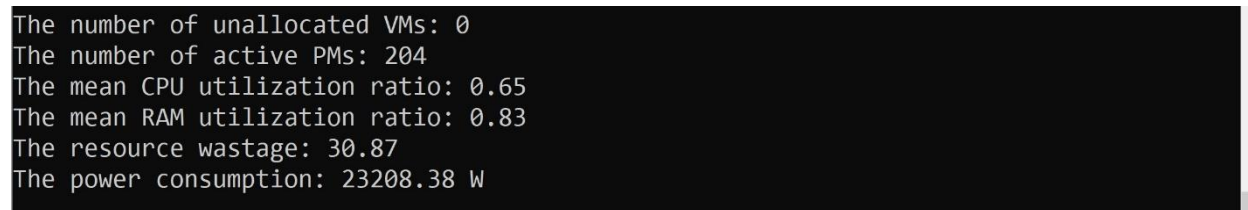
5- From menu, select the algorithm you want to execute.



```
E:\M_P\1399 - 2020\Cluster Computing\Source code\MinPR_Final.exe
1-FFD
2-MBFD_Beloglazov
3-RAVMP
4-MinPR
5-Start New Iteration

Enter Your Choice: 
```

6- You can see the results as follows:



```
The number of unallocated VMs: 0
The number of active PMs: 204
The mean CPU utilization ratio: 0.65
The mean RAM utilization ratio: 0.83
The resource wastage: 30.87
The power consumption: 23208.38 W
```