

```
1 #include <stdio.h>
2 #include <stdlib.h>
3 #include <unistd.h>
4 #include <sys/mman.h>
5 #include <sys/shm.h>
6 #include <sys/stat.h>
7 #include <fcntl.h>
8 #include <sys/wait.h>
9 #include <string.h>
10 #include <time.h>
11 //////////////////////////////////////////////////gcc -o m multiprocess.1.c -lrt
12 float grade1A[] = {2.5,4,4,4,2.5,2.5}; //15,6
13 float weight1A[] = {3,3,2,1,3,3};
14 float sum1A=0;
15
16 float grade1B[] = {4,3,2.5,3.5,4,4,3.5,4}; //20,8
17 float weight1B[] = {3,3,3,1,1,3,3,3};
18 float sum1B=0;
19
20 float grade2A[] = {4,2.5,3,4,3.5,4,4,3}; //20,8
21 float weight2A[] = {3,3,3,3,1,3,1,3};
22 float sum2A=0;
23
24 float grade2B[] = {4,4,3.5,4,3.5,3.5,2,2.5}; //21,9
25 float weight2B[] = {3,1,3,1,1,3,3,3};
26 float sum2B=0;
27
28 float grade3A[] = {4,4,4,4,4,4,4,4}; //21,9
29 float weight3A[] = {3,1,3,3,1,3,3,1};
30 float sum3A=0;
31 float gradeAll=0;
32
33 void delay(int num){
34     int milli_sec = 1000*num;
35     clock_t start_time = clock();
36     while(clock() < start_time + milli_sec);
37 }
38 void DoWorkInChild(){
39     int i,j;
40     for(i=0; i<6; i++){ //15,6
41         sum1A+=grade1A[i]*weight1A[i];
42     }
43     sum1A = sum1A/15;
44
45     for(i=0; i<8; i++){ //20,8
46         sum1B+=grade1B[i]*weight1B[i];
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47     }
48     sum1B = sum1B/20;
49
50     for(i=0; i<8; i++){ //20,8
51         sum2A+=grade2A[i]*weight2A[i];
52     }
53     sum2A = sum2A/20;
54
55     for(i=0; i<9; i++){ //21,9
56         sum2B+=grade2B[i]*weight2B[i];
57     }
58     sum2B = sum2B/21;
59
60     for(i=0; i<9; i++){ //21,9
61         sum3A+=grade3A[i]*weight3A[i];
62     }
63     sum3A = sum3A/21;
64
65     delay(2000);
66 }
67 void DoWorkInParent(){
68     int i;
69
70     printf("Grade AVG: %.2f \n",gradeAll);
71     delay(2000);
72 }
73 void main (){
74     pid_t pids[10];
75     int i;
76     int n = 1;
77     for (i = 0; i < n; ++i) {
78         pids[i] = fork();
79         if (pids[i] < 0) {
80             perror("fork");
81             abort();
82         } else {
83             if (pids[i] == 0) {
84                 DoWorkInChild();
85                 delay(2000);
86                 exit(0);
87             }
88         }
89     }
90     DoWorkInParent();
91     delay(2000);

```