

Name : Radhyanas Oetomo  
NIM: 22/492226/PA/21092  
Class : Programming Lab (CS)  
Assignment 7 Sub-Program

1. Create a program using the calculate\_gpa function to calculate the Grade Point Average. The function needs three input parameters, namely:

score an array that contains several course scores

sks an array that contains the number of semester credits for each course

n amount of data in the array

The Grade Point Average is calculated using the following formula

In this case, is obtained with the following rules

'A' = 4

'B' = 3

'C' = 2

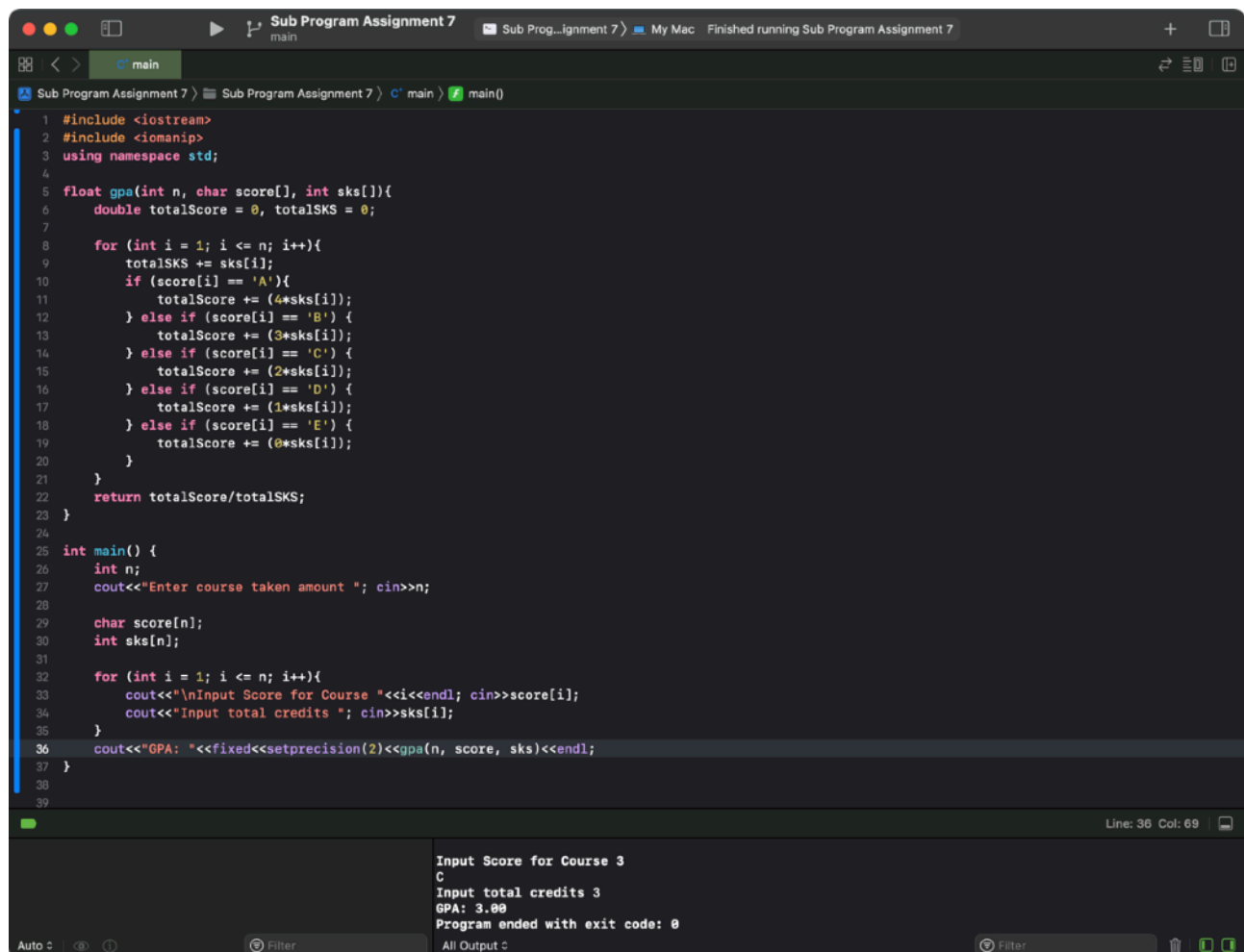
'D' = 1

'E' = 0

Example:

score ['A', 'B', 'C']

sks [3,3,3]



```
1 #include <iostream>
2 #include <iomanip>
3 using namespace std;
4
5 float gpa(int n, char score[], int sks[]){
6     double totalScore = 0, totalSKS = 0;
7
8     for (int i = 1; i <= n; i++){
9         totalSKS += sks[i];
10        if (score[i] == 'A'){
11            totalScore += (4*sks[i]);
12        } else if (score[i] == 'B') {
13            totalScore += (3*sks[i]);
14        } else if (score[i] == 'C') {
15            totalScore += (2*sks[i]);
16        } else if (score[i] == 'D') {
17            totalScore += (1*sks[i]);
18        } else if (score[i] == 'E') {
19            totalScore += (0*sks[i]);
20        }
21    }
22    return totalScore/totalSKS;
23 }
24
25 int main() {
26     int n;
27     cout<<"Enter course taken amount "; cin>>n;
28
29     char score[n];
30     int sks[n];
31
32     for (int i = 1; i <= n; i++){
33         cout<<"\nInput Score for Course "<<i<<endl; cin>>score[i];
34         cout<<"Input total credits "; cin>>sks[i];
35     }
36     cout<<"GPA: "<<fixed<<setprecision(2)<<gpa(n, score, sks)<<endl;
37 }
38
39
```

Line: 36 Col: 69

Input Score for Course 3  
C  
Input total credits 3  
GPA: 3.00  
Program ended with exit code: 0

```
Enter course taken amount
3

Input Score for Course 1
A
Input total credits 3

Input Score for Course 2
B
Input total credits 3

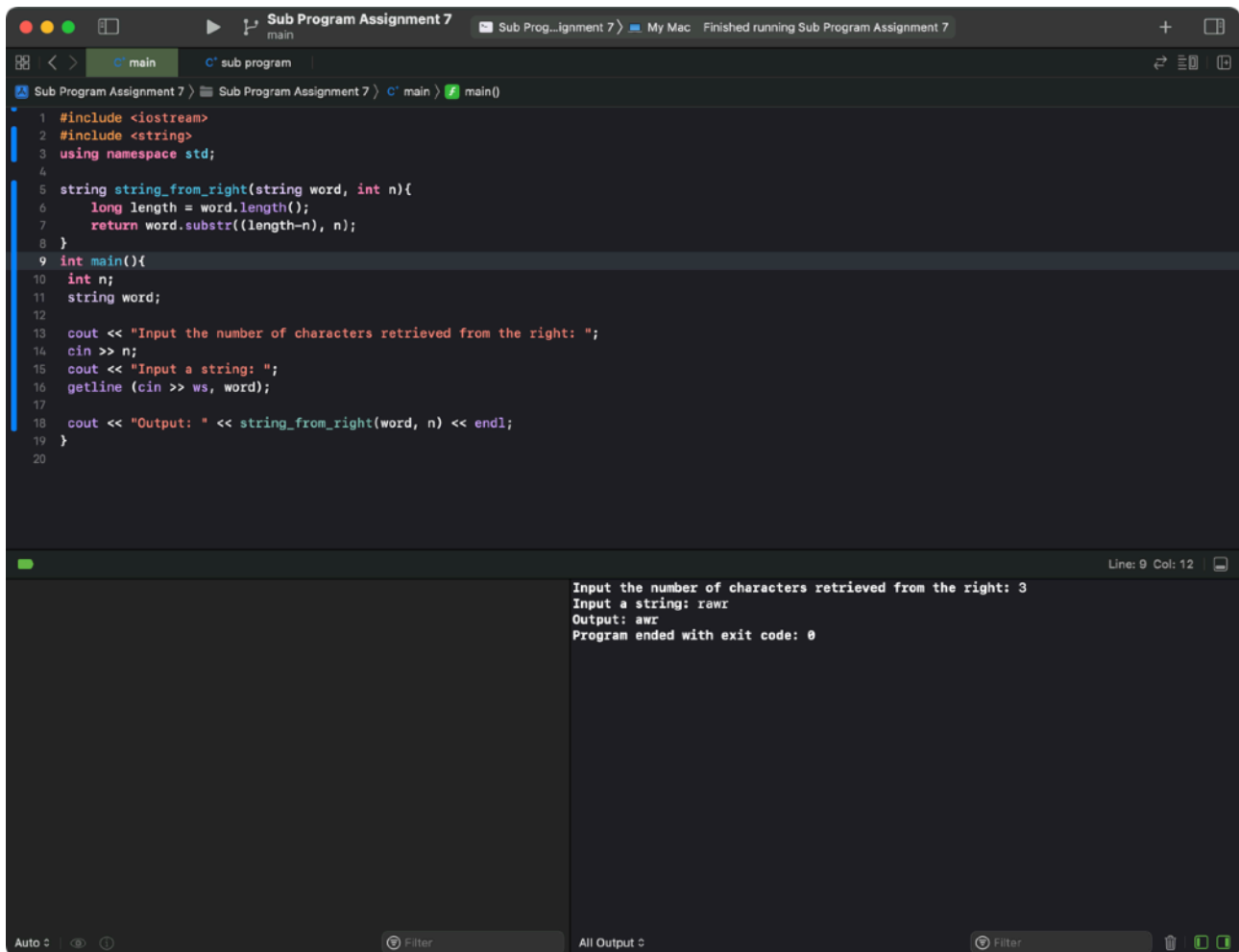
Input Score for Course 3
C
Input total credits 3
GPA: 3.00
Program ended with exit code: 0
```

2. Create a program using the `string_from_right` function to retrieve `n` characters of a string entered by the user, starting from the right. This function needs two input parameters, namely the string `st` and `int n` which represents the number of `n` characters to be retrieved.

Example:

`string_from_right("Yogyakarta ", 5) "karta"`

`string_from_right("Yogyakarta ", 2) "ta"`



```
Sub Program Assignment 7
main
Sub Program Assignment 7 > My Mac Finished running Sub Program Assignment 7

C++ main C++ sub program
Sub Program Assignment 7 > Sub Program Assignment 7 > C++ main > main()

1 #include <iostream>
2 #include <string>
3 using namespace std;
4
5 string string_from_right(string word, int n){
6     long length = word.length();
7     return word.substr((length-n), n);
8 }
9
10 int main(){
11     int n;
12     string word;
13     cout << "Input the number of characters retrieved from the right: ";
14     cin >> n;
15     cout << "Input a string: ";
16     getline (cin >> ws, word);
17
18     cout << "Output: " << string_from_right(word, n) << endl;
19 }
20

Line: 9 Col: 12

Input the number of characters retrieved from the right: 3
Input a string: rawr
Output: awr
Program ended with exit code: 0

Auto Filter All Output Filter
```