

Program 1

```
#include <iostream>
#include <iomanip>
using namespace std;

//declaration of variables
int n, i;
float gpa;
float total_sks = 0;
float total_score = 0;

//Set score for each grade letter
char A = 4.00;
char B = 3.00;
char C = 2.00;
char D = 1.00;
char E = 0.00;

//function declaration with 3 parameters
void calculate_gpa(char score_arr[], int sks_arr[], int n);

int main(){

    //user determine the size of an array
    cout << "Input the amount of data (GPA) you want to compute : ";
    cin >> n;
    cout << endl;

    //array declaration
    char score_arr[n];
    int sks_arr[n];

    //function recall
    calculate_gpa(score_arr, sks_arr, n);

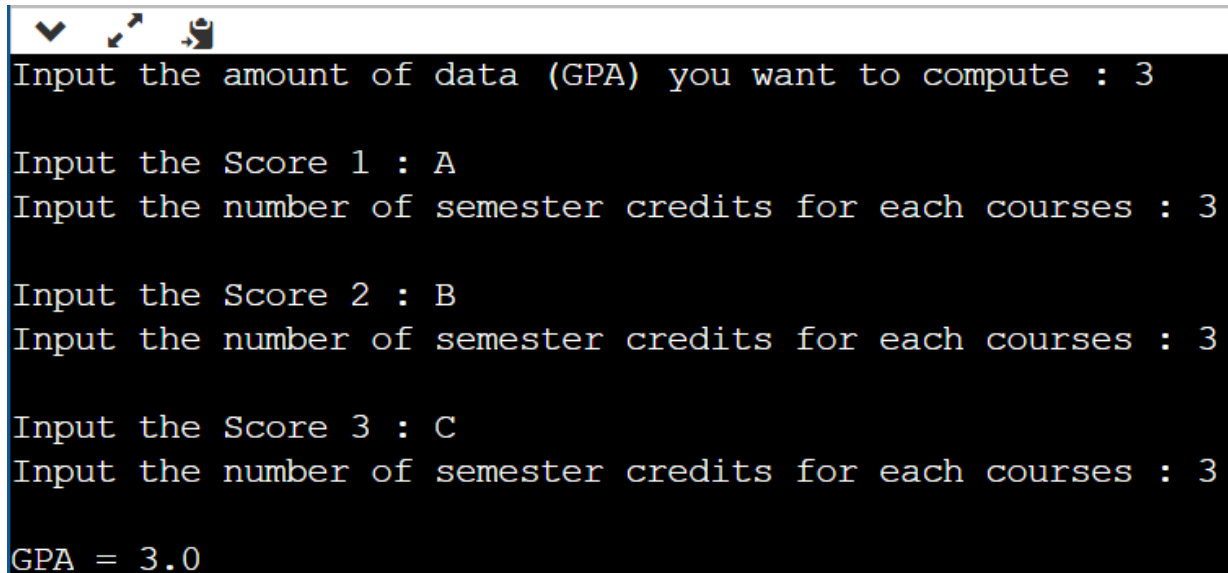
    //output the final calculation in decimal
    cout << "GPA = ";
    cout << showpoint << setprecision(2) << gpa << endl;

    return 0;
}
```

```
//defining the function
void calculate_gpa(char score_arr[], int sks_arr[], int n){

    //program to receive input
    for (i = 1; i <= n; i++){
        cout << "Input the Score " << i << " : ";
        cin >> score_arr[i];
        cout << "Input the number of semester credits for each courses : ";
        cin >> sks_arr[i];
        cout << endl;
    }
    //program to compute the GPA
    for (i = 1; i <= n; i++){
        total_score += (score_arr[i] * sks_arr[i]);
        total_sks += score_arr[i];
    }
    gpa = total_score / total_sks;
}
```

Output

A terminal window with a black background and green text. At the top left, there are three small icons: a checkmark, a cursor, and a document. The text in the terminal shows the program's execution flow, including prompts for the number of data points, individual scores, and semester credits, followed by the final GPA calculation.

```
Input the amount of data (GPA) you want to compute : 3

Input the Score 1 : A
Input the number of semester credits for each courses : 3

Input the Score 2 : B
Input the number of semester credits for each courses : 3

Input the Score 3 : C
Input the number of semester credits for each courses : 3

GPA = 3.0
```

```

1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4
5  //declaration of variables
6  int n, i;
7  float gpa;
8  float total_sks = 0;
9  float total_score = 0;
10
11 //Set score for each grade letter
12 char A = 4.00;
13 char B = 3.00;
14 char C = 2.00;
15 char D = 1.00;
16 char E = 0.00;
17
18 //function declaration with 3 parameters
19 void calculate_gpa(char score_arr[], int sks_arr[], int n);
20
21
22 int main(){
23
24     //user determine the size of an array
25     cout << "Input the amount of data (GPA) you want to compute : ";
26     cin >> n;
27     cout << endl;
28
29     //array declaration
30     char score_arr[n];
31     int sks_arr[n];
32
33     //function recall
34     calculate_gpa(score_arr, sks_arr, n);
35
36     //output the final calculation in decimal
37     cout << "GPA = ";
38     cout << showpoint << setprecision(2) << gpa << endl;
39
40
41     return 0;
42 }
43
44 //defining the function
45 void calculate_gpa(char score_arr[], int sks_arr[], int n){
46
47
48     //program to receive input
49     for (i = 1; i <= n; i++){
50         cout << "Input the Score " << i << " : ";
51         cin >> score_arr[i];
52         cout << "Input the number of semester credits for each courses : ";
53         cin >> sks_arr[i];
54         cout << endl;
55     }
56
57     //program to compute the GPA
58     for (i = 1; i <= n; i++){
59         total_score += (score_arr[i] * sks_arr[i]);
60         total_sks += score_arr[i];
61     }
62     gpa = total_score / total_sks;
63 }

```

Program 2

```
#include <iostream>
using namespace std;

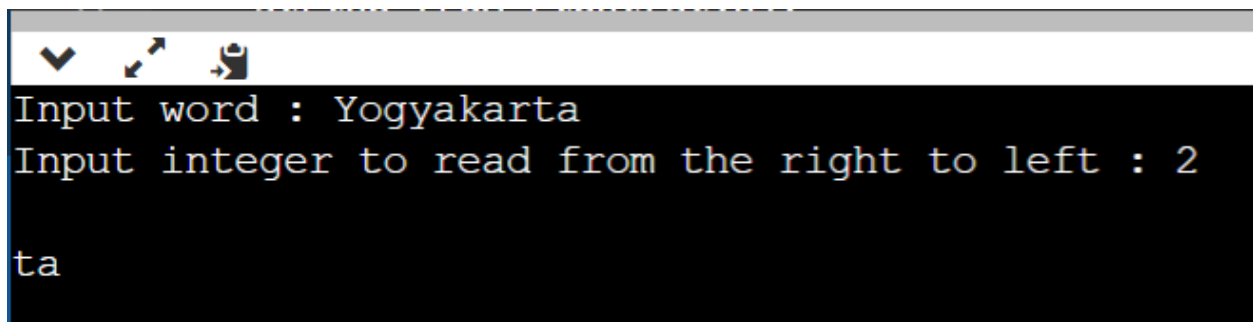
//declaration of function
void string_from_right(string st, int n);
//declaration of variables
int n;
string st;

int main(){
    cout << "Input word : ";
    cin >> st;
    cout << "Input integer to read from the right to left : ";
    cin >> n;
    cout << endl;
    //recalling the function
    string_from_right(st,n);

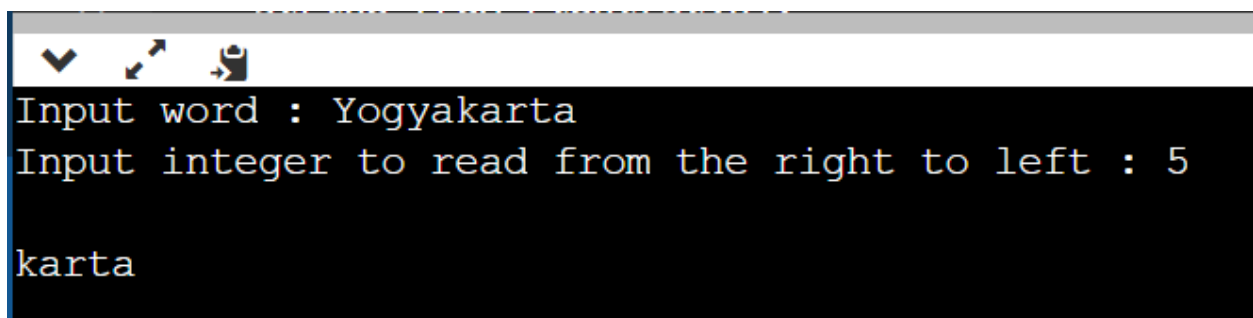
    return 0;
}

//defining the function
void string_from_right(string st, int n){
    for (int i = st.length() - n; i < st.length(); i++){
        cout << st[i];
    }
}
```

Output



```
Input word : Yogyakarta
Input integer to read from the right to left : 2
ta
```



```
Input word : Yogyakarta
Input integer to read from the right to left : 5
karta
```

```
1  #include <iostream>
2  using namespace std;
3
4  //declaration of function
5  void string_from_right(string st, int n);
6  //declaration of variables
7  int n;
8  string st;
9
10 int main(){
11     cout << "Input word : ";
12     cin >> st;
13     cout << "Input integer to read from the right to left : ";
14     cin >> n;
15     cout << endl;
16     //recalling the function
17     string_from_right(st,n);
18
19     return 0;
20 }
21
22 //defining the function
23 void string_from_right(string st, int n){
24     for (int i = st.length() - n; i < st.length(); i++){
25         cout << st[i];
26     }
27 }
```