

# Typedef struct student info

Seakmeng Hor  
CS126 Section 2

```
//Struct (build student input and display student information)
#include <iostream>
#include <iomanip>
#include <string>
using namespace std;

#define maxx 3
string major[3];
typedef struct student
{
    string fname;
    string lname;
    string name;
    string id;
    string birthmonthstring[12] = {"Jan", "Feb", "Mar", "Apr",
"May", "Jun", "Jul", "Aug", "Sep", "Oct", "Nov", "Dec"};
    int studentgrade;
    int birthday;
    int birthmonth;
    int birthyear;
    string day;
    string month;
    string year;
    string cakeday;
    string courses[3] = {"CS", "MIS", "BUS"};
    string monthstring;
} info;

//Credit to
https://thecleverprogrammer.com/2021/08/12/age-calculator-using-c/
```

```
//convert the birthday specific month/day/year to age;
int convert_age(int month, int day, int year)
{
    struct tm date = {0};
    date.tm_year = year-1900;
    date.tm_mon = month-1;
    date.tm_mday = day;
    time_t normal = mktime(&date);
    time_t current;
    time(&current);
    int age = (difftime(current, normal) + 86400L/2) / 86400L;
    return age/365;
}

/*int convert_age(int month, int day, int year)
{
    int age = 0;
    int cage = 2022 - year;
    int cmonth = 12 - month;
    if (month < 7)
    {
        age + 1;
    }
    int cday = 30 - day;
    int agebyday = (cage * 365) + (12*30) + cday;
    age = agebyday / 365;
    return age - 2;
} */

//display info
int main()
{
    int n = 0;
    int monthinput;
    info studentinfo[maxx];

    //student data input
```

```

    for (int i = 0; i < maxx; i++)
    {
        cout << "Enter first name: ";
        getline (cin, studentinfo[i].fname);
        cout << "Enter last name: ";
        getline (cin, studentinfo[i].lname);
        studentinfo[i].name = studentinfo[i].fname + " " +
studentinfo[i].lname;
        cout << "Enter birthmonth: ";
        cin >> monthinput;
        studentinfo[i].monthstring =
studentinfo[i].birthmonthstring[monthinput - 1];
        studentinfo[i].birthmonth = monthinput;
        studentinfo[i].month = to_string(studentinfo[i].birthmonth);
        cout << "Enter birthday: ";
        cin >> studentinfo[i].birthday;
        studentinfo[i].day = to_string(studentinfo[i].birthday);
        cout << "Enter birthyear: ";
        cin >> studentinfo[i].birthyear;
        studentinfo[i].year = to_string(studentinfo[i].birthyear);
        studentinfo[i].cakeday = studentinfo[i].monthstring + "/" +
studentinfo[i].day + "/" + studentinfo[i].year;
        cout << "Enter student id: ";
        cin >> studentinfo[i].id;
        cout << "Enter Major [1]CS [2]MIS [3]BUS" << endl;
        cin >> n;
        major[i]= studentinfo[i].courses[n - 1];
        cin.ignore();
    }
    /*

```

*setw() is used to change the width of the output field.*

*For example, if we are assigning the width as 4 and printing the word 'one',*

*which is a three-letter word, the output will add one blank space to the result to make it equal to the width.*

`setfill()` takes one character as the argument and uses it as the fill character.

Output: `***one`

By default, the printing word is added to the right side but we can also use `std::left` to print it on left.

Output: `one**`

Credit: <https://www.codevscolor.com/c-plus-plus-print-data-table>

```
*/
cout << setfill('-') << setw(74) << "" << endl;
cout << setfill(' ');
cout << left << setw(5) << "|N.O" << left << setw(20) << " |NAME" <<
left << setw(15) << " |Birthday" << left << setw(7) << " |AGE" << left
<< setw(15) << " |STUDENT ID" << left << setw(5) << " |MAJOR|" <<
endl;

cout << setfill('-') << setw(74) << "" << endl;
cout << setfill(' ');
//student data output
for (int i = 0; i < maxx; i++)
{
    cout << "|" << left << setw(5) << i << "|"
        << left << setw(20) << studentinfo[i].name << "|"
        << left << setw(15) << studentinfo[i].cakeday << "|"
        << left << setw(7) << convert_age(studentinfo[i].birthmonth,
studentinfo[i].birthday, studentinfo[i].birthyear) << "|"
        << left << setw(15) << studentinfo[i].id << "|"
        << left << setw(5) << major[i] << "|" << endl;
    cout << setfill('-') << setw(74) << "" << endl;
    cout << setfill(' ');
}

return 0;
}
```

```
PS D:\Meng\Paragon\Year 1 Semester 2\CS 126 Excercise> cd "d:\Meng\Paragon\Ye
Enter first name: Seakmeng
Enter last name: Hor
Enter birthmonth: 7
Enter birthday: 22
Enter birthyear: 2001
Enter student id: 31030
Enter Major [1]CS [2]MIS [3]BUS
1
Enter first name: Layheng
Enter last name: Hok
Enter birthmonth: 9
Enter birthday: 26
Enter birthyear: 2002
Enter student id: 21330
Enter Major [1]CS [2]MIS [3]BUS
2
Enter first name: Bovisal
Enter last name: Zhou
Enter birthmonth: 4
Enter birthday: 22
Enter birthyear: 2005
Enter student id: 31314
Enter Major [1]CS [2]MIS [3]BUS
3
-----
|N.O |NAME                |Birthday      |AGE  |STUDENT ID  |MAJOR|
-----
|0   |Seakmeng Hor        |Jul/22/2001   |20   |31030       |CS   |
-----
|1   |Layheng Hok         |Sep/26/2002   |19   |21330       |MIS  |
-----
|2   |Bovisal Zhou        |Apr/22/2005   |17   |31314       |BUS  |
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PS D:\Meng\Paragon\Year 1 Semester 2\CS 126 Excercise> █
```