```cpp
// LAB 7 WORKSHEET 6.5 - OPTION 1
// LEONG ZI QI

#include <iostream>
using namespace std;

void swapNum(int&, int&);

int main(){

    int first, second;

    cout << "Enter the first number\n";
    cout << "Then hit enter\n";
    cin >> first;
    cout << "Enter the second number\n";
    cout << "Then hit enter\n";
    cin >> second;

    cout << "\nYou input the numbers as " << first << " and " << second << ".\n";
    swapNum(first, second);

    cout << "\nAfter swapping, the first number has the value of " << first << " which was the value of the second number\n";
    cout << "The second number has the value of " << second << " which was the value of the first number\n";

    return 0;
}

void swapNum(int& first, int& second)
{
    int temp;
    temp = first;
    first = second;
    second = temp;
}
```

Output:

```
C:\Users\User\Downloads\Lab Files\Lab 6.5 Option 1.exe
Enter the first number
Then hit enter
80
Enter the second number
Then hit enter
70

You input the numbers as 80 and 70.

After swapping, the first number has the value of 70 which was the value of the second number
The second number has the value of 80 which was the value of the first number

--------------------------------
Process exited after 7.163 seconds with return value 0
Press any key to continue . . .
```

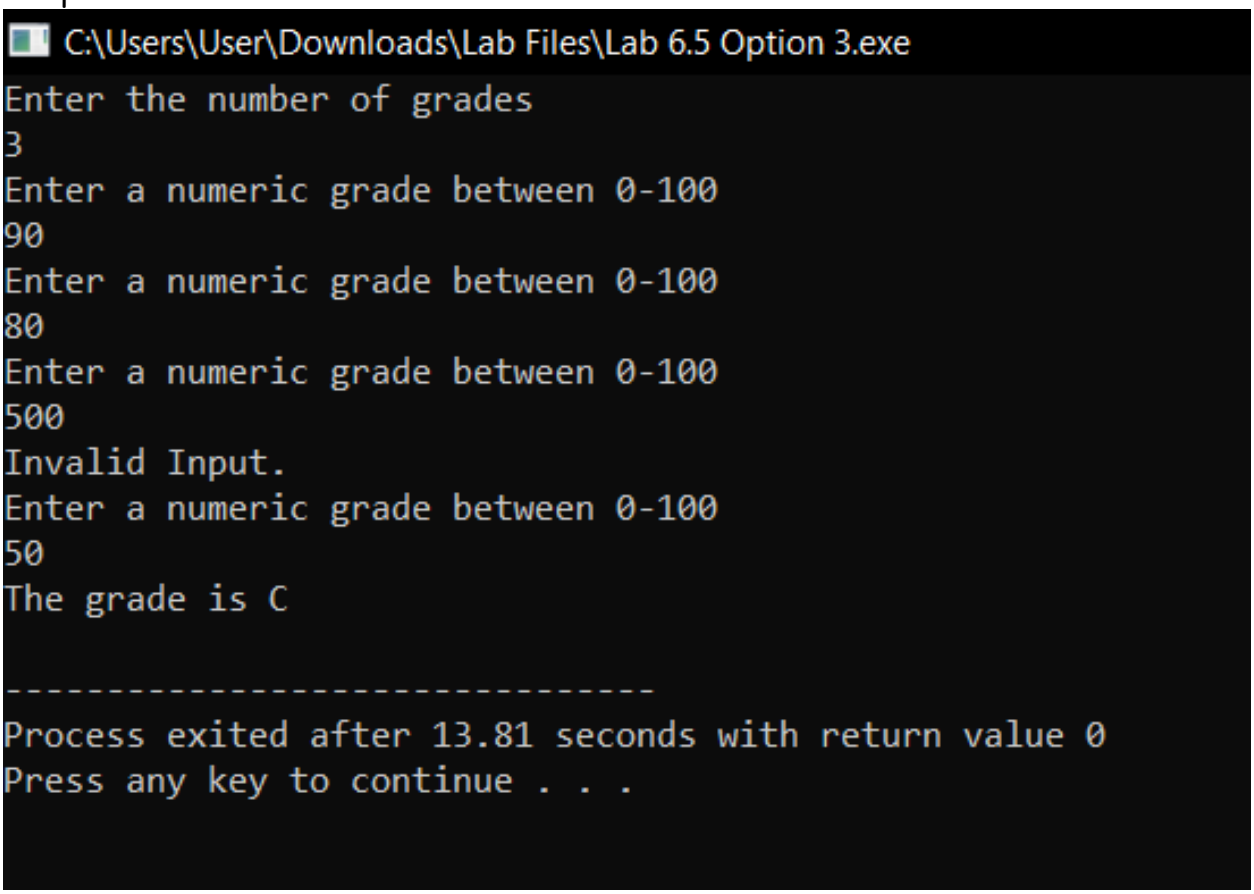
```cpp
// LAB 7 WORKSHEET 6.5 - OPTION 2
// LEONG ZI QI

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

double calcSpeed(double, double);

int main(){

    double miles, hours, speed;
    cout << setprecision(2) << fixed;

    cout << "Please input the miles traveled\n";
    cin >> miles;
    cout << "Please input the hours traveled\n";
    cin >> hours;

    speed = calcSpeed(miles, hours);

    cout << "Your speed is " << speed << " miles per hour\n";

    return 0;

}

double calcSpeed(double miles, double hours)
{
    double speed = miles / hours;
    return speed;
}
```

Output:

```
C:\Users\User\Downloads\Lab Files\Lab 6.5 Option 2.exe
Please input the miles traveled
475
Please input the hours traveled
8
Your speed is 59.38 miles per hour

--------------------------------
Process exited after 13.33 seconds with return value 0
Press any key to continue . . .
```

```cpp
// LAB 7 WORKSHEET 6.5 - OPTION 3
// LEONG ZI QI

#include <iostream>
using namespace std;

int calcAverageGrade(int, int, int);

int main()
{
    int sumOfScore, totalStudent, averageMark;
    char grade;

    cout << "Enter the number of grades\n";
    cin >> totalStudent;
    averageMark = calcAverageGrade(0, totalStudent, averageMark);

    if(averageMark >= 90)
        grade = 'A';
    else if(averageMark >= 80)
        grade = 'B';
    else if(averageMark >= 70)
        grade = 'C';
    else if(averageMark >= 60)
        grade = 'D';
    else
        grade = 'F';

    cout << "The grade is " << grade << endl;

    return 0;

}

int calcAverageGrade(int sumOfScore, int totalStudent, int averageMark)
{
    int score;

    for(int i = 0; i < totalStudent; i++){
        do{
            cout << "Enter a numeric grade between 0-100\n";
            cin >> score;

            if(score < 0 || score > 100)
                cout << "Invalid Input.\n";
        }
        while(score < 0 || score > 100);

        sumOfScore += score;
    }

    averageMark = sumOfScore / totalStudent;

    return averageMark;
}
```

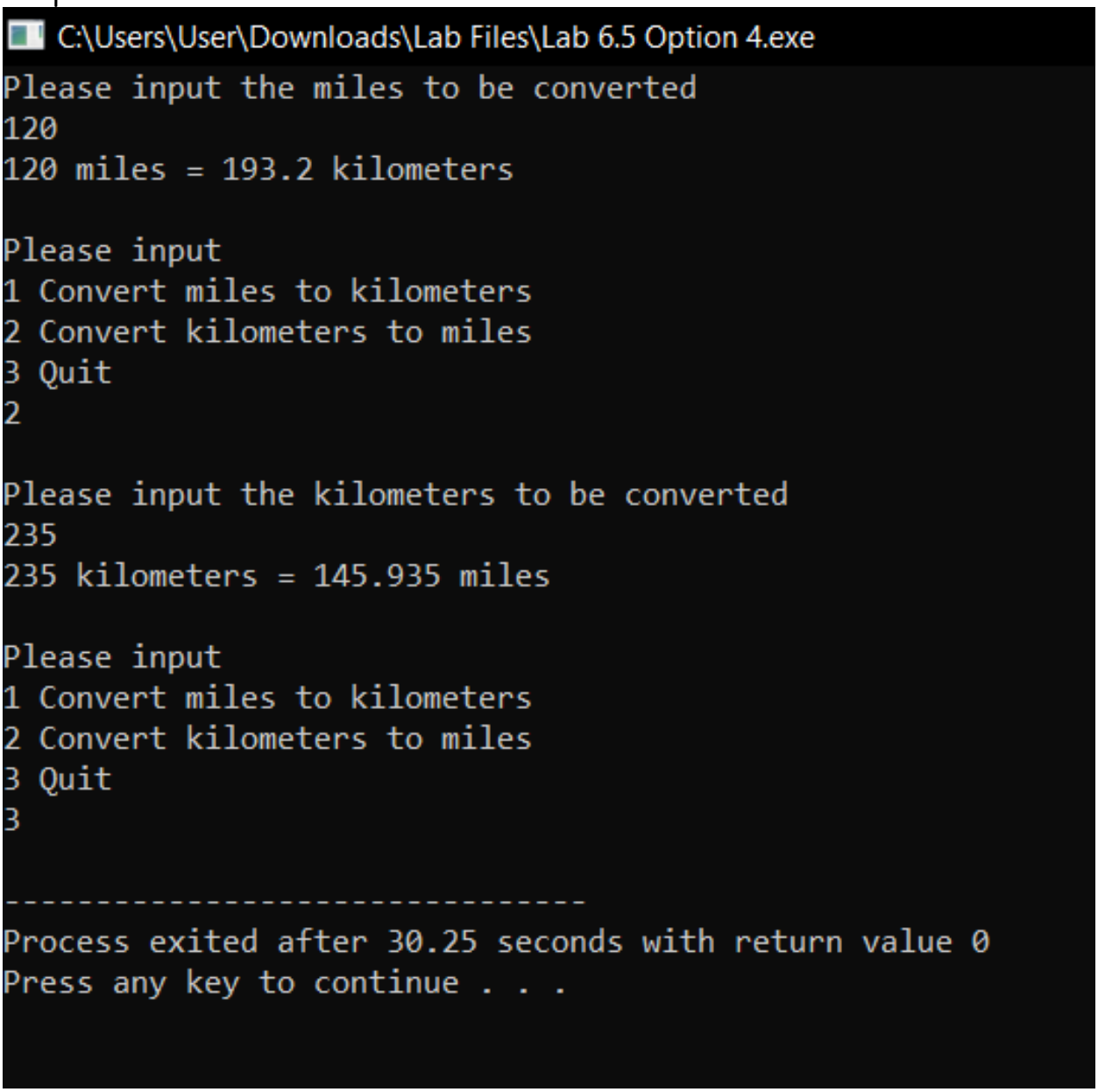
Output:


C:\Users\User\Downloads\Lab Files\Lab 6.5 Option 3.exe
Enter the number of grades
3
Enter a numeric grade between 0-100
90
Enter a numeric grade between 0-100
80
Enter a numeric grade between 0-100
500
Invalid Input.
Enter a numeric grade between 0-100
50
The grade is C

Process exited after 13.81 seconds with return value 0
Press any key to continue . . .

```cpp
// LAB 7 WORKSHEET 6.5 - OPTION 4
// LEONG ZI QI

#include <iostream>
using namespace std;

int converter(int, double&, double&);

int main(){

    int select;
    double convert, convert2;

    cout << "Please input\n";
    cout << "1 Convert miles to kilometers\n";
    cout << "2 Convert kilometers to miles\n";
    cout << "3 Quit\n";
    cin >> select;

    if(select == 1 || select == 2)
        converter(select, convert, convert2);

    switch(select){
        case  1:    cout << convert << " miles = " << convert2 << " kilometers\n\n";
                    break;
        case  2:    cout << convert << " kilometers = " << convert2 << " miles\n\n";
                    break;
        case  3:    return 0;
                    break;
    }

    main();
}

int converter(int select, double& convert, double& convert2)
{
    int selection[2] = {1, 2};
    string unit[2] = {"miles", "kilometers"};

    for(int i = 0; i < 2; i++)
        if(select == selection[i]){
            do{
                cout << "\nPlease input the " << unit[i] << " to be converted\n";
                cin >> convert;
            }
            while(convert < 0);

            if(select == 1){
                convert2 = convert * 1.61;
            }
            else if(select == 2){
                convert2 = convert * 0.621;
            }
        }
}
```

Output:


C:\Users\User\Downloads\Lab Files\Lab 6.5 Option 4.exe
Please input the miles to be converted
120
120 miles = 193.2 kilometers
Please input
1 Convert miles to kilometers
2 Convert kilometers to miles
3 Quit
2
Please input the kilometers to be converted
235
235 kilometers = 145.935 miles
Please input
1 Convert miles to kilometers
2 Convert kilometers to miles
3 Quit
3

Process exited after 30.25 seconds with return value 0
Press any key to continue . . .