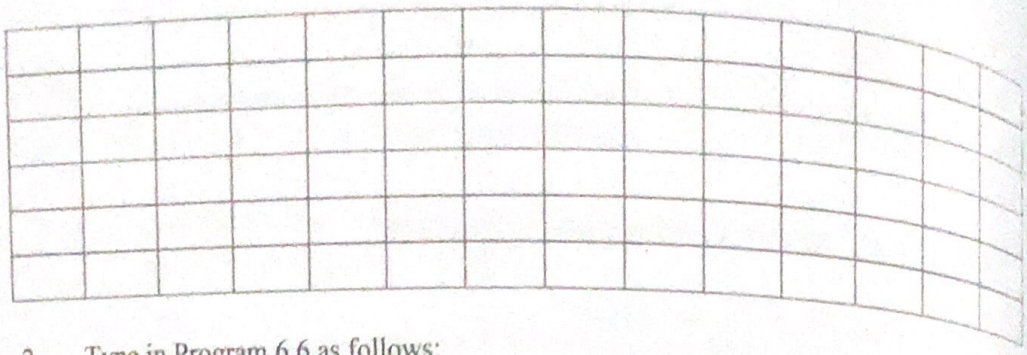
EXERCISE 2: OUTPUT AND ERRORS TRACING

1. Type the Program 6.5 as follows:

```
1   //Program 6.5
2   #include <iostream>
3   #include <iomanip>
4   using namespace std;
5
6   int main()
7   {
8         int n;
9         float f;
10        double d;
11        char s[100];
12
13        cout<<"Input one integer: ";
14        cin >> n;
15
16        cout << n << endl;
17        cout << setw(6) << n << endl;
18        cout << setw(-6) << n << endl;
19
20        cout<<"Input one string: ";
21        cin >> s;
22        cout << s << endl;
23        cout << setw(20) << s << endl;
24        cout<<left<< setw(20)<<s<< endl;
25
26        cout<<"Input one floating number: ";
27        cin >> f;
28        cout << fixed << f << endl;
29
30        cout<<"Input one double number: ";
31        cin >> d;
32        cout << d << endl;
33        cout << setprecision(2) << d << endl;
34        cout <<setw(10)<<setprecision(2) << d << endl;
35
36        return 0;
37  }
```

Compile and run Program 6.5. Show the output by filling in the boxes. Each box represents a character or a space.



2. Type in Program 6.6 as follows:

```
1   //Program 6.6
2   #include <iostream>
3   #include <fstream>
4   using namespace std;
5
6   int main()
7   {
8       float val1, val2, val3, val4;
9       ifstream inData;
10      ofstream outData;
11
12      inData.open("DataIn.txt");
13      outData.open("DataOut.txt");
14
15      inData  >> val1 >> val2 >> val3 >> val4;
16      outData  << val4  << endl;
17      outData  << val3  << endl;
18      outData  << val2  << endl;
19      outData  << val1  << endl;
20
21      return 0;
22  }
```

a. Create the input data file `DataIn.txt`. The file consists of the following data:

```
5.5
6.6
7.7
8.8
```

b. Compile and run Program 6.6. Examine the results carefully. Understand what each line of the statement in the program does. In your own words, explain what the program does.

c. Modify the program so it also outputs the average of the four input numbers.

d. Modify the program by changing file data types in line 9 and 10 to `fstream` data type.

3. Given the following program.

```
1  // Program 6.7
2  #include <iostream>
3  #include <iomanip>
4  using namespace std;
5
6  int main(){
7     double amount;
8     char s[100];
9
10    cout<<"D:";
11    cin >> amount;
12    cout << setprecision(2);
13    cout << amount << endl;
14    cout << fixed;
15    cout << amount << endl;
16
17    cout<<"S:";
18    cin >> s;
19    cout << setw(6) << s << "END"<<endl;
20    cout<< left<< setw(6)<<s<< "END"<<endl;
21    return 0;
22 }
```

a. Given the following input, show the output of the above program in the following boxes. Each box represents a character or a space.

Input set:

digits	s
4.5	saya

b. Given the following input, show the output of the above program in the following boxes. Each box represents a character or space.

Input set:

d	s
77.7777	sayaLagi

4. Given the Program 6.8 that writes data to text files, as well as to the screen.

```
1   //Program 6.8
2   ofstream fdata1, fdata2;
3   fdata1.open("hasil.txt");
4   fdata2.open("lapor.txt");
5   fdata1 << "$" << 789 << "," << 190 << endl;
6   cout << "Terima kasih" << endl;
7   fdata2 << "Selamat datang ";
8   fdata1 << "***" << -3.4 << "CR" << endl;
9   fdata2 << "Ke FSKSM, UTM" << endl;
10  cout << "Jumpa lagi" << endl;
11  fdata1.close();
12  fdata2.close();
```

a. Show the output sent to the file named `hasil.txt`.

b. Show the output sent to the file named `lapor.txt`.

c. Show the output displayed on the screen.

EXERCISE 3: PROBLEM SOLVING

1. Write a C++ program that asks the user to enter an item name of type string, an item code of type character, the price of the item per unit of type floating point number, and the quantity of type integer. Display the output seperti berikut.

```
Sample input:
Enter an item name : HDD Sata
Enter the item code: c
Enter the price per unit: 225
Enter the quantity: 10

Sample output:
You entered the item name : HDD Sata
You entered the item code : c
You entered the item price: RM225.00
You entered the item quantity: 10 unit
The total cost : RM2250.00
```

2. Write a C++ program that reads the total time in minutes. The program computes the time in Day, Hour and Minutes (1 day = 1440 minutes = 60 x 24, 1 hour = 60 minutes).
Tip: You can use the **Modulus** operator that obtains the remainder from a division.

3. Write a program that will convert Malaysian Ringgit (RM) amounts to Turkish Lira. The conversion factors to use are as follows. Format your currency amounts in fixed-point notation, with two decimal places of precision, and be sure the decimal point is always displayed.

1 RM = 0.5997 Turkish Lira