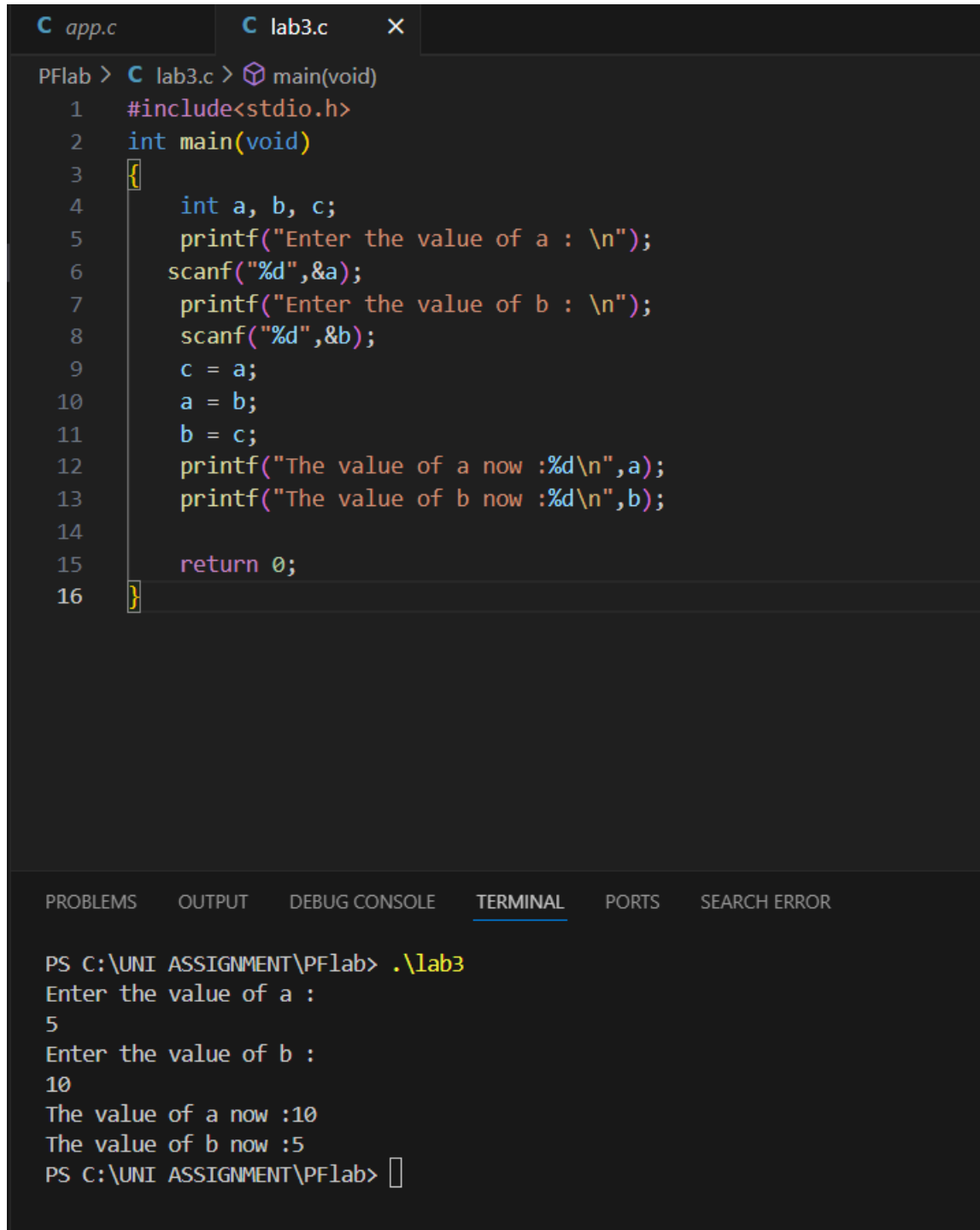


QNO.1 Explain the output of this C program. Why the wrong value is being displayed in the output?

Because Integers are whole numbers that can have both zero, positive and negative values but no decimal values. It can take 232 distinct states from -2147483648 to 2147483647.

QNO.2 Write a C program that takes two integer values as input from the user. Then swap the values taken from the user and display the output of the variables.



```
C app.c C lab3.c X
PFlab > C lab3.c > main(void)
1  #include<stdio.h>
2  int main(void)
3  {
4      int a, b, c;
5      printf("Enter the value of a : \n");
6      scanf("%d",&a);
7      printf("Enter the value of b : \n");
8      scanf("%d",&b);
9      c = a;
10     a = b;
11     b = c;
12     printf("The value of a now :%d\n",a);
13     printf("The value of b now :%d\n",b);
14
15     return 0;
16 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

```
PS C:\UNI ASSIGNMENT\PFlab> .\lab3
Enter the value of a :
5
Enter the value of b :
10
The value of a now :10
The value of b now :5
PS C:\UNI ASSIGNMENT\PFlab> 
```

QNO.4 A car travelled back and forth from point A to point B. With a distance being (single trip) 1207KM. During the forward trip fuel price was 118/liter while returning it was 123/liter. Calculate the total fuel cost (both ways) and the fuel consumed (total trip). Use the car's fuel average as input from the user (Input must be positive make some restrictions on only accepting positive input)

```
PFlab > C lab3q4.c > main(void)
1  #include<stdio.h>
2  int main(void)
3  {
4      float fuel_avg, fuel_costA, fuel_costB, tot_fuel, tot_cost;
5      int dis = 1207, A = 118, B = 123;
6      printf("Enter the car's fuel average :");
7      scanf("%f",&fuel_avg);
8      if(fuel_avg > 0)
9      {
10         tot_fuel = dis / fuel_avg;
11         printf("The total fuel used is :%f\n",tot_fuel);
12         fuel_costA = tot_fuel * A;
13         printf("The fuel cost from A to B is :%f\n",fuel_costA);
14         fuel_costB = tot_fuel * B;
15         printf("The fuel cost from B to A is :%f\n",fuel_costB);
16         tot_cost = fuel_costA + fuel_costB;
17         printf("The total Trip cost is :%f",tot_cost);
18     }
19     else{
20         printf("invalid data");
21     }
22
23     return 0;
24 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

```
PS C:\UNI ASSIGNMENT\pflab> .\lab3q4
Enter the car's fuel average :-2
invalid data
PS C:\UNI ASSIGNMENT\pflab> .\lab3q4
Enter the car's fuel average :25.5
The total fuel used is :47.333332
The fuel cost from A to B is :5585.333008
The fuel cost from B to A is :5822.000000
The total Trip cost is :11407.333008
PS C:\UNI ASSIGNMENT\pflab> 
```

QNO.5 Construct a C program with the flowchart below. The input value of the principle must be between 100 Rs. To 1,000,000 Rs. The Rate of interest must be between 5% to 10% and Time Period must be between 1 to 10 years. Hint: these restrictions can be displayed in the form of message on the window.

```
PFlab > C lab3q5.c > main(void)
1  #include<stdio.h>
2  int main(void)
3  {
4      float P, R, T, simp_interest;
5      printf("Enter the principle :");
6      scanf("%f",&P);    //P = principle
7      printf("Enter the rate :");
8      scanf("%f",&R);    //R = rate
9      printf("Enter the time :");
10     scanf("%f",&T);    //T = time
11     if((P >= 100&&P <= 1000000)&&(R >=5&&R <=10)&&(T >=1&&T <=10))
12     {
13         simp_interest = (P*R*T)/100;
14         printf("Simple interest is : %.2f",simp_interest);
15     }
16     else{
17         printf("Invalid input");
18     }
19     return 0;
20 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

```
PS C:\UNI ASSIGNMENT\pflab> .\lab3q5
Enter the principle :50
Enter the rate :7
Enter the time :6
Simple interest is : 21.00
PS C:\UNI ASSIGNMENT\pflab> .\lab3q5
Enter the principle :9
Enter the rate :5
Enter the time :11
Invalid input
PS C:\UNI ASSIGNMENT\pflab> 
```

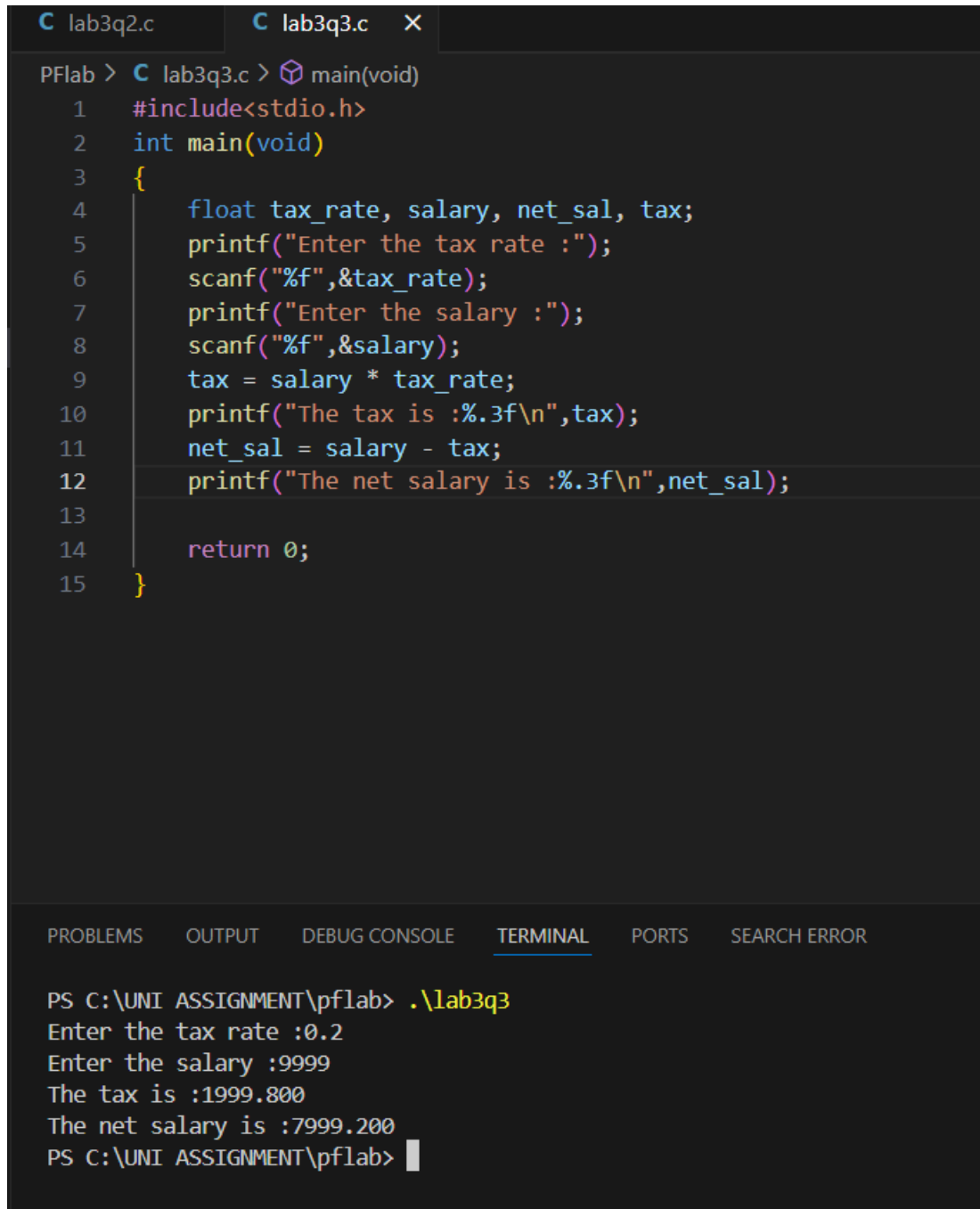
QNO.6 Construct a C program where you calculate the slope of two point (5,4), (3,2). Use format specifiers to cap the result to 3 decimal places.

```
PFlab > C lab3q6.c > main(void)
1  #include<stdio.h>
2  int main(void)
3  {
4      float x1, x2, y1, y2, slope;
5      printf("Enter the first point coordinates (x1, y1): ");
6      scanf("%f %f",&x1, &y1);
7      printf("Enter the second point coordinates (x2, y2): ");
8      scanf("%f %f",&x2, &y2);
9      slope = (y2-y1)/(x2-x1);
10     printf("the slope is :%.3f", slope);
11     return 0;
12 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

```
PS C:\UNI ASSIGNMENT\pflab> .\lab3q6
Enter the first point coordinates (x1, y1): 5 6
Enter the second point coordinates (x2, y2): 7 4
the slope is :-1.000
PS C:\UNI ASSIGNMENT\pflab> █
```

QNO.3 A customer asks the IT firm to develop a program in C language, which can take tax rate and salary from the user on runtime and then calculate the tax, the user has to pay and the salary he/she will have after paying the tax. This information is then provided to the user.



```
C lab3q2.c  C lab3q3.c  X
PFlab > C lab3q3.c > main(void)
1  #include<stdio.h>
2  int main(void)
3  {
4      float tax_rate, salary, net_sal, tax;
5      printf("Enter the tax rate :");
6      scanf("%f",&tax_rate);
7      printf("Enter the salary :");
8      scanf("%f",&salary);
9      tax = salary * tax_rate;
10     printf("The tax is :%.3f\n",tax);
11     net_sal = salary - tax;
12     printf("The net salary is :%.3f\n",net_sal);
13
14     return 0;
15 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SEARCH ERROR

```
PS C:\UNI ASSIGNMENT\pflab> .\lab3q3
Enter the tax rate :0.2
Enter the salary :9999
The tax is :1999.800
The net salary is :7999.200
PS C:\UNI ASSIGNMENT\pflab> 
```