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24K-0514

PF LAB:3

QUESTION#1

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

```
#include <stdio.h>
```

```
int main(){
```

```
    int testInteger=3000000000;
```

```
    printf("Number is %d",testInteger);
```

```
}
```

D:\PF\Lab 3 example codes\Printf.exe

Number is -1294967296

Process exited after 0.03059 seconds with return value 0

Press any key to continue . . .

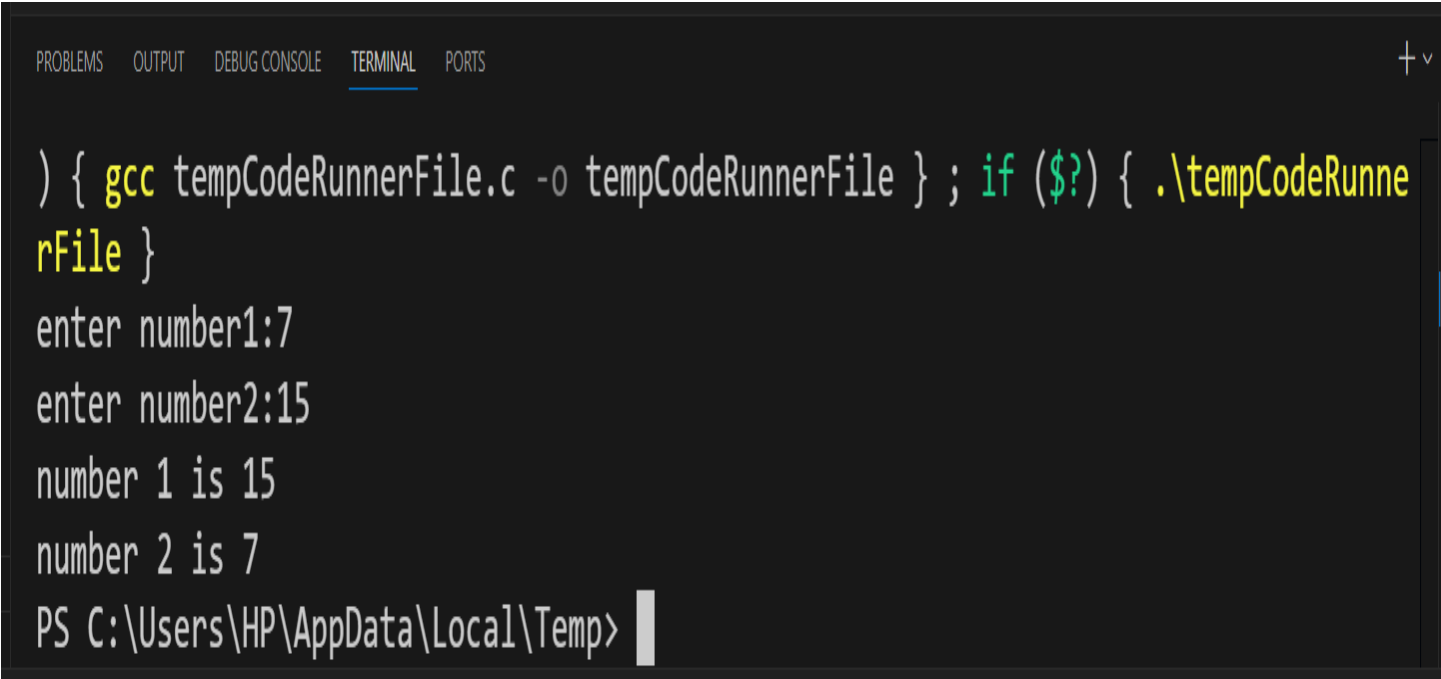
ANS: Because integer datatype in C language can only store value up to 2147483647 that's why it is showing wrong output.

QUESTION#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.

```
taxrate.c  #include<stdio.h> Untitled-2  #include<stdio.h> Untitled-1
1  #include<stdio.h>
2  int main()
3  {
4      int a,b,c;
5      printf("enter number1:");
6      scanf("%d",&a);
7      printf("enter number2:");
8      scanf("%d",&b);
9      c=a;
10     a=b;
11     b=c;
12     printf("number 1 is %d \nnumber 2 is %d",a,b);
13     return 0;
14 }
```

OUTPUT:



The screenshot shows a Visual Studio Code interface with a terminal window open. The terminal has tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (which is active), and PORTS. The terminal content shows a C program being compiled and executed. The program prompts for two numbers, 7 and 15, and then prints the results of a comparison: 'number 1 is 15' and 'number 2 is 7'. The command prompt is 'PS C:\Users\HP\AppData\Local\Temp>'.

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS + v  
  
) { gcc tempCodeRunnerFile.c -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRunne  
rFile }  
enter number1:7  
enter number2:15  
number 1 is 15  
number 2 is 7  
PS C:\Users\HP\AppData\Local\Temp>
```

QUESTION#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 #include<stdio.h> Untitled-1
1  #include<stdio.h>
2  int main(){
3      float taxrate,salary,tax,revisedsalary;
4      printf("enter salary:");
5      scanf("%f",&salary);
6
7      printf("enter taxrate:");
8      scanf("%f",&taxrate);
9
10     tax=(salary*taxrate)/100;
11     revisedsalary=salary-tax;
12
13     printf("tax is:%.2f \nrevised salary is:%.2f",tax,revisedsalary);
14     return 0;
15 }
```

OUTPUT:

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
) { gcc tempCodeRunnerFile.c -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRunnerFile }
```

```
enter salary:80000.0
```

```
enter taxrate:5.2
```

```
tax is:4160.00
```

```
revised salary is:75840.00
```

```
PS C:\Users\HP\AppData\Local\Temp> 
```

QUESTION#4

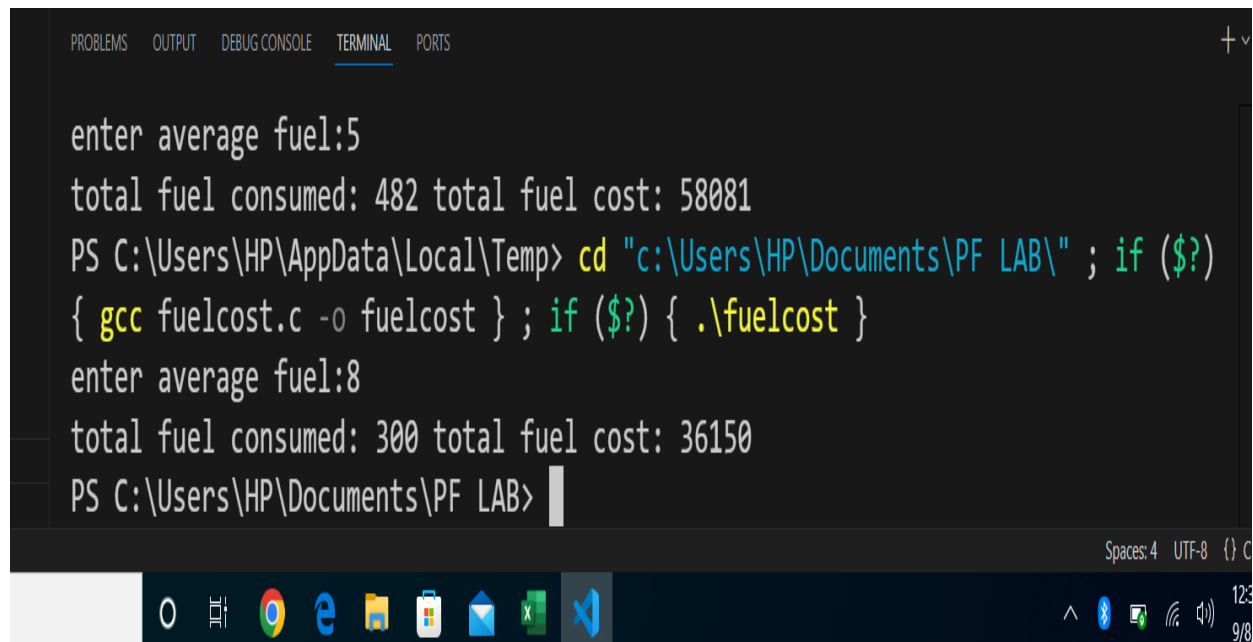
A car travelled back and forth from point A to point B. With a distance being (single trip) 1207KM. During the forward trip fuel price was 118/liter while returning it was 123/liter. Calculate the total fuel cost (both ways) and the fuel consumed (total trip). Use the car's fuel average as input from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

C fuelcost.c X

C: > Users > HP > Documents > PF LAB > C fuelcost.c > main()

```
1  #include<stdio.h>
2  int main(){
3  int distance=1207,fuelprice=118,fuelpricereturn=123,averagefuel,fuelconsumed,fuelcost,fuelcostreturn;//distance is taken in kilometers
4  //and fuel price in liters
5  printf("enter average fuel:");
6  scanf("%u",&averagefuel);
7
8  fuelconsumed=distance/averagefuel;
9  fuelcost=fuelconsumed*fuelprice;
10
11 fuelcostreturn=fuelconsumed*fuelpricereturn;
12
13 fuelconsumed=fuelconsumed*2;
14 fuelcost=fuelcost+fuelcostreturn;
15
16 printf("total fuel consumed: %u total fuel cost: %u",fuelconsumed,fuelcost);
17 return 0;
18 }
```

OUTPUT:

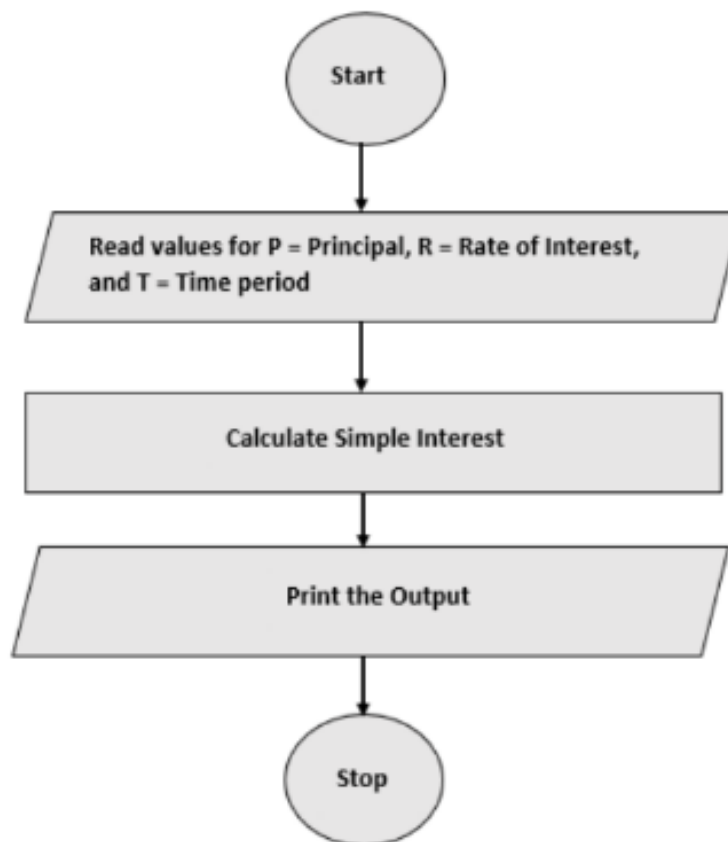


```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS + v  
  
enter average fuel:5  
total fuel consumed: 482 total fuel cost: 58081  
PS C:\Users\HP\AppData\Local\Temp> cd "c:\Users\HP\Documents\PF LAB\" ; if ($?)  
{ gcc fuelcost.c -o fuelcost } ; if ($?) { .\fuelcost }  
enter average fuel:8  
total fuel consumed: 300 total fuel cost: 36150  
PS C:\Users\HP\Documents\PF LAB> |  
  
Spaces: 4 UTF-8 {} C  
O [taskbar icons] 12:30 9/8
```

QUESTION#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.




```
taxrate.c  #include<stdio.h> Untitled-2  #include<stdio.h> Untitled-3  #include<stdio.h> Untitled-4  #include<stdio.h> Untitled-1

1  #include<stdio.h>
2  int main(){
3      int principal,rateofinterest,timeperiod,simpleinterest;
4      printf("enter principal:");
5      scanf("%d",&principal);
6      printf("enter rate of interest:");
7      scanf("%d",&rateofinterest);
8      printf("enter timeperiod:");
9      scanf("%d",&timeperiod);
10
11     simpleinterest=(principal*rateofinterest*timeperiod)/100; //principal must be between 100 Rs to 1000000 Rs,Rate of interest must be
12     //between 5% to 10% and Time Period must be btween 1 to 10 years.
13     printf("simple interest is:%d",simpleinterest);
14     return 0;
15
16 }
```

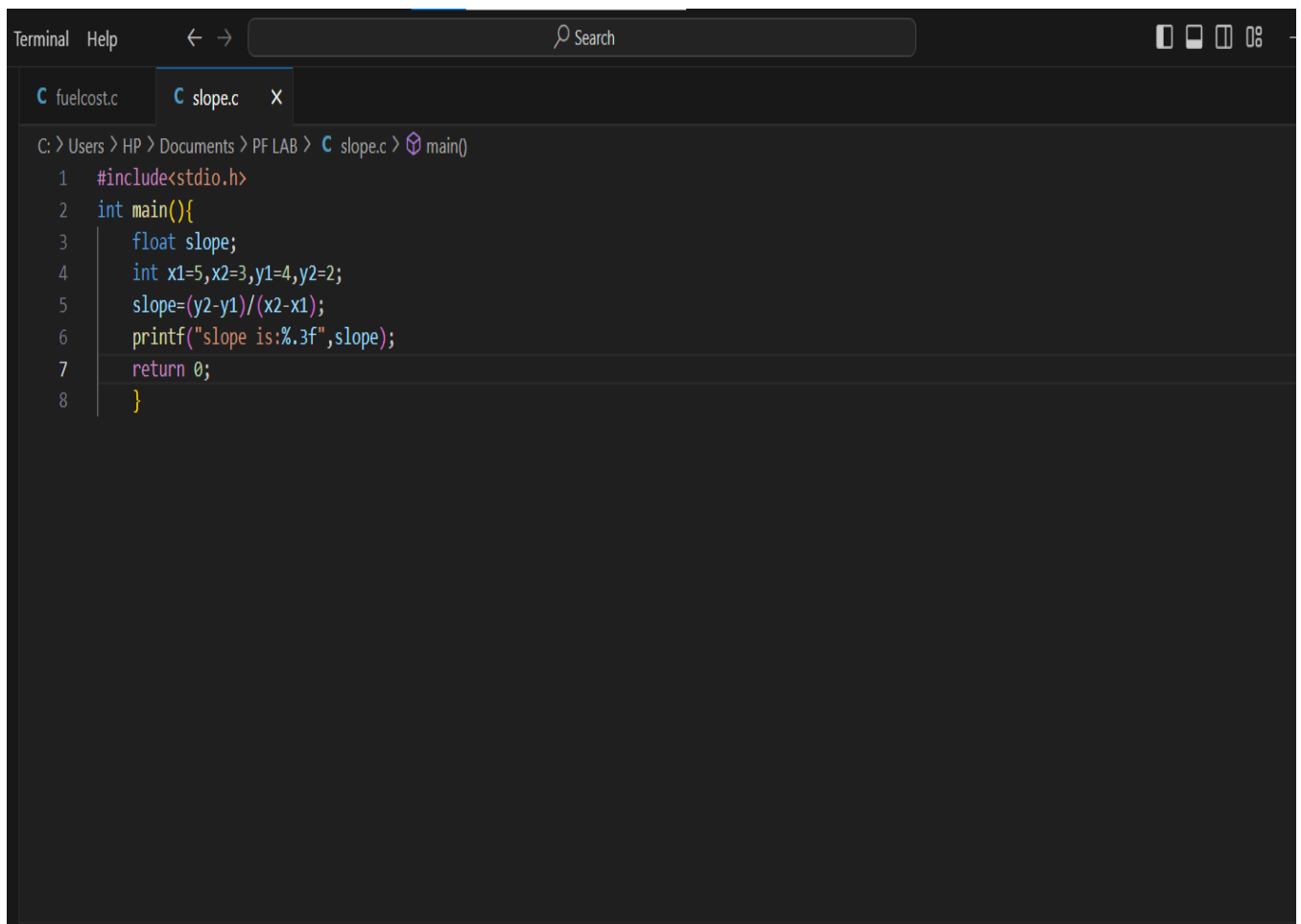
OUTPUT:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  +
) { gcc tempCodeRunnerFile.c -o tempCodeRunnerFile } ; if ($?) { .\tempCodeRunne
rFile }
enter principal:65000
enter rate of interest:7
enter timeperiod:4
simple interest is:18200
PS C:\Users\HP\AppData\Local\Temp> 
```

Ln 16, Col 2 Spaces: 4 UTF-8

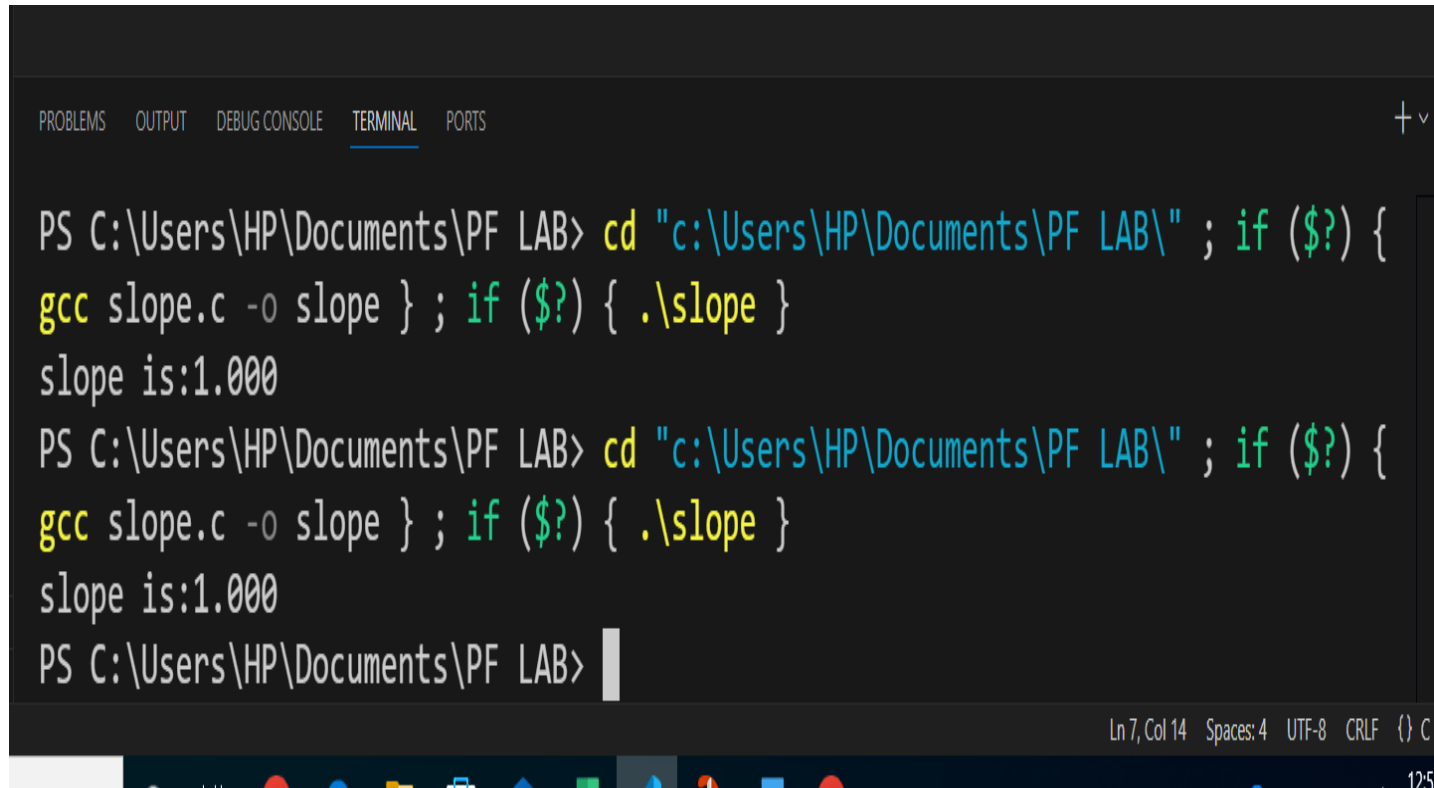
Question#6

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.

A screenshot of a code editor window with a dark theme. The window has a title bar with 'Terminal' and 'Help' buttons, and a search bar. Below the title bar, there are two tabs: 'fuelcost.c' and 'slope.c'. The 'slope.c' tab is active. The code in the editor is as follows:

```
C: > Users > HP > Documents > PF LAB > C slope.c > main()
1  #include<stdio.h>
2  int main(){
3      float slope;
4      int x1=5,x2=3,y1=4,y2=2;
5      slope=(y2-y1)/(x2-x1);
6      printf("slope is:%.3f",slope);
7      return 0;
8  }
```

OUTPUT:



The image shows a screenshot of a Visual Studio Code terminal window. The terminal has tabs for PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL (which is active), and PORTS. The terminal content shows two identical commands being executed. The first command is: `PS C:\Users\HP\Documents\PF LAB> cd "c:\Users\HP\Documents\PF LAB\" ; if ($?) { gcc slope.c -o slope } ; if ($?) { .\slope }`. The output of the first command is `slope is:1.000`. The second command is identical and also results in `slope is:1.000`. The terminal status bar at the bottom right indicates 'Ln 7, Col 14', 'Spaces: 4', 'UTF-8', 'CRLF', and '{ } C'. A Windows taskbar is visible at the very bottom of the image.

```
PS C:\Users\HP\Documents\PF LAB> cd "c:\Users\HP\Documents\PF LAB\" ; if ($?) {  
gcc slope.c -o slope } ; if ($?) { .\slope }  
slope is:1.000  
PS C:\Users\HP\Documents\PF LAB> cd "c:\Users\HP\Documents\PF LAB\" ; if ($?) {  
gcc slope.c -o slope } ; if ($?) { .\slope }  
slope is:1.000  
PS C:\Users\HP\Documents\PF LAB>
```

Ln 7, Col 14 Spaces: 4 UTF-8 CRLF { } C 12/5