

Programs executed in Lab Session 1

Date: 18 May 2021

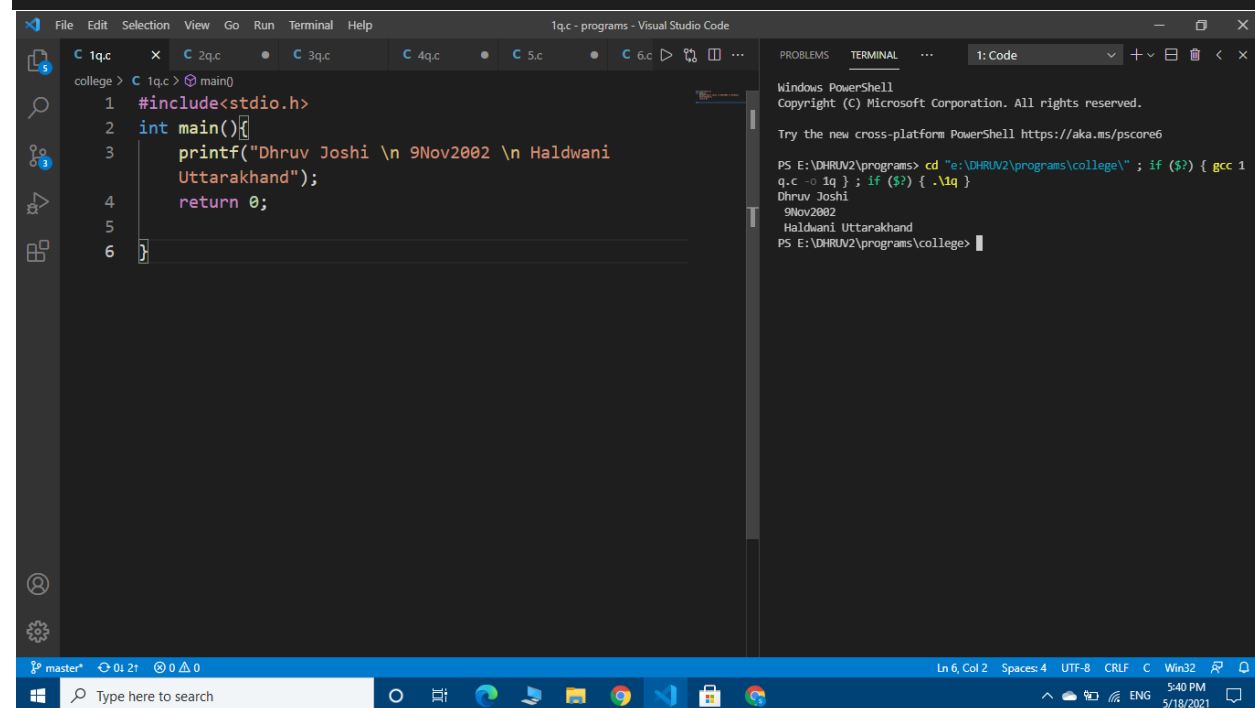
Name- Dhruv Joshi

ID- 20EC3018

1. Program to print your name, date of birth and address.

```
#include<stdio.h>

int main() {
    printf("Dhruv Joshi \n 9Nov2002 \n Haldwani
Uttarakhand");
    return 0;
}
```



The screenshot shows the Visual Studio Code interface. The editor displays the C program code. The terminal window on the right shows the execution of the program. The command prompt is at E:\DHRUV2\programs\college>. The user enters 'gcc 1 q.c -o 1q' and presses Enter. The compiler outputs 'Dhruv Joshi', '9Nov2002', and 'Haldwani Uttarakhand' on separate lines. The prompt returns to E:\DHRUV2\programs\college>.

2. Program to print a block F using hash (#), where the F has a height of six characters and width of five and four characters.

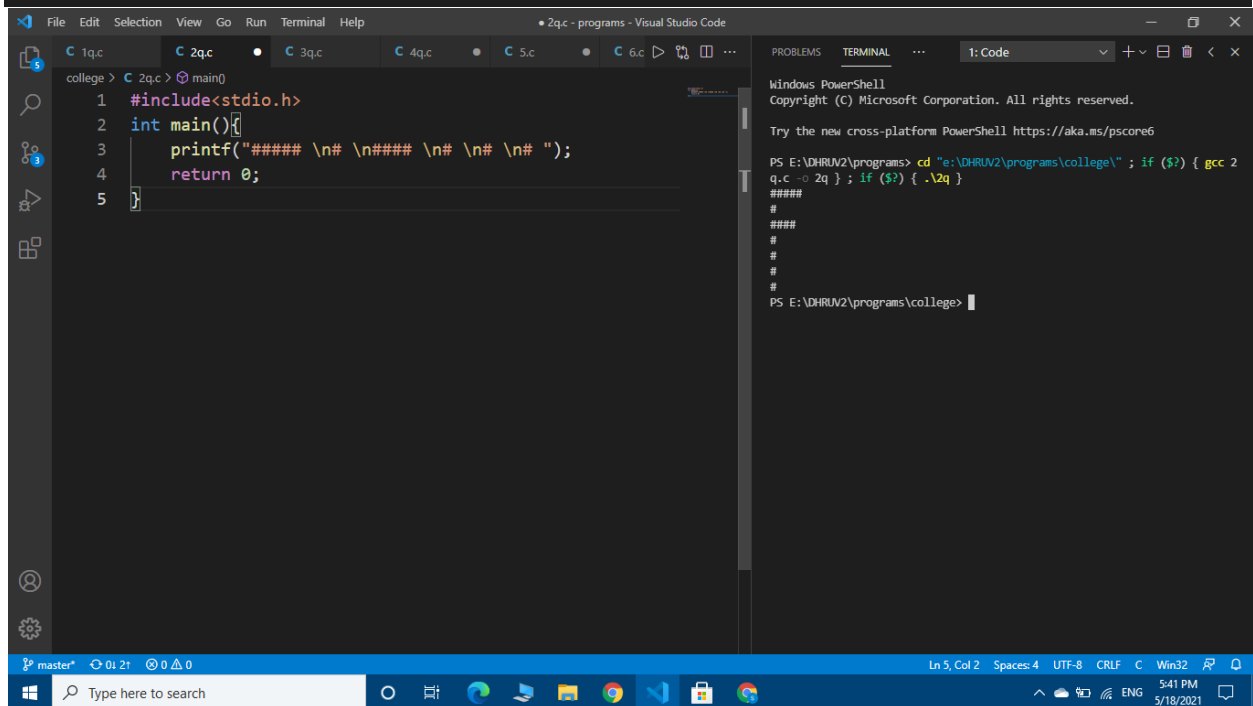
```
#include<stdio.h>

int main(){

    printf("##### \n# \n#### \n# \n# \n# ");

    return 0;

}
```



The screenshot shows the Visual Studio Code interface. The editor window displays the C program code. The terminal window shows the output of the program, which is a block letter 'F' formed by hash characters. The output is as follows:

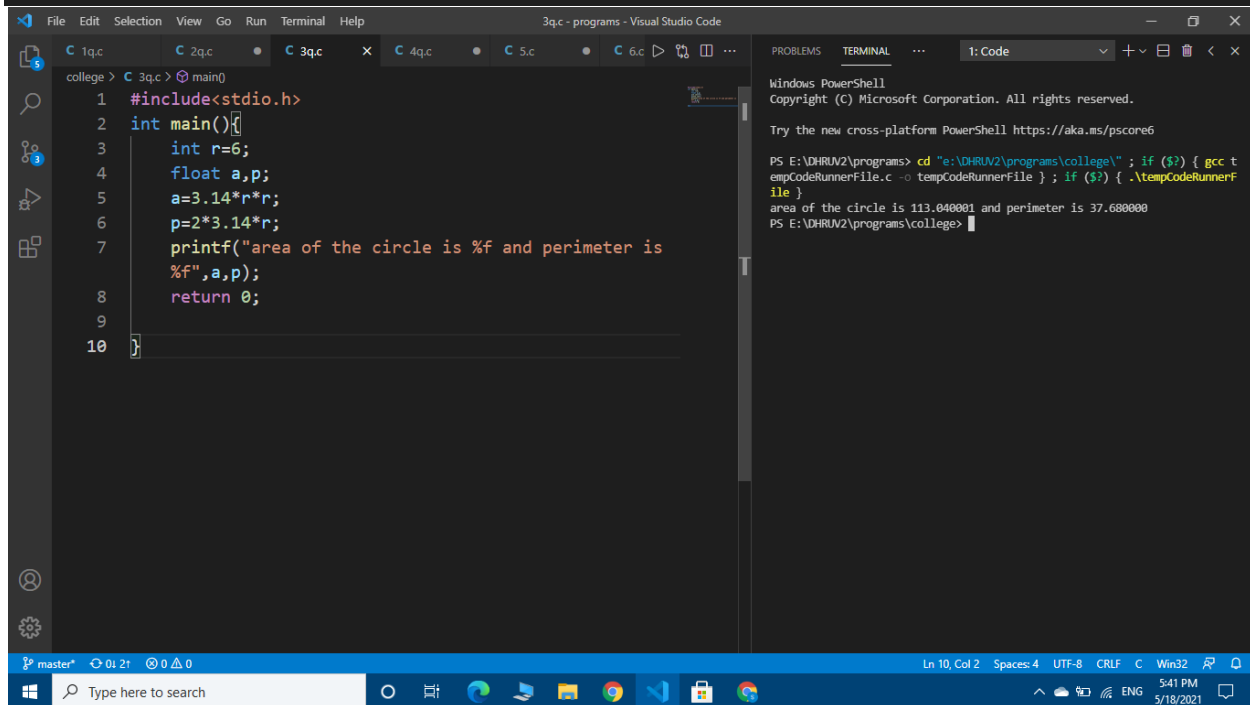
```
#####
#
####
#
#
#
```

The terminal also shows the command prompt and the execution of the program using gcc.

3. Program to compute the perimeter and area of a circle with a radius of 6 inches.

```
#include<stdio.h>

int main(){
    int r=6;
    float a,p;
    a=3.14*r*r;
    p=2*3.14*r;
    printf("area of the circle is %f and perimeter
is %f",a,p);
    return 0;
}
```

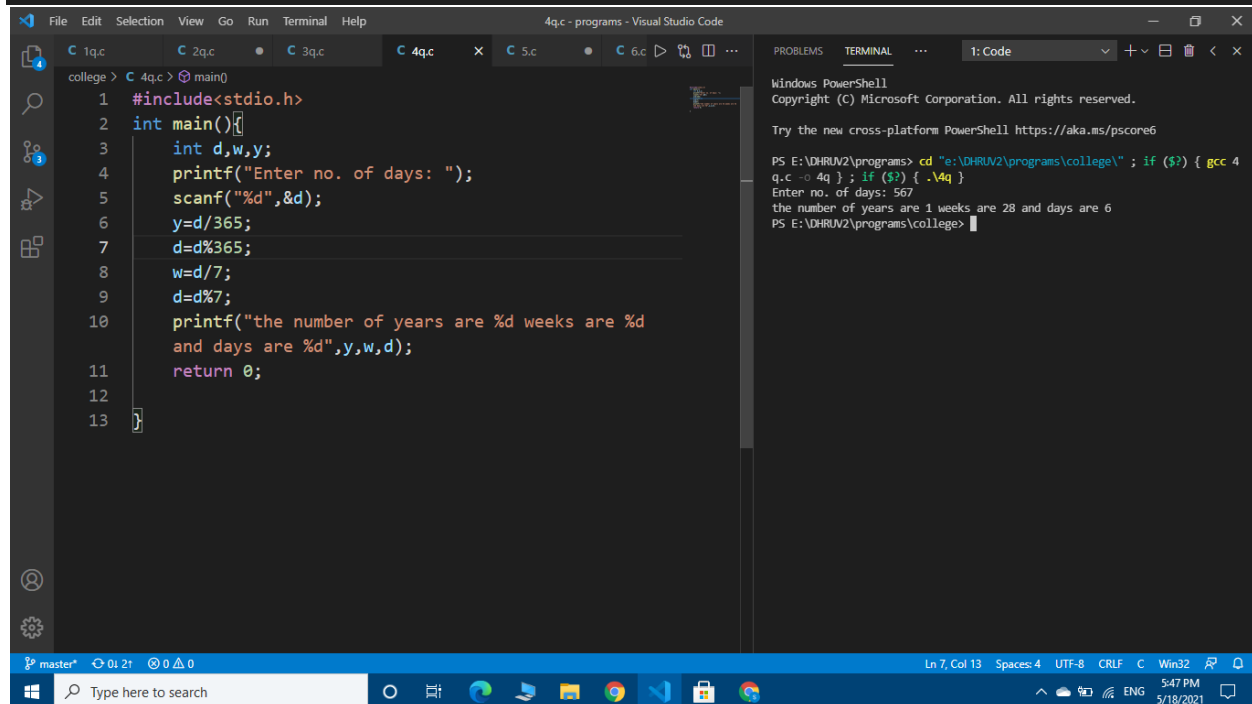


4. Program to convert specified days into years, weeks and days.

```
#include<stdio.h>

int main(){
    int d,w,y;
    printf("Enter no. of days: ");
    scanf("%d",&d);
    y=d/365;
    d=d%365;
    w=d/7;
    d=d%7;

    printf("the number of years are %d weeks are %d
and days are %d",y,w,d);
    return 0;
}
```



The screenshot shows the Visual Studio Code interface. The editor displays the C program code from the previous block. The terminal window on the right shows the execution of the program. The user has entered 567 as the number of days. The program outputs: "the number of years are 1 weeks are 28 and days are 6".

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

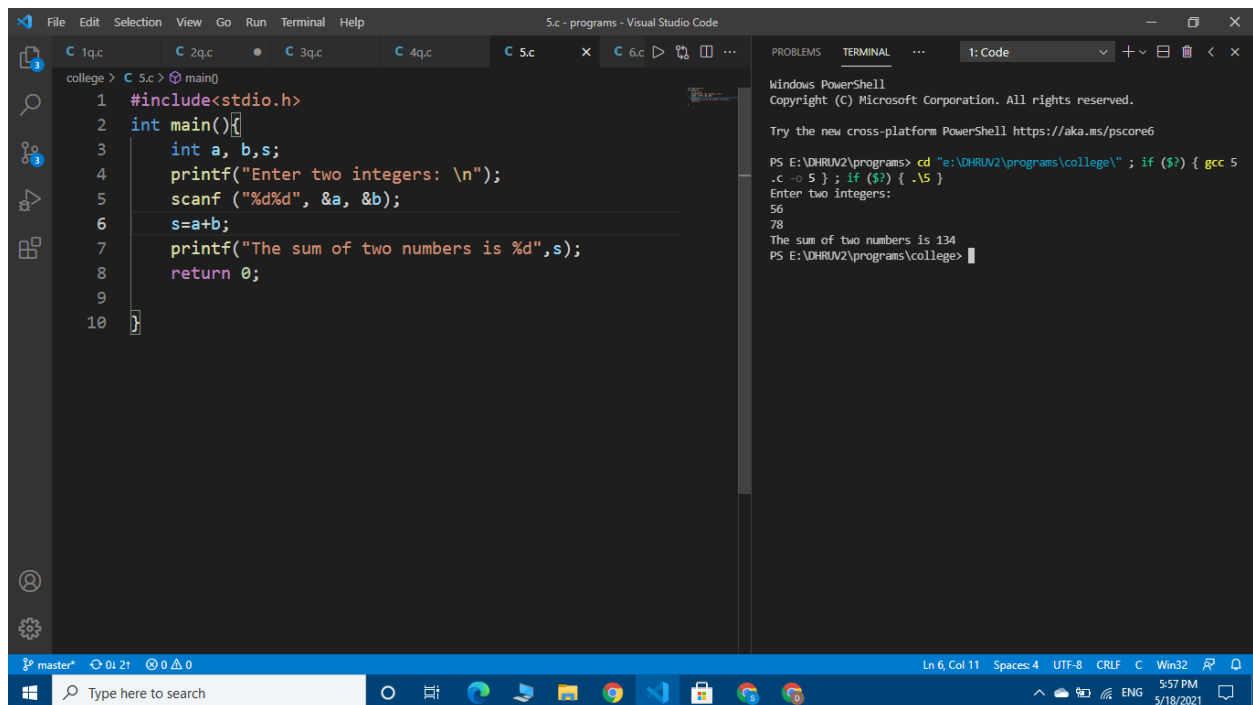
Try the new cross-platform PowerShell https://aka.ms/pscore6

PS E:\DHRUV2\programs> cd "e:\DHRUV2\programs\college\"; if ($?) { gcc 4
q.c -o 4q }; if ($?) { .\4q }
q.c -o 4q; ; if ($?) { .\4q }
Enter no. of days: 567
the number of years are 1 weeks are 28 and days are 6
PS E:\DHRUV2\programs\college>
```

5. Program that accepts two integers from the user and calculates the sum of the two integers.

```
#include<stdio.h>

int main(){
    int a, b,s;
    printf("Enter two integers: \n");
    scanf ("%d%d", &a, &b);
    s=a+b;
    printf("The sum of two numbers is %d",s);
    return 0;
}
```



The screenshot shows the Visual Studio Code interface with a C program open in the editor and a terminal window at the bottom. The program is a simple C code that takes two integers as input and prints their sum. The terminal shows the execution of the program, where the user enters two integers (56 and 78) and the program outputs the sum (134).

```
File Edit Selection View Go Run Terminal Help
5.c - programs - Visual Studio Code

1 #include<stdio.h>
2 int main(){
3     int a, b,s;
4     printf("Enter two integers: \n");
5     scanf ("%d%d", &a, &b);
6     s=a+b;
7     printf("The sum of two numbers is %d",s);
8     return 0;
9
10 }
```

PROBLEMS TERMINAL 1: Code

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell <https://aka.ms/pscore6>

PS E:\DHRUV2\programs> cd "e:\DHRUV2\programs\college\" ; if (\$?) { gcc 5
.c -o 5 } ; if (\$?) { . 5 }
Enter two integers:
56
78
The sum of two numbers is 134
PS E:\DHRUV2\programs\college>

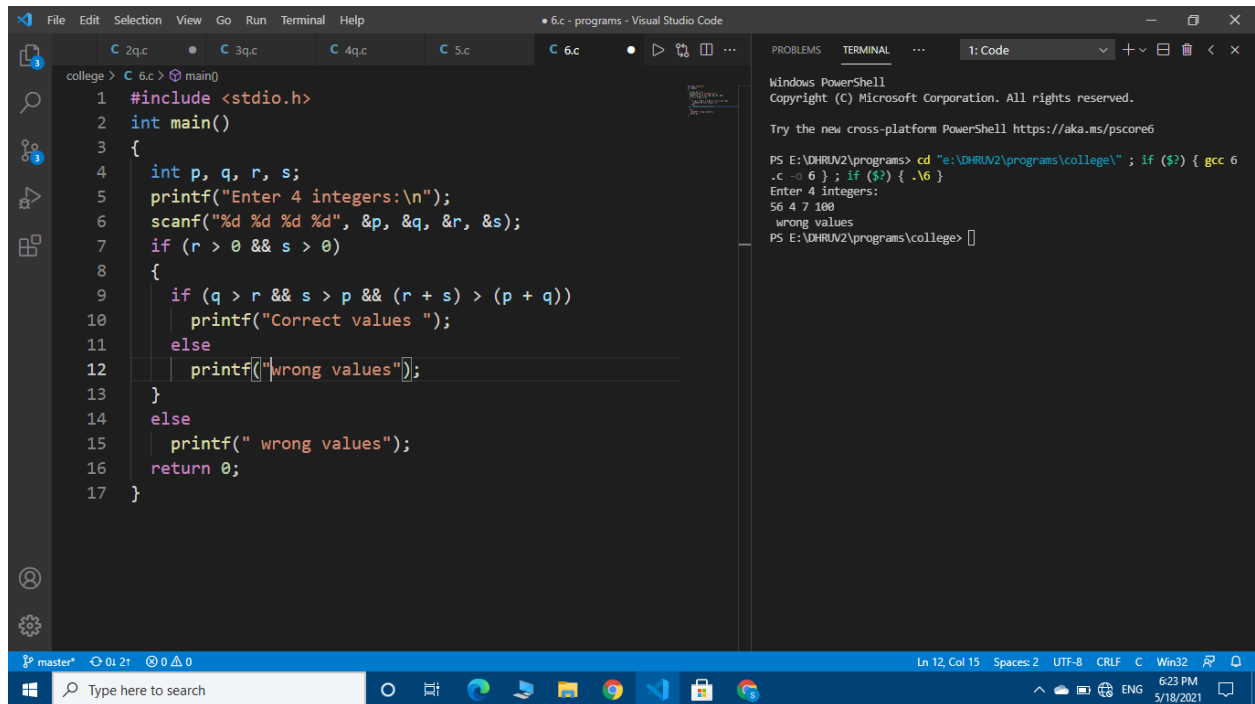
Ln 6, Col 11 Spaces: 4 UTF-8 CRLF Win32

Type here to search

5:57 PM 5/18/2021

6. Program that accepts 4 integers p, q, r, s from the user where r and s are positive and p is even. If q is greater than r and s is greater than p and if the sum of r and s is greater than the sum of p and q print “Correct values”, otherwise print “Wrong values”.

```
#include<stdio.h>
int main(){
    int p,q,r,s;
    scanf ("%d %d %d %d", p,q,r,s);
    if (r>0 && s>0)
    {
        if (q>r && s>p && (r+s)>(p+q))
            printf("Correct values ");
        else
            printf (" wrong values");
    }
    else
        printf (" wrong values");
    return 0;
}
```



7. Program that reads three floating values and checks if it is possible to make a triangle with them. Also calculate the perimeter of the triangle if the said values are valid.

```
#include<stdio.h>

int main() {
    float p,q,r,max,sm;
    printf("Enter three side lengths : ");
    scanf ("%f %f %f", &p,&q,&r);

    if (p>q)
    {
        if (r>p)
            {max=r;
             sm=p+q;}
        else
        {
            max=p;
            sm=r+q;
        }
    }
    else
    {
        if (r>q)
            {max=r;
             sm=p+q;}
        else
        {
            max=q;

```



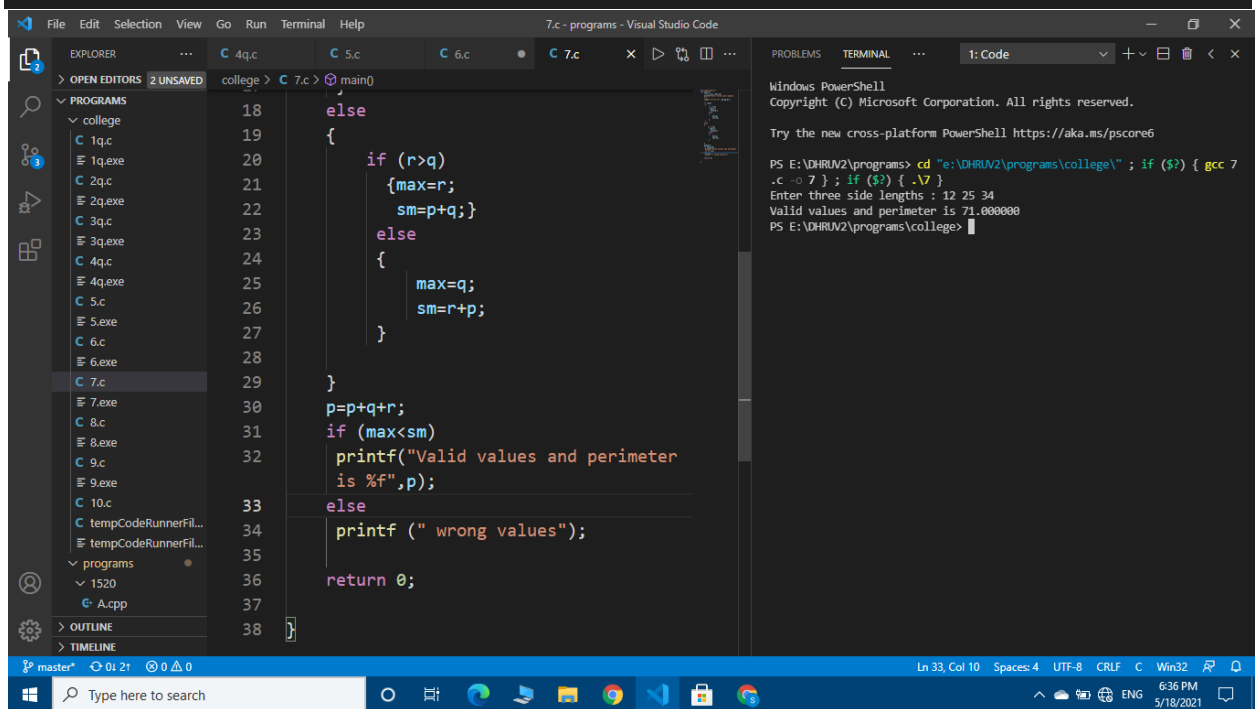
```

        sm=r+p;
    }

}

p=p+q+r;
if (max<sm)
    printf("Valid values and perimeter is %f",p);
else
    printf (" wrong values");
return 0;
}

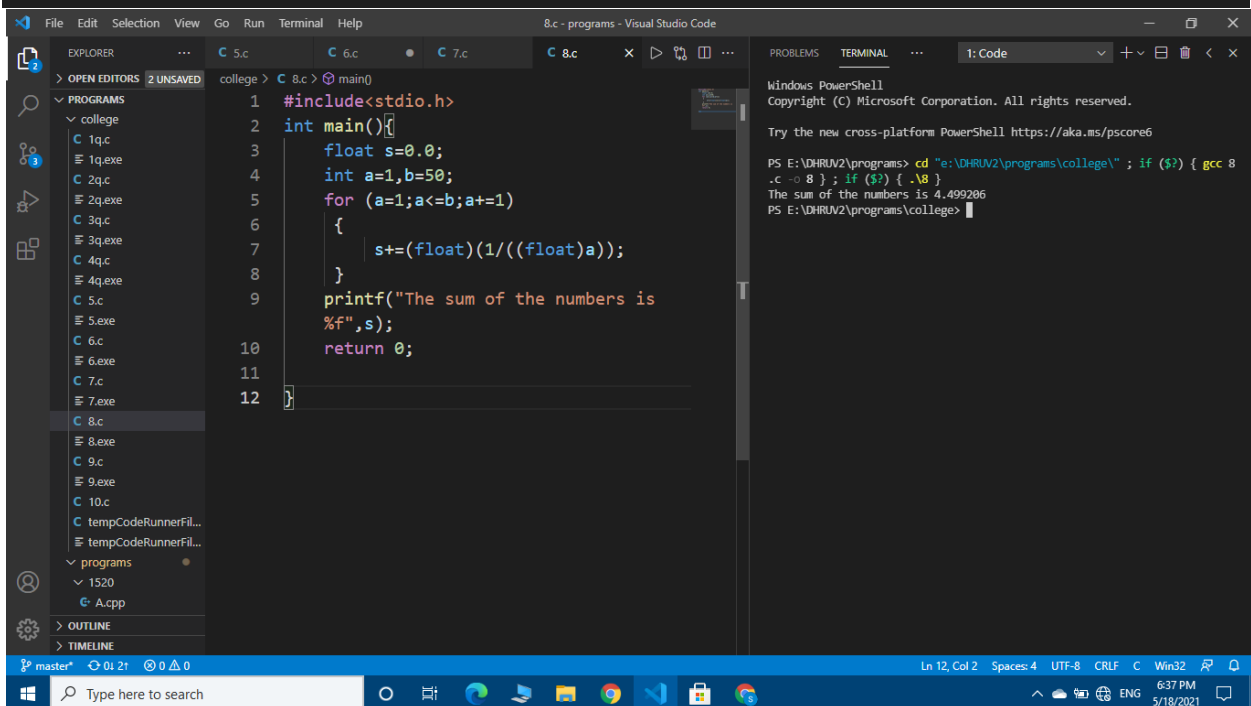
```



8. Program to calculate the value of S where $S = 1 + 1/2 + 1/3 + \dots + 1/50$.

```
#include<stdio.h>

int main() {
    float s=0.0;
    int a=1,b=50;
    for (a=1;a<=b;a+=1)
    {
        s+=(float) (1/((float)a));
    }
    printf("The sum of the numbers is %f",s);
    return 0;
}
```



9. Program to calculate the value of S where $S = 1 + \frac{3}{2} + \frac{5}{4} + \frac{7}{8}$ using for loop.

```
#include<stdio.h>

int main(){

    float a,b=50.0,c=1.0,s=0.0;

    for (a=0;a<=2;a++)
    {

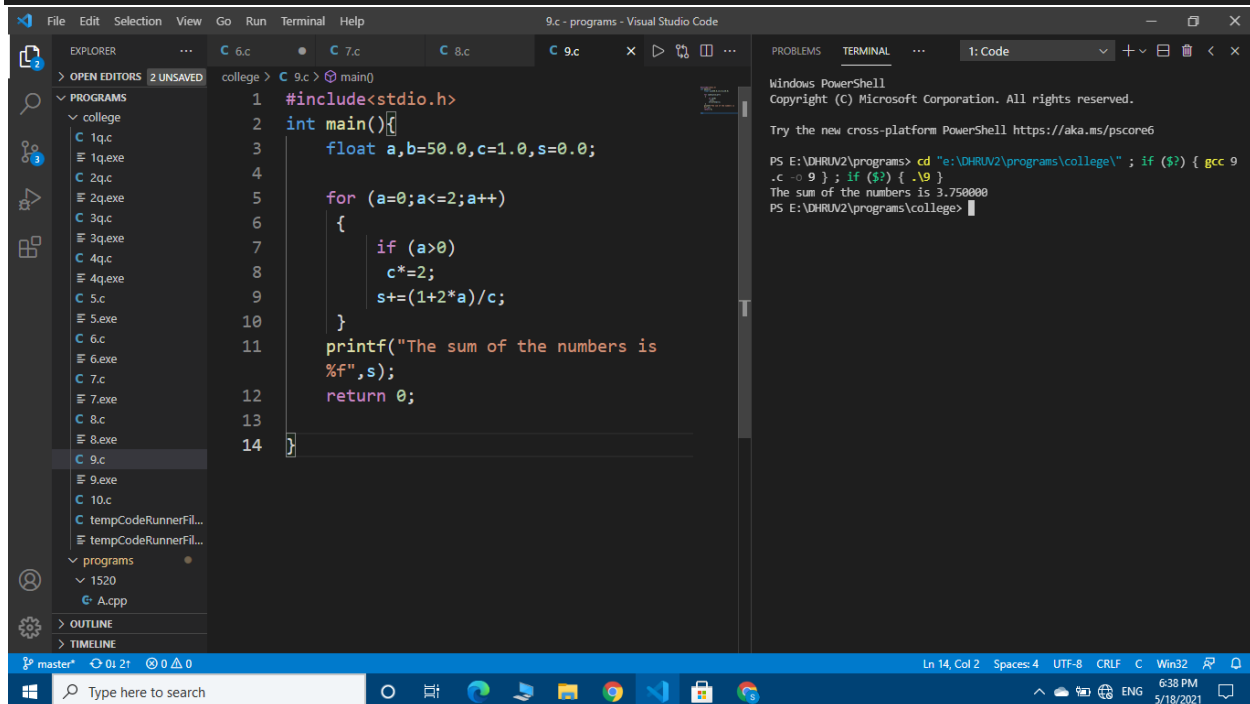
        if (a>0)
            c*=2;
        s+=(1+2*a)/c;

    }

    printf("The sum of the numbers is %f",s);

    return 0;

}
```



10. Program that accepts 4 real numbers from the keyboard and prints out the difference of the maximum and minimum values of these four numbers.

```
#include <stdio.h>

int main()
{
    printf("Enter four numbers :\n");
    float p, q, r, s, mx, mn, v;
    scanf("%f%f%f%f", &p, &q, &r, &s);
    if (p > q)
    {
        mx = p;
        mn = q;
    }
    else
    {
        mx = q;
        mn = p;
    }
    if (r > mx)
    {
        mx = r;
    }
    if (r < mn)
    {
        mn = r;
    }
    if (s > mx)
```

```

{
    mx = s;
}

if (s < mn)
{
    mn = s;
}

v=mx-mn;

printf("The value is %f", v);

return 0;
}

```

The screenshot shows the Visual Studio Code interface with a C program open in the editor and a terminal window showing its execution.

Editor Content (10.c):

```

1 #include <stdio.h>
2 int main()
3 {
4     printf("Enter four numbers :\n");
5     float p, q, r, s, mx, mn, v;
6     scanf("%f%f%f%f", &p, &q, &r, &s);
7     if (p > q)
8     {
9         mx = p;
10        mn = q;
11    }
12    else
13    {
14        mx = q;
15        mn = p;
16    }
17    if (r > mx)
18    {
19        mx = r;
20    }
21    if (r < mn)
22    {
23        mn = r;

```

Terminal Output:

```

Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS E:\DHRUV2\programs> cd "e:\DHRUV2\programs\college\" ; if ($?) { gcc 1
0.c -o 10 } ; if ($?) { .\10 }
Enter four numbers :
5.6
8.9
2.1
4.7
The value is 6.800000
PS E:\DHRUV2\programs\college>

```

The terminal shows the command to compile the program using gcc and then execute it. The program prompts for four numbers (5.6, 8.9, 2.1, 4.7) and outputs "The value is 6.800000".