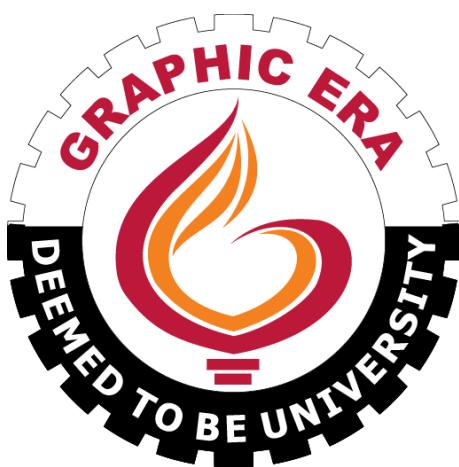


LAB FILE

Introduction to 'C'

Programming



Batch 2023-27

BCA hons. with AI/DS

Submitted by:

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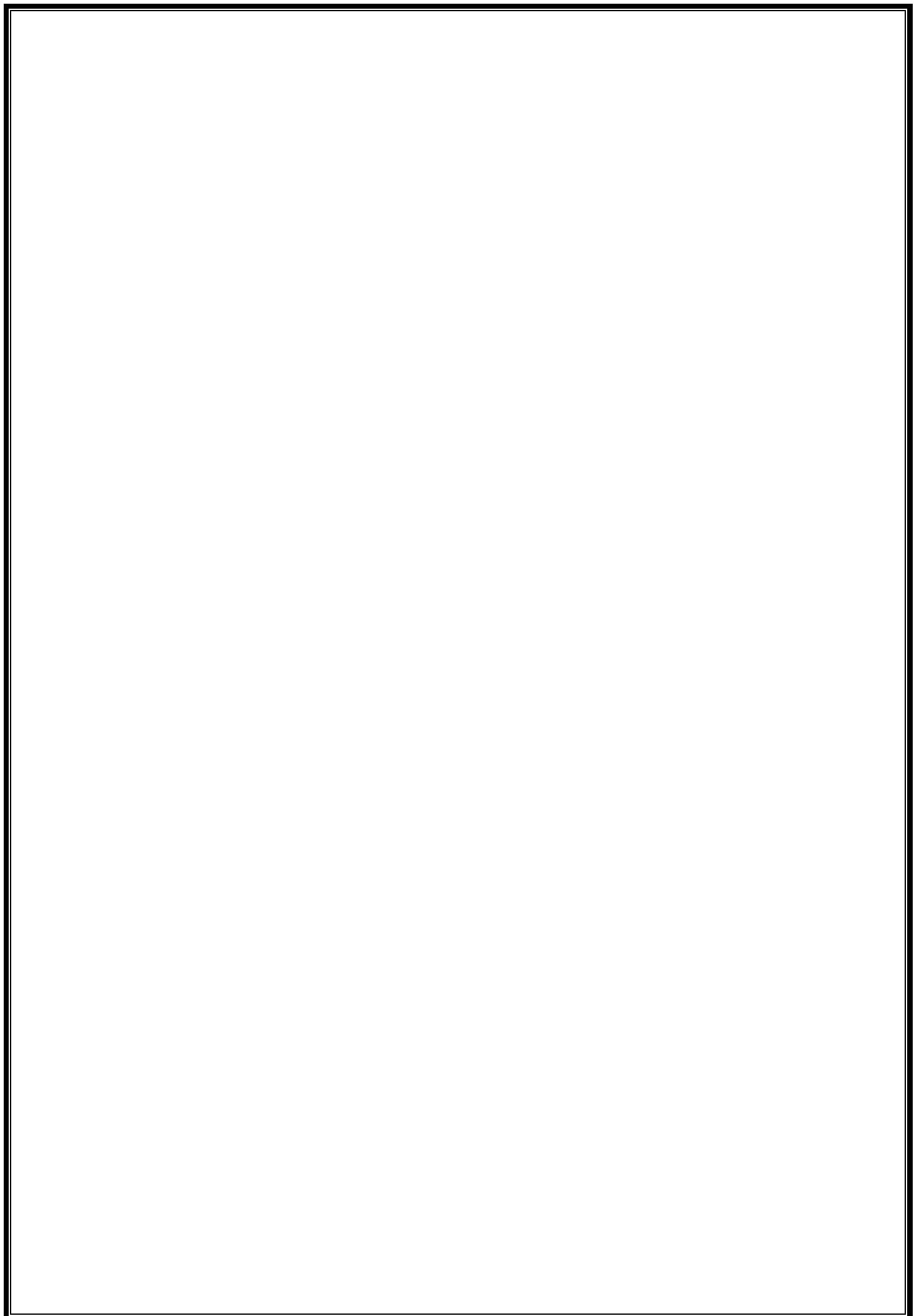
Submitted to:

Mr. Rishi Kumar

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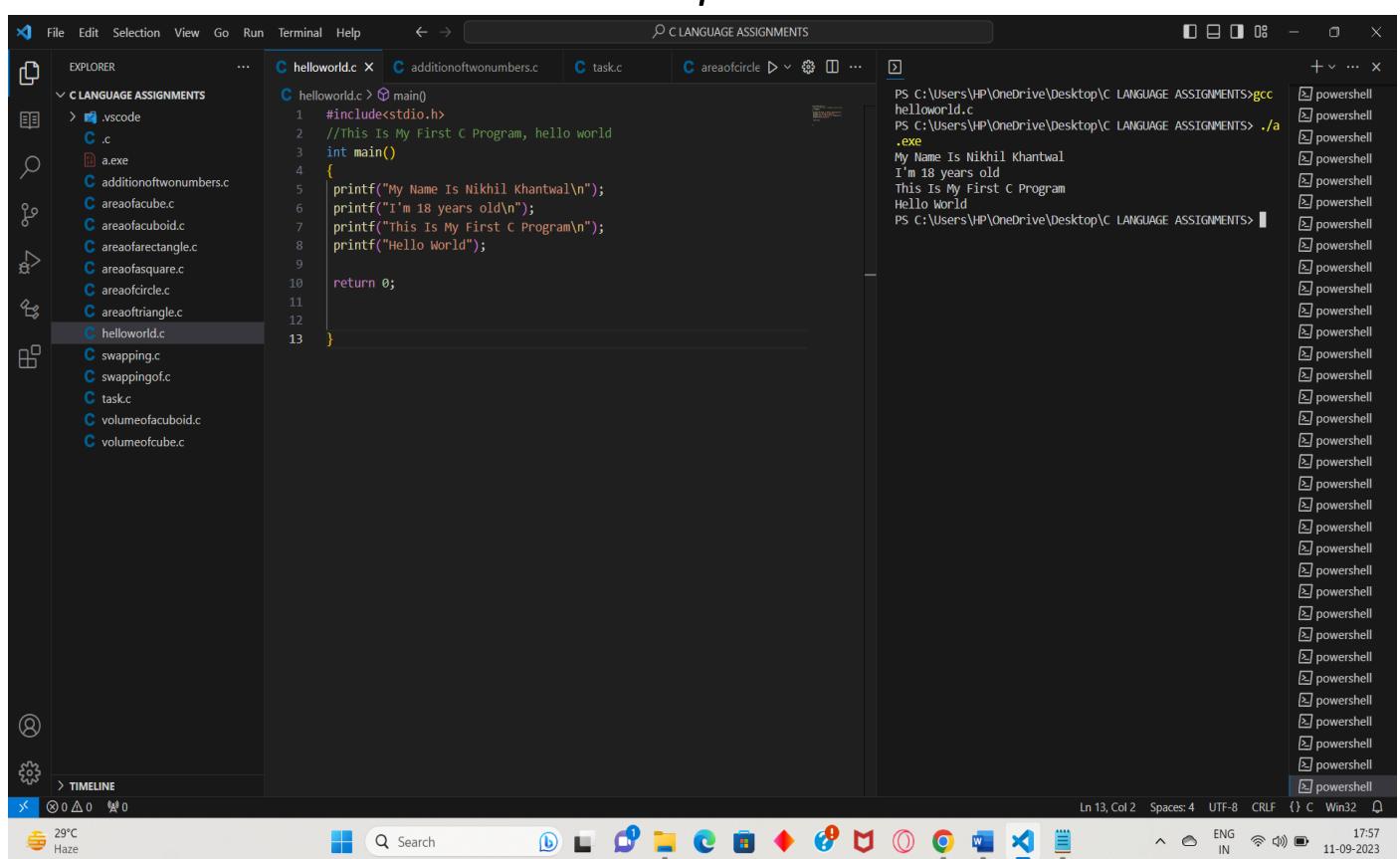
Program 1: Write a program for hello world or this is my first C program.

Program:

```
#include<stdio.h>
//This Is My First C Program, hello world
int main()
{
    printf("My Name Is Nikhil Khantwal\n");
    printf("I'm 18 years old\n");
    printf("This Is My First C Program\n");
    printf("Hello World");

    return 0;
}
```

Output:



The screenshot shows a Windows desktop environment with a terminal window open in the background. The terminal window displays the output of a C program named 'helloworld.c'. The code in the terminal is as follows:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc helloworld.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a.exe
My Name Is Nikhil Khantwal
I'm 18 years old
This Is My First C Program
Hello World
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

The terminal window has a dark theme and is titled 'C LANGUAGE ASSIGNMENTS'. The file 'helloworld.c' is selected in the Explorer sidebar. The system tray at the bottom left shows the date and time as '11-09-2023' and the temperature as '29°C Haze'. The taskbar at the bottom includes icons for File Explorer, Edge, and other applications.

Program 2: Write a program to add two numbers

Program:

```
#include<stdio.h>
//WAP To Add Two Numbers
int main()
{
    int a,b;
    printf("Enter a");
    scanf("%d",&a);

    printf("Enter b");
    scanf("%d",&b);

    int sum=a+b;
    printf("sum is %d", sum);

    return 0;
}
```

Output:

The screenshot shows the Microsoft Visual Studio Code interface. The Explorer sidebar on the left has a 'C LANGUAGE ASSIGNMENTS' folder expanded, containing files like '.vscode', 'a.exe', 'additionoftwonumbers.c', and 'helloworld.c'. The main editor area displays a C program named 'additionoftwonumbers.c' with the following code:

```
#include<stdio.h>
//WAP To Add Two Numbers
int main()
{
    int a,b;
    printf("Enter a");
    scanf("%d",&a);

    printf("Enter b");
    scanf("%d",&b);

    int sum=a+b;
    printf("sum is %d", sum);

    return 0;
}
```

The terminal tab at the bottom shows the execution of the program:

```
PS C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS> gcc additionoftwonumbers.c
PS C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Enter a10
Enter b20
sum is 30
PS C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS>
```

The status bar at the bottom right indicates the file is 'Ln 5, Col 1' with 'Spaces: 4', 'UTF-8', 'CRLF', and 'C Win32' selected.

Program 3: Write a program to find area of circle.

Program:

```
#include<stdio.h>
//Write A Program To Find The Area Of Circle
int main()
{
    int R;
    printf("Radius Of Circle:");
    scanf("%d",&R);

    float pi=3.14;
    float Area;
```

$$Area = 3.14 * R * R;$$

```
printf("Area OF Circle=%f",Area);
```

```
return 0;
```

```
}
```

Output:

The screenshot shows the Visual Studio Code interface. The left sidebar displays a file tree under 'C LANGUAGE ASSIGNMENTS' containing files like .vscode, .c, a.exe, additionoftwonumbers.c, task.c, and areaofcircle.c. The main editor window shows the source code for 'areaofcircle.c'. The code defines a main function that prompts for a radius, calculates the area using pi=3.14, and prints the result. The terminal at the bottom shows the command-line output of running the program, which outputs 'Area Of Circle=254.339996'.

```
C areaofcircle.c > main()
1 #include<stdio.h>
2 //Write A Program To Find The Area Of Circle
3 int main()
4 {
5     int R;
6     printf("Radius of Circle:");
7     scanf("%d",&R);
8
9     float pi=3.14;
10    float Area;
11    Area=3.14*R*R;
12
13    printf("Area OF Circle=%f",Area);
14
15
16    return 0;
17 }
18
19
20
21
```

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gcc areaofcircle.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Radius Of Circle:9
Area Of Circle=254.339996
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

Program 4: Write a Program to divide two number

Program:

```
#include<stdio.h>
int main()
{
    int a;
    printf("ENTER THE VALUE OF FIRST NUMBER a:");
    scanf("%d",&a);

    int b;
    printf("ENTER THE VALUE OF SECOND NUMBER b:");
    scanf("%d",&b);

    int divison;
    divison=a/b;

    printf("\nVALUE AFTER DIVISON IS:%d",divison);

    return 0;
}
```

Output:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc divisionoftwonumbers.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a
ENTER THE VALUE OF FIRST NUMBER a:100
ENTER THE VALUE OF SECOND NUMBER b:50
VALUE AFTER DIVISON IS:2
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

The screenshot shows a Windows desktop environment with VS Code open. The terminal window displays the execution of a C program named 'divisionoftwonumbers.c'. The program prompts for two integers, 'a' and 'b', and then prints the result of their division. The output shows 'a' as 100 and 'b' as 50, resulting in a value of 2.

Program 5: Write a program to find the ASCII value.

Program:

```
#include<stdio.h>
int main()
{
    char df;
    printf("ENTER A CHARACTER:");
    scanf("%c",&df);

    printf("ASCII VALUE OF %c:%d",df,df);
    return 0;
}
```

Output:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc ascii.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a.exe
ENTER A CHARACTER:N
ASCII VALUE OF N:78
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

The screenshot shows a Windows desktop environment. In the center is a terminal window within a code editor (VS Code). The terminal window has a dark background and displays the command-line interface. It shows the user has run 'gcc' to compile a file named 'ascii.c', then executed the resulting binary 'a.exe'. The user then typed 'N' and the terminal printed its ASCII value, '78'. The terminal window also shows a long list of 'powershell' entries at the bottom.

Program 6: Write a program to find the area of rectangle.

Program:

```
#include<stdio.h>
int main()
{
    int a;
    printf("Length Of Rectangle is:");
    scanf("%d",&a);
```

```
    int b;
    printf("Breadth Of Rectangle is:");
    scanf("%d",&b);
```

```
    int Area;
```

```

Area= a*b;
printf("\nArea Of Rectangle Is:%d",Area);
return 0;
}

```

Output:

The screenshot shows the VS Code interface with the following details:

- File Explorer:** Shows several C files: helloworld.c, additionoftwonumbers.c, task.c, areaofcircle.c, divisionoftwonumbers.c (2), and areaofrectangle.c.
- Code Editor:** Displays the source code for `areaofrectangle.c`. The code prompts for length and breadth, calculates the area, and prints the result.
- Terminal:** Shows the command-line output of the program's execution. It includes the compilation step (`gcc areaofrectangle.c`) and the execution step (`./a.exe`). The terminal also displays the user input for length (25) and breadth (25), and the resulting output (Area Of Rectangle Is:100).
- Status Bar:** Provides information such as the current file path (`C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS\areaofrectangle.c`), line and column numbers (Ln 5, Col 16), spaces used (Spaces: 7), encoding (UTF-8), and the date and time (10-09-2023 16:57).

Program 7: Write to program to SWAP two variables number by using third variable.

Program:

```

#include<stdio.h>
int main()
{
    int a;
    printf("VALUE OF FIRST VARIABLE BEFORE SWAPPING:");
    scanf("%d",&a);

```

```
int b;  
printf("VALUE OF SECOND VARIABLE BEFORE SWAPPING:");  
scanf("%d",&b);
```

```
a=a+b;  
b=a-b;  
a=a-b;
```

```
printf("\nVALUE OF FIRST VARIABLE AFTER SWAPPING:%d",a);  
printf("\nVALUE OF SECOND VARIABLE AFTER  
SWAPPING:%d",b);
```

```
return 0;  
}
```

Output:

The screenshot shows a Microsoft Visual Studio Code (VS Code) interface. On the left, the Explorer sidebar lists several C files: areaofrectangle.c, areaofsquare.c, swapping.c, swappingof.c (which is currently selected), task.c, and others like .c, a.exe, additionoftwonumbers.c, areaofrectangle.c, areaofcircle.c, helloworld.c, swapping.c, swappingof.c, and swappingof.exe. The main editor pane displays the code for swappingof.c, which swaps the values of variables a and b. The terminal on the right shows the execution of the program, displaying the initial values of a and b, the swap operation, and the final swapped values.

```
File Edit Selection View Go Run Terminal Help ⏎ → 🔍 C LANGUAGE ASSIGNMENTS  
EXPLORER ... ngs C areaofrectangle.c C areaofsquare.c C swapping.c C swappingof.c ...  
C LANGUAGE ASSIGNMENTS  
> 🌐 .vscode  
C .c  
a.exe  
C additionoftwonumbers.c  
C areaofrectangle.c  
C areaofsquare.c  
C areaofcircle.c  
C helloworld.c  
C swapping.c  
C swappingof.c  
C swappingof.exe  
C task.c  
C swappingof.c > main()  
1 #include<stdio.h>  
2 int main()  
3 {  
4  
5     int a;  
6     printf("VALUE OF FIRST VARIABLE BEFORE SWAPPING:");  
7     scanf("%d",&a);  
8  
9     int b;  
10    printf("VALUE OF SECOND VARIABLE BEFORE SWAPPING:");  
11    scanf("%d",&b);  
12  
13    a=a+b;  
14    b=a-b;  
15    a=a-b;  
16  
17  
18    printf("\nVALUE OF FIRST VARIABLE AFTER SWAPPING:%d",a);  
19    printf("\nVALUE OF SECOND VARIABLE AFTER SWAPPING:%d",b);  
20  
21    return 0;  
22 }  
  
VALUE OF FIRST VARIABLE BEFORE SWAPPING:60  
OneDrive\Desktop\C LANGUAGE ASSIGNMENTS"  
VALUE OF SECOND VARIABLE BEFORE SWAPPING:60  
VALUE OF FIRST VARIABLE AFTER SWAPPING:3969024  
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>  
d "C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS"\  
; if ($?) { gcc swappingof.c -o swappingof } ; if ($?)  
{ .\swappingof }  
VALUE OF FIRST VARIABLE BEFORE SWAPPING:60  
VALUE OF SECOND VARIABLE BEFORE SWAPPING:60  
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>  
d "C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS"\  
; if ($?) { gcc swappingof.c -o swappingof } ; if ($?)  
{ .\swappingof }  
VALUE OF FIRST VARIABLE AFTER SWAPPING:40  
VALUE OF SECOND VARIABLE AFTER SWAPPING:60  
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>  
26°C Mostly cloudy Search ⏎ IN 19:47 10-09-2023
```

Program 8: Write a program to SWAP two variable numbers without using third element

Program:

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

```
//WAP TO SWAP TWO NUMBERS USING A THIRD VARIABLE
```

```
int main()
```

```
{
```

```
    int a;
```

```
    printf("Value of 1st number before swapping:");
```

```
    scanf("%d",&a);
```

```
    int b;
```

```
    printf("Value of 2nd number before swapping:");
```

```
    scanf("%d",&b);
```

```
//NOW WE WILL TAKE A TEMPORARY NUMBER temp(THIRD VARIABLE) TO SWAP NUMBERS X AND Y
```

```
    int temp;
```

```
    temp = a;
```

```
    a = b;
```

```
    b = temp;
```

```
printf("value of 1st number after swapping:%d",a);
printf("\nvalue of 2nd number after swapping:%d",b);
```

```
return 0;
```

```
}
```

Output:

The screenshot shows the Microsoft Visual Studio Code interface. The left sidebar displays a tree view of C LANGUAGE ASSIGNMENTS, including files like twonumbers.c, task.c, areaofcircle.c, divisionoftwonumbers.c, areaofrectangle.c, areaofsquare.c, areasofsquare.exe, areaofcircle.c, divisionoftwonumbers.c, helloworld.c, swapping.c, and task.c. The main editor window shows the code for swapping.c. The terminal at the bottom shows the execution of the program:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gcc swapping.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Value of 1st number before swapping:50
Value of 2nd number before swapping:100
value of 1st number after swapping:100
value of 2nd number after swapping:50
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

Program 9: Write A Program to Find the Volume of Cuboid.

Program:

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

```
int main()
```

```
{
```

```
    int a;
```

```
printf("ENTER THE LENGTH OF CUBOID:");
scanf("%d",&a);
```

```
int b;
printf("ENTER THE BREADTH OF CUBOID:");
scanf("%d",&b);
```

```
int c;
printf("ENTER THE HEIGHT OF THE CUBOID:");
scanf("%d",&c);
```

```
int Volume_of_cuboid;
Volume_of_cuboid=a*b*c;
```

```
printf("\nVolume Is:%d",Volume_of_cuboid);
```

```
return 0;
```

```
}
```

Output:

The screenshot shows a Windows desktop environment with the Visual Studio Code (VS Code) application open. The code editor displays a C program named 'volumeofcuboid.c'. The terminal window shows the execution of the program using gcc and the resulting output. The output indicates that the user entered dimensions for a cuboid (length 50, breadth 4, height 4) and the calculated volume is 800.

```
#include<stdio.h>
int main()
{
    int a;
    printf("ENTER THE LENGTH OF CUBOID:");
    scanf("%d",&a);

    int b;
    printf("ENTER THE BREADTH OF CUBOID:");
    scanf("%d",&b);

    int c;
    printf("ENTER THE HEIGHT OF THE CUBOID:");
    scanf("%d",&c);

    int Volume_of_cuboid;
    Volume_of_cuboid=a*b*c;

    printf("\nVolume Is:%d",Volume_of_cuboid);
}

```

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc volumeofcuboid.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a
.exe
ENTER THE LENGTH OF CUBOID:50
ENTER THE BREADTH OF CUBOID:4
ENTER THE HEIGHT OF THE CUBOID:4
Volume Is:800
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

Program 10: Write a program to find the volume of a cube.

Program:

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

```
int main()
```

```
{
```

```
int a;
```

```
printf("ENTER THE VALUE OF THE SIDE OF A CUBE:");
```

```
scanf("%d",&a);
```

```
int volume;
```

```
volume=a*a*a;
```

```
printf("\nVOLUME OF CUBE IS:%d",volume);
```

```
return 0;
```

```
}
```

Output:

The screenshot shows the Visual Studio Code interface with the following details:

- File Explorer:** Shows several C files including `volumeofcube.c`, `areaoftriangle.c`, and `areaofcuboid.c`.
- Code Editor:** Displays the `volumeofcube.c` file with the following code:

```
#include<stdio.h>
int main()
{
    int a;
    printf("ENTER THE VALUE OF THE SIDE OF A CUBE:");
    scanf("%d",&a);
    int volume;
    volume=a*a*a;
    printf("\nVOLUME OF CUBE IS:%d",volume);
    return 0;
}
```
- Terminal:** Shows the command-line output:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc volumeofcube.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a
ENTER THE VALUE OF THE SIDE OF A CUBE:6
VOLUME OF CUBE IS:216
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```
- Status Bar:** Shows the current file is `volumeofcube.c`, line 18, column 2, with 4 spaces, using UTF-8 encoding, and the date/time is 10-09-2023.

Program 11: Write a program to find the area of cuboid:

Program:

```
#include<stdio.h>
int main()
{
    int a;
    printf("Enter The length OF THE Cuboid:");
    scanf("%d",&a);

    int b;
    printf("Enter The Breadth Of The  Of A Cuboid:");
    scanf("%d",&b);

    int c;
    printf("Enter The Height Of The Cuboid;");
    scanf("%d",&c);

    int area;
    area= 2*a*b+2*a*c+2*b*c;

    printf("\nArea  OF CUBOID IS:%d",area);

    return 0;
}
```

Output:

The screenshot shows the Microsoft Visual Studio Code interface. The left sidebar displays a file tree under 'C LANGUAGE ASSIGNMENTS' containing various C files like 'areaoftriangle.c', 'volumeofcube.c', 'areaofacube.c', and 'areaofcuboid.c'. The main editor window shows the code for 'areaofcuboid.c'. The terminal window at the bottom right shows the command line output of running the program.

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gcc areaofcuboid.c c:/mingw/bin/../lib/gcc/mingw32/6.3.0/../../../../mingw32/bin/ld.exe: cannot open output file a.exe: Permission denied collect2.exe: error: ld returned 1 exit status PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe Enter the length OF THE Cuboid:10 Enter The Breadth Of The OF A Cuboid:10 Enter The Height Of The Cuboid:20 Area OF CUBOID IS:1000
```

Program 12: Write a program to find the area of triangle.

Program:

```
#include<stdio.h>
int main()
{
    int a;
    printf("ENTER THE HEIGHT OF THE TRIANGLE:");
    scanf("%d",&a);
```

```
    int b;
    printf("ENTER THE BASE OF THE TRIANGLE:");
    scanf("%d",&b);
```

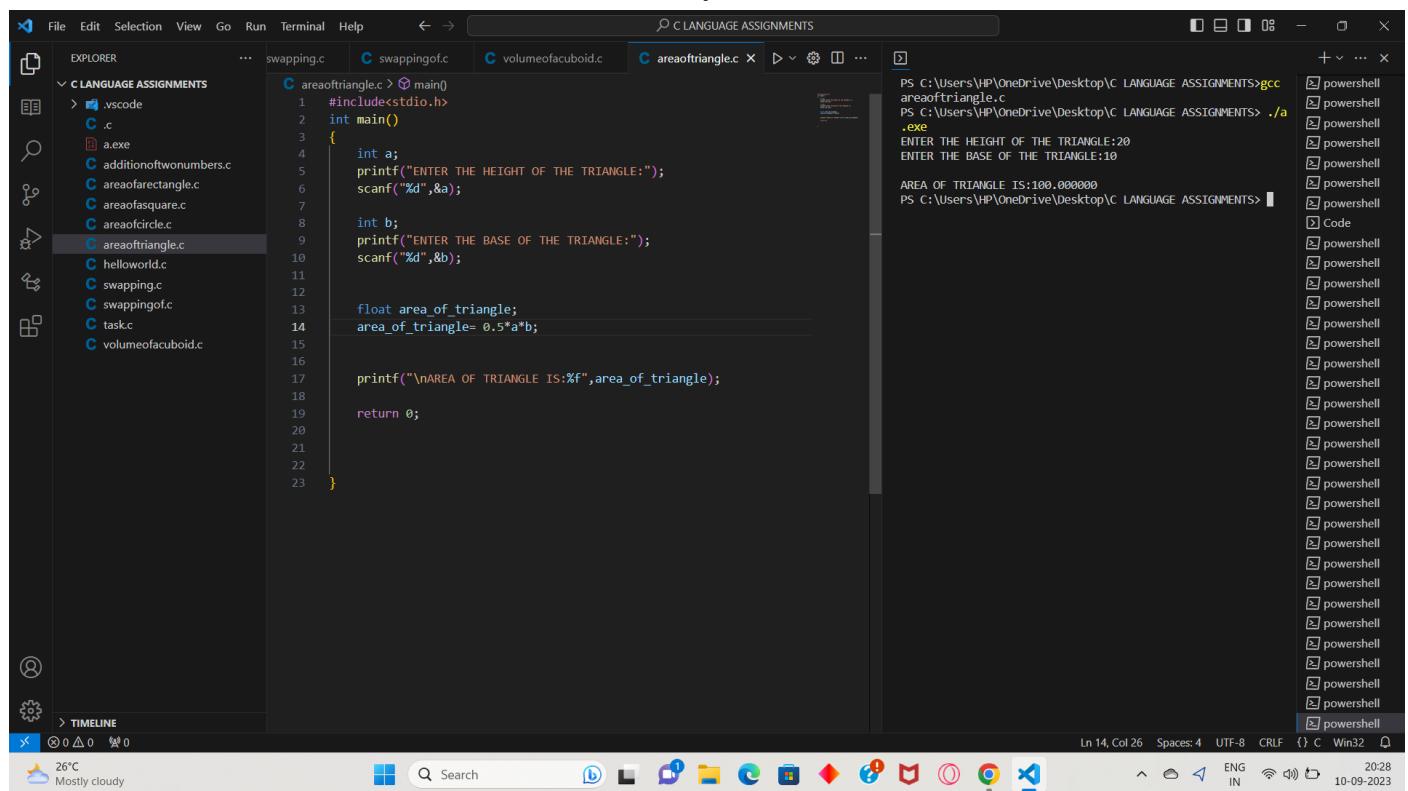
```
float area_of_triangle;  
area_of_triangle= 0.5*a*b;
```

```
printf("\nAREA OF TRIANGLE IS:%f",area_of_triangle);
```

```
return 0;
```

```
}
```

Output:



The screenshot shows the Microsoft Visual Studio Code interface with the following details:

- File Explorer:** Shows the workspace named "C LANGUAGE ASSIGNMENTS" containing files like swapping.c, areaoftriangle.c, and volumeofacuboid.c.
- Editor:** The "areaoftriangle.c" file is open, showing the following C code:

```
float area_of_triangle;  
area_of_triangle= 0.5*a*b;  
  
printf("\nAREA OF TRIANGLE IS:%f",area_of_triangle);  
  
return 0;
```
- Terminal:** The terminal window shows the command "gcc areaoftriangle.c" being run, followed by the output of the program:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc areaoftriangle.c  
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe  
ENTER THE HEIGHT OF THE TRIANGLE:20  
ENTER THE BASE OF THE TRIANGLE:10  
AREA OF TRIANGLE IS:100.000000
```
- Status Bar:** Shows the current line (Ln 14, Col 26), spaces (Spaces: 4), encoding (UTF-8), and file type (C Win32).
- System Tray:** Shows the weather (26°C, Mostly cloudy) and system icons.

Program 13: Write a Program to find the area of cube:

Program:

```
#include<stdio.h>
int main()
{
    int a;
    printf("ENTER THE VALUE OF THE SIDE OF A CUBE:");
    scanf("%d",&a);

    int area;
    area=6*a*a;

    printf("\nArea OF CUBE IS:%d",area);

    return 0;
}
```

Output:

The screenshot shows a Windows desktop environment. In the center is a terminal window titled 'C LANGUAGE ASSIGNMENTS' running in VS Code. The code in the editor is:

```
#include<stdio.h>
int main()
{
    int a;
    printf("ENTER THE VALUE OF THE SIDE OF A CUBE:");
    scanf("%d",&a);
    int area;
    area=a*a*a;
    printf("\nArea OF CUBE IS:%d",area);
    return 0;
}
```

The terminal output shows the program being compiled with gcc and run, followed by user input and the program's output:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc areaofcube.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a
Area OF CUBE IS:54
```

At the bottom of the terminal window, there is a long list of powershell command history entries.

Program 14: Write a program to find the area of square:

Program:

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

//Write A Program To Find The Area Of The Square

```
int main()
```

```
{
```

```
    int a;
```

```
    printf("Side Of The Square is ");
```

```
scanf("%d",&a);  
  
int Area;  
Area= a*a;  
  
printf("\nArea Of Square is :%d",Area);  
  
return 0;  
}
```

Output:

The screenshot shows the Visual Studio Code interface. The left sidebar has icons for file operations like Open, Save, Find, and Copy/Paste. The main editor area contains the following C code:

```
areaofsquare.c > main()
1 #include<stdio.h>
2 //Write A Program To Find The Area Of The Circle
3
4 int main()
5 {
6
7     int a;
8     printf("side Of The Square is ");
9     scanf("%d",&a);
10
11     int Area;
12     Area= a*a;
13
14     printf("\nArea Of Square is :%d",Area);
15
16     return 0;
17
18 }
19
```

Below the editor is a terminal window showing the execution of the program:

```
PROBLEMS DEBUG CONSOLE OUTPUT TERMINAL PORTS
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gcc areaofsquare.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Side of The Square is 50
Area Of Square is :2500
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

The status bar at the bottom shows the current file is 'areaofsquare.c', encoding is 'UTF-8', and the date/time is '10-09-2023'.

Program 15: Write a program to find the simple interest.

Program:

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

```
int main()
```

```
{
```

```
float p,r,t,si;
```

```
printf("Enter The Value Of Principle amount:");
```

```
scanf("%f",&p);
```

```
printf("Enter The Value Of rate Of Interest:");
```

```
scanf("%f",&r);
```

```
printf("Enter The Time Duration:");
```

```
scanf("%f",&t);
```

```
si=p*r*t/100;
```

```
printf("\nSimple Interest So Calculated:%f",si);
```

```
return 0;
```

```
}
```

Output:

The screenshot shows a Windows desktop environment with the Visual Studio Code (VS Code) application open. The title bar of VS Code reads "C LANGUAGE ASSIGNMENTS". The left sidebar (Explorer) lists several C programs: areafasquare.c, swapping.c, swappingof.c, simpleinterest.c, additionoftwonumbers.c, areaofacube.c, areaofacuboid.c, areaofrectangle.c, areaofsquare.c, areaofcircle.c, areaoftriangle.c, asci.c, divisionoftwonumbers.c, helloworld.c, simpleinterest.c, swapping.c, swappingof.c, task.c, volumeofacuboid.c, and volumeofcube.c. The "simpleinterest.c" file is currently selected and is displayed in the main editor area. The code implements a simple interest calculation. The terminal tab at the bottom shows the command "gcc simpleinterest.c" being run, followed by the program's output: "Simple Interest So Calculated:100.00000". The status bar at the bottom right indicates the date and time as "11-09-2023" and "20:38".

Program 16: Write A program to swap three variables without using a third variable.

Program:

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

```
int main()
```

```
{
```

```
int a,b,c;
```

```
printf("Enter First Number:");
```

```
scanf("%d",&a);
```

```
printf("Enter Second Number:");
```

```
scanf("%d",&b);
```

```
printf("Enter Third Number:");
```

```
scanf("%d",&c);
```

```
a=a+b+c;
```

```
b=a-(b+c);
```

```
c=a-(b+c);
```

```
a=a-(b+c);
```

```
printf("\nFirst Number After Swapping:%d",a);
```

```
printf("\nSecond Number After Swapping:%d",b);
```

```
printf("\nThird Number After swapping:%d",c);
```

```
return 0;
```

```
}
```

Output:

```
#include<stdio.h>
int main()
{
    int a,b,c;
    printf("Enter First Number:");
    scanf("%d",&a);
    printf("Enter Second Number:");
    scanf("%d",&b);
    printf("Enter Third Number:");
    scanf("%d",&c);

    a=a+b+c;
    b=a-(b+c);
    c=a-(b+c);
    a=a-(b+c);

    printf("\nFirst Number After Swapping:%d",a);
    printf("\nSecond Number After Swapping:%d",b);
    printf("\nThird Number After Swapping:%d",c);

    return 0;
}
```

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc swappingofthree.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Enter First Number:10
Enter Second Number:20
Enter Third Number:30

First Number After Swapping:30
Second Number After Swapping:10
Third Number After Swapping:20
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>
```

Program 17: Write a program to conversion from Fahrenheit to Celsius.

Program:

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

```
int main()
```

```
{
```

```
float fah,cel;
```

```

printf("Enter The Temperature in Fahrenheit:");
scanf("%f",&fah);

cel=(5*(fah-32))/9;

printf("Temperature in celsius:%f",cel);

return 0;

}

```

Output:

The screenshot shows the Microsoft Visual Studio Code interface with the following details:

- File Explorer:** On the left, it lists various C source files and executables, including `conversion.c`, `swappingofthree.c`, `compoundinterest.c`, and `a.exe`.
- Code Editor:** The main editor area displays the code for `conversion.c`. The code prompts for Fahrenheit input, calculates Celsius, and prints the result.
- Terminal:** On the right, the terminal window shows the execution of the program. It starts with the command `gcc conversion.c`, followed by running the executable `./a.exe`. The user is prompted to enter a temperature in Fahrenheit, and the program outputs the converted Celsius value.
- Status Bar:** At the bottom, the status bar shows the current file is `conversion.c`, the line and column are `Ln 14, Col 2`, and the encoding is `UTF-8`.
- Taskbar:** The taskbar at the very bottom includes icons for weather (25°C, mostly cloudy), search, browser, and other system functions.

Program 18 : Write a program for multiplication of two floating numbers.

Program:

```
#include<stdio.h>

int main()
{
    float a,b;

    printf("Enter First Number:");
    scanf("%f",&a);

    printf("Enter Second Number:");
    scanf("%f",&b);

    float multiplication;
    multiplication=a*b;
```

```

printf("\nFinal Answer After Multiplication Of Floating Numbers
Is:%.4f",multiplication);

return 0;

}

```

Output:

The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar lists various C files under 'C LANGUAGE ASSIGNMENTS'. The main editor area displays the 'floating.c' file with the following code:

```

1 #include <stdio.h>
2 int main()
3 {
4     float a,b;
5     printf("Enter First Number:");
6     scanf("%f",&a);
7     printf("Enter Second Number:");
8     scanf("%f",&b);
9
10    float multiplication;
11    multiplication=a*b;
12
13
14    printf("\nFinal Answer After Multiplication Of Floating Numbers Is:%.4f",multiplication);
15    return 0;
16
17
18
19
20
21
22
23
24 }

```

To the right of the editor is a terminal window showing the execution of the program:

```

PS C:\Users\HP\OneDrive\Desktop\CL LANGUAGE ASSIGNMENTS> gcc floating.c
PS C:\Users\HP\OneDrive\Desktop\CL LANGUAGE ASSIGNMENTS> ./a.exe
Enter First Number:2.5
Enter Second Number:2.55
Final Answer After Multiplication Of Floating Numbers Is:6.3750
PS C:\Users\HP\OneDrive\Desktop\CL LANGUAGE ASSIGNMENTS>

```

Program 19: Write a program to print your Name, age, batch, student ID, course.

Program:

```
#include<stdio.h>
int main()
{
    char name[25],course[10];
    int age, batch, sid;
    printf("Enter Your Name:");
    scanf("%s",&name);
    printf("Enter Your age:");
    scanf("%d",&age);
    printf("Enter Your batch:");
    scanf("%d",&batch);
    printf("Enter Your Student Id:");
    scanf("%d",&sid);
    printf("Enter Your Course:");
    scanf("%s",&course);
```

```

printf("\n\nName:%s",name);

printf("\nAge:%d",age);

printf("\nBatch:%d",batch);

printf("\nStudent Id:%d",sid);

printf("\nCourse:%s",course);

return 0;

}

```

Output:

The screenshot shows the Microsoft Visual Studio Code interface. The code editor displays the following C program:

```

File Edit Selection View Go Run Terminal Help ← → 🔍 C LANGUAGE ASSIGNMENTS
EXPLORER C personaldetails.c > ⚙️ main()
C LANGUAGE ASSIGNMENTS
> 📂 .vscode
C .c
C a.exe
C additionoftwonumbers.c
C areaofacube.c
C areaofacuboid.c
C areaofrectangle.c
C areaofsquare.c
C areaofcircle.c
C areaoftriangle.c
C ascii.c
C compoundinterest.c
C conversion.c
C divisionoftwonumbers.c
C floating.c
C helloworld.c
C personaldetails.c
C simpleinterest.c
C swapping.c
C swappingof.c
C swappingofthree.c
C task.c
C volumeofacuboid.c
C volumeofcube.c
C personaldetails.c > ⚙️ main()
1 #include<stdio.h>
2 int main()
3 {
4
5 char name[25],course[10];
6 int age, batch, sid;
7
8 printf("Enter Your Name:");
9 scanf("%s",&name);
10
11 printf("Enter Your age:");
12 scanf("%d",&age);
13
14 printf("Enter Your batch:");
15 scanf("%d",&batch);
16
17 printf("Enter Your Student Id:");
18 scanf("%d",&sid);
19
20 printf("Enter Your Course:");
21 scanf("%s",&course);
22
23
24 printf("\n\nName:%s",name);
25 printf("\nAge:%d",age);
26 printf("\nBatch:%d",batch);
27 printf("\nStudent Id:%d",sid);
28 printf("\nCourse:%s",course);
29
30
31 return 0;
32 }

```

The terminal window shows the execution of the program and its output:

```

PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gec personaldetails.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Enter Your Name:nikhil
Enter Your age:18
Enter Your batch:2027
Enter Your Student Id:23151431
Enter Your Course:BCA(Hons.)WithAI+DS
Name:WithAI+DS
Age:18
Batch:2027
Student Id:23151431
Course:BCA(Hons.)WithAI+DS
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> █

```

The status bar at the bottom indicates the following information: Line 21, Column 21, Spaces: 4, UTF-8, CRLF, ENG IN, 23:26, 11-09-2023.

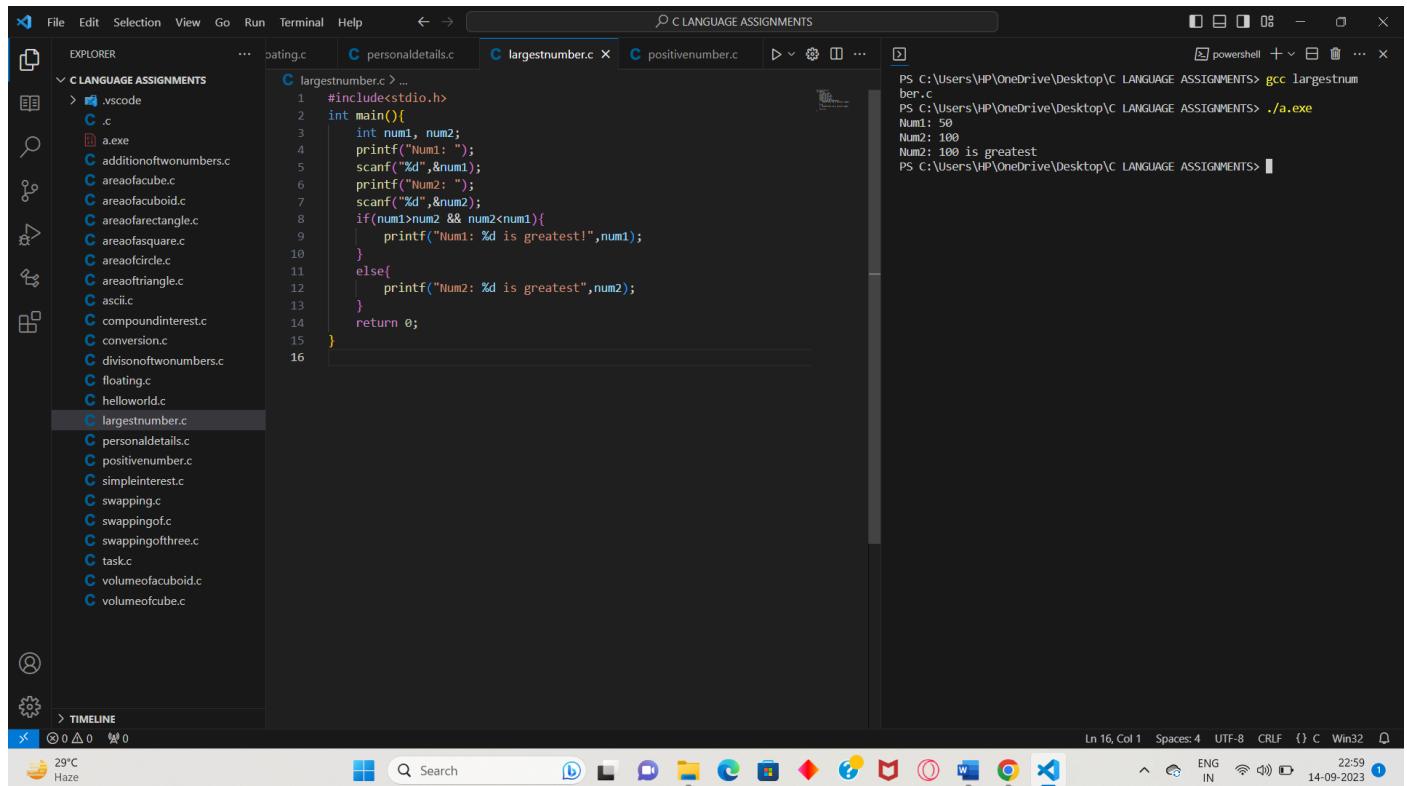
Program 20: Write a program to find the largest number using the logic and operator

Program:

```
#include<stdio.h>

int main(){
    int num1, num2;
    printf("Num1: ");
    scanf("%d",&num1);
    printf("Num2: ");
    scanf("%d",&num2);
    if(num1>num2 && num2<num1){
        printf("Num1: %d is greatest!",num1);
    }
    else{
        printf("Num2: %d is greatest",num2);
    }
    return 0;
}
```

Output:



```
#include<stdio.h>
int main(){
    int num1, num2;
    printf("Num1: ");
    scanf("%d",&num1);
    printf("Num2: ");
    scanf("%d",&num2);
    if(num1>num2 && num2<num1){
        printf("Num1: %d is greatest!",num1);
    }
    else{
        printf("Num2: %d is greatest",num2);
    }
    return 0;
}
```

PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gcc largestnumber.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe
Num1: 50
Num2: 100
Num2: 100 is greatest
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>

Program 21: Write a program to input the positive number from the user:

Program:

```
#include<stdio.h>

int main(){

    int num;

    printf("\nEnter a number: ");

    scanf("%d",&num);

    int a = num << 2;

    printf("Two Left shift: %d",a);
```

```
return 0;  
}
```

Output:

The screenshot shows a Windows desktop environment with VS Code open. The terminal window displays the following text:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>gcc positivenumber.c  
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS>./a.exe  
Enter a number: 10  
Two Left shift: 40
```

Program 22: Write a program to input the positive number from the user to perform the right shift operator

Program:

```
#include<stdio.h>  
  
int main(){  
    int num;  
    printf("\nEnter the number: ");  
    scanf("%d",&num);  
    int a = num >> 2;
```

```

printf("Right shift: %d",a);

return 0;

}

```

Output:

The screenshot shows a Windows desktop environment. In the center is a terminal window titled 'C LANGUAGE ASSIGNMENTS' with the command 'gcc positivenumber2.c' and its output: 'PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> ./a.exe Enter the number: 21 Right shift: 5'. To the left of the terminal is a file explorer window showing a folder named 'C LANGUAGE ASSIGNMENTS' containing various C source files like 'details.c', 'largestnumber.c', and 'positivenumber2.c'. The file 'positivenumber2.c' is currently selected. At the bottom of the screen is a taskbar with icons for various applications.

```

#include<stdio.h>
int main(){
    int num;
    printf("\nEnter the number: ");
    scanf("%d",&num);
    int a = num >> 2;
    printf("Right shift: %d",a);
    return 0;
}

```

Program 23: Write a program to perform the pre increment and pre decrement operator on two integers and print both original value and updated value

Program:

```

#include<stdio.h>

int main(){

    int num1,num2;

    printf("Enter the number1: ");

    scanf("%d",&num1);

```

```

printf("Enter the number2: ");

scanf("%d",&num2);

printf("Original Num1: %d and Original Num2: %d",num1,num2);

++num1, ++num2;

printf("\nUpdated Num1: %d and Updated Num3: %d",num1,num2);

return 0;
}

```

Output:

The screenshot shows the Visual Studio Code interface. The left sidebar displays a tree view of C language assignments, with 'operators.c' selected. The main editor area shows the code for 'operators.c'. The terminal tab at the bottom shows the execution of the program:

```

PS C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS>gcc operators.c
PS C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS>./a.exe
Enter the number1: 10
Enter the number2: 14
Original Num1: 10 and Original Num2: 14
Updated Num1: 11 and Updated Num3: 15
PS C:\Users\HP\Desktop\C LANGUAGE ASSIGNMENTS>

```

Program 24: Write a program to identify gender in single character and print full gender (Ex: if input is 'M' or 'm' – it should print "Male")

Program:

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

```
int main(){
    char gender;
    printf("\nEnter your gender(M/F): ");
    scanf("%c",&gender);
    if(gender=='m' || gender=='M'){
        printf("Male");
    }
    else if(gender=='f' || gender=='F'){
        printf("Female");
    }
    else{
        printf("Invalid Gender!");
    }
    return 0;
}
```

Output:

```
#include<stdio.h>
int main(){
    char gender;
    printf("\nEnter your gender(M/F): ");
    scanf("%c",&gender);
    if(gender=='m' || gender=='M'){
        printf("Male");
    }
    else if(gender=='f' || gender=='F'){
        printf("Female");
    }
    else{
        printf("Invalid Gender!");
    }
    return 0;
}
```

Program 25: FIND THE LARGEST NUMBER USING THE LOGICAL AND OPERATOR

Program:

```
#include<stdio.h>

int main(){

    int num1, num2;

    printf("Num1: ");
    scanf("%d",&num1);

    printf("Num2: ");
    scanf("%d",&num2);

    if(num1>num2 && num2<num1){

        printf("Num1: %d is greatest!",num1);
    }
}
```

```

}

else{

    printf("Num2: %d is greatest",num2);

}

return 0;

}

```

OUTPUT

The screenshot displays a Windows desktop environment with a code editor window titled "C LANGUAGE ASSIGNMENTS". The code editor shows a file named "largestnumber.c" containing the following C code:

```

1 #include<stdio.h>
2 int main(){
3     int num1, num2;
4     printf("Num1: ");
5     scanf("%d",&num1);
6     printf("Num2: ");
7     scanf("%d",&num2);
8     if(num1>num2 && num2<num1){
9         printf("Num1: %d is greatest!",num1);
10    }
11    else{
12        printf("Num2: %d is greatest",num2);
13    }
14 }
15
16 }

```

To the right of the code editor is a terminal window showing the command-line interface. It starts with "PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS> gcc largestnumber.c", followed by ".exe", and then the output of the program: "Num1: 1000", "Num2: 3000", and "Num2: 3000 is greatest". The terminal window has a scroll bar on the right side.

Program 26: TO VALIDATE THE USERNAME AND PASSWORD ENTERED BY USER IS CORRECT OR NOT USING THE PREDEFINED USERNAME AND PASSWORD

Program:

```
#include <stdio.h>
int main()
{
    int n;
    printf("NIKHIL KHANTWAL\n");

    printf("enter the number:");
    scanf("%d", &n);

    int a = 0;
    for (int i = 2; i <= n - 1; i++)
    {
        if (n % i == 0)
        {
            a = 1;
            break;
        }
    }
    if (n == 1)
```

```
{  
    printf("neither prime nor composite");  
}  
  
else if (a == 0)  
{  
    printf("%d is prime", n);  
}  
  
else if (a ==1)  
{  
    printf("%d is composite number", n);  
}  
  
return 0;  
}
```

OUTPUT

The screenshot shows a Windows desktop environment with the Visual Studio Code application open. The code editor displays a C program named prime.c. The terminal window to the right shows the execution of the program, including the compilation with gcc, the execution of the resulting executable, and the user interaction where it asks for a number and prints whether it is prime or composite.

```
#include <stdio.h>
int main()
{
    int n;
    printf("NIKHIL KHANTWAL\n");
    printf("enter the number:");
    scanf("%d", &n);

    int a = 0;
    for (int i = 2; i <= n - 1; i++)
    {
        if (n % i == 0)
        {
            a = 1;
            break;
        }
    }

    if (n == 1)
    {
        printf("neither prime nor composite");
    }

    else if (a == 0)
    {
        printf("%d is prime", n);
    }

    else if (a ==1)
    {
        printf("%d is composite number", n);
    }

    return 0;
}
```

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\loop
sbasics> gcc prime.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\loop
sbasics> ./a.exe
NIKHIL KHANTWAL
enter the number:29
29 is prime
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\loop
sbasics>
```

Program 27: Write a program to print a table.

Program:

```
#include <stdio.h>

int main()
{
    int n;

    printf("ENTER THE NUMBER:");

    scanf("%d", &n);

    for (int i = 1; i <= 10; i++)
```

```
{
```

```
    printf("%d\n", n*i);
```

```
}
```

```
return 0;
```

```
}
```

OUTPUT

The screenshot shows a Windows desktop environment with a terminal window open in the center. The terminal window has a dark theme and displays the following text:

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\loop
sbasics> gcc table.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\loop
sbasics> ./a.exe
ENTER THE NUMBER:21
21
42
63
84
105
126
147
168
189
210
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\loop
sbasics> █
```

To the left of the terminal window is a file explorer window titled "C LANGUAGE ASSIGNMENTS". It lists various C source files and their corresponding executables. The "table.c" file is currently selected.

The taskbar at the bottom of the screen shows several pinned icons, including File Explorer, Microsoft Edge, and Visual Studio Code. The system tray indicates the date and time as 19-10-2023, 19:58.

Program 28:Write a Program to find the profit or loss using cost price and selling price

Program:

```
#include<stdio.h>
int main()
{
    float sp,cp;
    printf("ENTER THE COST PRICE:");
    scanf("%f",&cp);

    printf("ENTER THE SELLING PRICE:");
    scanf("%f",&sp);

    if(sp-cp>0){
        printf("PROFIT OF : %f",sp-cp);
    }
    else if(sp-cp<0){
        printf("LOSS OF : %f",sp-cp);
    }
}
```

}

else{

```
    printf("NEITHER LOSS NOR PROFIT");
```

}

```
return 0;
```

}

OUTPUT

The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar displays a file tree with various C projects and files. The current file, `cpsp.c`, is open in the center editor. The code implements a simple profit/loss calculator. The terminal on the right shows the execution of the program, where the user inputs cost and selling prices, and the program outputs the result.

```
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\ifelsefolder> gcc cpsp.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\ifelsefolder> ./a.exe
ENTER THE COST PRICE:20000
ENTER THE SELLING PRICE:100000
PROFIT OF : 80000.00000
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\ifelsefolder>
```

Ln 28, Col 1 Spaces:5 UTF-8 CRLF f C Win32

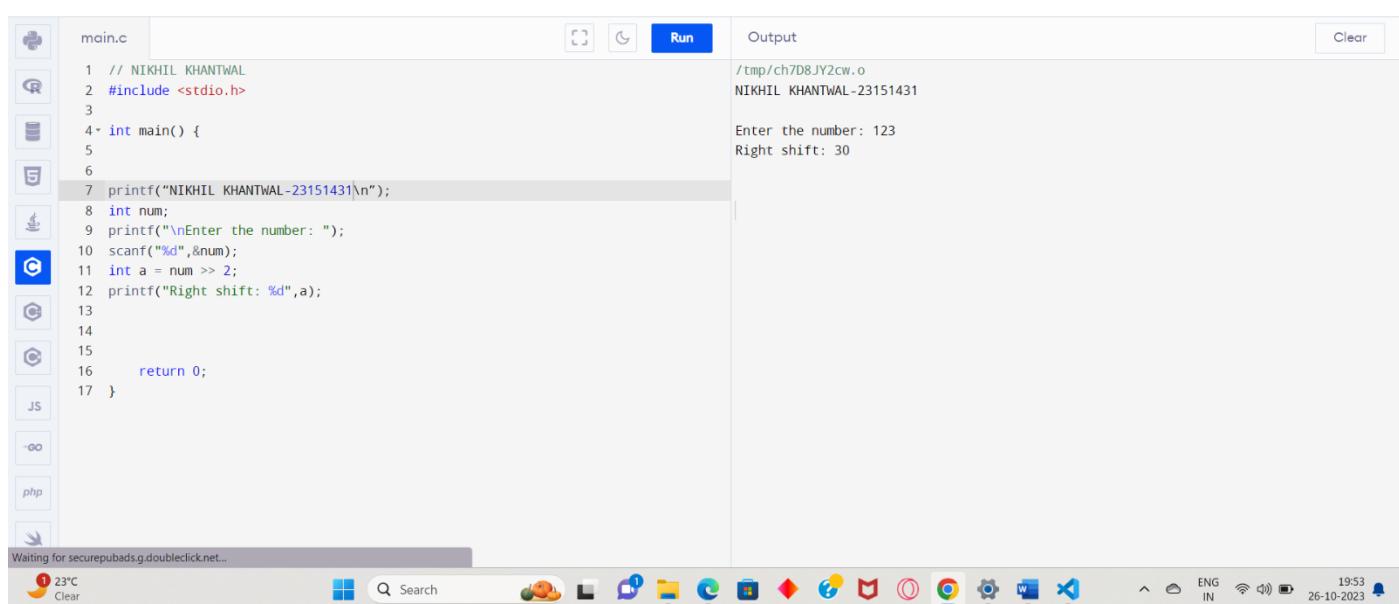
Program 29: Write a program to input the positive number from the user to perform the left shift

Program:

```
#include<stdio.h>

int main(){
    printf("Aditya Rawat-23151125\n");
    int num;
    printf("\nEnter a number: ");
    scanf("%d",&num);
    int a = num << 2;
    printf("Two Left shift: %d",a);
    return 0;
}
```

OUTPUT



The screenshot shows a code editor interface with a toolbar on the left containing icons for various languages (C, C++, Java, Python, etc.). The main area displays a C program named 'main.c' with line numbers 1 through 17. Lines 1-3 are comments. Lines 4-17 define the main function, which prints a header, reads a number from the user, performs a left shift operation (a = num << 2), and then prints the result. The output window on the right shows the compiled file path ('/tmp/ch7D8JY2cw.o'), the name 'NIKHIL KHANTWAL-23151431', the user's input ('Enter the number: 123'), and the program's output ('Right shift: 30').

```
main.c
1 // NIKHIL KHANTWAL
2 #include <stdio.h>
3
4+ int main() {
5
6
7     printf("NIKHIL KHANTWAL-23151431\n");
8     int num;
9     printf("\nEnter the number: ");
10    scanf("%d",&num);
11    int a = num >> 2;
12    printf("Right shift: %d",a);
13
14
15
16    return 0;
17 }
```

Output

```
/tmp/ch7D8JY2cw.o
NIKHIL KHANTWAL-23151431
Enter the number: 123
Right shift: 30
```

Program 30 : Write a program to perform the pre increment and pre decrement operator on two integers and print both original value and updated value

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");
int num1,num2;
printf("Enter the number1: ");
scanf("%d",&num1);
printf("Enter the number2: ");
scanf("%d",&num2);
printf("Original Num1: %d and Original Num2: %d",num1,num2);
++num1, --num2;
printf("\nUpdated Num1: %d and Updated Num3: %d",num1,num2);

return 0;
}
```

OUTPUT

```
main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3+
4 int main(){
5     int num1,num2;
6     printf("Enter the number1: ");
7     scanf("%d",&num1);
8     printf("Enter the number2: ");
9     scanf("%d",&num2);
10    printf("Original Num1: %d and Original Num2: %d",num1,num2);
11    ++num1, --num2;
12    printf("\nUpdated Num1: %d and Updated Num3: %d",num1,num2);
13    return 0;
14 }
```

Output

```
/tmp/ch7D8JY2cw.o
NIKHIL KHANTWAL-23151431
Enter the number1: 1000
Enter the number2: 5123
Original Num1: 1000 and Original Num2: 5123
Updated Num1: 1001 and Updated Num3: 5122
```

Program 31: Write a program to perform the post increment and post

decrement operator on two integers and print both original value and

updated value

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num1,num2;

printf("Enter the number1: ");

scanf("%d",&num1);

printf("Enter the number2: ");
```

```

scanf("%d",&num2);

printf("Original Num1: %d and Original Num2:
%d",num1,num2);

num1++, num2--;

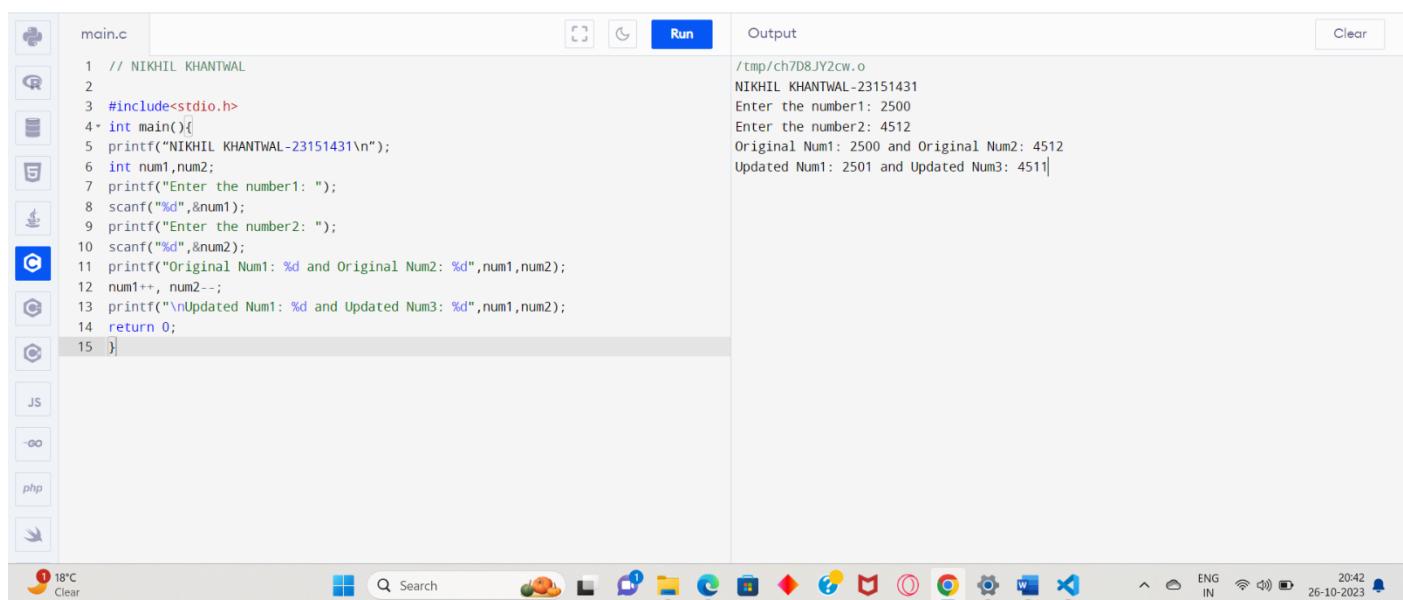
printf("\nUpdated Num1: %d and Updated Num3:
%d",num1,num2);

return 0;

}

```

OUTPUT



```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2
3 #include<stdio.h>
4 int main(){
5 printf("NIKHIL KHANTWAL-23151431\n");
6 int num1,num2;
7 printf("Enter the number1: ");
8 scanf("%d",&num1);
9 printf("Enter the number2: ");
10 scanf("%d",&num2);
11 printf("Original Num1: %d and Original Num2: %d",num1,num2);
12 num1++, num2--;
13 printf("\nUpdated Num1: %d and Updated Num3: %d",num1,num2);
14 return 0;
15 }

Output
/tmp/ch7D8JY2cw.o
NIKHIL KHANTWAL-23151431
Enter the number1: 2500
Enter the number2: 4512
Original Num1: 2500 and Original Num2: 4512
Updated Num1: 2501 and Updated Num3: 4511

```

The screenshot shows a code editor interface with a toolbar on the left containing icons for various languages (C, C++, JS, etc.). The main area has tabs for 'main.c' and 'Run'. The code itself is a simple C program that swaps two integers entered by the user. The 'Output' tab shows the terminal window where the program runs, displaying the original numbers, the swap operation, and the final updated values.

Program 32: Write a program to identify gender in single character and

print full gender (Ex: if input is 'M' or 'm' – it should print "Male")

Program:

```
#include<stdio.h>

int main(){
    printf("Aditya Rawat-23151125\n");
    char gender;
    printf("\nEnter your gender(M/F): ");
    scanf("%c",&gender);
    if(gender=='m' || gender=='M'){
        printf("Male");
    }
    else if(gender=='f' || gender=='F'){
        printf("Female");
    }
    else{
        printf("Invalid Gender!");
    }
    return 0;
}
```

OUTPUT

The screenshot shows a code editor interface with a toolbar at the top. The left pane displays a C program named 'main.c'. The right pane shows the output of the program. The terminal output shows the program's execution and a user interaction where the user enters 'M' for Male.

```
main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     char gender;
6     printf("\nEnter your gender(M/F): ");
7     scanf("%c",&gender);
8     if(gender=='m' || gender=='M'){
9         printf("Male");
10    }
11    else if(gender=='f' || gender=='F'){
12        printf("Female");
13    }
14    else{
15        printf("Invalid Gender!");
16    }
17    return 0;
18 }
```

Output

```
/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
Enter your gender(M/F): M
Male
```

Program 32: Write a Program to print all natural numbers in reverse
(from n to 1).

Program:

```
#include<stdio.h>

int main()

{
    printf("NIKHIL KHANTWAL- 23151431\n");

    int n;

    printf("Enter a number: ");

    scanf("%d",&n);

    for(int i=n;i>=1;i--){

        printf("%d ",i);
    }
}
```

```
}
```

```
return 0;
```

```
}
```

Output:

```
main.c
```

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main()
4 {
5 printf("NIKHIL KHANTWAL- 23151431\n");
6 int n;
7 printf("Enter a number: ");
8 scanf("%d",&n);
9 for(int i=n;i>=1;i--){
10 printf("%d ",i);
11 }
12 return 0;
13 }
```

```
/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL- 23151431
Enter a number: 7
7 6 5 4 3 2 1 |
```

Program 27: Write a program to print all odd numbers between 1 to n

Program:

```
#include<stdio.h>

int main()

{

printf("NIKHIL KHANTWAL-23151431\n");

for(int i=1;i<=100;i++)

{

if(i%2==1){
```

```

printf("%d ",i);

}

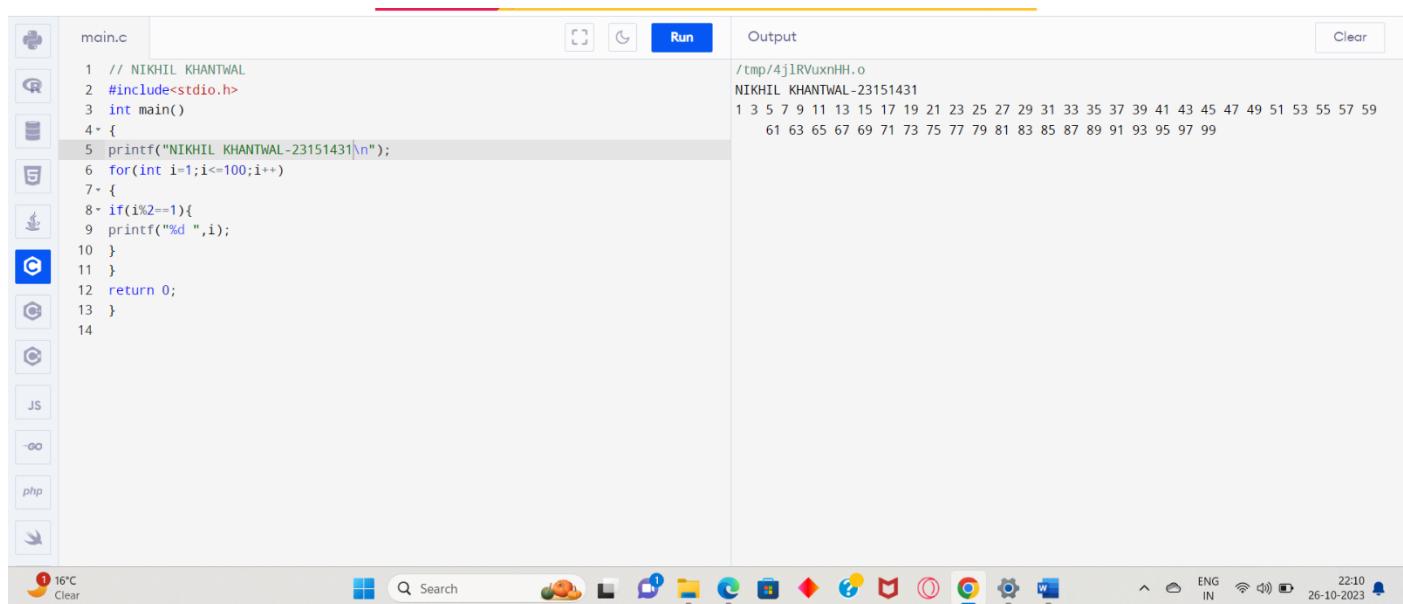
}

return 0;

}

```

OUTPUT



The screenshot shows a code editor interface with a toolbar at the top and a file list on the left. The main area displays a C program named 'main.c'. The code includes a header inclusion, a main function, and a loop that prints prime numbers. The output window shows the generated prime numbers.

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main()
4 {
5 printf("NIKHIL KHANTWAL-23151431\n");
6 for(int i=1;i<=100;i++)
7 {
8 if(i%2==1){
9 printf("%d ",i);
10 }
11 }
12 return 0;
13 }
14

```

Output

```

/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59
61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99

```

Program 28: Write a program to find sum of all natural numbers between 1 to n.

Program:

```

#include<stdio.h>

int main()

{
    int n,sum=0;

```

```

printf("NIKHIL KHANTWAL-23151431\n");

printf("Enter a number: ");

scanf("%d",&n);

for(int i=1;i<=n;i++){

sum = sum + i;

}

printf("Sum is: %d",sum);

return 0;

}

```

OUTPUT

The screenshot shows a code editor interface with a toolbar at the top. The file tab shows "main.c". The code area contains the C program provided above. The output window shows the following text:

```

/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
Enter a number: 20
Sum is: 210

```

The bottom of the screen shows a Windows taskbar with various icons and system status.

Program 29: Write a Program to find sum of all even natural numbers

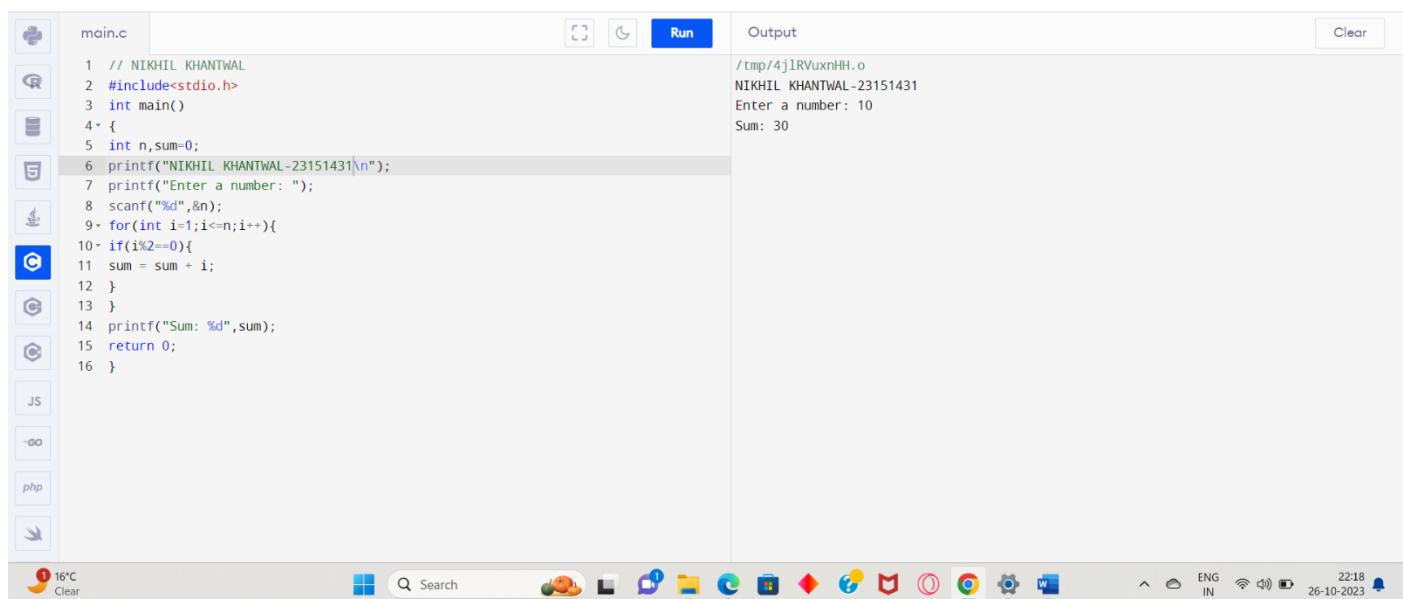
between n to 1

Program:

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

```
int main()
{
int n,sum=0;
printf("NIKHIL KHANTWAL-23151431\n");
printf("Enter a number: ");
scanf("%d",&n);
for(int i=1;i<=n;i++){
if(i%2==0){
sum = sum + i;
}
}
printf("Sum: %d",sum);
return 0;
}
```

OUTPUT



```
main.c // NIKHIL KHANTWAL
#include<stdio.h>
int main()
{
    int n,sum=0;
    printf("NIKHIL KHANTWAL-23151431\n");
    printf("Enter a number: ");
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        if(i%2==0){
            sum = sum + i;
        }
    }
    printf("Sum: %d",sum);
    return 0;
}
```

The output window shows the compiled file path /tmp/4j1RVuxnHH.o, the author's name NIKHIL KHANTWAL-23151431, the user's input Enter a number: 10, and the program's output Sum: 30.

Program 27: Write a program to print all odd numbers between 1 to n

Program:

```
#include<stdio.h>

int main()

{
    printf("NIKHIL KHANTWAL-23151431\n");

    for(int i=1;i<=100;i++)

    {
        if(i%2==1){

            printf("%d ",i);

        }
    }

    return 0;
```

}

OUTPUT

The screenshot shows a code editor interface with a toolbar on the left containing icons for various languages (C, C++, Java, Python, JavaScript, PHP, HTML/CSS, SQL) and other tools. The main area has tabs for 'main.c' and 'Output'. The code in 'main.c' is:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main()
4 {
5 printf("NIKHIL KHANTWAL-23151431\n");
6 for(int i=1;i<=100;i++)
7 {
8 if(i%2==1){
9 printf("%d ",i);
10 }
11 }
12 return 0;
13 }
14
15
16
17
```

The 'Output' tab shows the compiled output:

```
/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39 41 43 45 47 49 51 53 55 57 59
61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 |
```

The system tray at the bottom shows the date and time as 26-10-2023.

Program 32: Write a program to count numbers of digits in a number

Program:

```
#include<stdio.h>

int main()

{
int num,count=0;

printf("NIKHIL KHANTWAL-23151431\n");

printf("Enter the number: ");

scanf("%d",&num);

while(num%10!=0){
```

```

num = num/10;

count++;

}

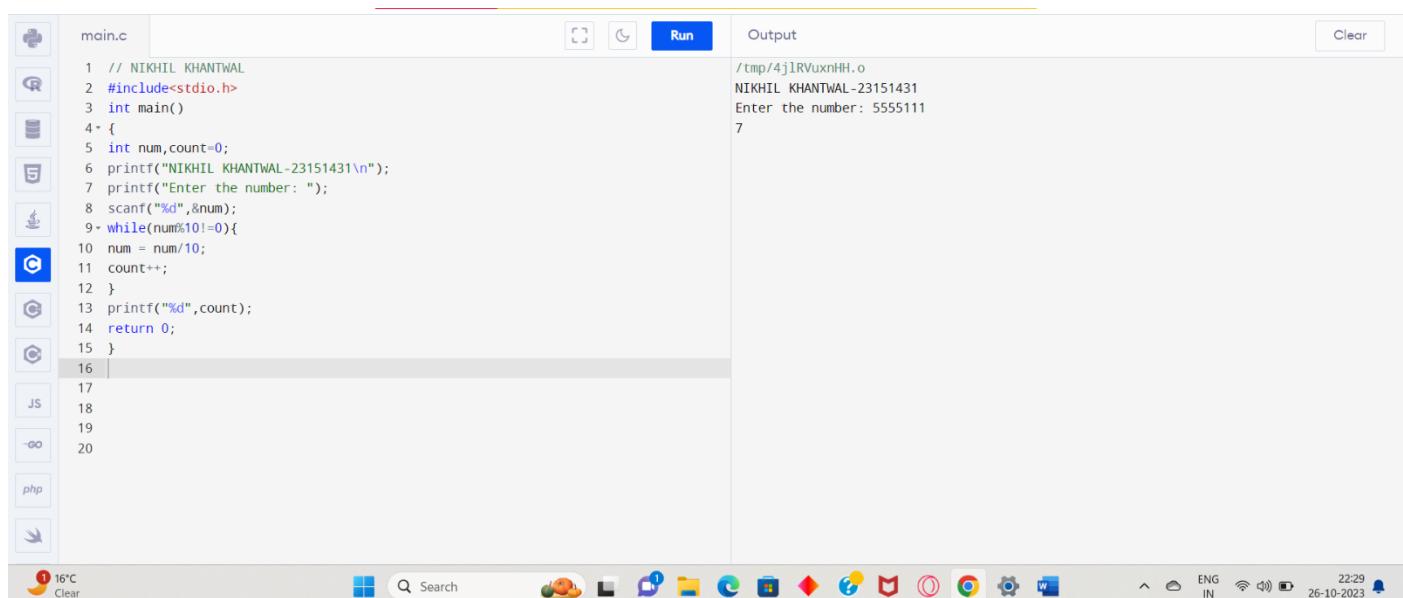
printf("%d",count);

return 0;

}

```

OUTPUT



The screenshot shows a Windows operating system interface. On the left is a code editor window titled "main.c". The code is a C program that reads a number from the user, counts the digits, and prints the count. The output window shows the compiled executable name, the author's name and ID, the input number, and the digit count. The taskbar at the bottom displays various application icons and the date/time.

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main()
4 {
5     int num,count=0;
6     printf("NIKHIL KHANTWAL-23151431\n");
7     printf("Enter the number: ");
8     scanf("%d",&num);
9     while(num%10!=0){
10         num = num/10;
11         count++;
12     }
13     printf("%d",count);
14     return 0;
15 }
16
17
18
19
20

```

Output

```

/tmp/4jlRVuxnHH.o
NIKHIL KHANTWAL-23151431
Enter the number: 5555111
7

```

Program 33: Write a program to find first and last digit of a number

Program:

```

#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num,count=0,value;

```

```
printf("Enter the number: ");
scanf("%d",&num);
printf("Enter the number of digits: ");
scanf("%d",&value);
while(num%10!=0){
    int r = num%10;
    if(count==0){
        printf("First Digit: %d\n",r);
    }
    else if(count==value-1){
        printf("Last Digit: %d\n",r);
    }
    num = num/10;
    count++;
}
return 0;
}
```

The screenshot shows a code editor interface with a toolbar at the top. The left sidebar contains icons for various file types: C, C++, Java, Python, JavaScript, Go, PHP, and HTML. The main area has tabs for 'main.c' and 'Run'. The code in 'main.c' is as follows:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num,count=0,value;
6     printf("Enter the number: ");
7     scanf("%d",&num);
8     printf("Enter the number of digits: ");
9     scanf("%d",&value);
10    while(num%10!=0){
11        int r = num%10;
12        if(count==0){
13            printf("First Digit: %d\n",r);
14        }
15        else if(count==value-1){
16            printf("Last Digit: %d\n",r);
17        }
18        num = num/10;
19        count++;
20    }
21    return 0;
22 }
23
24
25
```

The output window shows the results of running the program with the input '817162' and '6'.

```
/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
Enter the number: 817162
Enter the number of digits: 6
First Digit: 2
Last Digit: 8
```

The system tray at the bottom shows the date and time as 26-10-2023 22:33.

Program : Write a program to print all alphabets from a to z.

Program:

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

```
int main()
```

```
{
```

```
printf("NIKHIL KHANTWAL-23151431\n");
```

```
for(char i='a';i<='z';i++){
```

```
    printf("%c ",i);
```

```
}
```

```
return 0;
```

```
}
```

OUTPUT

The screenshot shows an online IDE interface. On the left, there's a file navigation sidebar with icons for Python, C, C++, Java, Go, PHP, and HTML. The main area has tabs for 'main.c' and 'Output'. The code in 'main.c' is:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main()
4 {
5     printf("NIKHIL KHANTWAL-23151431\n");
6     for(char i='a';i<='z';i++){
7         printf("%c ",i);
8     }
9     return 0;
10}
11
```

The 'Output' tab shows the compiled output:

```
/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
a b c d e f g h i j k l m n o p q r s t u v w x y z |
```

The system tray at the bottom indicates it's 18°C, the date is 26-10-2023, and the time is 21:04.

Program 34: Write a program to find sum of first and last digit of a number

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num,count=0,value,sum=0;

printf("Enter the number: ");

scanf("%d",&num);

printf("Enter the number of digits: ");

scanf("%d",&value);

while(num%10!=0){

int r = num%10;

if(count==0){

sum = sum + r;
```

```

}

else if(count==value-1){

sum = sum + r;

}

num = num/10;

count++;

}

printf("Sum: %d",sum);

return 0;

}

```

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int num,count=0,value,sum=0;
6 printf("Enter the number: ");
7 scanf("%d",&num);
8 printf("Enter the number of digits: ");
9 scanf("%d",&value);
10 while(num%10!=0){
11 int r = num%10;
12 if(count==0){
13 sum = sum + r;
14 }
15 else if(count==value-1){
16 sum = sum + r;
17 }
18 num = num/10;
19 count++;
20 }
21 printf("Sum: %d",sum);
22 return 0;
23 }
24
25

```

Output

```

/tmp/4j1RVuxnHH.o
NIKHIL KHANTWAL-23151431
Enter the number: 895623
Enter the number of digits: 6
Sum: 11

```

Program 35: Write a program to swap first and last digits of a number

Program:

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

```
#include<math.h>

int main(){
printf("NIKHIL KHANTWAL-23151431\n");
int num,value,count=0,sum=0,first,end,number=0;
printf("Enter the number: ");
scanf("%d",&num);
printf("Enter the number of digits: ");
scanf("%d",&value);
int ten=1;
while(num%10!=0){
int r = num%10;
if(count==0){
end = r;
}
else if(count==value-1){
first = r;
}
else{
number = number + r*ten;
ten = ten*10;
}
}
```

```

num = num / 10;

count++;

}

int num2 = end*pow(10,count-1) + number*10 + first ;

printf("%d",num2);

return 0;

}

```

The screenshot shows a code editor interface with a toolbar at the top. The left pane displays the C code for Program 35. The right pane shows the terminal output where the program is run with the input 4563, resulting in the output 3564.

```

main.c
7 printf("Enter the number: ");
8 scanf("%d",&num);
9 printf("Enter the number of digits: ");
10 scanf("%d",&value);
11 int ten=1;
12 while(num%10!=0){
13     int r = num%10;
14     if(count==0){
15         end = r;
16     }
17     else if(count==value-1){
18         first = r;
19     }
20     else{
21         number = number + r*ten;
22         ten = ten*10;
23     }
24     num = num / 10;
25     count++;
26 }
27 int num2 = end*pow(10,count-1) + number*10 + first ;
28 printf("%d",num2);
29 return 0;
30 }
31

```

Output

```

/tmp/Sno3Qy0FSG.o
NIKHIL KHANTWAL-23151431
Enter the number: 4563
Enter the number of digits: 4
3564

```

Program 36: Write a program to calculate sum of digits of a number

Program:

```

#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num,sum=0;

printf("Enter the number: ");

```

```

scanf("%d",&num);

while(num%10!=0){

int r = num%10;

num = num/10;

sum = sum + r;

}

printf("Sum: %d",sum);

return 0;

}

```

The screenshot shows a Windows operating system interface. On the left is a code editor window titled "main.c" containing C code. The code reads a number, calculates its sum of digits, and prints the result. The output pane shows the program's execution and results. On the right is a taskbar with various pinned icons and system status indicators at the bottom.

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int num,sum=0;
6 printf("Enter the number: ");
7 scanf("%d",&num);
8 while(num%10!=0){
9 int r = num%10;
10 num = num/10;
11 sum = sum + r;
12 }
13 printf("Sum: %d",sum);
14 return 0;
15 }
16 |

```

Output

```

/tmp/Sno3Qy0FSG.o
NIKHIL KHANTWAL-23151431
Enter the number: 456321
Sum: 21

```

Taskbar icons include: File Explorer, Edge browser, Task View, Mail, Photos, OneDrive, Microsoft Store, Settings, and others. System status shows: 16°C, ENG IN, 22:43, 26-10-2023.

Program 37: Write a program to calculate the product of digits of a number

Program:

```

#include<stdio.h>

int main(){


```

```

printf("NIKHIL KHANTWAL-23151431\n");

int num,prod=1;

printf("Enter the number: ");

scanf("%d",&num);

while(num%10!=0){

int r = num%10;

prod = prod * r;

num = num/10;

}

printf("Product: %d",prod);

return 0;
}

```

The screenshot shows a code editor interface with the following details:

- File:** main.c
- Code Content:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num,prod=1;
6     printf("Enter the number: ");
7     scanf("%d",&num);
8     while(num%10!=0){
9         int r = num%10;
10        prod = prod * r;
11        num = num/10;
12    }
13    printf("Product: %d",prod);
14    return 0;
15 }
16

```
- Output Window:**

```

/tmp/Sno3Qy0FSG.o
NIKHIL KHANTWAL-23151431
Enter the number: 4562
Product: 240

```
- Toolbar:** Includes icons for file operations like Open, Save, Run, and Undo.
- Bottom Bar:** Shows system status including weather (16°C), search bar, taskbar icons (calculator, mail, browser, etc.), and system notifications.

Program 38: Write a program to enter a number and print its reverse

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int num,reverse=0;
    printf("Enter the number: ");
    scanf("%d",&num);
    while(num%10!=0){
        int r = num % 10;
        reverse = reverse * 10 + r;
        num = num / 10;
    }
    printf("%d",reverse);
    return 0;
}
```

The screenshot shows a code editor interface with a toolbar on the left containing icons for various file types (C, C++, JS, etc.). The main area has tabs for 'main.c' and 'Output'. The code in 'main.c' is as follows:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){}
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int num,reverse=0;
6 printf("Enter the number: ");
7 scanf("%d",&num);
8 while(num%10!=0){
9     int r = num % 10;
10    reverse = reverse * 10 + r;
11    num = num / 10;
12 }
13 printf("%d",reverse);
14 return 0;
15 }
16 
```

The 'Output' tab shows the following terminal session:

```
/tmp/Sno3Qy0FSG.o
NIKHIL KHANTWAL-23151431
Enter the number: 25614
41652
```

The system tray at the bottom shows the date and time as 26-10-2023 22:48.

Program 39: Write a program to check whether a number is palindrome or not.

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num,num2,reverse=0;

printf("Enter a number: ");

scanf("%d",&num);

num2 = num;

while(num%10!=0){

int r = num % 10;

reverse = reverse * 10 + r;

num = num / 10;
```

```

}

if(num2 == reverse){

printf("Number is Palindrome!!!");

}

else{

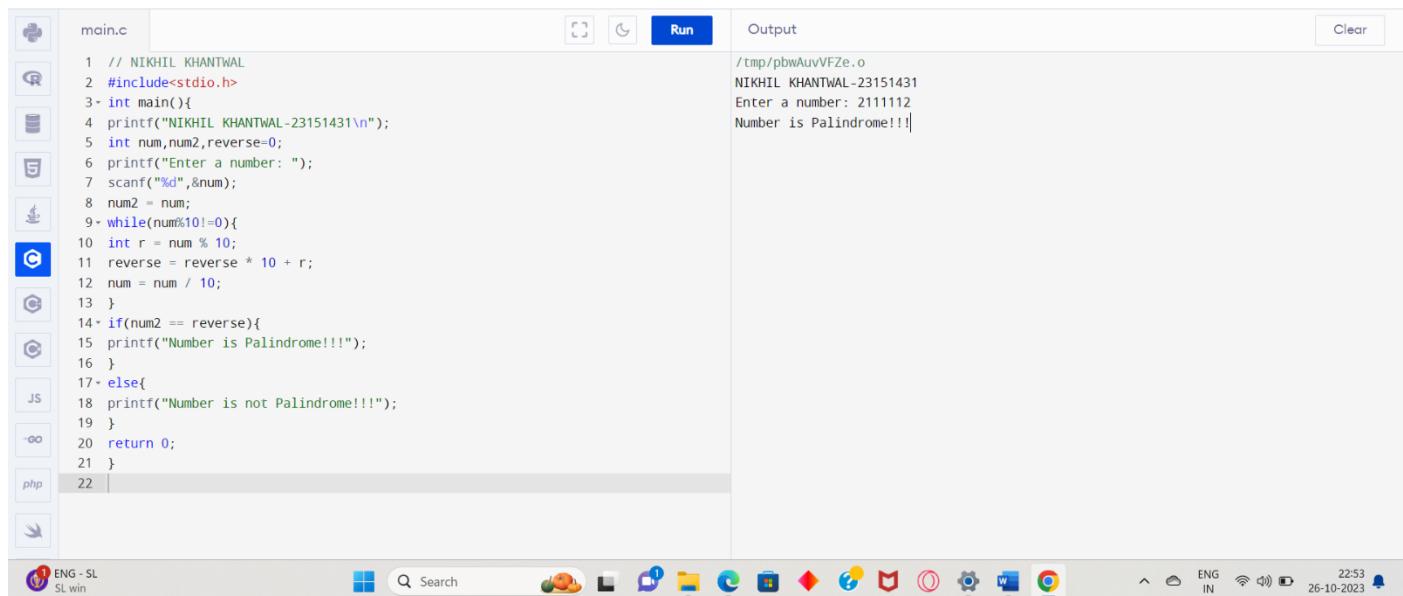
printf("Number is not Palindrome!!!");

}

return 0;

}

```



```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int num,num2,reverse=0;
6 printf("Enter a number: ");
7 scanf("%d",&num);
8 num2 = num;
9 while(num%10!=0){
10 int r = num % 10;
11 reverse = reverse * 10 + r;
12 num = num / 10;
13 }
14 if(num2 == reverse){
15 printf("Number is Palindrome!!!");
16 }
17 else{
18 printf("Number is not Palindrome!!!");
19 }
20 return 0;
21 }
22

```

Output

```

/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
Enter a number: 211112
Number is Palindrome!!!

```

Program 40: Write a program to find frequency of each digit in a given integer

Program:

```
#include<stdio.h>
int main(){


```

```
printf("NIKHIL KHANTWAL-23151431\n");
int num;
int n0=0,n1=0,n2=0,n3=0,n4=0,n5=0,n6=0,n7=0,n8=0,n9=0;
printf("Enter the number: ");
scanf("%d",&num);
while(num!=0){
    num = num / 10;
    int r = num % 10;
    if(r==0){
        n0++;
    }
    else if(r==1){
        n1++;
    }
    else if(r==2){
        n2++;
    }
    else if(r==3){
        n3++;
    }
    else if(r==4){
```

```
n4++;
}
else if(r==5){
n5++;
}
else if(r==6){
n6++;
}
else if(r==7){
n7++;
}
else if(r==8){
n8++;
}
else if(r==9){
n9++;
}
printf("0: %d 1: %d 2: %d 3: %d 4: %d 5: %d 6: %d 7: %d 8: %d 9:
%d",n0,n1,n2,n3,n4,n5,n6,n7,n8,n9);
return 0;
```

}

The screenshot shows a code editor interface with a toolbar on the left containing icons for various languages (C, C++, Python, Java, JavaScript, PHP, SQL, etc.). The main area displays a C program named 'main.c'. The code initializes variables n0 through n9 to 0, prints a header, prompts for a number, and then uses a while loop to calculate the number of digits (n0 to n4) and their respective counts (n1 to n5). The output window shows the compiled file path, the author's name and ID, the input number 7452, and the execution timestamp.

```
main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num;
6     int n0=0,n1=0,n2=0,n3=0,n4=0,n5=0,n6=0,n7=0,n8=0,n9=0;
7     printf("Enter the number: ");
8     scanf("%d",&num);
9     while(num!=0){
10         num = num / 10;
11         int r = num % 10;
12         if(r==0){
13             n0++;
14         }
15         else if(r==1){
16             n1++;
17         }
18         else if(r==2){
19             n2++;
20         }
21         else if(r==3){
22             n3++;
23         }
24         else if(r==4){
25             n4++;
}
Output
/tmppbwAvvVFZe.o
NIKHIL KHANTWAL-23151431
Enter the number: 7452
0: 11:02:03:04:15:16:07:18:09:0

```

Program 44: Write a program to find all factors of a number

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num;

printf("Enter the number: ");

scanf("%d",&num);

for(int i=1;i<=num;i++){

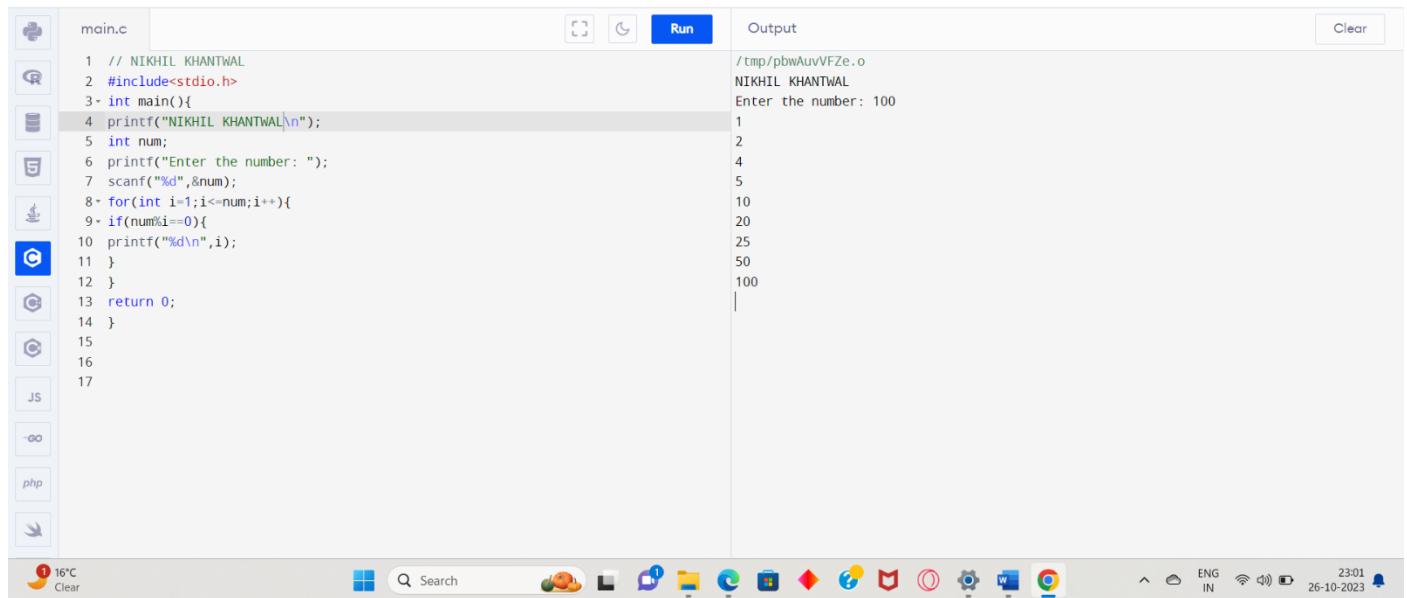
if(num%i==0){

printf("%d\n",i);

}

}
```

```
return 0;  
}  
  
}
```



```
main.c | Run | Output | Clear  
1 // NIKHIL KHANTWAL  
2 #include<stdio.h>  
3 int main(){  
4 printf("NIKHIL KHANTWAL\n");  
5 int num;  
6 printf("Enter the number: ");  
7 scanf("%d",&num);  
8 for(int i=1;i<=num;i++){  
9 if(num%i==0){  
10 printf("%d\n",i);  
11 }  
12 }  
13 return 0;  
14 }  
15  
16  
17
```

```
/tmp/pbwAuvVFZe.o  
NIKHIL KHANTWAL  
Enter the number: 100  
1  
2  
4  
5  
10  
20  
25  
50  
100
```

Program 45: Write a program to calculate factorial of a number

Program:

```
#include<stdio.h>  
  
int main(){  
  
printf("NIKHIL KHANTWAL-23151431\n");  
  
int fact=1,num;  
  
printf("Enter the number: ");  
  
scanf("%d",&num);  
  
for(int i=1;i<=num;i++){  
  
fact = fact * i;  
  
}  
  
printf("Factorial of %d! is %d",num,fact);
```

```
return 0;  
}  
  
main.c
```

```
1 // NIKHIL KHANTWAL  
2 #include<stdio.h>  
3 int main(){  
4 printf("NIKHIL KHANTWAL-23151431\n");  
5 int fact=1,num;  
6 printf("Enter the number: ");  
7 scanf("%d",&num);  
8 for(int i=1;i<=num;i++){  
9 fact = fact * i;  
10 }  
11 printf("Factorial of %d! is %d",num,fact);  
12 return 0;  
13 }  
14 |
```

Run

Output

Clear

```
/tmp/pbwAuvVFZe.o  
NIKHIL KHANTWAL-23151431  
Enter the number: 9  
Factorial of 9! is 362880|
```



Program 48: Write a program to check whether a number is Prime

number or not.

Program:

```
#include<stdio.h>  
  
int main(){  
printf("NIKHIL KHANTWAL-23151431\n");  
  
int num,count=0;  
  
printf("Enter the number: ");  
  
scanf("%d",&num);  
  
for(int i=1;i<=num;i++){  
  
if(num%i==0){  
  
count++;
```

```

}

}

if(count==2){

printf("%d is prime number",num);

}

else{

printf("%d is not a prime number");

}

return 0;

}

```

```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int num,count=0;
6 printf("Enter the number: ");
7 scanf("%d",&num);
8 for(int i=1;i<=num;i++){
9 if(num%i==0){
10 count++;
11 }
12 }
13 if(count==2){
14 printf("%d is prime number",num);
15 }
16 else{
17 printf("%d is not a prime number");
18 }
19 return 0;
20 }
21

```

/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
Enter the number: 29
29 is prime number

Program 49: Write a program to find Prime number between 1 to n.

Program:

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

```
int main(){
printf("NIKHIL KHANTWAL-23151431\n");
int num;
printf("Enter the number: ");
scanf("%d",&num);
for(int i=1;i<=num;i++){
int c = 0;
for(int j=1;j<=i;j++){
if(i%j==0){
c++;
}
}
if(c==2){
printf("%d\n",i);
}
}
return 0;
}
```

The screenshot shows a Windows desktop environment. In the center is a terminal window titled 'main.c'. The code in the terminal is:

```
1 // NIKHIL KHANTWAL
2
3 #include<stdio.h>
4 int main(){
5     printf("NIKHIL KHANTWAL-23151431\n");
6     int num;
7     printf("Enter the number: ");
8     scanf("%d",&num);
9     for(int i=1;i<=num;i++){
10         int c = 0;
11         for(int j=1;j<=i;j++){
12             if(i%j==0){
13                 c++;
14             }
15         }
16         if(c==2){
17             printf("%d\n",i);
18         }
19     }
20     return 0;
21 }
```

The output of the program is displayed in the 'Output' tab:

```
/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
Enter the number: 80
2
3
5
7
11
13
17
19
23
29
31
37
41
43
47
53
59
61
67
71
73
79
```

At the bottom of the screen, the taskbar shows various icons for applications like File Explorer, Edge, and File Manager. The system tray indicates the date as 26-10-2023 and the time as 23:09.

Program 50: Write a program to find sum of all prime numbers between 1 to n.

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num,sum=0;

printf("Enter the number: ");

scanf("%d",&num);

for(int i=1;i<=num;i++){

int c = 0;

for(int j=1;j<=i;j++){

if(i%j==0){

c++;

}

}

if(c==2){

sum+=i;

}

}

return sum;

}
```

```

}

if(c==2){

sum = sum + i;

}

}

printf("Sum: %d",sum);

return 0;

}

```

```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num,sum=0;
6     printf("Enter the number: ");
7     scanf("%d",&num);
8     for(int i=1;i<=num;i++){
9         int c = 0;
10        for(int j=1;j<=i;j++){
11            if(i%j==0){
12                c++;
13            }
14        }
15        if(c==2){
16            sum = sum + i;
17        }
18    }
19    printf("Sum: %d",sum);
20    return 0;
21 }
22 |

```

Output

```

/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
Enter the number: 50
Sum: 328

```

Program : Write a program to find all prime factor of a number.

Program:

```

#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int num;

printf("Enter a number: ");

```

```
scanf("%d",&num);

for(int i=1;i<=num;i++){
    if(num%i==0){

        int c=0;

        for(int j=1;j<=i;j++){
            if(j%2==0){

                c++;

            }
        }

        if(c==2){

            printf("%d\n",i);

        }
    }
}

return 0;
}
```

The screenshot shows a C programming interface with the following details:

- File:** main.c
- Run Status:** The "Run" button is highlighted in blue.
- Output:** The terminal window displays the following:

```
/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
NIKHIL KHANTWAL-23151431
Enter a number: 2
5
```
- Code Content:**

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num;
6     printf("Enter a number: ");
7     scanf("%d",&num);
8     for(int i=1;i<=num;i++){
9         if(num%i==0){
10             int c=0;
11             for(int j=1;j<=i;j++){
12                 if(i%j==0){
13                     c++;
14                 }
15             }
16             if(c==2){
17                 printf("%d\n",i);
18             }
19         }
20     }
21     return 0;
22 }
```
- Toolbars and Icons:** On the left, there are icons for various languages and tools: Python, C, C++, JS, PHP, and a file manager. At the bottom, there are icons for weather (16°C), search, file operations, and system status.
- Bottom Bar:** Includes icons for file operations (New, Open, Save, Print, Find, Copy, Paste, Undo, Redo), system status (Battery, Network, Volume), and system controls (Eng In, 2315, 26-10-2023).

Program : Write a program to check whether a number is Armstrong number or not.

Program:

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

```
int main(){
```

```
printf("NIKHIL KHANTWAL-23151431\n");
int num,dig,sum=0;
printf("Enter the number: ");
scanf("%d",&num);
int num2 = num;
printf("Enter the number of digits: ");
scanf("%d",&dig);
while(num!=0){
    int prod=1;
```

```

int r = num % 10;

for(int i=0;i<dig;i++){

prod = prod * r;

}

sum = sum + prod;

num = num / 10;

}

if(sum==num2){

printf("The Number is Armstrong");

}

else{

printf("The number is not armstrong");

}

return 0;

}

```

The screenshot shows a Windows desktop environment. At the top, there's a taskbar with various icons. Below the taskbar is a code editor window titled "main.c". The code in the editor is identical to the one above. To the right of the code editor is a terminal window titled "Output". The terminal shows the following session:

```

/tmp/pbwAvVFZe.o
NIKHIL KHANTWAL-23151431
Enter the number: 153
Enter the number of digits: 3
The Number is Armstrong

```

The terminal has a "Clear" button at the top right. The bottom right corner of the screen shows the date and time as "26-10-2023".

Program : Write a program to print all Armstrong number between 1 to n.

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int n;
    printf("Enter the number: ");
    scanf("%d",&n);
    for(int i=1;i<=n;i++){
        int j=i,k=i,c=0,sum=0,prod=1;
        while(j!=0){
            j = j / 10;
            c++;
        }
        while(i!=0){
            int prod=1;
            int r = i % 10;
            for(int i=0;i<c;i++){
                prod = prod * r;
            }
            sum = sum + prod;
        }
    }
}
```

```
i = i / 10;  
}  
  
if(sum==k){  
    printf("%d\n",i);  
}  
}  
  
return 0;  
}
```

Program : Write a program to print all Perfect numbers between 1 to n.

Program:

```
#include<stdio.h>  
  
int main(){  
    printf("NIKHIL KHANTWAL-23151431");  
  
    int n;  
  
    printf("Enter a number: ");  
  
    scanf("%d",&n);  
  
    for(int i=1;i<=n;i++){  
  
        int c = 0;  
  
        for(int j=1;j<=i;j++){  
  
            if(i%j==0){
```

```

c++;
}

}

if(c!=2){

printf("%d\n",i);

}

}

return 0;

}

```

The screenshot shows a code editor interface with a toolbar at the top. The left sidebar has icons for various languages: C, C++, C#, Java, Python, JavaScript, Go, PHP, and Ruby. The main area is titled "main.c" and contains the following C code:

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n;
6     printf("Enter a number: ");
7     scanf("%d",&n);
8     for(int i=1;i<=n;i++){
9         int c = 0;
10    for(int j=1;j<=i;j++){
11        if(i%j==0){
12            c++;
13        }
14    }
15    if(c!=2){
16        printf("%d\n",i);
17    }
18 }
19 return 0;
20 }
21

```

The "Output" tab is selected, showing the following terminal-like output:

```

/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
Enter a number: 20
1
4
6
8
9
10
12
14
15
16
18
20

```

The status bar at the bottom shows the weather (16°C), search bar, taskbar with various application icons, and system status indicators.

Program : Write a program to check whether a number is Strong number or not.

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");
```

```
int num,sum=0;
printf("Enter the number: ");
scanf("%d",&num);
int num2 = num;
while(num!=0){
    int r = num % 10;
    int prod = 1;
    for(int i=1;i<=r;i++){
        prod = prod * i;
    }
    sum = sum + prod;
    num = num / 10;
}
if(sum == num2){
    printf("%d is a strong number",num2);
}
else{
    printf("%d is not a strong number",num2);
}
return 0;
}
```

The screenshot shows a C programming interface. On the left, there's a file browser with icons for various file types like C, C++, Java, Python, and others. A file named 'main.c' is selected. The main area contains the following C code:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main()
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int n;
6 printf("Enter a number: ");
7 scanf("%d",&n);
8 for(int i=1;i<=n;i++){
9     int c = 0;
10    for(int j=1;j<=i;j++){
11        if(i%j==0){
12            c++;
13        }
14    }
15    if(c!=2){
16        printf("%d\n",i);
17    }
18 }
19 return 0;
20 }
```

To the right, the 'Output' tab shows the program's execution:

```
/tmp/pbwAvVFZe.o
NIKHIL KHANTWAL-23151431
Enter a number: 20
1
4
6
8
9
10
12
14
15
16
18
20
```

At the bottom, the taskbar shows the Windows Start button, a search bar, and various pinned application icons. The system tray indicates the date as 26-10-2023 and the time as 23:25.

Program : Write a program to print Fibonacci series up to n terms

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int n;

printf("Enter a number: ");

scanf("%d",&n);

int a = 0;

int b = 1;

int c = 0;

while(c<=n){

a = b;
```

```
b = c;  
printf("%d",c);  
  
c = a + b;  
  
}  
  
return 0;  
  
}
```

The screenshot shows a C programming environment with the following details:

- File:** main.c
- Code:**

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n;
6     printf("Enter a number: ");
7     scanf("%d",&n);
8     int a = 0;
9     int b = 1;
10    int c = 0;
11    while(c<=n){
12        a = b;
13        b = c;
14        printf(" %d ",c);
15        c = a + b;
16    }
17    return 0;
18 }
```
- Output:**

```
/tmp/pbwAuvVFZe.o
NIKHIL KHANTWAL-23151431
Enter a number: 50
0 1 1 2 3 5 8 13 21 34
```
- Toolbars and Icons:** Includes icons for file operations (New, Open, Save, Run, Stop), project management, and various programming languages like C, C++, Java, Python, JavaScript, and PHP.
- Bottom Bar:** Shows system status (16°C, Clear), search bar, and system icons (Network, Battery, Volume, etc.).
- Bottom Right:** Date and time (26-10-2023, 23:30) and language settings (ENG IN).

Program : Write a program to print the Pyramid star pattern

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431");

    int rows;
    printf("Enter the number of rows: ");
    scanf("%d",&rows);

    for(int i=1;i<=rows;i++){
        for(int j=rows;j>i;j--){
            printf(" ");
        }
        if(i%2==1){
            for(int k=0;k<i;k++){
                printf("* ");
            }
        }
        printf("\n");
    }
    return 0;
}
```

The screenshot shows a code editor interface with a toolbar on the left containing icons for various languages (C, C++, Java, Python, etc.) and a 'Run' button. The main area displays a C program named 'main.c'. The code includes a header inclusion, a main function, a row input section, and a nested loop for printing stars. The output window shows the compiled file path, the author's name and ID, and the execution results for 7 rows, displaying a hollow pyramid pattern.

```
main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=1;i<=rows;i++){
9         for(int j=rows;j>i;j--){
10            printf("");
11        }
12        if(i%2==1){
13            for(int k=0;k<i;k++){
14                printf("* ");
15            }
16        }
17        printf("\n");
18    }
19    return 0;
20 }
21
```

Program : Write a program to print the Hollow Pyramid Star Pattern

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431");

int rows;

printf("Enter the number of rows: ");

scanf("%d",&rows);

for(int i=1;i<=rows;i++){

for(int k=rows;k>i;k--){

printf(" ");

}

for(int j=0;j<i;j++){
```

```

if(i>2 && i<rows && j>0 && j<i-1){

printf(" ");

}

else if(i%2!=0){

printf("* ");

}

printf("\n");

}

return 0;

}

```

The screenshot shows a code editor interface with the following details:

- File:** main.c
- Code Content:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=1;i<rows;i++){
9         for(int k=rows;k>i;k--){
10            printf("");
11        }
12        for(int j=0;j<i;j++){
13
14            if(i>2 && i<rows && j>0 && j<i-1){
15                printf(" ");
16            }
17            else if(i%2!=0){
18                printf("*");
19            }
20        }
21        printf("\n");
22    }
23    return 0;
24 }
```
- Output Window:**

```

/tmp/DCn060MndN.o
NIKHIL KHANTWAL-23151431
Enter the number of rows: 9
*
*
*
*****
|
```
- Bottom Bar:**
 - Icons for various file types (HTML, CSS, JS, etc.)
 - Search bar: Search
 - Taskbar icons: File Explorer, Control Panel, Task View, File, Settings, Start, Edge, Mail, Photos, OneDrive, Microsoft Store, Microsoft Edge, Google Chrome, and others.
 - System status: ENG IN, 23:46, 26-10-2023, and a bell icon.

Program : Write a program to print the Inverted Pyramid Star Pattern

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431");

    int rows;
    printf("Enter the number of rows: ");
    scanf("%d",&rows);

    for(int i=rows;i>=1;i--){
        for(int k=i;k<=rows;k++){
            printf(" ");
        }
        for(int j=i;j>=1;j--){
            printf("* ");
        }
        printf("\n");
    }
    return 0;
}
```

The screenshot shows a code editor interface with a toolbar at the top containing icons for file operations, run, and clear. The left sidebar lists various file types: main.c, JS, and others like C, C++, PHP, and HTML. The main area displays a C program named 'main.c' with the following code:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=rows;i>1;i--){
9         for(int k=i;k<=rows;k++){
10            printf("");
11        }
12        for(int j=i;j>=1;j--){
13            printf("* ");
14        }
15        printf("\n");
16    }
17    return 0;
18 }
19
20
```

The output window shows the execution of the program. It prints the header "NIKHIL KHANTWAL-23151431", prompts for the number of rows, and then displays a half diamond star pattern. The pattern consists of 10 rows, starting with 1 star and increasing by 2 stars per row until it reaches 10 stars, then decreasing back down to 1 star.

Program : Write a program to print half diamond star pattern

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431");

int rows;

printf("Enter the number of rows: ");

scanf("%d",&rows);

for(int i=1;i<=rows;i++){

for(int k=rows;k>=i;k--){

printf(" ");

}

for(int j=1;j<=i;j++){

printf("* ");

}
```

```

}

printf("\n");

}

for(int i=rows-1;i>=1;i--){

for(int k=i;k<=rows;k++){

printf(" ");

}

for(int j=i;j>=1;j--){

printf("* ");

}

printf("\n");

}

return 0;

}

```

The screenshot shows a code editor interface with a toolbar at the top and a file list on the left. The active file is `main.c`. The code itself is a C program that prompts the user for the number of rows and then prints a diamond-shaped pattern of asterisks. The output window shows the generated pattern for 10 rows.

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=1;i<=rows;i++){
9
10        for(int k=rows;k>=i;k--){
11            printf(" ");
12        }
13        for(int j=1;j<=i;j++){
14            printf("* ");
15        }
16        printf("\n");
17    }
18    for(int i=rows-1;i>=1;i--){
19        for(int k=i;k<=rows;k++){
20            printf(" ");
21        }
22
23        for(int j=i;j>=1;j--){
24            printf("* ");
25        }

```

Output:

```

/tmp/DCn060MndN.o
NIKHIL KHANTWAL-23151431
Enter the number of rows: 10
*
   *
  * *
 * * *
* * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
* * * *
 * *
  *

```

Program : Write a program to print square number pattern - 1

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-231514314\n");
    int num;
    printf("Enter the number of rows: ");
    scanf("%d",&num);

    for(int i=0;i<num;i++){
        for(int j=0;j<num;j++){
            printf("1");
        }
        printf("\n");
    }
    return 0;
}
```

The screenshot shows a code editor interface with a toolbar on the left containing icons for various languages (C, C++, Java, Python, etc.). The main area has tabs for 'main.c' and 'Output'. The code in 'main.c' is as follows:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num;
6     printf("Enter the number of rows: ");
7     scanf("%d",&num);
8
9    for(int i=0;i<num;i++){
10       for(int j=0;j<num;j++){
11           printf("1");
12       }
13       printf("\n");
14   }
15   return 0;
16 }
```

The 'Output' tab shows the execution results:

```
/tmp/DCn060MndN.o
NIKHIL KHANTWAL-231514314
Enter the number of rows: 10
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
```

Program : Write a program to print square number pattern - 2

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int rows;

printf("Enter the number of rows: ");

scanf("%d",&rows);

for(int i=0;i<rows;i++){

for(int j=0;j<rows;j++){

if(i%2!=0){

printf("0");

}

else{
```

```

printf("1");

}

}

printf("\n");

}

return 0;

}

```

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int rows;
6 printf("Enter the number of rows: ");
7 scanf("%d",&rows);
8 for(int i=0;i<rows;i++){
9 for(int j=0;j<rows;j++){
10 if(i%2!=0){
11 printf("0");
12 }
13 else{
14 printf("1");
15 }
16 }
17 printf("\n");
18 }
19 return 0;
20 }
21

```

Output

```

/tmp/DCn060MndN.o
NIKHIL KHANTWAL-23151431
Enter the number of rows: 10
1111111111
0000000000
1111111111
0000000000
1111111111
0000000000
1111111111
0000000000
1111111111
0000000000
|
```

Program : Write a program to print square number pattern - 3

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int rows;

printf("Enter the number of rows: ");
```

```

scanf("%d",&rows);

for(int i=1;i<=rows;i++){

for(int j=1;j<=rows;j++){

if(j%2==0){

printf("1");

}

else{

printf("0");

}

}

printf("\n");

}

return 0;

}

```

The screenshot shows a code editor interface with a toolbar at the top. The left sidebar has icons for various file types: Python, C/C++, Java, JavaScript, Go, PHP, and HTML. The main area displays the C code for generating a square pattern. The output window shows the execution of the program, where it asks for the number of rows and then prints the pattern. The taskbar at the bottom shows several open application icons.

```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=1;i<=rows;i++){
9         for(int j=1;j<=rows;j++){
10            if(j%2==0){
11                printf("1");
12            }
13            else{
14                printf("0");
15            }
16        }
17        printf("\n");
18    }
19    return 0;
20 }
21

```

Program : Write a program to print square number pattern - 4

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int rows;
    printf("Enter the number of rows: ");
    scanf("%d",&rows);
    for(int i=1;i<=rows;i++){
        for(int j=1;j<=rows;j++){
            if(i>1 && i<rows){
                if(j>1 && j<rows){
                    printf("0");
                }
            }
            else{
                printf("1");
            }
        }
        else{
            printf("1");
        }
        printf("\n");
    }
}
```

```
}
```

```
return 0;
```

```
}
```

```
main.c
```

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=1;i<=rows;i++){
9         for(int j=1;j<=rows;j++){
10            if(i>1 && i<rows){
11               if(j>1 && j<rows){
12                   printf("0");
13               }
14            else{
15                printf("1");
16            }
17        }
18    else{
19        printf("1");
20    }
21 }
22 printf("\n");
23 }
24 return 0;
25 }
```

```
Output
```

```
/tmp/DCn060MndN.o
NIKHIL KHANTWAL-23151431
Enter the number of rows: 10
1111111111
1000000001
1000000001
1000000001
1000000001
1000000001
1000000001
1000000001
1000000001
1111111111
```

Program : Write a program to print square number pattern - 5

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int rows;

printf("Enter the number of rows: ");

scanf("%d",&rows);

for(int i=1;i<=rows;i++){

for(int j=1;j<=rows;j++){

if(i==j && i==rows/2+1){

printf("0");

}
```

```

}

else{
    printf("1");

}

printf("\n");

}

return 0;

}

```

The screenshot shows a Windows operating system interface. At the top, there is a title bar with the file name "main.c". Below the title bar is a toolbar with several icons. To the right of the toolbar is a "Run" button. Further to the right is an "Output" window which displays the program's output. The main area contains the C code for printing a square number pattern. The taskbar at the bottom shows various pinned icons and the date/time "27-10-2023".

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int rows;
6     printf("Enter the number of rows: ");
7     scanf("%d",&rows);
8     for(int i=1;i<=rows;i++){
9         for(int j=1;j<=rows;j++){
10            if(i==j && i==rows/2+1){
11                printf("0");
12            }
13            else{
14                printf("1");
15            }
16        }
17        printf("\n");
18    }
19    return 0;
20 }
21

```

Output:

```

/tmp/DCn060MndN.o
NIKHIL KHANTWAL-23151431
Enter the number of rows: 10
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
1111111111
|
```

Program : Write a program to print square number pattern - 6

Program:

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

```
int main(){
printf("NIKHIL KHANTWAL-23151431\n");
int rows;
printf("Enter the number of rows: ");
scanf("%d",&rows);
for(int i=1;i<=rows;i++){
for(int j=1;j<=rows;j++){
if(i%2==0){
if(j%2==0){
printf("1");
}
else{
printf("0");
}
}
else{
if(j%2==0){
printf("0");
}
else{
printf("1");
}
}
}
}
```

```
    }  
}  
}  
  
printf("\n");  
}  
  
return 0;  
}
```

The screenshot shows a C programming environment with the following details:

- File:** main.c
- Code:**

```
7 scanf("%d",&rows);
8 for(int i=1;i<=rows;i++){
9 for(int j=1;j<=rows;j++){
10 if(i%2==0){
11 if(j%2==0){
12 printf("1");
13 }
14 }else{
15 printf("0");
16 }
17 }
18 }else{
19 if(j%2==0){
20 printf("0");
21 }
22 }else{
23 printf("1");
24 }
25 }
26 }
27 printf("\n");
28 }
29 return 0;
30 }
31 }
```
- Run Button:** A blue button labeled "Run".
- Output:**

```
/tmp/DCn060MndN.o
NIKHIL KHANTWAL-23151431
Enter the number of rows: 11
1010101010
01010101010
10101010101
01010101010
10101010101
01010101010
10101010101
01010101010
10101010101
01010101010
10101010101
```
- Icons:** A vertical sidebar on the left contains icons for various languages and tools: Python, C, C++, Java, JS, Go, PHP, and a file icon.
- System Status:** At the bottom, there are icons for battery (14%), signal strength, network, and volume.
- System Date:** 27-10-2023
- System Time:** 00:12
- Clear Button:** A "Clear" button in the bottom right corner.

Program 87: Write a program to check whether a number is negative, positive or zero

Program:

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

```
int main(){
```

```
printf("NIKHIL KHANTWAL-23151431\\n");  
  
int num;
```

```

printf("Enter a number: ");

scanf("%d",&num);

if(num>0){

printf("Positive");

}

else if(num<0){

printf("Negative");

}

else if(num==0){

printf("Zero");

}

else{

printf("Error");

}

return 0;
}

```

The screenshot shows a code editor interface with the following details:

- File:** main.c
- Code Content:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num;
6     printf("Enter a number: ");
7     scanf("%d",&num);
8     if(num>0){
9         printf("Positive");
10    }
11    else if(num<0){
12        printf("Negative");
13    }
14    else if(num==0){
15        printf("Zero");
16    }
17    else{
18        printf("Error");
19    }
20    return 0;
21 }
22 
```
- Toolbar:** Includes icons for file operations like Open, Save, Run, and Undo.
- Run Tab:** A blue "Run" button is highlighted.
- Output Panel:**

```

/tmp/5Lbi4bhUs.o
NIKHIL KHANTWAL-23151431
Enter a number: -25611
Negative

```
- Bottom Icons:** Includes icons for Python, C/C++, C, C#, JS, Go, and PHP.

Program 91: Write a program to check whether a character is alphabet or not

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    char ch;
    printf("Enter the character: ");
    scanf("%c",&ch);
//main
    int n = ch;
    if(n>=97 && n<=122){
        printf("Yes, it is an alphabet");
    }
    else{
        printf("No, it is not an alphabet");
    }
    return 0;
}
```

}

The screenshot shows a C programming environment. On the left, there's a file browser with a tree view containing 'main.c'. The main area is a code editor with the following C code:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     char ch;
6     printf("Enter the character: ");
7     scanf("%c",&ch);
8     //main
9     int n = ch;
10    if(n>=97 && n<=122){
11        printf("Yes, it is an alphabet");
12    }
13    else{
14        printf("No, it is not an alphabet");
15    }
16    return 0;
17 }
```

At the top of the interface, there are buttons for Save, Run, and Output. The 'Run' button is highlighted in blue. To the right of the code editor is an 'Output' window showing the results of the program execution:

```
/tmp/5Lbi4blhUs.o
NIKHIL KHANTWAL-23151431
Enter the character: A
No, it is not an alphabet
```

There is also a 'Clear' button in the output window.

Program 93: Write a program to input any character and check whether it is alphabet, digit or special character.

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

char ch;

printf("Enter the character: ");

scanf("%c",&ch);

int c = ch;

if(c>=48 && c<=57){

printf("It is a digit");

}

else if(c>=33 && c<=47){
```

```

printf("It is a Special character");

}

else if(c>=97 && c<=122){

printf("It is a Alphabet");

}

else{

printf("Invalid Input");

}

return 0;

}

```

The screenshot shows a code editor interface with a toolbar at the top. The file tab shows 'main.c'. The code area contains the C program provided above. The output window shows the following text:

```

/tmp/5Lbi4bhUs.o
NIKHIL KHANTWAL-23151431
Enter the character: #
It is a Special character

```

Program 94: Write a program to check whether character is uppercase or lowercase alphabet.

Program:

```

#include<stdio.h>

int main(){

```

```

printf("NIKHIL KHANTWAL - 23151431\n");

char ch;

printf("Enter the character: ");

scanf("%c",&ch);

int c = ch;

if(c>=97 && c<=122){

printf("Character is in Lowercase");

}

else if(c>=65 && c<=90){

printf("Character is in Uppercase");

}

else{

printf("Invalid Input!!!");

}

return 0;

}

```

The screenshot shows a code editor interface with the following details:

- Title Bar:** The title bar displays "main.c".
- Toolbar:** A standard toolbar with icons for file operations like Open, Save, and Run.
- Code Area:** The main area contains the C code provided in the question. Line 19 is highlighted with a light gray background.
- Output Area:** To the right of the code, the output window shows the following sequence of events:
 - The program starts by printing its own name and ID: "/tmp/5Lbi4blhUs.o NIKHIL KHANTWAL - 23151431".
 - The user enters "n" at the prompt "Enter the character: ".
 - The program then outputs "Character is in Lowercase".
- File List:** On the far left, there is a sidebar showing a list of files with their extensions: main.c, style.css, index.html, and index.js.

Program 95: Write a program to input week number and print week day

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int num;
    printf("Enter the week number: ");
    scanf("%d",&num);
    if(num==1){
        printf("Monday");
    }
    else if(num==2){
        printf("Tuesday");
    }
    else if(num==3){
        printf("Wednesday");
    }
    else if(num==4){
        printf("Thursday");
    }
    else if(num==5){
```

```
printf("Friday");

}

else if(num==6){

printf("Saturday");

}

else if(num==7){

printf("Sunday");

}

return 0;

}
```

The screenshot shows a code editor interface with the following details:

- File:** main.c
- Code Content:**

```
6 printf("Enter the week number: ");
7 scanf("%d",&num);
8 if(num==1){
9     printf("Monday");
10 }
11 else if(num==2){
12     printf("Tuesday");
13 }
14 else if(num==3){
15     printf("Wednesday");
16 }
17 else if(num==4){
18     printf("Thursday");
19 }
20 else if(num==5){
21     printf("Friday");
22 }
23 else if(num==6){
24     printf("Saturday");
25 }
26 else if(num==7){
27     printf("Sunday");
28 }
29 return 0;
30 }
```
- Toolbar:** Includes icons for file operations (New, Open, Save), Run, and Clear.
- Output Panel:** Displays the terminal output of the program execution. It shows the command `/tmp/5Lbi4blhUs.o`, the user's name `NIKHIL KHANTWAL-23151431`, the prompt `Enter the week number: 7`, and the resulting output `Sunday`.

Program 96: Write a program to input month number and print number of days in that month

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int num;
    printf("Enter the month in number: ");
    scanf("%d",&num);
    if(num==1 || num==3 || num==5 || num==7 || num==8 ||
       num==10 || num==12){
        printf("31 Days");
    }
    else if(num==2){
        printf("28 Days");
    }
    else if(num < 12){
        printf("30 Days");
    }
    return 0;
}
```

The screenshot shows an online IDE interface. On the left, there's a toolbar with icons for various languages: PHP, C, C++, JS, Java, Python, and Go. The main area has tabs for 'main.c' and 'Output'. The code in 'main.c' is as follows:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num;
6     printf("Enter the month in number: ");
7     scanf("%d",&num);
8     if(num==1 || num==3 || num==5 || num==7 || num==8 ||
9     num==10 || num==12){
10    printf("31 Days");
11 }
12 else if(num==2){
13    printf("28 Days");
14 }
15 else if(num < 12){
16    printf("30 Days");
17 }
18 return 0;
19 }
20
```

The 'Output' tab shows the results of running the program:

```
/tmp/5Lhi4blhUs.o
NIKHIL KHANTWAL-23151431
Enter the month in number: 2
28 Days
```

Program 97: Write a program to count total number of notes in given amount

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int amt,n500=0,n200=0,n100=0,n20=0,n10=0,n1=0;

printf("Enter the total number of amount: ");

scanf("%d",&amt);

while(amt!=0){

if(amt>=500){

n500 = amt/500;

amt = amt%500;

}

else if(amt<500 && amt>=200){
```

```
n200 = amt/200;  
amt = amt%200;  
}  
  
else if(amt<200 && amt>=100){  
n100 = amt/100;  
amt = amt%100;  
}  
  
else if(amt<100 && amt>=20){  
n20 = amt/20;  
amt = amt%20;  
}  
  
else if(amt<20 && amt>=10){  
n10 = amt/10;  
amt = amt%10;  
}  
  
else if(amt<10 && amt>=1){  
n1 = amt/1;  
amt = amt%1;  
}  
}  
}  
  
printf("500 notes: %d,\n200 notes: %d \n100 notes: %d \n20  
notes:
```

```
%d \n10 notes: %d \n1 coins: %d",n500,n200,n100,n20,n10,n1);  
return 0;  
}
```

Program 100: Write a program to input angles of a triangle and check whether triangle is valid or not.

Program:

```
#include<stdio.h>  
  
int main(){  
    printf("NIKHIL KHANTWAL-23151431\\n");  
    int a1,a2,a3;  
    printf("Enter First angle of triangle: ");  
    scanf("%d",&a1);  
    printf("Enter Second angle of triangle: ");  
    scanf("%d",&a2);  
    printf("Enter Third angle of triangle: ");  
    scanf("%d",&a3);  
    if(a1+a2+a3==180 && a1>0 && a2>0 && a3>0){  
        printf("The triangle is valid!!!");  
    }  
    else{
```

```

printf("Triangle is not valid!!!");

}

return 0;

}

```

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int a1,a2,a3;
6     printf("Enter First angle of triangle: ");
7     scanf("%d",&a1);
8     printf("Enter Second angle of triangle: ");
9     scanf("%d",&a2);
10    printf("Enter Third angle of triangle: ");
11    scanf("%d",&a3);
12    if(a1+a2+a3==180 && a1>0 && a2>0 && a3>0){
13        printf("The triangle is valid!!!");
14    }
15    else{
16        printf("Triangle is not valid!!!");
17    }
18    return 0;
19 }
20

```

Output

```

/tmp/L1BcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter First angle of triangle: 5
Enter Second angle of triangle: 10
Enter Third angle of triangle: 25
Triangle is not valid!!!

```

Program 102: Write a program to check whether the triangle is equilateral, isosceles or scalene triangle.

Program:

```

#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int side1,side2,side3;

printf("Enter first side of triangle: ");

scanf("%d",&side1);

printf("Enter second side of triangle: ");

scanf("%d",&side2);

```

```

printf("Enter third side of triangle: ");

scanf("%d",&side3);

if(side1==side2 && side2==side3){

printf("The triangle is Equilateral");

}

else if(side1==side2 || side2==side3 || side1==side3){

printf("Triangle is Isoceles");

}

else if(side1!=side2 && side2!=side3){

printf("Triangle is scalene");

}

return 0;

}

```

The screenshot shows the Online C Compiler interface on Programiz.com. The code in the editor is identical to the one above. The output window shows the following interaction:

```

/tmp/L1BcpQa7e1.o
NIKHIL KHANTWAL-23151431
Enter first side of triangle: 10
Enter second side of triangle: 10
Enter third side of triangle: 15
Triangle is Isoceles

```

Program 103: Write a program to find all roots of a quadratic equation

Program:

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

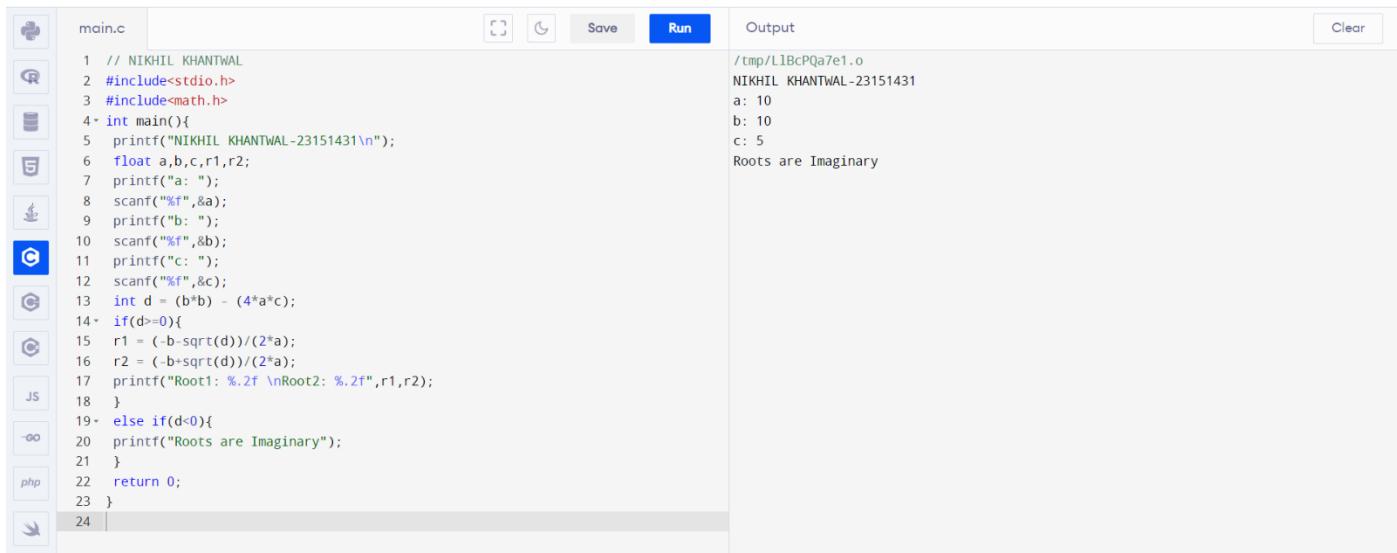
int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    float a,b,c,r1,r2;
    printf("a: ");
    scanf("%f",&a);
    printf("b: ");
    scanf("%f",&b);
    printf("c: ");
    scanf("%f",&c);
    int d = (b*b) - (4*a*c);
    if(d>=0){
        r1 = (-b-sqrt(d))/(2*a);
        r2 = (-b+sqrt(d))/(2*a);
        printf("Root1: %.2f \nRoot2: %.2f",r1,r2);
    }
    else if(d<0){
        printf("Roots are Imaginary");
    }
}
```

```
}
```



```
return 0;
```

```
}
```



```
main.c
```

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 #include<math.h>
4 int main(){
5     printf("NIKHIL KHANTWAL-23151431\n");
6     float a,b,c,r1,r2;
7     printf("a: ");
8     scanf("%f",&a);
9     printf("b: ");
10    scanf("%f",&b);
11    printf("c: ");
12    scanf("%f",&c);
13    int d = (b*b) - (4*a*c);
14    if(d==0){
15        r1 = (-b-sqrt(d))/(2*a);
16        r2 = (-b+sqrt(d))/(2*a);
17        printf("Root1: %.2f \nRoot2: %.2f",r1,r2);
18    }
19    else if(d<0){
20        printf("Roots are Imaginary");
21    }
22    return 0;
23 }
```

```
/tmp/L1BcpQa7e1.o
NIKHIL KHANTWAL-23151431
a: 10
b: 10
c: 5
Roots are Imaginary
```

Program 105: Write a program to input marks of five subjects
Physics,

Chemistry, Biology, Mathematics and computer. Calculate percentage

and grade according to following:

Percentage $\geq 90\%$: Grade A

Percentage $\geq 80\%$: Grade B

Percentage $\geq 70\%$: Grade C

Percentage $\geq 60\%$: Grade D

Percentage $\geq 40\%$: Grade E

Percentage $< 40\%$: Grade F

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int m,c,p,b,com,perc;
    char grad;
    printf("Enter your maths marks: ");
    scanf("%d",&m);
    printf("Enter your chemistry marks: ");
    scanf("%d",&c);
    printf("Enter your physics marks: ");
    scanf("%d",&p);
    printf("Enter your biology marks: ");
    scanf("%d",&b);
    printf("Enter your commerce marks: ");
    scanf("%d",&com);
    perc = (m+c+p+b+com)/5;
    if(perc>=90){
        grad = 'A';
    }
    else if(perc>=80){
```

```
grad = 'B';
}
else if(perc>=70){
grad = 'C';
}
else if(perc>=60){
grad = 'D';
}
else if(perc>=40){
grad = 'E';
}
else if(perc<40){
grad = 'F';
}
printf("You have got %c Grade!",grad);
return 0;
}
```

The screenshot shows a C programming interface. On the left, there's a file browser with icons for various file types like C, Java, Python, and others. The current file is 'main.c'. The code in the editor is:

```
15 printf("Enter your commerce marks: ");
16 scanf("%d",&com);
17 perc = (m+c+p+b+com)/5;
18 if(perc>=90){
19     grad = 'A';
20 }
21 else if(perc>=80){
22     grad = 'B';
23 }
24 else if(perc>=70){
25     grad = 'C';
26 }
27 else if(perc>=60){
28     grad = 'D';
29 }
30 else if(perc>=40){
31     grad = 'E';
32 }
33 else if(perc<40){
34     grad = 'F';
35 }
36 printf("You have got %c Grade!",grad);
37 return 0;
38 }
39 }
```

The 'Run' button is highlighted in blue. The 'Output' tab shows the program's run results:

```
/tmp/L1lBcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter your maths marks: 100
Enter your chemistry marks: 99
Enter your physics marks: 91
Enter your biology marks: 100
Enter your commerce marks: 100
You have got A Grade!
```

Program 106: Write a program to input basic salary of an employee

and calculate its Gross salary according to following:

Basic Salary <= 10000 : HRA = 20%, DA = 80%

Basic Salary <= 20000 : HRA = 25%, DA = 90%

Basic Salary > 20000 : HRA = 30%, DA = 95%

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

float sal,gsal,hra,da;

printf("Enter the employee salary: ");

scanf("%f",&sal);

if(sal<=10000){

hra = sal/5;
```

```

da = (sal*4)/5;

}

else if(sal>=10000 && sal<=20000){

hra = sal/4;

da = sal*0.9;

}

else if(sal>20000){

hra = sal*0.3;

da = sal*0.95;

}

gsal = sal + hra + da;

printf("The Gross salary of the employee is: %.2f",gsal);

return 0;

}

```

The screenshot shows a code editor interface with the following details:

- File:** main.c
- Toolbar:** Includes icons for file operations like Open, Save, Run, and a clear button.
- Code Area:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     float sal,gsal,hra,da;
6     printf("Enter the employee salary: ");
7     scanf("%f",&sal);
8     if(sal<=10000){
9         hra = sal/5;
10        da = (sal*4)/5;
11    }
12    else if(sal>=10000 && sal<=20000){
13        hra = sal/4;
14        da = sal*0.9;
15    }
16    else if(sal>20000){
17        hra = sal*0.3;
18        da = sal*0.95;
19    }
20    gsal = sal + hra + da;
21    printf("The Gross salary of the employee is: %.2f",gsal);
22    return 0;
23 }
```
- Output Area:**

```
/tmp/L1BcpQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the employee salary: 200000
The Gross salary of the employee is: 450000.00
```

Program 107: Write a program to input electricity unit charges and

calculate total electricity bill according to the given conditions:

For first 50 units Rs. 0.50/unit

For first 100 units Rs. 0.75/unit

For first 100 units Rs. 1.20/unit

For first above 250 Rs. 1.50/unit

An additional surcharge of 20% is added to the bill

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int unit;
    float charge;
    printf("Enter the total unit of electricity charge: ");
    scanf("%f",&unit);
    if(unit<=50){
        charge = unit*0.5;
    }
    else if(unit>50 && unit<=150){
        charge = 25 + (unit%50)*0.75;
    }
}
```

```

else if(unit>150 && unit<=250){

charge = 100 + (unit%150)*1.25;

}

else if(unit>250){

charge = 225 + (unit%250)*1.5;

}

charge = charge + (charge/5);

printf("Total charge cost: %.2f",charge);

return 0;
}

```

The screenshot shows a C programming environment with the following details:

- File:** main.c
- Code Content:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){}
4 printf("NIKHIL KHANTWAL-23151431\n");
5 int unit;
6 float charge;
7 printf("Enter the total unit of electricity charge: ");
8 scanf("%f",&unit);
9 if(unit<=50){
10 charge = unit*0.5;
11 }
12 else if(unit>50 && unit<=150){
13 charge = 25 + (unit%50)*0.75;
14 }
15 else if(unit>150 && unit<=250){
16 charge = 100 + (unit%150)*1.25;
17 }
18 else if(unit>250){
19 charge = 225 + (unit%250)*1.5;
20 }
21 charge = charge + (charge/5);
22 printf("Total charge cost: %.2f",charge);
23 return 0;
24 }
25

```
- Buttons:** Save, Run, Clear
- Output:**

```

/tmp/L1BcpQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the total unit of electricity charge: 1000
Total charge cost: 414.00

```

Program 108: Write a program to convert specified days into years, weeks and days:

Program:

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

```
int main(){
```

```

printf("NIKHIL KHANTWAL - 23151431\n");

int days,years,weeks;

printf("Enter the number of days: ");

scanf("%d",&days);

years = days/365;

weeks = (days%365)/7;

days = days - (years*365) + (weeks*7);

printf("Years: %d",years);

printf("Weeks: %d",weeks);

printf("Days: %d",days);

return 0;

```

}

The screenshot shows a code editor interface with the following details:

- Title Bar:** main.c
- Toolbar:** Includes icons for file operations (New, Open, Save, Run, etc.) and a "Run" button.
- Code Area:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){}
4 printf("NIKHIL KHANTWAL - 23151431\n");
5 int days,years,weeks;
6 printf("Enter the number of days: ");
7 scanf("%d",&days);
8
9 years = days/365;
10 weeks = (days%365)/7;
11 days = days - (years*365) + (weeks*7);
12 printf("Years: %d\n",years);
13 printf("Weeks: %d\n",weeks);
14 printf("Days: %d\n",days);
15 return 0;
16 }
17 
```
- Output Area:** Displays the program's output. The user enters "28", and the program outputs:


```

/tmp/L1BcpQa7e1.o
NIKHIL KHANTWAL - 23151431
Enter the number of days: 28
Years: 0
Weeks: 4
Days: 56
| 
```
- Bottom Bar:** Includes a "Clear" button.

Program 109: Write a program to read n number of values in an array and display them in reverse order.

Program:

```
#include<stdio.h>

int main(){
```

```
printf("NIKHIL KHANTWAL-23151431\n");

int num1, num2;

printf("Enter the number 1: ");

scanf("%d",&num1);

printf("Enter the number 2: ");

scanf("%d",&num2);

if(num1>num2){

    printf("%d is greater than %d",num1,num2);

}

else if(num2>num1){

    printf("%d is greater than %d",num2,num1);

}

else{

    printf("both are equal");

}

return 0;

}
```

The screenshot shows an online IDE interface. On the left, there's a file navigation sidebar with icons for Python, C, C++, Java, JavaScript, Go, and PHP. The main area has tabs for 'main.c' and 'main.cpp'. The code editor contains the following C program:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int num1, num2;
6     printf("Enter the number 1: ");
7     scanf("%d",&num1);
8     printf("Enter the number 2: ");
9     scanf("%d",&num2);
10 if(num1>num2){
11     printf("%d is greater than %d",num1,num2);
12 }
13 else if(num2>num1){
14     printf("%d is greater than %d",num2,num1);
15 }
16 else{
17     printf("both are equal");
18 }
19 return 0;
20 }
```

The output window shows the results of running the program with inputs 5 and 10:

```
/tmp/L1BcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number 1: 5
Enter the number 2: 10
10 is greater than 5
```

Program 110: Write a program to find the sum of all elements of the array.

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int n;

printf("Enter the number of elements: ");

scanf("%d",&n);

int arr[n];

for(int i=0;i<n;i++){

printf("Enter the element %d: ",i);

scanf("%d",&arr[i]);

}

int sum=0;
```

```

for(int i=0;i<n;i++){
    sum = sum + arr[i];
}

printf("Sum: %d",sum);

return 0;

}

```

```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3+ int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n;
6     printf("Enter the number of elements: ");
7     scanf("%d",&n);
8     int arr[n];
9+     for(int i=0;i<n;i++){
10         printf("Enter the element %d: ",i);
11         scanf("%d",&arr[i]);
12     }
13     int sum=0;
14+     for(int i=0;i<n;i++){
15         sum = sum + arr[i];
16     }
17     printf("Sum: %d",sum);
18     return 0;
19 }
20

```

/tmp/LlBcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number of elements: 10
Enter the element 0: 1
Enter the element 1: 2
Enter the element 2: 3
4Enter the element 3: 5
Enter the element 4: 6
Enter the element 5: 7
Enter the element 6: 8
Enter the element 7: 9
Enter the element 8: 1
Enter the element 9: 5
Sum: 47|

Program 111: Write a program to copy the elements of one array into another array.

Program:

```

#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int n;

printf("Enter the number of elements: ");

scanf("%d",&n);

```

```
int arr1[n], arr2[n];  
for(int i=0;i<n;i++){  
    printf("Enter the element %d: ",i+1);  
    scanf("%d",&arr1[i]);  
}  
  
printf("\nElements of Array 1: \n");  
for(int i=0;i<n;i++){  
    printf("%d, ",arr1[i]);  
}  
  
for(int i=0;i<n;i++){  
    arr2[i] = arr1[i];  
}  
  
printf("\nElements of Array 2: \n");  
for(int i=0;i<n;i++){  
    printf("%d, ",arr2[i]);  
}  
  
return 0;  
}
```

The screenshot shows a C programming environment with the following details:

- File:** main.c
- Code:**

```
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n;
6     printf("Enter the number of elements: ");
7     scanf("%d",&n);
8     int arr1[n], arr2[n];
9     for(int i=0;i<n;i++){
10        printf("Enter the element %d: ",i+1);
11        scanf("%d",&arr1[i]);
12    }
13    printf("\nElements of Array 1: \n");
14    for(int i=0;i<n;i++){
15        printf("%d, ",arr1[i]);
16    }
17    for(int i=0;i<n;i++){
18        arr2[i] = arr1[i];
19    }
20    printf("\nElements of Array 2: \n");
21    for(int i=0;i<n;i++){
22        printf("%d, ",arr2[i]);
23    }
24    return 0;
25 }
26 }
```
- Output:**

```
/tmp/LlBcpQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number of elements: 9
Enter the element 1: 1
Enter the element 2: 2
Enter the element 3: 3
Enter the element 4: 4
Enter the element 5: 5
Enter the element 6: 6
Enter the element 7: 7
Enter the element 8: 8
Enter the element 9: 9
Elements of Array 1:
1, 2, 3, 4, 5, 6, 7, 8, 9,
Elements of Array 2:
1, 2, 3, 4, 5, 6, 7, 8, 9,
```

Program 112: Write a program to count the total number of duplicate elements in an array.

Program:

```
#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

int n, count=0;

printf("Enter the number of elements: ");

scanf("%d",&n);

int arr[n];

for(int i=0;i<n;i++){

printf("Enter element %d: ",i+1);

scanf("%d",&arr[i]);

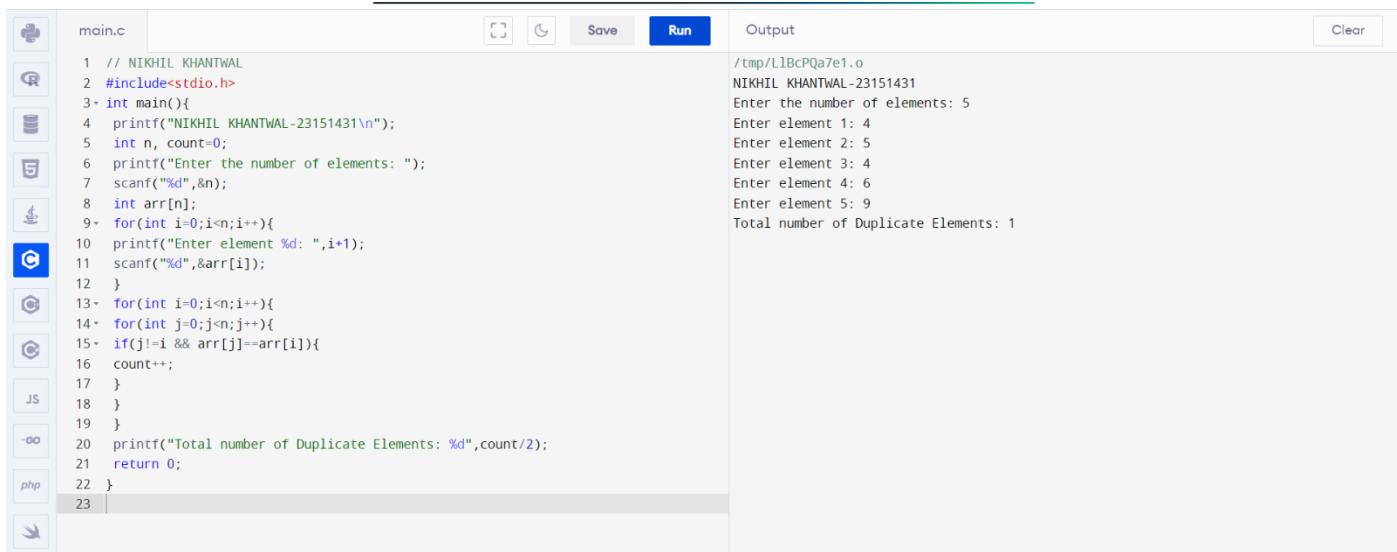
}

for(int i=0;i<n;i++){
```

```

for(int j=0;j<n;j++){
    if(j!=i && arr[j]==arr[i]){
        count++;
    }
}
printf("Total number of Duplicate Elements: %d",count/2);
return 0;
}

```



```

main.c | Run | Output | Clear
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n, count=0;
6     printf("Enter the number of elements: ");
7     scanf("%d",&n);
8     int arr[n];
9     for(int i=0;i<n;i++){
10         printf("Enter element %d: ",i+1);
11         scanf("%d",&arr[i]);
12     }
13     for(int i=0;i<n;i++){
14         for(int j=0;j<n;j++){
15             if(j!=i && arr[j]==arr[i]){
16                 count++;
17             }
18         }
19     }
20     printf("Total number of Duplicate Elements: %d",count/2);
21     return 0;
22 }
23

```

Output

```

/tmp/L1BcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number of elements: 5
Enter element 1: 5
Enter element 2: 4
Enter element 3: 4
Enter element 4: 6
Enter element 5: 9
Total number of Duplicate Elements: 1

```

Program 113: Write a program to find the maximum and minimum elements in an array.

Program:

```

#include<stdio.h>

int main(){

printf("NIKHIL KHANTWAL-23151431\n");

```

```
int n;  
printf("Enter the number of elements: ");  
scanf("%d",&n);  
int arr[n];  
for(int i=0;i<n;i++){  
    printf("Enter the number of elements %d: ",i+1);  
    scanf("%d",&arr[i]);  
}  
int max=0, min=10000;  
for(int i=0;i<n;i++){  
    if(arr[i]<min){  
        min = arr[i];  
    }  
    if(arr[i]>max){  
        max = arr[i];  
    }  
}  
printf("Maximum: %d, Minimum: %d",max,min);  
return 0;  
}
```

The screenshot shows a C IDE interface. On the left, there is a toolbar with icons for various languages: C, C++, C#, JS, PHP, and Python. The main area has tabs for "main.c" and "Output". The "main.c" tab contains the following C code:

```
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n;
6     printf("Enter the number of elements: ");
7     scanf("%d",&n);
8     int arr[n];
9     for(int i=0;i<n;i++){
10        printf("Enter the number of elements %d: ",i+1);
11        scanf("%d",&arr[i]);
12    }
13    int max=0, min=10000;
14    for(int i=0;i<n;i++){
15        if(arr[i]<min){
16            min = arr[i];
17        }
18        if(arr[i]>max){
19            max = arr[i];
20        }
21    }
22    printf("Maximum: %d, Minimum: %d",max,min);
23    return 0;
24 }
25
```

The "Output" tab shows the execution of the program. It starts with the file path "/tmp/L1BcPQa7e1.o" and the author "NIKHIL KHANTWAL-23151431". It then prompts for the number of elements and lists ten user inputs. Finally, it displays the maximum and minimum values found in the array.

```
/tmp/L1BcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number of elements: 10
Enter the number of elements 1: 2030
Enter the number of elements 2: 1000
Enter the number of elements 3: 8546
Enter the number of elements 4: 235
Enter the number of elements 5: 99
Enter the number of elements 6: 4562
Enter the number of elements 7: 3232
Enter the number of elements 8: 1002
Enter the number of elements 9: 565
Enter the number of elements 10: 23
Maximum: 8546, Minimum: 23
```

Program 114: Write a program to sort the elements of an array in descending order.

Program:

```
#include<stdio.h>

int main(){

    int n;

    printf("NIKHIL KHANTWAL-23151431");

    printf("Enter the number of elements: ");

    scanf("%d",&n);

    int arr[n];

    for(int i=0;i<n;i++){

        printf("Enter the element %d: ",i+1);

        scanf("%d",&arr[i]);

    }

    for(int i=0;i<n;i++){
```

```

for(int j=i+1;j<n;j++){
    if(arr[j]>arr[i]){
        int temp = arr[i];
        arr[i] = arr[j];
        arr[j] = temp;
    }
}
}

for(int i=0;i<n;i++){
    printf("%d, ",arr[i]);
}
return 0;
}

```

The screenshot shows a code editor interface with a toolbar at the top. The file tab shows "main.c". The code area contains C code for bubble sort. The output window shows the execution of the program, including user input and the sorted array.

```

main.c
1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     int n;
5     printf("NIKHIL KHANTWAL-23151431\n");
6     printf("Enter the number of elements: ");
7     scanf("%d",&n);
8     int arr[n];
9     for(int i=0;i<n;i++){
10         printf("Enter the element %d: ",i+1);
11         scanf("%d",&arr[i]);
12     }
13     for(int i=0;i<n;i++){
14         for(int j=i+1;j<n;j++){
15             if(arr[j]>arr[i]){
16                 int temp = arr[i];
17                 arr[i] = arr[j];
18                 arr[j] = temp;
19             }
20         }
21     }
22     for(int i=0;i<n;i++){
23         printf("%d, ",arr[i]);
24     }
25     return 0;
}

```

Output:

```

/tmp/L1lBcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number of elements: 5
Enter the element 1: 8
Enter the element 2: 5
Enter the element 3: 6
Enter the element 4: 7
Enter the element 5: 10
10, 8, 7, 6, 5,

```

Program 115: Write a program to separate odd and even integers into separate arrays.

Program:

```
#include<stdio.h>

int main(){
    printf("NIKHIL KHANTWAL-23151431\n");
    int n, j=0, k=0;
    printf("Enter the number of elements: ");
    scanf("%d",&n);
    int arr[n];
    for(int i=0;i<n;i++){
        int num=0;
        printf("Enter the number of elements %d: ",i+1);
        scanf("%d",&arr[i]);
    }
    int even[n], odd[n];
    for(int i=0;i<n;i++){
        if(arr[i]%2==0){
            even[j] = arr[i];
            j++;
        }
    }
    else{
```

```

odd[k] = arr[i];

k++;

}

}

printf("\nEven number's Array: \n");

for(int i=0;i<j;i++){

printf("%d, ",even[i]);

}

printf("\nOdd number's Array: \n");

for(int i=0;i<k;i++){

printf("%d, ",odd[i]);

}

return 0;
}

```

The screenshot shows a code editor interface with the following details:

- File:** main.c
- Code Content:**

```

1 // NIKHIL KHANTWAL
2 #include<stdio.h>
3 int main(){
4     printf("NIKHIL KHANTWAL-23151431\n");
5     int n, j=0, k=0;
6     printf("Enter the number of elements: ");
7     scanf("%d",&n);
8     int arr[n];
9     for(int i=0;i<n;i++){
10         int num=0;
11         printf("Enter the number of elements %d: ",i+1);
12         scanf("%d",&arr[i]);
13     }
14     int even[n], odd[n];
15     for(int i=0;i<n;i++){
16         if(arr[i]%2==0){
17             even[j] = arr[i];
18             j++;
19         }
20     } else{
21         odd[k] = arr[i];
22         k++;
23     }
24 }
25 printf("\nEven number's Array: \n");

```
- Buttons:** Save, Run, Clear
- Output:**

```

/tmp/L1BcPQa7e1.o
NIKHIL KHANTWAL-23151431
Enter the number of elements: 9
Enter the number of elements 1: 10
Enter the number of elements 2: 20
Enter the number of elements 3: 30
Enter the number of elements 4: 40
Enter the number of elements 5: 11
Enter the number of elements 6: 9
Enter the number of elements 7: 65
Enter the number of elements 8: 77
Enter the number of elements 9: 81
Even number's Array:
10, 20, 30, 40,
Odd number's Array:
11, 9, 65, 77, 81,

```

The screenshot shows a code editor interface with a toolbar at the top. On the left, there are icons for various file types: C, C++, JS, PHP, and HTML. The current file is 'main.c'. The code itself is as follows:

```
11 printf("Enter the number of elements %d: ",i+1);
12 scanf("%d",&arr[i]);
13 }
14 int even[n], odd[n];
15 for(int i=0;i<n;i++){
16 if(arr[i]%2==0){
17 even[j] = arr[i];
18 j++;
19 }
20 else{
21 odd[k] = arr[i];
22 k++;
23 }
24 }
25 printf("\nEven number's Array: \n");
26 for(int i=0;i<j;i++){
27 printf("%d, ",even[i]);
28 }
29 printf("\nOdd number's Array: \n");
30 for(int i=0;i<k;i++){
31 printf("%d, ",odd[i]);
32 }
33 return 0;
34 }
35 }
```

The output window on the right shows the execution of the program. It prompts for the number of elements, then lists the even and odd numbers separately.

Program: To find the multiplication of arrays(matrices) using function:

Program:

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

```
#include <stdlib.h>
```

```
int main()
```

```
{
```

```
int a[10][10], b[10][10], mul[10][10], r, c, i, j, k;
```

```
system("cls");
```

```
printf("NIKHIL KHANTWAL-23151431\n");
```

```
printf("ENTER THE NUMBER OF ROW:");
```

```
scanf("%d", &r);
```

```
printf("enter the number of column:");
```

```
scanf("%d", &c);

printf("entr the first matrix element=\n");
for (i = 0; i < r; i++)
{
    for (j = 0; j < c; j++)
        scanf("%d", &a[i][j]);
}

printf("enter the second matrix element=\n");
for (i = 0; i < r; i++)
{
    for (j = 0; j < c; j++)
        scanf("%d", &b[i][j]);
```

```
    }
}

printf("multiplication of matrix=\n");
for (i = 0; i < r; i++)
{
    for (j = 0; j < c; j++)
    {
        mul[i][j] = 0;
        for (k = 0; k < c; k++)
        {
            mul[i][j] += a[i][k] * b[k][j];
        }
    }
}

for (i = 0; i < r; i++)
{
```

```
for (j = 0; j < c; j++)
```

```
{
```

```
    printf("%d\t", mul[i][j]);
```

```
}
```

```
    printf("\n");
```

```
}
```

```
return 0;
```

```
}
```

The screenshot shows the VS Code interface with the following details:

- Explorer View:** Shows files in the "C LANGUAGE ASSIGNMENTS" folder, including `positivenumber.c`, `pn.c`, `pnn.c`, `pin.c`, and `function.c`.
- Code Editor:** Displays the `function.c` file with C code for matrix multiplication.
- Terminal:** Shows the output of the program execution. It prompts for the number of rows (3), columns (3), and matrix elements, then displays the multiplication results:

```
NIKHIL KHANTWAL-23151431
ENTER THE NUMBER OF ROW:3
enter the number of column:3
enter the first matrix element=
1
2
3
4
5
6
7
8
9
enter the second matrix element=
1
2
3
4
5
6
7
8
9
multiplication of matrix=
30 36 42
66 81 96
102 126 150
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment>
```

```

NIKHIL KHANTWAL-23151431
ENTER THE NUMBER OF ROW:3
enter the number of column:3
enter the first matrix element=
1
2
3
4
5
6
7
8
9
enter the second matrix element=
1
2
3
4
5
6
7
8
9
multiplication of matrix=
30 36 42
66 81 96
102 126 150
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment>

```

FILE: function.c

```

#include <stdio.h>

int m[10][10], n[10][10], k[10][10], r, c;

void matrixmulAnu()

{
    printf("NIKHIL KHANTWAL-23151431");

    printf("Enter rows and columns of arrays\n");
    scanf("%d %d", &r, &c);

    printf("Enter elements of 1st array\n");
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            scanf("%d", &m[i][j]);
        }
    }

    printf("Enter elements of 2nd array\n");
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            scanf("%d", &n[i][j]);
        }
    }

    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            k[i][j] = 0;
            for (int k = 0; k < c; k++)
            {
                k[i][j] += m[i][k] * n[k][j];
            }
        }
    }

    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {
            printf("%d\t", k[i][j]);
        }
        printf("\n");
    }

    return 0;
}

```

Program:

```

#include <stdio.h>

int m[10][10], n[10][10], k[10][10], r, c;

void matrixmulAnu()

{
    printf("NIKHIL KHANTWAL-23151431");

    printf("Enter rows and columns of arrays\n");
    scanf("%d %d", &r, &c);

    printf("Enter elements of 1st array\n");
    for (int i = 0; i < r; i++)
    {
        for (int j = 0; j < c; j++)
        {

```

```
{  
    scanf("%d", &m[i][j]);  
}  
}  
  
printf("Enter elements of 2nd array\n");  
  
for (int i = 0; i < r; i++)  
{  
    for (int j = 0; j < c; j++)  
    {  
        scanf("%d", &n[i][j]);  
    }  
}  
  
for (int i = 0; i < r; i++)  
{  
    for (int j = 0; j < c; j++)  
    {  
        k[i][j] = 0;  
        for (int x = 0; x < c; x++)  
        {  
            k[i][j] += m[i][x] * n[x][j];  
        }  
    }  
}
```

```
    }

}

for (int i = 0; i < r; i++)
{
    for (int j = 0; j < c; j++)
    {
        printf("%d\t", k[i][j]);
    }
    printf("\n");
}

int main()
{
    matrixmulAnu();
    return 0;
}
```

OUTPUT

File Edit Selection View Go Run Terminal Help ← → 🔍 C LANGUAGE ASSIGNMENTS

EXPLORER ... : C positivenumber.c C pn.c C pnn.c C pin.c C function.c

assignment > C function.c > main()

```

1 #include <stdio.h>
2 #include <stdlib.h>
3 int main()
4 {
5
6     int a[10][10], b[10][10], mul[10][10], r, c, i, j, k;
7     system("cls");
8     printf("NIKHIL KHANTWAL-23151431\n");
9
10    printf("ENTER THE NUMBER OF ROW:");
11    scanf("%d", &r);
12
13    printf("enter the number of column:");
14    scanf("%d", &c);
15
16    printf("enter the first matrix element=\n");
17    for (i = 0; i < r; i++)
18    {
19
20        for (j = 0; j < c; j++)
21        {
22
23            scanf("%d", &a[i][j]);
24        }
25    }
26
27    printf("enter the second matrix element=\n");
28    for (i = 0; i < r; i++)
29    {
30
31        for (j = 0; j < c; j++)
32        {
33
34            scanf("%d", &b[i][j]);
35        }
36    }
37
38
39    printf("multiplication of matrix=\n");
40    for (i = 0; i < r; i++)
41    {
42
43        for (j = 0; j < c; j++)
44        {
45
46            mul[i][j] = 0;
47            for (k = 0; k < c; k++)
48            {
49
50                mul[i][j] += a[i][k] * b[k][j];
51            }
52        }
53
54    for (i = 0; i < r; i++)
55    {
56
57        for (j = 0; j < c; j++)
58        {
59
60            printf("%d\t", mul[i][j]);
61        }
62        printf("\n");
63    }
64
65    return 0;
66
67 }
```

PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment> gcc function.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment> ./a.exe
Enter rows and columns of arrays
3
3
Enter elements of 1st array
1
2
3
4
5
6
7
8
9
Enter elements of 2nd array
9
8
7
6
5
4
3
2
1
30 24 18
84 69 54
138 114 90
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment>

Ln 16, Col 17 Spaces:4 UTF-8 CRLF {} C Win32

File Edit Selection View Go Run Terminal Help ← → 🔍 C LANGUAGE ASSIGNMENTS

EXPLORER ... : C positivenumber.c C pn.c C pnn.c C pin.c C function.c

assignment > C function.c > main()

```

32 {
33
34     scanf("%d", &b[i][j]);
35 }
36
37
38
39    printf("multiplication of matrix=\n");
40    for (i = 0; i < r; i++)
41    {
42
43        for (j = 0; j < c; j++)
44        {
45
46            mul[i][j] = 0;
47            for (k = 0; k < c; k++)
48            {
49
50                mul[i][j] += a[i][k] * b[k][j];
51            }
52        }
53
54    for (i = 0; i < r; i++)
55    {
56
57        for (j = 0; j < c; j++)
58        {
59
60            printf("%d\t", mul[i][j]);
61        }
62        printf("\n");
63    }
64
65    return 0;
66
67 }
```

PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment> gcc function.c
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment> ./a.exe
Enter rows and columns of arrays
3
3
Enter elements of 1st array
1
2
3
4
5
6
7
8
9
Enter elements of 2nd array
9
8
7
6
5
4
3
2
1
30 24 18
84 69 54
138 114 90
PS C:\Users\HP\OneDrive\Desktop\C LANGUAGE ASSIGNMENTS\assignment>

Ln 16, Col 17 Spaces:4 UTF-8 CRLF {} C Win32