Name   :- Nigam yadav
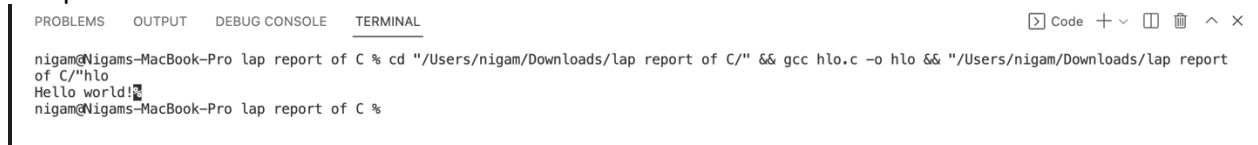
Roll No:-   PUR078BCT053

Sheet No.   :-   1

Checked By:-

LAB SHEET NO.1[To be familiar with C – programming]

1.Write a program to print hello world.

```c
#include<stdio.h>
int main()
{
    printf("Hello world!");
    return 0;
}
```

Output

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL                                                    Code + ⋁  ⊟ 🗑  ∧ ✕

nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Hello world!▉
nigam@Nigams-MacBook-Pro lap report of C %
```

2. Write a program to print your name, roll number and address.

```c
#include<stdio.h>
int main()
{
    printf("My name is Nigam Yadav\n");
    printf("My roll number is PUR078BCT053\n");
    printf("I live in Dharan-8,Langali chowk\n");
    return 0;
}
```
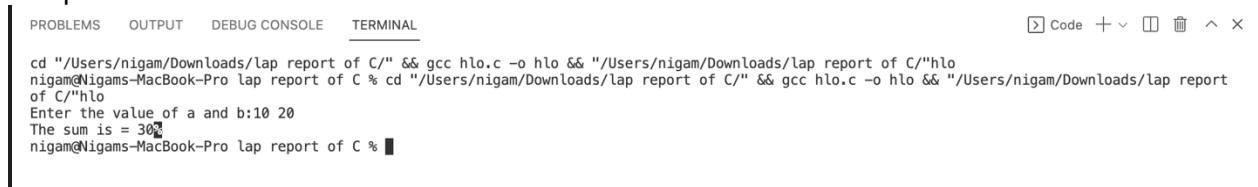
Output

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL                                                    Code + ⋁  ⊟ 🗑  ∧ ✕

cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report of C/"hlo
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
My name is Nigam Yadav
My roll number is PUR078BCT053
I live in Dharan-8,Langali chowk
nigam@Nigams-MacBook-Pro lap report of C %
```

3. Write a program to add two integer variables and print sum.

```c
#include<stdio.h>
int main()
{
    int a,b,sum;
    printf("Enter the value of a and b:");
    scanf("%d%d",&a,&b);
    sum=a+b;
    printf("The sum is = %d",sum);
    return 0;
}
```
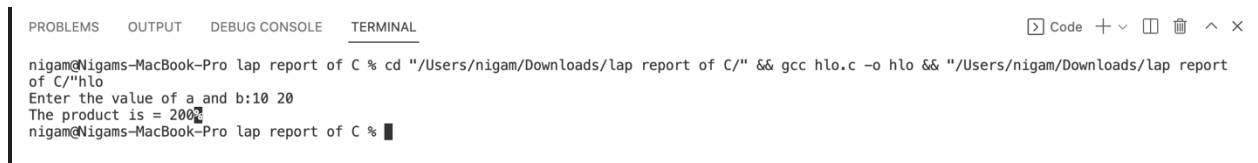
Output

4. Write a program to multiply two integer variables and print product.

```c
#include<stdio.h>
int main()
{
    int a,b,product;
    printf("Enter the value of a and b:");
    scanf("%d%d",&a,&b);
    product=a*b;
    printf("The product is = %d",product);
    return 0;
}
```

Output

5. Write a program to calculate and display simple interest.

```c
#include<stdio.h>
int main()
{
    int P,T,R,SI;
    printf("Enter the value of P,T and R:");
    scanf("%d%d%d",&P,&T,&R);
    SI=(P*T*R)/100;
    printf("The simple interest  is = %d",SI);
    return 0;
}
```

Output

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL                                                    Code + ∨  ⊡  🗑  ∧ ×

cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report of C/"hlo
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Enter the value of P,T and R:5000
2
10
The simple interest  is = 1000▓
nigam@Nigams-MacBook-Pro lap report of C % ▊
```

6. Write a program to calculate the area of circle.

```c
#include<stdio.h>
int main()
{
    float r,Area,pi= 3.1415;
    printf("Enter the radius of the circle:");
    scanf("%f",&r);
    Area =pi*r*r;
    printf("Area of a circle = %f",Area);
    return 0;
}
```

Output

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL                                                    Code + ∨  ⊡  🗑  ∧ ×

nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Enter the radius of the circle:5
Area of a circle = 78.537506▓
nigam@Nigams-MacBook-Pro lap report of C % ▊
```

Name :- Nigam yadav   Sheet No.   :-   2

Roll No:-   PUR078BCT053   Checked By:-

LAB SHEET NO.2[To be familiar with Data types, Constants, Operators and Expressions]

1.Write a program to declare integer, float and character variable. Initialize them with certain value and print those values. Also display the size of variables.

```c
#include<stdio.h>
int main()
{
    int a=10;
    float b=4.0;
    char star='*';
    printf("the value of a = %d and the size of a is %lu\n",a,sizeof(a));
    printf("the value of b = %f and the size of b is %lu\n",b,sizeof(b));
    printf("star is %c and the size of star is %lu",star,sizeof(star));

}
```

Output

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   ▷ Code + ∨ ⬚ 🗑 ∧ ✕

```
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
the value of a = 10 and the size of a is 4
the value of b = 4.000000 and the size of b is 4
star is * and the size of star is 1
nigam@Nigams-MacBook-Pro lap report of C %
```

2. Write a program to swap the value of the variable with and without using third variable.

      With using third variable

```c
//swapping the values of two variables with using third variable
#include<stdio.h>
int main()
{
    int a,b,temp;
    printf("Enter the value of a and b:");
    scanf("%d%d",&a,&b);
    temp=a;
    a=b;
    b=temp;
    printf("After swapping a=%d and b=%d",a,b);
    return 0;
}
```

Output

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL                                              Code + ∨  ⊓  🗑  ∧ ×

cd "/Users/nigam/Downloads/lap report of C/" && gc
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Enter the value of a and b:10
20
After swapping a=20 and b=10
nigam@Nigams-MacBook-Pro lap report of C %
```

Without using third variable

```c
#include<stdio.h>
int main()
{
    int a=10, b=20;
    printf("Before swap a=%d b=%d",a,b);
    a=a+b;
    b=a-b;
    a=a-b;
    printf("\nAfter swap a=%d b=%d",a,b);
    return 0;
}
```

Output

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL                                              Code + ∨  ⊓  🗑  ∧ ×

cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report of C/"hlo
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Before swap a=10 b=20
After swap a=20 b=10
nigam@Nigams-MacBook-Pro lap report of C %
```

3. Write a program to calculate the area and volume of a cylinder using pre-processor directive for the value of Pi.

```c
#include<stdio.h>
#define Pi 3.1415
 int main()
{
    float r,h,area,volume;
    printf("Enter the value of r anf h:");
    scanf("%f%f",&r,&h);
    area=2*Pi*r*(r+h);
    printf("Area of cylinder = %f",area);
    volume=Pi*r*r*h;
    printf("Volume of cylinder = %f",volume);
    return 0;
}
```

Output

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   Code + ∨ ⊓ 🗑 ∧ ✕

cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report of C/"hlo
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Enter the value of r anf h:5
7
Area of cylinder = 376.980011Volume of cylinder = 549.762512▮
nigam@Nigams-MacBook-Pro lap report of C % ▮

4. Write a program to input two numbers from user and display the minimum using conditional operator.

```c
#include<stdio.h>
 int main()
{
    int a,b,minimum;
    printf("Enter the value of a and b:");
    scanf("%d%d",&a,&b);
    minimum=(a<b)?a:b;
    printf("the minimum value is %d",minimum);
    return 0;
}
```

Output

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   Code + ∨ ⊓ 🗑 ∧ ✕

nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Downloads/lap report
of C/"hlo
Enter the value of a and b:5 7
the minimum value is 5▮
nigam@Nigams-MacBook-Pro lap report of C % ▮

5. Write a program to display whether a number is odd or even using conditional operator.

```c
#include<stdio.h>
int main()
{
    int N,X;
    printf("Enter the value of N:");
    scanf("%d",&N);
    X=N%2;
    if(X==0)
    {
        printf("N is a even number.");
    }
    else
    {
        printf("N is a odd number.");
    }
    return 0;
}
```
Output

6. What are the output of the following programs:

```c
#include<stdio.h>
int main()
{
  int a =5, b = 9;
  printf("a = %d, b = %d\n", a, b);
  printf("a&b = %d\n", a & b);
  printf("a|b = %d\n", a | b);
  printf("a^b = %d\n", a^b);
  printf("~a = %d\n", ~a);
  printf("(b<<2) + (a<<1) = %d\n", (b<<2) +(a<<1));
  printf("(b>>1) + (a>>1) = %d\n", (b>>1) +(a>>1));
  return 0;
}
```

Output

```
cd "/Users/nigam/Downloads/lap report of C/" && gc▊
nigam@Nigams-MacBook-Pro lap report of C % cd "/Users/nigam/Downloads/lap report of C/" && gcc hlo.c -o hlo && "/Users/nigam/Dow
nloads/lap report of C/"hlo
a= 5, b = 9
a&b = 1
a|b = 13
a^b = 12
~a = -6
(b<<2)+(a<<1) = 46
(b>>1)+(a>>1) = 6
nigam@Nigams-MacBook-Pro lap report of C %
```

CONCLUSION:-

In this lab report, I become familiar to C-programming. I learn about using simple output and input function. I also learn about using instruction and operator like using ternary operator and conditional operators. I also learn to find logical and syntax error.