INDEX

S.No.	TITLE OF PROGRAM	SIGNATURE
1.	Write a program to print “Hello World!”.	
2.	Write a program to add two numbers and print their sum.	
3.	Write a program to read an integer input from user and print it.	
4.	Write a program to read char input from user and print it.	
5.	Write a program to read float input from the user and print it.	
6.	Write a program to convert temperature in celsius to fahreheit and viceversa.	
7.	Write a program to convert height in cm to feet.	
8.	Write a program to read an input keystroke (alphabet,number or special symbol) and output its equivalent ASCII code.	
9.	Write a program to calculate the simple interest given the rate of interest , principal , amount and duration(years and months).	
10.	Write a program to add ,subtract ,divide and multiply two given numbers and return corresponding outputs . What will happen if denominator in division is zero?	
11.	Snippets	
12.	Snippets	
13.	Write a program to swap to integers using a third variable.	
14.	Write a program to swap to integers without using a third variable.	
15.	Write a program to convert decimal to binary.	
16.	A number is input by user ,write a program that calculates the sum of all digits of the number.	

17.	Write a program to find the reverse of a number.	
18.	Write a program to calculate hra , da , gross salary of an employee from basic salary.	
19.	Write a program to find total percentage of 5 subjects.	
20.	Write a program to show that left shift involves multiplication and right shift involves division.	
21.	Write a program to find whether the given year is a leap year or not.	
22.	Write a program to find first 10 multiples of a given number.	
23.	Write a program to find the factorial of a number.	
24.	Write a program to find mean , variance and standard deviation of any given N numbers(N is input from the user).	
25.	Check whether a number is prime or not.	
26.	Write a program to find all primes within a given range.	
27.	Write a program to arrange any 5 numbers in increasing order.	
28.	Write a program to find out whether number is armstrong number or not.	
29.	Write a program to calculate the average marks of a class.	
30.	Write a program to check whether number is pallindrome or not.	
31.	Write a program to display a pattern of number.	
32.	Write a program to print pattern of right angle triangle using *.	
33.	Write a program to find fibonacci series.	
34.	Write a program to find the sum of a geometric progression.	

35.	Write a program to illustrate the use of conditional compilation using #ifdef.	
36.	Write a program using a function to find factorial of a given number then extend it to ${}^{n}C_{r}$.	
37.	Write a program using a function that takes radius as input and gives area and perimeter as output.	
38.	Write a program using a function that takes coefficient of quadratic equation as input and return its roots as output.	
39.	Write a program using the function myexpo(a,b) that calculates a^{b} programs should work on negative a and b.	
40.	Write a program to find the factorial of a number using recursion.	
41.	Write a program to print the fibonacci series using recursion.	
42.	Write a program to find the average of 5 numbers.	
43.	Write a program to find the standard deviation of 10 numbers.	
44.	Write a program to record the average temperature for 10 days.	
45.	Write a position of key in array of 10 numbers. Find the largest among 10 numbers.	
46.	Write a program to input 5 numbers and a key(number to be searched) output the position of key if found , else output 1.	
47.	Write a program to find the maximum and minimum among 5 numbers.	
48.	Write a program to add 2 matrices.	
49.	Write a program to find the transpose of a matrix.	
50.	Write a program to multiply 2 matrices.	
51.	Write a program to subract two matrices.	

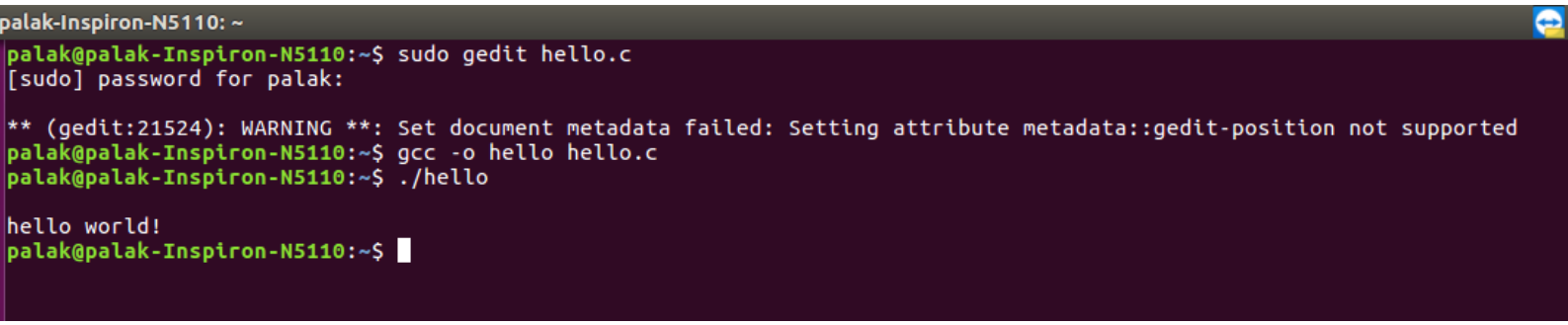
52.	Write a program to find the length of string without using library functions.	
53.	Write a program to concatenate two strings without using library functions.	
54.	Write a program to copy a string without using library functions.	
55.	Write a program to reverse a string without using library functions.	
56.	Write a program to compare two strings without using library functions.	
57.	Write a program using function to output sum of all numerals , in an alphanumeric string given by the user.	
58.	Write a program using function to output “yes” if str2 is present as a sub-string in str1 else output “no”, str1 and str2 are input strings by the user.	
59.	Write a program using function to reverse a string.Input is given by the user as an output sentence(read it into a string).	
60.	Write a program to illustrate the size of all positive data types.	
61.	Write a program to swap 2 numbers uing pointers.	
62.	Write a program to count the vowels and consonants in a string using pointers.	
63.	Write a program to compute the sum of all elements stored in an array using pointers.	
64.	Write a program to change the value of a constant integer using pointers.	
65.	Write a program to find the largest element using dynamic memory allocation calloc().	
66.	Write a program to find the area of circle using PI as a macro.	
67.	Write a program to copy a source text file into a target text file.	

68.	Write a program to read a file as input and count the number of characters, words and lines.	
69.	Write a program that takes input as details of book(titles, pages and cost) and displays the same. Take input for 10 books and arrange them in increasing order of cost.	
70.	Write a program illustrating the garbage values of uninitialized variable.	
71.	Write a program to find all the prime factors of any given number.	
72.	Write a program to find hcf of two numbers.	
73.	Write a program to illustrate the use of #pragma.	
74.	Illustrate pointer to structure.	
75.	Write a program to illustrate referencing and deferencing of pointers.	
76.	Write a program using all the string functions.	
77.	Write a program to illustrate scope,visibility and lifetime of various storage classes.	
78.	Write a program to input details of as much as book using malloc and display the same.	
79.	Write a program to read and write the file using following commands: a.)fgetc() and fputc() b.)fprintf() and fscanf() c.)fread() and fwrite()	
80.	Modify the file copy program to avoid over writing the existing target file, instead if taget file has some contents, then target file is appended by contents of source file.	

Q1. Write a program to print “Hello World!”.

```
#include<stdio.h>

 void main()
 {

    printf("\nhello world!\n");

    }
```

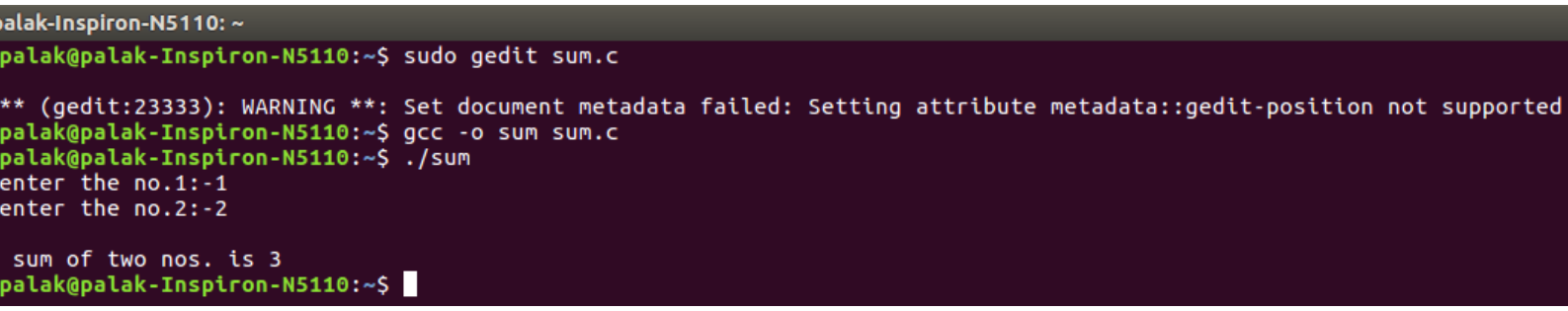
Output:



Q2. Write a program to add two numbers and print their sum.

```
#include<stdio.h>

void main()

{
  int num1,num2,sum=0;

  printf("enter the no.1:-");

  scanf("%d ",&num1);

  printf("enter the no.2:-");

   scanf("%d",&num2);


       sum=num1+num2;

         printf("\n sum of two nos. is %d\n", sum);

        }
```

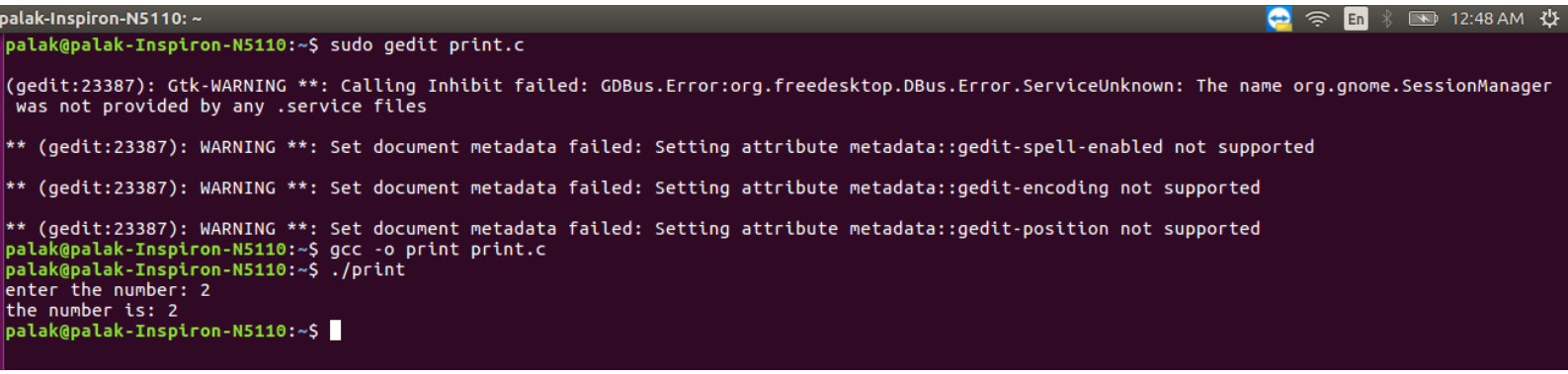
Output:



Q3. Write a program to read an integer input from user and print it.

```
#include<stdio.h>

void main()

{

 int num;

 printf("enter the number: ");

 scanf("%d",&num);

 printf("the number is: %d \n",num);

 }
```

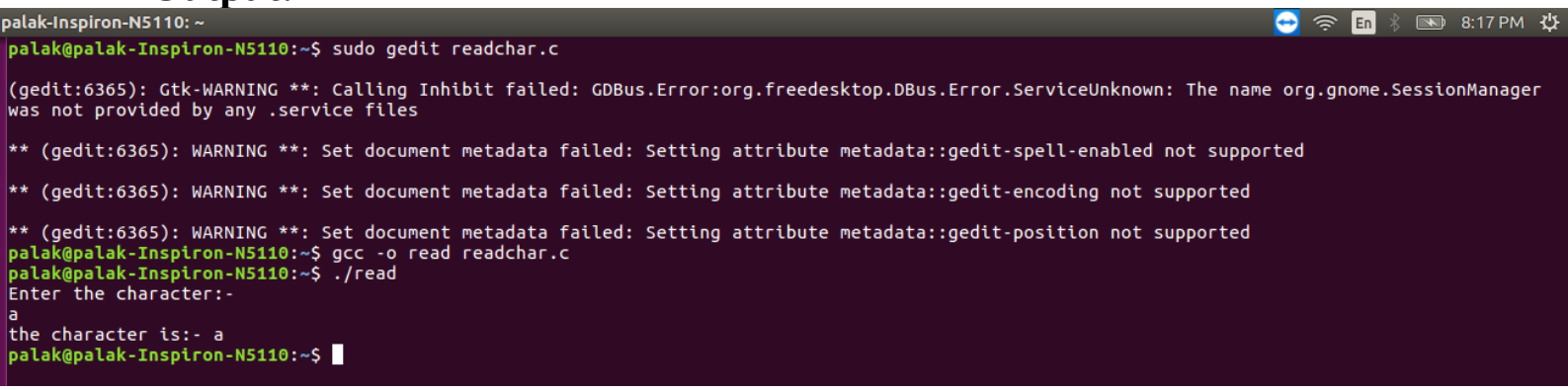
Output:



Q4. Write a program to read char input from user and print it.

```
#include<stdio.h>

void main()
 {
   char ch;

   printf("Enter the character:-\n");

   scanf("%c",&ch);

   printf("the character is:- %c" , ch);

   }
```

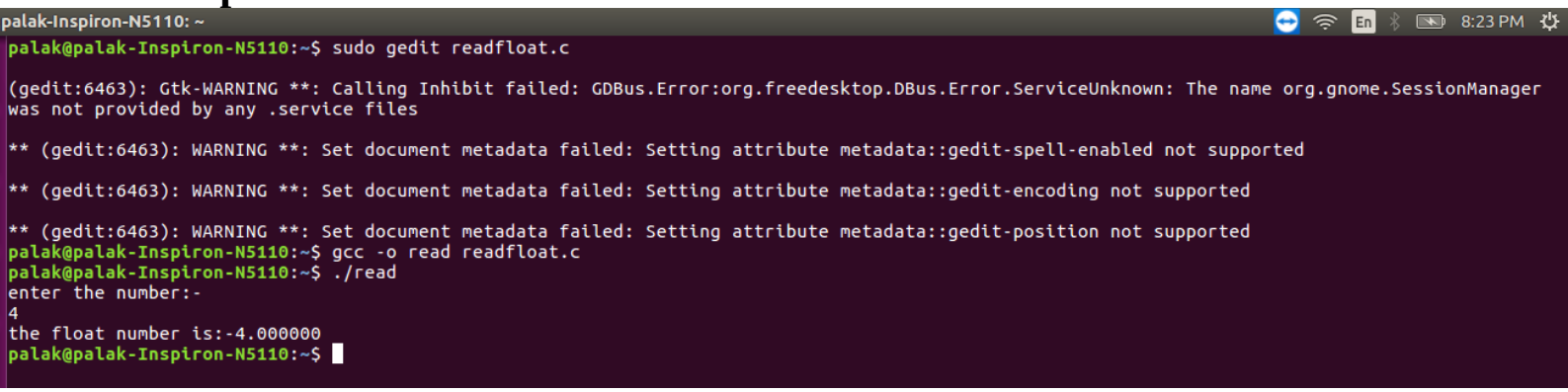
Output:



Q5. Write a program to read float input from the user and print it.

```
#include<stdio.h>

void main()

{

float num;

printf("enter the number:-\n");

scanf("%f" , &num);

printf("the float number is:-%f \n",num);

}
```

Output:



Q6. Write a program to convert temperature in celsius to fahreheit and viceversa.

```
#include<stdio.h>

void main()

{

 int num1,num2;

 float f=0,c=0;

 printf("Enter temperature in Celsius:- ");

 scanf("%d", &num1);

 printf("Enter temperature in Fahrenheit:- ");

 scanf("%d", &num2);

 f=(num1*(9/5))+32;

 printf("After conversion \n");

 printf("Temperature in Fahrenheit is:- %f \n", f);

c=(num2-32)*5/9;

printf("Temperature in Celsius is:- %f \n", c);

 }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit temp.c

** (gedit:6884): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o temp temp.c
palak@palak-Inspiron-N5110:~$ ./temp
Enter temperature in Celsius:- 37
Enter temperature in Fahrenheit:- 96
After conversion
Temperature in Fahrenheit is:- 69.000000
Temperature in Celsius is:- 35.000000
palak@palak-Inspiron-N5110:~$
```

Q7. Write a program to convert height in cm to feet.

```
#include<stdio.h>

#include<stdlib.h>

void main()

{
 int choice;
 do

  {
   printf("1. Conversion from centimeter to feet \n");

   printf("2. Conversion from feet to centimeter \n");

   printf("3. Exit the program\n");

   printf("Enter your choice");

   scanf("%d",&choice);

    switch(choice)
   {
 case 1:{
            int num;

            float ans=0;

            printf("Enter the height in centimeter:- ");

             scanf("%d", &num);

             ans=num/30;

             printf("The height in feet is:- %f \n",ans);

              break;
```

```
                }
    case 2:{
            int num;

            float cm=0;

            printf("Enter the height in feet:- ");

            scanf("%d", &num);

            cm=num*30.0;

            printf("The height in centimeter is:- %f \n", cm);

            break;
             }
 case 3:{
           printf("Exit the program");

           exit(0);
          }
     }//end of switch
}while(1);

}
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit height.c
[sudo] password for palak:

** (gedit:7052): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o height height.c
palak@palak-Inspiron-N5110:~$ ./height
1. Conversion from centimeter to feet
2. Conversion from feet to centimeter
3. Exit the program
Enter your choice1
Enter the height in centimeter:- 145
The height in feet is:- 4.000000
1. Conversion from centimeter to feet
2. Conversion from feet to centimeter
3. Exit the program
Enter your choice2
Enter the height in feet:- 3
The height in centimeter is:- 90.000000
1. Conversion from centimeter to feet
2. Conversion from feet to centimeter
3. Exit the program
Enter your choice
```

Q8. Write a program to read an input keystroke (alphabet,number or special symbol) and output its equivalent ASCII code.

```
#include<stdio.h>

 void main()

 {

   char ch;

   printf("Enter the character:- \n");

   scanf("%c", &ch);

   printf("The ASCII value is:- %d \n", ch);

   }
```

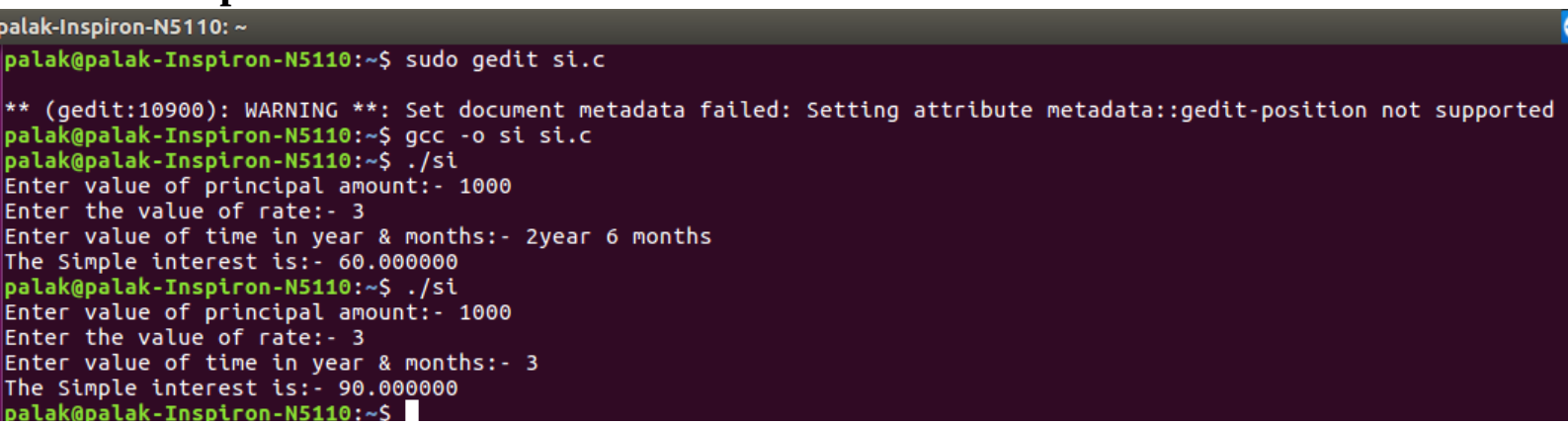
Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit ascii.c

** (gedit:8134): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o ascii ascii.c
palak@palak-Inspiron-N5110:~$ ./ascii
Enter the character:-
A
The ASCII value is:- 65
palak@palak-Inspiron-N5110:~$ ./ascii
Enter the character:-
a
The ASCII value is:- 97
palak@palak-Inspiron-N5110:~$
```

Q9. Write a program to calculate the simple interest given the rate of interest , principal , amount and duration(years and months).

```
#include<stdio.h>

 void main()

 {

   float p, r, t, si ;

   printf("Enter value of principal amount:- ");

   scanf("%f", &p);

   printf("Enter the value of rate:- ");

   scanf("%f", &r);

   printf("Enter value of time in year & months:- ");

   scanf("%f", &t);

   si=(p*r*t)/100;

   printf("The Simple interest is:- %f \n",si);

    }
```

Output:



Q10. Write a program to add ,subtract ,divide and multiply two given numbers and return corresponding outputs . What will happen if denominator in division is zero?

```
#include<stdio.h>

#include<math.h>

#include<stdlib.h>

 void main()

 {

  int choice;

  do

   {

     printf("1. Addition\n");

     printf("2. Subtraction\n");

     printf("3. Multiplication\n");

     printf("4. Division\n");

     printf("5. For exiting the program\n");

     printf("Enter your choice\n");

     scanf("%d",& choice);

        switch(choice)

        {

   case 1:{
```

```
        int num1,num2,sum;
        printf("Enter the number1:- ");
        scanf("%d", &num1);
        printf("Enter the number2:- ");
        scanf("%d", &num2);
      sum=num1+num2;
    printf("Addition of two num is:- %d",sum);
    printf("\n");
     break;
      }
case 2:{
        int num1,num2,sub;
        printf("Enter the number1:- ");
        scanf("%d", &num1);
        printf("Enter the number2:- ");
        scanf("%d", &num2);
        sub=num1-num2;
        printf("subtraction of two num is:- %d ",sub);
        printf("\n");
         break;
          }
```

```
case 3:{
        int num1,num2, mul;

        printf("Enter the number1:- ");

        scanf("%d", &num1);

        printf("Enter the number2:- ");

        scanf("%d", &num2);

        mul=num1*num2;
        printf("Multiplication of two num is:- %d ",mul);

        printf("\n");

         break;
          }

  case 4:{
         int num1,num2,div;

         printf("Enter the number1:- ");

         scanf("%d", &num1);

          printf("Enter the number2:- ");

          scanf("%d", &num2);

          div=num1/num2;

          printf("Division of two num is:- %d ",div);

           printf("\n");

            break;
              }
```

```
            case 5:{
                        printf("Exit the program ");

                         exit(0);
                         }
                default: printf("You have entered wrong choice");

               }//end of switch
        }while(1);

}
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit calc.c

** (gedit:11139): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o cal calc.c
palak@palak-Inspiron-N5110:~$ ./cal
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
Enter your choice
1
Enter the number1:- 1
Enter the number2:- 2
Addition of two num is:- 3
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
Enter your choice
2
Enter the number1:- 1
Enter the number2:- 2
subtraction of two num is:- -1
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
Enter your choice
3
Enter the number1:- 2
Enter the number2:- 3
Multiplication of two num is:- 6
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
```

```
4: command not found
palak@palak-Inspiron-N5110:~$ ./cal
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
Enter your choice
4
Enter the number1:- 1
Enter the number2:- 0
Floating point exception (core dumped)
palak@palak-Inspiron-N5110:~$
```

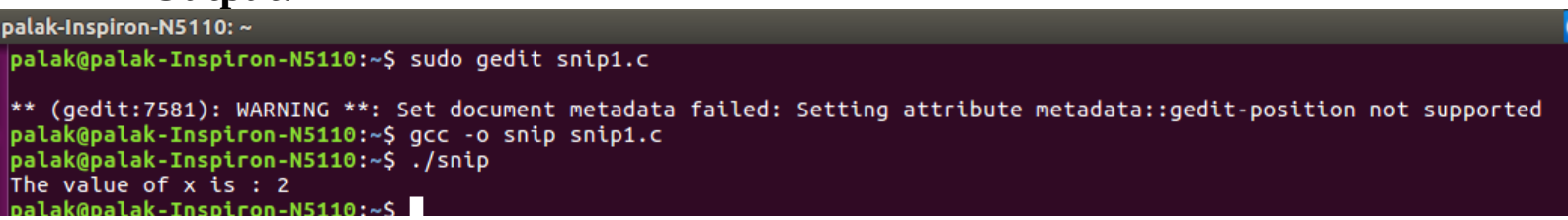
```
Multiplication of two num is:- 6
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
Enter your choice
4
Enter the number1:- 4
Enter the number2:- 2
Division of two num is:- 2
1. Addition
2. Subtraction
3. Multiplication
4. Division
5. For exiting the program
Enter your choice
5
Exit the program palak@palak-Inspiron-N5110:~$
```

Q.11 Snippets

1.)#include<stdio.h>

```
void main()

{
 int x=1;

  x++;

  printf("The value of x is : %d \n",x);

  }
```

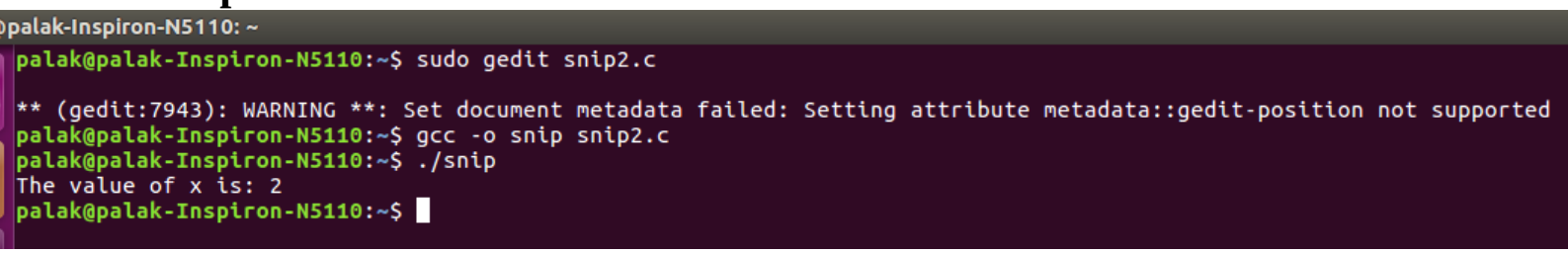
Output:



2.)#include<stdio.h>

```
void main()

{
  int x=1;

  ++x;

  printf("The value of x is: %d \n", x);

  }
```

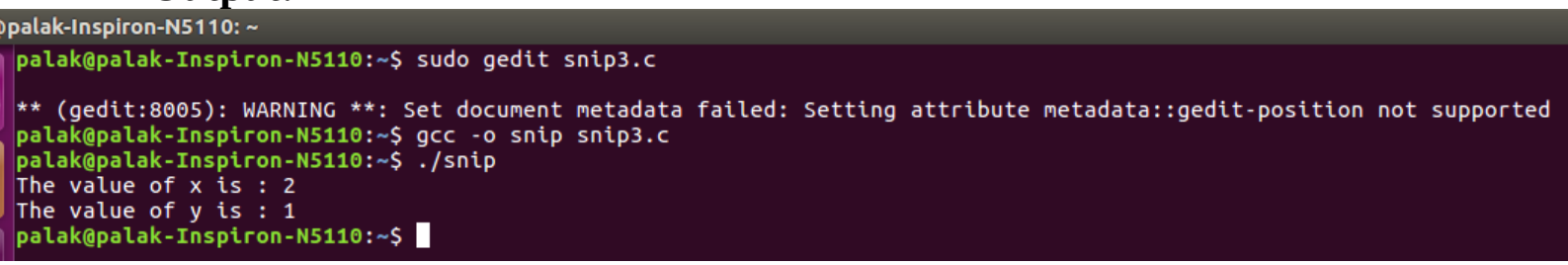
Output:



3.)#include<stdio.h>

```
void main()

{
  int x=1,y;
  y=x++;

   printf("The value of x is : %d\n",x);
   printf("The value of y is : %d\n",y);

   }
```

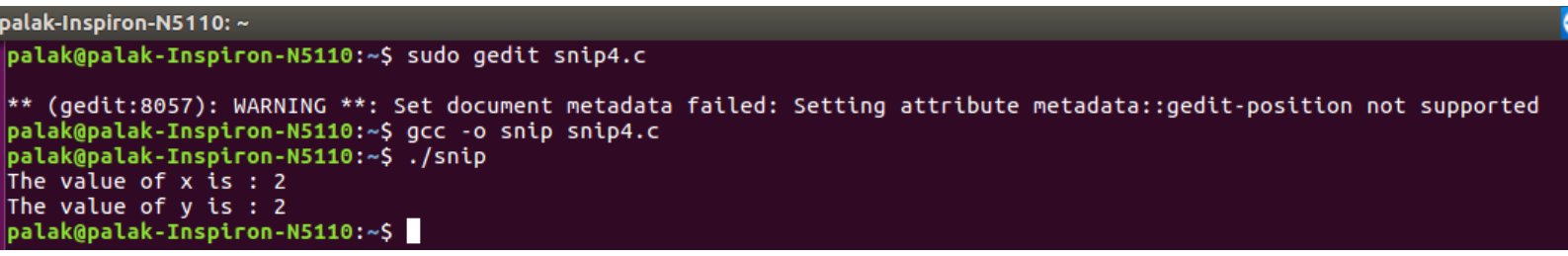
Output:



4.)#include<stdio.h>

```
void main()

{
  int x=1,y;
  y=++x;

   printf("The value of x is : %d\n",x);
   printf("The value of y is : %d\n",y);

   }
```

Output:



Q12. Snippets

1.)#include<stdio.h>

```
void main()

{
 int x;

 x=4*7%5+4/6-3;
 printf("The value of x is : %d \n", x);

 }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit snip5.c

** (gedit:8193): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o snip snip5.c
palak@palak-Inspiron-N5110:~$ ./snip
The value of x is : 0
palak@palak-Inspiron-N5110:~$
```

2.)#include<stdio.h>

```
void main()

{
 int x=1,y=2,z;

 z=x+++y++;
 printf("the value of x is: %d \n", x);
 printf("the value of y is: %d \n", y);
 printf("the value of z is: %d \n", z);

}
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit sni6.c

** (gedit:8277): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o snip sni6.c
palak@palak-Inspiron-N5110:~$ ./snip
the value of x is: 2
the value of y is: 3
the value of z is: 3
palak@palak-Inspiron-N5110:~$
```

3.)#include<stdio.h>

```
void main()
{
  int x=1,y=2,z;
  z=x*y+34/x++%y++;
  printf("the value of x is: %d \n", x);
  printf("the value of y is: %d \n", y);
  printf("the value of z is: %d \n", z);
   }
```

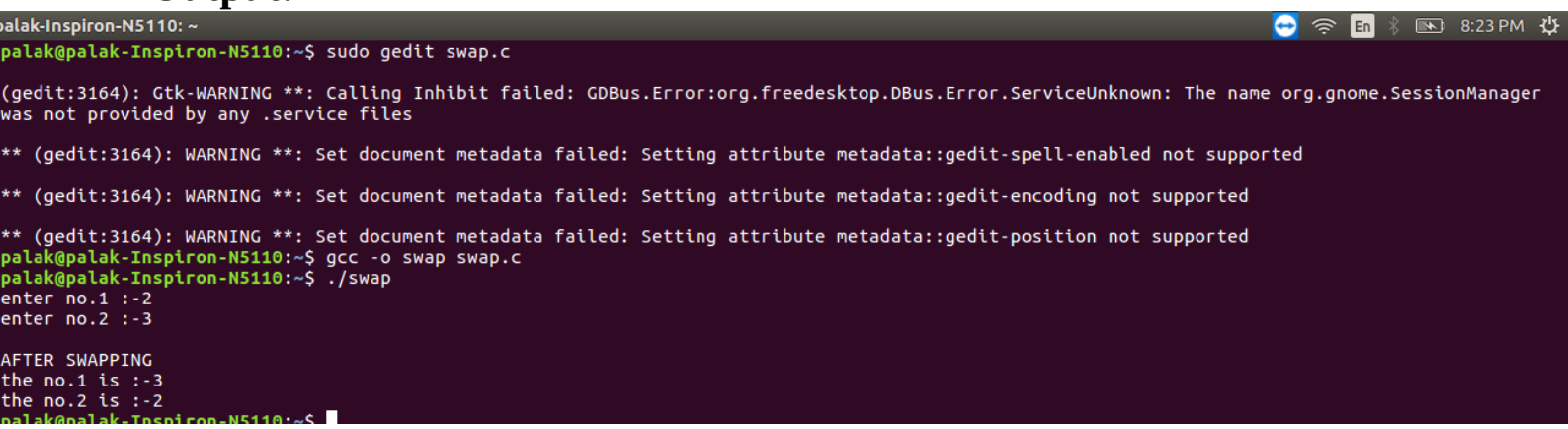
Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit snip7.c
[sudo] password for palak:

** (gedit:1662): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o snip snip7.c
palak@palak-Inspiron-N5110:~$ ./snip
the value of x is: 2
the value of y is: 3
the value of z is: 2
palak@palak-Inspiron-N5110:~$
```

Q13. Write a program to swap to integers using a third variable.

```
#include<stdio.h>

 void main()

 {
  int n1 , n2 , temp;

  printf("enter no.1 :-");

 scanf("%d",&n1);

 printf("enter no.2 :-");

 scanf("%d",&n2);

 temp=n1;

 n1=n2;

  n2=temp;

  printf("\nAFTER SWAPPING\n");

  printf("the no.1 is :-%d\n",n1);

 printf("the no.2 is :-%d\n",n2);

 }
```

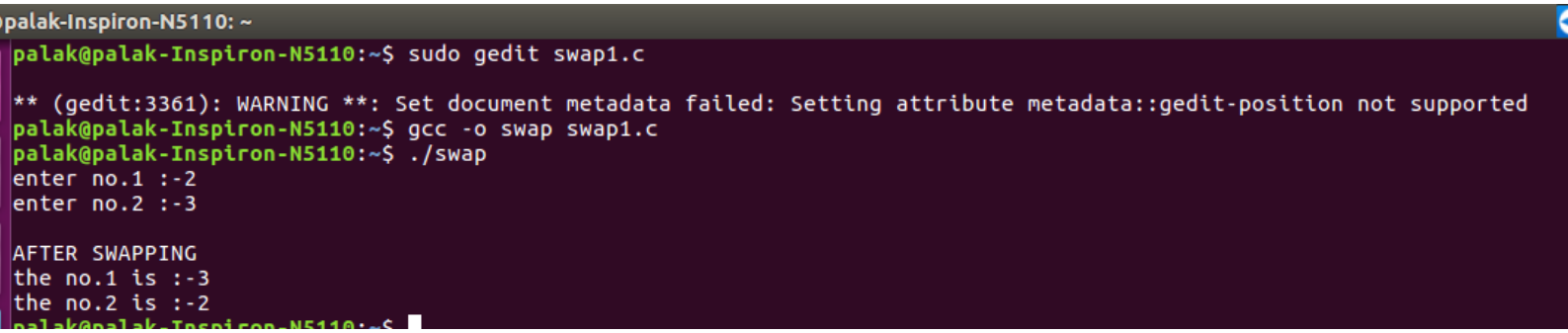
Output:



Q14. Write a program to swap to integers without using a third variable.

```
#include<stdio.h>

void main()

{
 int a , b ;

printf("enter no.1 :-");

scanf("%d",&a);

printf("enter no.2 :-");

scanf("%d",&b);

a=a+b;

b=a-b;

a=a-b;

printf("\nAFTER SWAPPING\n");

printf("the no.1 is :-%d\n",a);

printf("the no.2 is :-%d\n",b);

 }
```

Output:



Q15. Write a program to convert decimal to binary.

```
#include<stdio.h>
 void convertnum( int decimal, int newbase)
  {
   int rem[64],i=0,j=0,f;
   printf("\nConverting to base %d : ",newbase);
   while (decimal !=0)
     {
      rem[i++] = decimal% newbase;
     decimal /=newbase;
      }
  for(j= i-1; j>=0 ; j--)
     {
       if(rem[j] <10)
        {
          printf("%d",rem[j]);}
      else
         {
           switch(rem[j])
            {
```

```
                case 10 : {printf("A");break;}

                case 11 : {printf("B");break;}

                case 12 : {printf("C");break;}

                case 13 : {printf("D");break;}

                case 14 : {printf("E");break;}

                case 15 : {printf("F");break;}

            }
        }
    }
  }

void main()

  {
   int num ;

    printf("\n\nenter the decimal number u want to convert:");

    scanf("%d",&num);

    convertnum(num , 2);

    printf("\n");

  }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit d2b.c
[sudo] password for palak:

** (gedit:8798): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o d2b d2b.c
palak@palak-Inspiron-N5110:~$ ./d2b


enter the decimal number u want to convert:12

Converting to base 2 : 1100
palak@palak-Inspiron-N5110:~$
```

Q16. A number is input by user ,write a program that calculates the sum of all digits of the number.

```
#include<stdio.h>

void main()

{
    long int num,x;

   int dig,sum=0;

   printf("enter the number:\n");

   scanf("%ld",&num);

    x=num;

   while(x!=0)

   {
        dig=x%10;

        sum+=dig;

        x=x/10;
     }

   printf("\nsum of digits of %ld is:%d\n",num,sum);

  }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit sod.c

** (gedit:3092): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o sod sod.c
palak@palak-Inspiron-N5110:~$ ./sod
enter the number:
123

sum of digits of 123 is:6
palak@palak-Inspiron-N5110:~$
```

Q17. Write a program to find the reverse of a number.

```
#include<stdio.h>

 void main()

 {

  int n,r,y;

 printf ("enter the number\n");

 scanf("%d",&n);

  for(y=0;n!=0;)

     {

      r=n%10;

      y=y*10+r;

      n=n/10;

       }

 printf("%d is a reverse of number",y);

  }
```

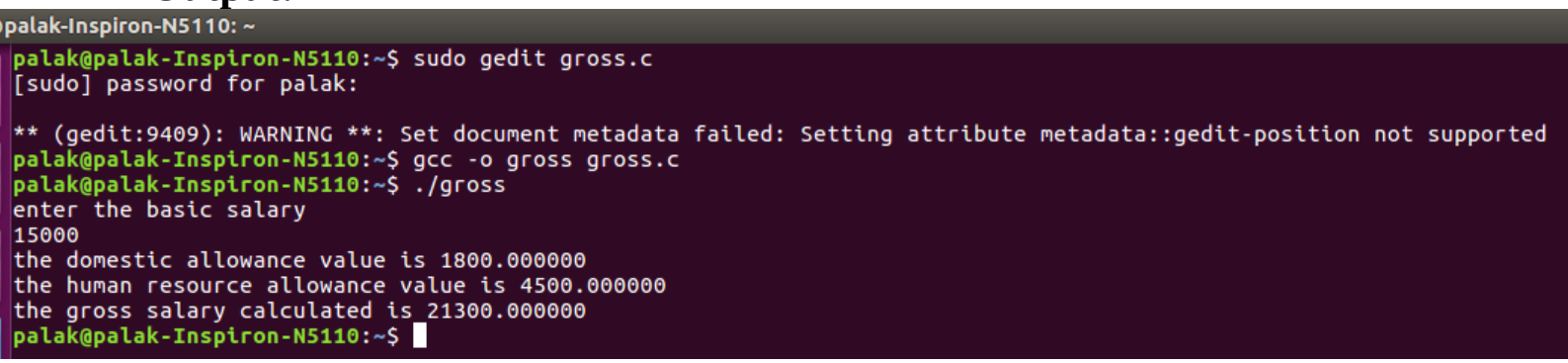
Output:

```
palak-Inspiron-N5110: ~                                                    8:09 PM
palak@palak-Inspiron-N5110:~$ sudo gedit reverse.c
[sudo] password for palak:

(gedit:6236): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager
was not provided by any .service files

** (gedit:6236): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported

** (gedit:6236): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported

** (gedit:6236): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o reverse reverse.c
palak@palak-Inspiron-N5110:~$ ./reverse
enter the number
123
321 is a reverse of numberpalak@palak-Inspiron-N5110:~$
```

Q18. Write a program to calculate hra , da , gross salary of an employee from basic salary.

```
#include<stdio.h>

void main()

{

  float basic,da,hr,gs;

  printf("enter the basic salary\n");

  scanf("%f",&basic);

  da=(basic*12)/100;

  printf("the domestic allowance value is %f\n",da);

  hr=(basic*30)/100;

  printf("the human resource allowance value is %f\n",hr);

   gs=basic+da+hr;

   printf("the gross salary calculated is %f\n",gs);

}
```

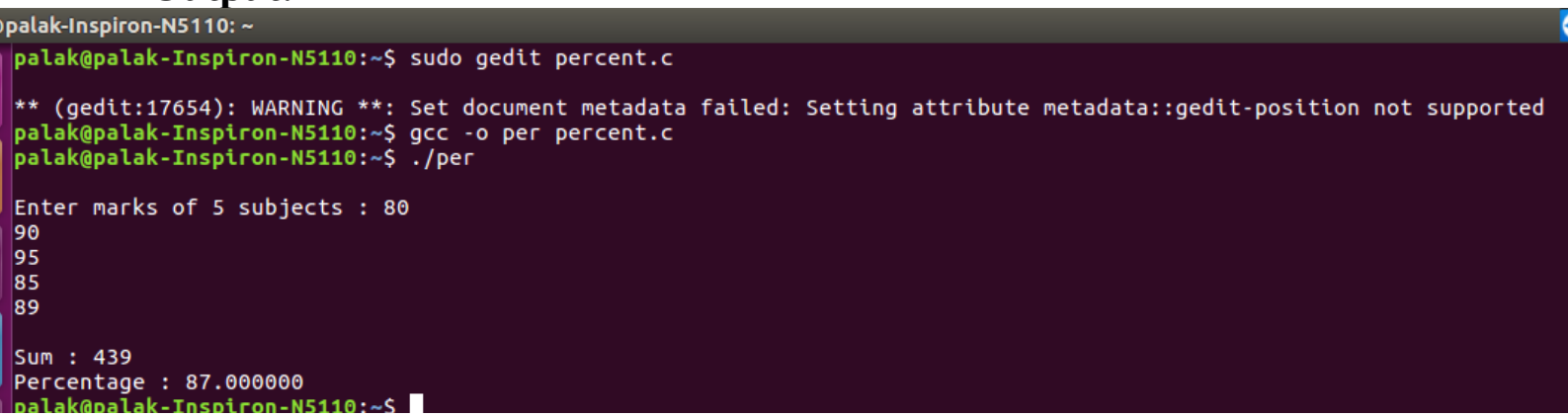
Output:



Q19. Write a program to find total percentage of 5 subjects.

```
#include<stdio.h>

 int main()

 {

   int s1, s2, s3, s4, s5, sum, total = 500;

   float per;

   printf("\nEnter marks of 5 subjects : ");

   scanf("%d %d %d %d %d", &s1, &s2, &s3, &s4, &s5);

   sum = s1 + s2 + s3 + s4 + s5;

   printf("\nSum : %d", sum);

   per = (sum * 100) / total;

   printf("\nPercentage : %f \n", per);

   return (0);

  }
```

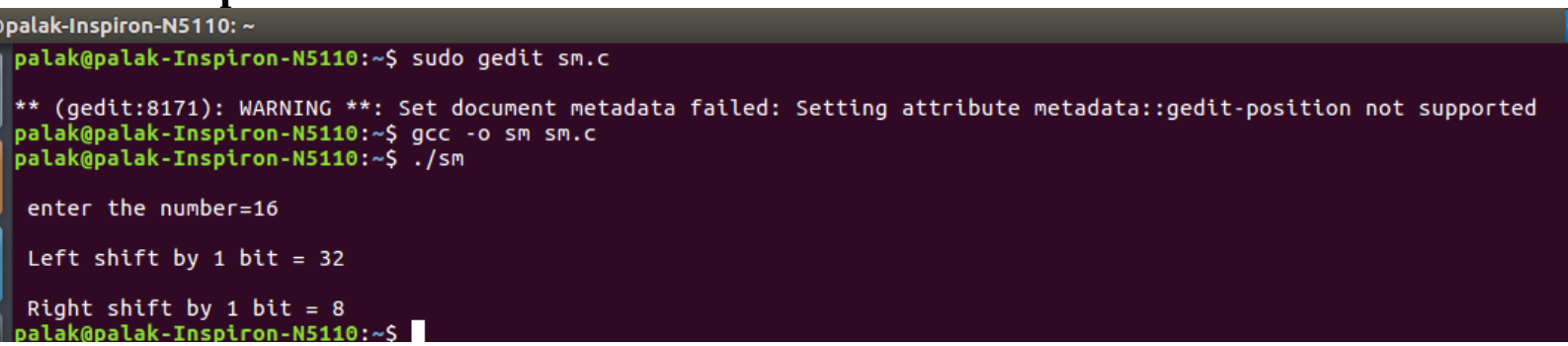
Output:



Q20. Write a program to show that left shift involves multiplication and right shift involves division.

```
#include<stdio.h>

#include<curses.h>

void main()

{

   int a;

   printf("\n enter the number=");

   scanf("%d",&a);

   printf("\n Left shift by 1 bit = %d \n",a<<1);

   printf("\n Right shift by 1 bit = %d \n",a>>1);

}
```

Output:

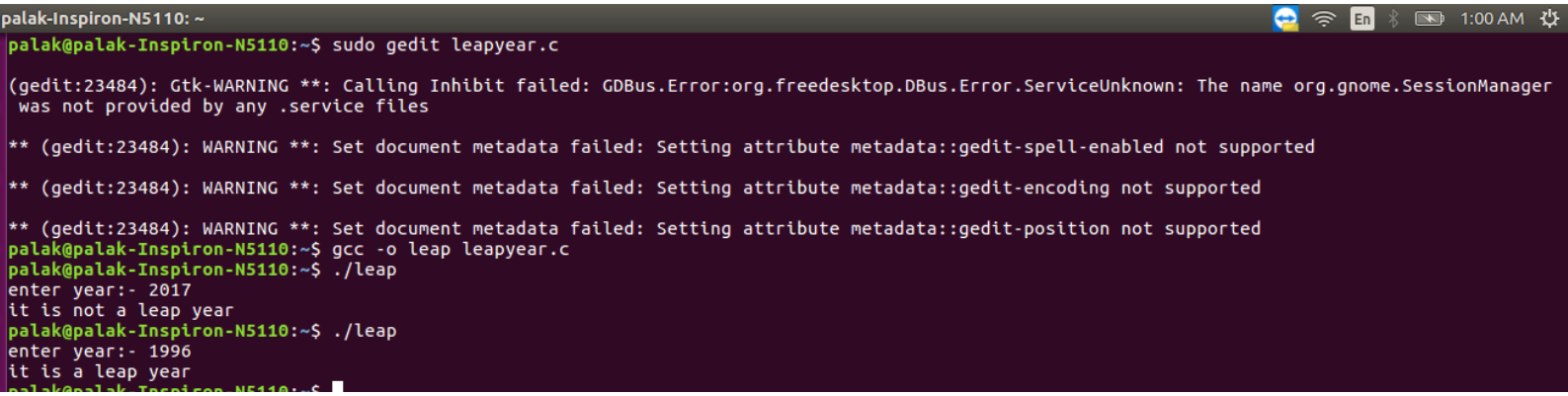


Q21. Write a program to find whether the given year is a leap year or not.

```
#include<stdio.h>
 void main()
 {
  int lp;
  printf("enter year");
  scanf("%d",&lp);
  if(lp%100==0)
  {
    if(lp%400==0)
        printf("it is a leap year");
        else
              printf("it is not  a leap year");
              }
    else
        {
          if(lp%4==0)
              printf("it is a leap year");
              else
                 printf("it is not a leap year");
```

```
        }
    }
```

Output:


palak-Inspiron-N5110: ~
1:00 AM
palak@palak-Inspiron-N5110:~$ sudo gedit leapyear.c
(gedit:23484): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided by any .service files
** (gedit:23484): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
** (gedit:23484): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported
** (gedit:23484): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o leap leapyear.c
palak@palak-Inspiron-N5110:~$ ./leap
enter year:- 2017
it is not a leap year
palak@palak-Inspiron-N5110:~$ ./leap
enter year:- 1996
it is a leap year

Q22. Write a program to find first 10 multiples of a given number.

```
#include<stdio.h>

 void main()

 {

  int num,i;

  printf("enter number:");

  scanf("%d",&num);

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

  {

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

        }

  }
```

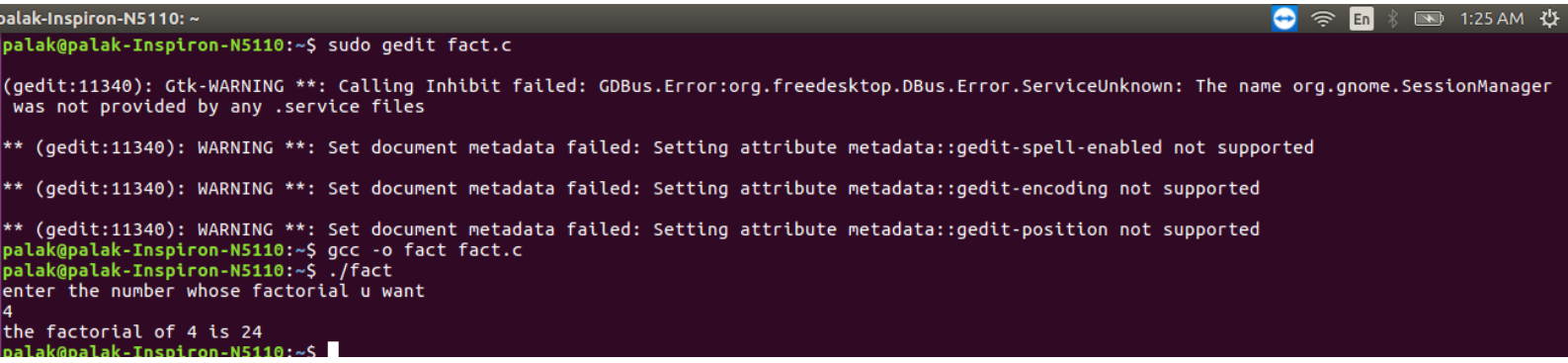
Output:

```
palak-Inspiron-N5110: ~                                                    1:10 AM
palak@palak-Inspiron-N5110:~$ sudo gedit multiples multiples.c

** (gedit:23607): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported

(gedit:23607): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager
 was not provided by any .service files

** (gedit:23607): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported

** (gedit:23607): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported

** (gedit:23607): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o multiples multiples.c
palak@palak-Inspiron-N5110:~$ ./multiples
enter number:10
10 * 1 = 10
10 * 2 = 20
10 * 3 = 30
10 * 4 = 40
10 * 5 = 50
10 * 6 = 60
10 * 7 = 70
10 * 8 = 80
10 * 9 = 90
10 * 10 = 100
palak@palak-Inspiron-N5110:~$
```

Q23. Write a program to find the factorial of a number.

```
#include<stdio.h>
 void main()
 {
  int x,n,f=1;
  printf("enter the number whose factorial u want\n");
  scanf("%d",&n);
  x=n;
   while(n>=1)
    {
       f=f*n;
       n--;
    }
   printf("the factorial of %d is %d\n",x,f);
}
```

Output:



Q24. Write a program to find mean , variance and standard deviation of any given N numbers(N is input from the user).

```
#include<stdio.h>

#include<math.h>

 void main()

  {

    int n,i;

    float mean,var,sd,a[100],temp=0,sum=0;

    printf("Enter the number of terms::\n");

    scanf("%d",&n);

    printf("Enter the numbers::\n");

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

        {

          scanf("%f",&a[i]);

         }

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

       {

         sum=sum+a[i];

         }

   mean=sum/n;
```

```
 printf("Mean=%f\n",mean);
 for(i=0;i<n;i++)
    {
      temp=temp+(a[i]-mean)*(a[i]-mean);
        }
var=temp/n;
printf("Variance=%f\n",var);
sd=var*var;
printf("Standard Deviation=%f\n",sd);
 }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit stat.c
[sudo] password for palak:

** (gedit:1871): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o stat stat.c
palak@palak-Inspiron-N5110:~$ ./stat
Enter the number of terms::
5
Enter the numbers::
1
2
3
4
5
Mean=3.000000
Variance=2.000000
Standard Deviation=4.000000
palak@palak-Inspiron-N5110:~$
```

Q25. Check whether a number is prime or not.

```
#include<stdio.h>

 void main()

 {
   int x,i;

   printf("enter the number\n");

   scanf("%d",&x);

   for(i=2;i<=x-1;i++)

      {
       if(x%i==0)

          break;

      }
       if(i==x)

           printf("%d is a prime number\n",x);

              else
                printf("%d is not a prime number\n",x);
  }
```

Output:

```
palak-Inspiron-N5110: ~                                                    7:21 PM
palak@palak-Inspiron-N5110:~$ sudo gedit prime.c

(gedit:5022): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager
was not provided by any .service files

** (gedit:5022): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported

** (gedit:5022): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-encoding not supported

** (gedit:5022): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o prime prime.c
palak@palak-Inspiron-N5110:~$ ./prime
enter the number
2
2 is a prime number
palak@palak-Inspiron-N5110:~$ ./prime
enter the number
4
4 is not a prime number
palak@palak-Inspiron-N5110:~$
```

Q26. Write a program to find all primes within a given range.

```
#include <stdio.h>
#include <stdlib.h>
 void main()
 {
  int num1, num2, i, j, flag, temp, count = 0;
  printf("Enter the value of num1 and num2 \n");
  scanf("%d %d", &num1, &num2);
   if (num2 < 2)
      {
        printf("There are no primes upto %d\n", num2);
         exit(0);
          }
  printf("Prime numbers are \n");
  temp = num1;
  if ( num1 % 2 == 0)
     {
       num1++;
         }
  for (i = num1; i <= num2; i = i + 2)
```

```
        {
          flag = 0;
          for (j = 2; j <= i / 2; j++)
              {
                if ((i % j) == 0)
                 {
                   flag = 1;
                    break;
                  }
                }
          if (flag == 0)
           {
             printf("%d\n", i);
               count++;
            }
           }
printf("Number of primes between %d & %d = %d\n", temp, num2,
  count);
      }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit primerange.c
** (gedit:17907): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o pr primerange.c
palak@palak-Inspiron-N5110:~$ ./pr
Enter the value of num1 and num2
1
50
Prime numbers are
1
3
5
7
11
13
17
19
23
29
31
37
41
43
47
Number of primes between 1 & 50 = 15

Q27. Write a program to arrange any 5 numbers in increasing order.

```
#include <stdio.h>
 void sort_numbers_ascending(int number[], int count)
 {
  int temp, i, j, k;
  for (j = 0; j < count; ++j)
 {
   for (k = j + 1; k < count; ++k)
  {
     if (number[j] > number[k])
        {
           temp = number[j];
           number[j] = number[k];
           number[k] = temp;
          }
  }
}
 printf("Numbers in ascending order:\n");
 for (i = 0; i < count; ++i)
 printf("%d\n", number[i]);
```

```
}
    void main()
    {
      int i, count, number[20];
      printf("How many numbers you are gonna enter:\n");
      scanf("%d", &count);
      printf("\nEnter the numbers one by one:\n");
      for (i = 0; i < count; ++i)
      scanf("%d", &number[i]);
     sort_numbers_ascending(number, count);
    }
```

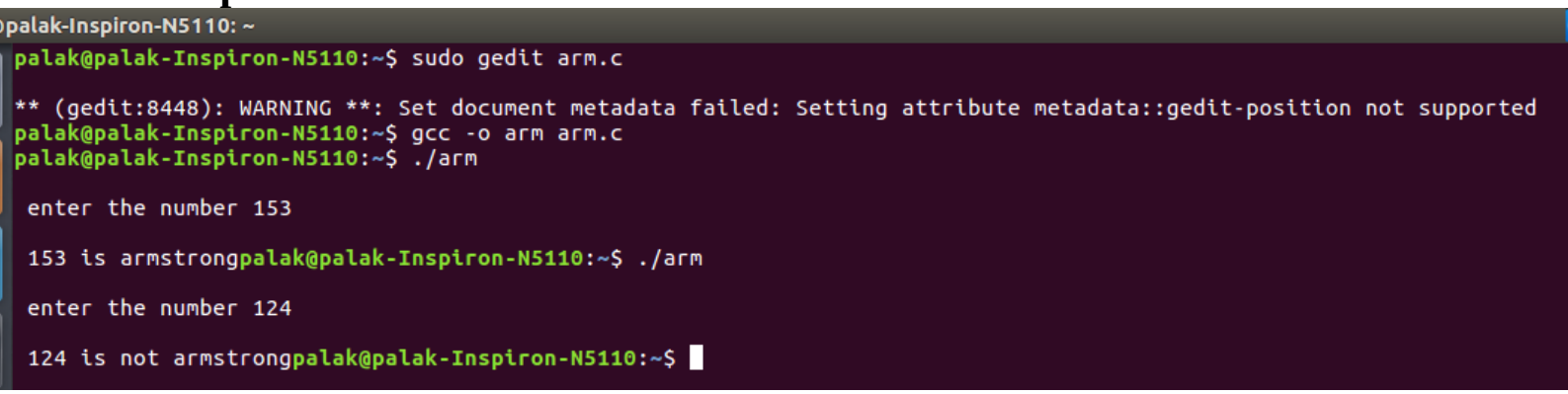
Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit sort.c

** (gedit:18382): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o sort sort.c
palak@palak-Inspiron-N5110:~$ ./sort
How many numbers you are gonna enter:
5

Enter the numbers one by one:
5
3
1
7
4
Numbers in ascending order:
1
3
4
5
7
palak@palak-Inspiron-N5110:~$
```

Q28. Write a program to find out whether number is armstrong number or not.

```
#include<stdio.h>

#include<curses.h>

 void main()

  {

     int k,rev=0,s,p,n;

     printf("\n enter the number");

     scanf("%d",&n);

     s=n;

     while(n>0)

           {

              k=n%10;

              rev=rev+k*k*k;

              n=n/10;

              }

         if(rev==s)

            printf("\n %d is armstrong",s);

         else

            printf("\n %d is not armstrong",s);

   }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit arm.c
** (gedit:8448): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o arm arm.c
palak@palak-Inspiron-N5110:~$ ./arm
enter the number 153
153 is armstrongpalak@palak-Inspiron-N5110:~$ ./arm
enter the number 124
124 is not armstrongpalak@palak-Inspiron-N5110:~$

Q29. Write a program to calculate the average marks of a class.

```
#include<stdio.h>
#include<stdlib.h>
 int main()
 {
  struct student
   {
     int rollno;
     char name[20];
     int m1,m2,m3;
     float percent;
      };
  struct student s[20],t;
 int i,j,n;
 printf("\n enter the no. of students=");
 scanf("%d",&n);
 for(i=0;i<n;i++)
    {
      printf("\n enter the roll no of student=");
      scanf("%d",&s[i].rollno);
```

```
      printf("\n enter the name of student= ");
       scanf("%s",s[i].name);
       printf("\n enter the marks of subject1=");
       scanf("%d",&s[i].m1);
       printf("\n enter the marks of subject2=");
       scanf("%d",&s[i].m2);
       printf("\n enter the marks of subject3=");
       scanf("%d",&s[i].m3);
       s[i].percent=(s[i].m1+s[i].m2+s[i].m3)/3;
       }
for(i=0;i<n-1;i++)
    {
       for(j=i+1;j<n;j++)
           {
             if(s[i].percent<s[j].percent)
               {
                  t=s[i];
                  s[i]=s[j];
                  s[j]=t;
```

```
            }
          }
        }
    for(i=0;i<n;i++)
       {
         printf("\n rollno of student=%d",s[i].rollno);
         printf("\n name of student=%s",s[i].name);
         printf("\n marks of subject1=%d",s[i].m1);
         printf("\n marks of subject2=%d",s[i].m2);
         printf("\n marks of subject3=%d",s[i].m3);
         printf("\n percentage of student=%f",s[i].percent);
         printf("\n");
        }
    return 0;
}
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit percent1.c

** (gedit:16060): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o percent percent1.c
palak@palak-Inspiron-N5110:~$ ./percent

 enter the no. of students=2

 enter the roll no of student=1

 enter the name of student= PALAK

 enter the marks of subject1=85

 enter the marks of subject2=68

 enter the marks of subject3=47

 enter the roll no of student=2

 enter the name of student= PRIYA

 enter the marks of subject1=98

 enter the marks of subject2=56

 enter the marks of subject3=78

 rollno of student=2
 name of student=PRIYA
 marks of subject1=98
 marks of subject2=56
 marks of subject3=78
 percentage of student=77.000000

 rollno of student=1
 name of student=PALAK
 marks of subject1=85
 marks of subject2=68
 marks of subject3=47
 percentage of student=66.000000
palak@palak-Inspiron-N5110:~$
```

Q30. Write a program to check whether number is pallindrome or not.

```
#include<stdio.h>
#include<curses.h>
 void main()
   {
     int n,k,rev=0,s;
     printf("\n enter the number");
     scanf("%d",&n);
     s=n;
      while(n>0)
        {
          k=n%10;
          rev=rev*10+k;
           n=n/10;
          }
       if(rev==s)
         printf("\n %d is pallindrome",s);
       else
          printf("\n %d is not pallindrome",s);
     }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit pal.c
** (gedit:8548): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o pal pal.c
palak@palak-Inspiron-N5110:~$ ./pal
enter the number 121
121 is pallindromepalak@palak-Inspiron-N5110:~$ ./pal
enter the number 123
123 is not pallindromepalak@palak-Inspiron-N5110:~$

Q31. Write a program to display a pattern of number.

```
#include<stdio.h>

#include<stdlib.h>

 void main()

 {

  int i,j,n;

  printf("Enter the number of lines to be printed:");

  scanf("%d",&n);

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

     {

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

        printf("%d",j);

        printf("\n");

       }

  }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit pat.c

** (gedit:1964): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o pat pat.c
palak@palak-Inspiron-N5110:~$ ./pat
Enter the number of lines to be printed:5
1
12
123
1234
12345
palak@palak-Inspiron-N5110:~$
```

Q32. Write a program to print pattern of right angle triangle using *.

```
#include<stdio.h>

 void main()

 {
  int i,j;

  for(i=1;i<=5;i++)

      {

       for(j=1;j<=5;j++)

           {

            if(j>=6-i)

               printf("*");

             else

               printf(" ");
             }

     printf("\n");

       }
    }
```

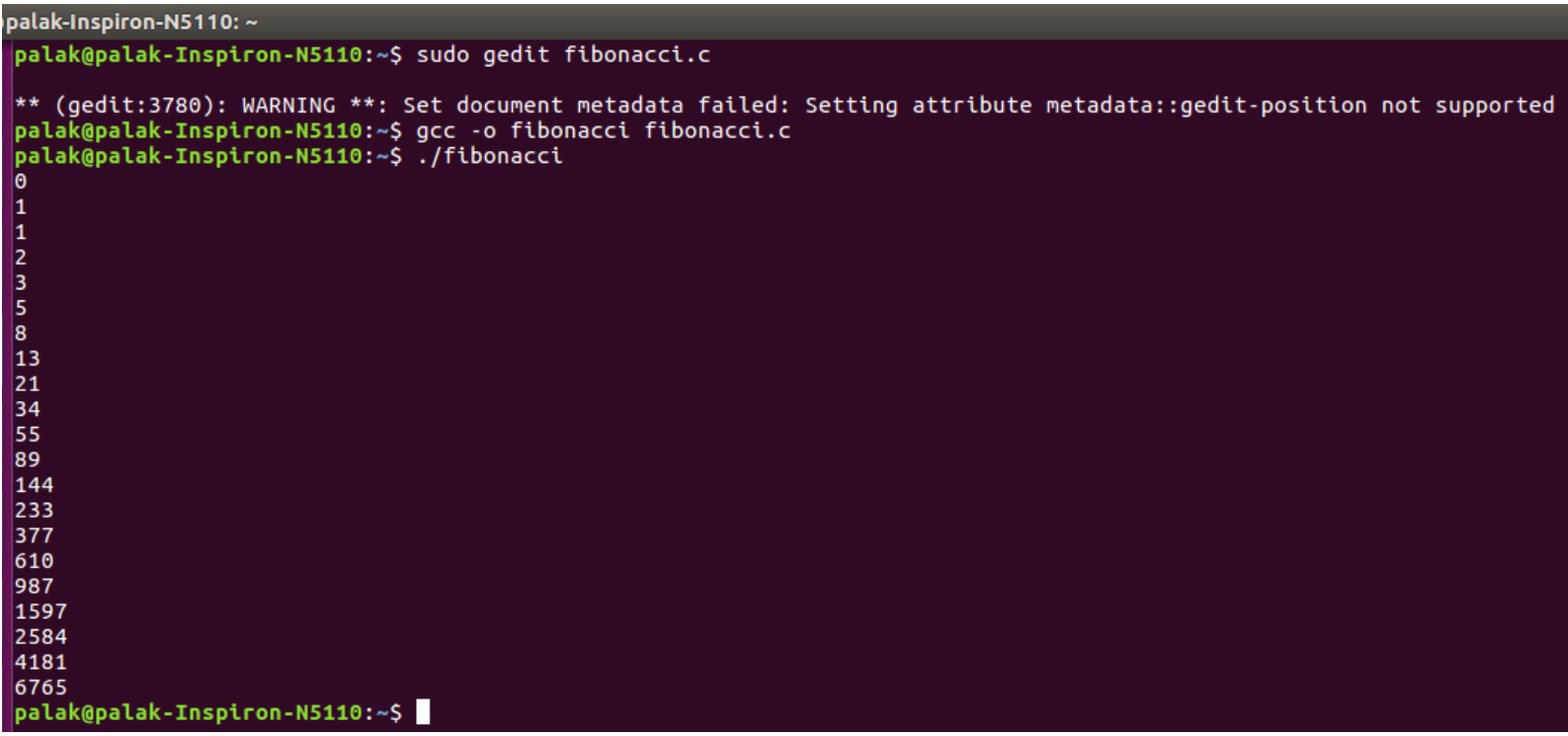
Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit pat1.c
[sudo] password for palak:

** (gedit:2572): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o pat pat1.c
palak@palak-Inspiron-N5110:~$ ./pat
    *
   **
  ***
 ****
*****
palak@palak-Inspiron-N5110:~$
```

Q33. Write a program to find fibonacci series.

```
#include<stdio.h>
 void main()
{
  int first=0,second=1,next,c;
  for(c=0;c<21;c++)
  {
    if(c<=1)
    next=c;
     else
     {
       next=first+second;
       first=second;
       second=next;
        }
printf("%d\n",next);
   }
}
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit fibonacci.c
** (gedit:3780): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o fibonacci fibonacci.c
palak@palak-Inspiron-N5110:~$ ./fibonacci
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
610
987
1597
2584
4181
6765
palak@palak-Inspiron-N5110:~$

Q34. Write a program to find the sum of a geometric progression.

```
#include<stdio.h>
#include<curses.h>
#include<math.h>
  void main()
    {
      int a,r,n;
      float sum;
      printf("\n enter the first term of gp");
      scanf("%d",&a);
      printf("\n enter the ratio");
      scanf("%d",&r);
      printf("\n enter the no of terms");
      scanf("%d",&n);
      sum=(a*(1-pow(r,n))/(1-r));
      printf("\n Sum of GP = %0.2f",sum);
       }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit gp.c

** (gedit:9091): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o gp gp.c -lm
palak@palak-Inspiron-N5110:~$ ./gp

 enter the first term of gp 1

 enter the ratio 2

 enter the no of terms 5

 Sum of GP = 31.00palak@palak-Inspiron-N5110:~$
```

Q35. Write a program to illustrate the use of conditional compilation using #ifdef.

```
#include<stdio.h>

#define a 24

#include<curses.h>

 void main()

  {

     #ifdef a

         printf("a=%d",a);

    #endif

   printf("\n a is defined");

    }
```

Output:

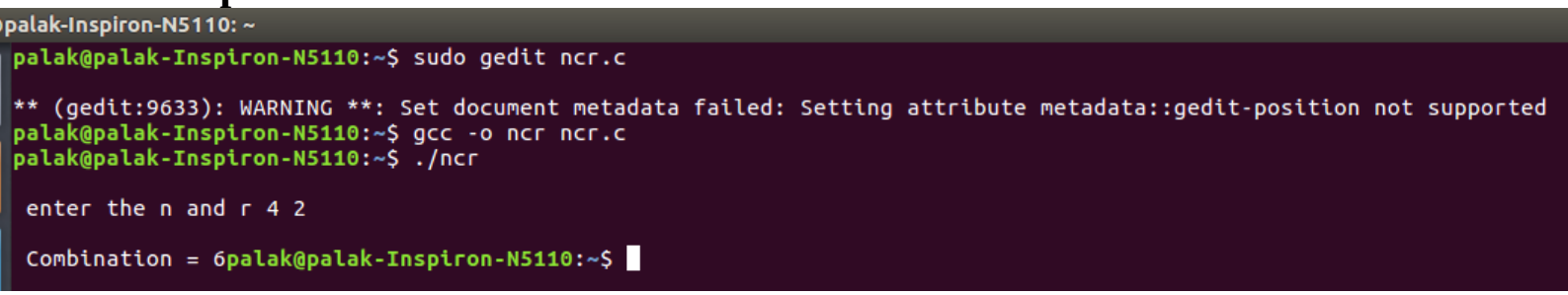
```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit ifdef.c

** (gedit:12925): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o ifdef ifdef.c
palak@palak-Inspiron-N5110:~$ ./ifdef
a=24
 a is definedpalak@palak-Inspiron-N5110:~$
```

Q36. Write a program using a function to find factorial of a given number then extend it to ${}^{n}C_{r}$.

```
#include<stdio.h>

#include<curses.h>

 long int fact(int s)

   {

      long int f=1;

      while(s>1)

       {

          f*=s;

          s=s-1;

         }

      return f;

     }

  void main()
    {

        int n,r;

        long int fac;

 printf("\n enter the n and r");

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

fac=fact(n)/(fact(n-r)*fact(r));
```

```
printf("\n Combination = %ld",fac);

}
```

Output:



Q37. Write a program using a function that takes radius as input and gives area and perimeter as output.

```
#include<stdio.h>

 void areaperi(float ,float *,float *);

 void main()

  {

    float rad,ar,peri;

    printf("enter radius of circle:");

    scanf("%f",&rad);

    areaperi(rad,&ar,&peri);

    printf("area=%f\nperimeter=%f",ar,peri);

   }

 void areaperi(float r,float *a,float *p)

 {

      *a=(3.14*r*r);

       *p=(2.0*3.14*r);

    }
```

Output:

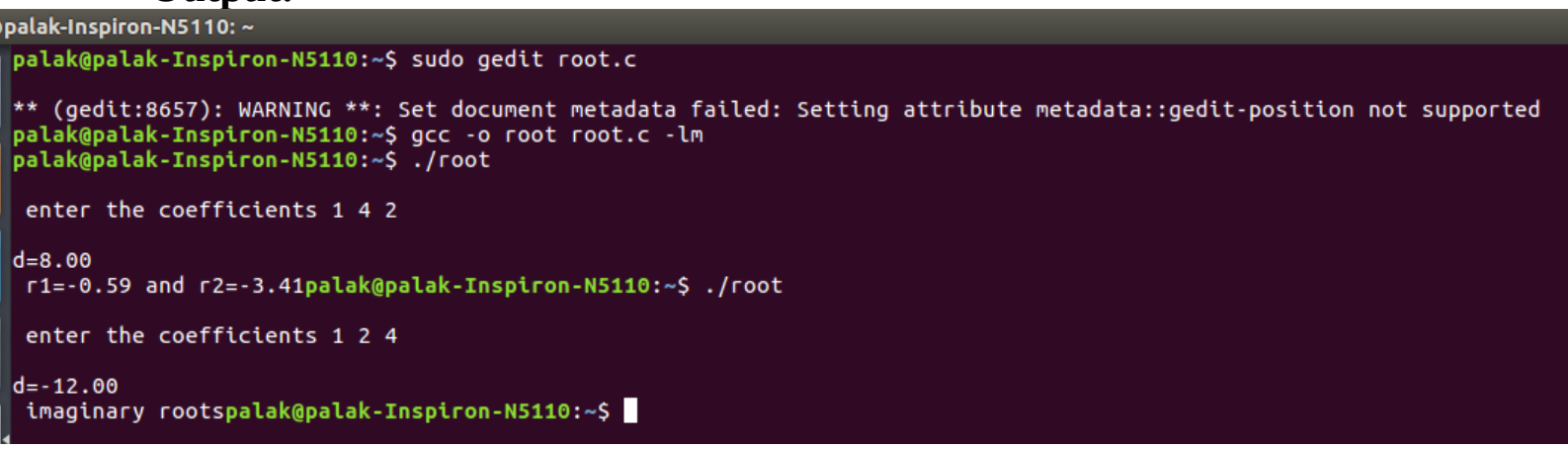
```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit areaperi.c

** (gedit:2820): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o ap areaperi.c
palak@palak-Inspiron-N5110:~$ ./ap
enter radius of circle:2
area=12.560000
perimeter=12.560000palak@palak-Inspiron-N5110:~$
```

Q38. Write a program using a function that takes coefficient of quadratic equation as input and return its roots as output.

```
#include<stdio.h>

#include<curses.h>

#include<math.h>

void main()

 {

  int a,b,c;

  float d,r1,r2;

  printf("\n enter the coefficients");

  scanf("%d %d %d",&a,&b,&c);

  fflush(stdin);

 d=(b*b)-(4*a*c);

 printf("\nd=%.2f",d);

  if(d>=0)

    {

      r1=((-b)+(sqrt(d)))/(2*a);
      r2=((-b)-(sqrt(d)))/(2*a);

      printf("\n r1=%.2f and r2=%.2f",r1,r2);

     }

     else
```

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

    }
```

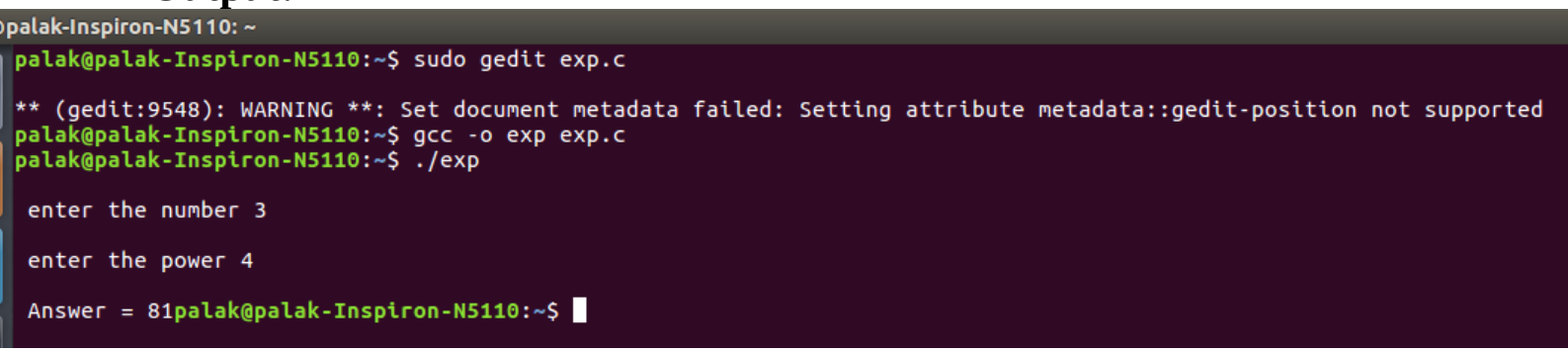
Output:



Q39. Write a program using the function myexpo(a,b) that calculates a^b programs should work on negative a and b.

```
#include<stdio.h>

#include<curses.h>

 void myExpo(int a,int b)

   {

      int expo=1,i;

      for(i=0;i<b;i++)

          expo=expo*a;

          printf("\n Answer = %d",expo);

           }

      void main()

        {

          int p,q;

          printf("\n enter the number");

          scanf("%d",&p);

           printf("\n enter the power");

           scanf("%d",&q);

           myExpo(p,q);

             }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit exp.c
** (gedit:9548): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o exp exp.c
palak@palak-Inspiron-N5110:~$ ./exp
enter the number 3
enter the power 4
Answer = 81palak@palak-Inspiron-N5110:~$

Q40. Write a program to find the factorial of a number using recursion.

```
#include <stdio.h>

 long int multiplyNumbers(int n);

int main()

{
 int n;

 printf("Enter a positive integer: ");
 scanf("%d", &n);

 printf("Factorial of %d = %ld \n", n, multiplyNumbers(n));

 return 0;

  }

long int multiplyNumbers(int n)

 {
  if (n >= 1)

      return n*multiplyNumbers(n-1);

  else

       return 1;

 }
```

Output:

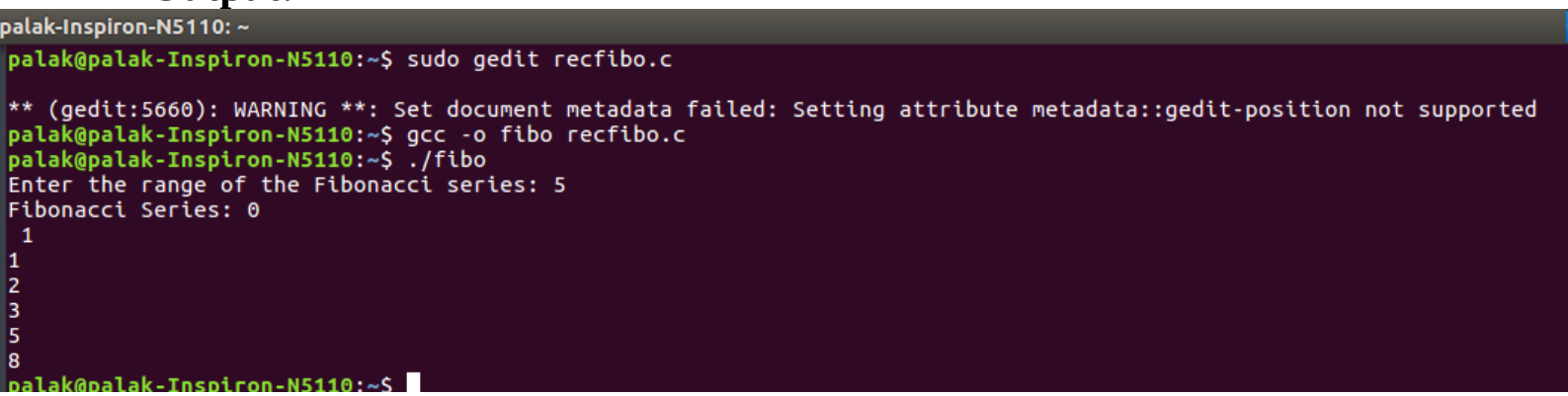
```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit recfact.c

** (gedit:5540): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o fact recfact.c
palak@palak-Inspiron-N5110:~$ ./fact
Enter a positive integer: 4
Factorial of 4 = 24
palak@palak-Inspiron-N5110:~$
```

Q41. Write a program to print the fibonacci series using recursion.

```
#include<stdio.h>
void printFibonacci(int);
int main()
 {
    int k,n;
    long int i=0,j=1,f;
    printf("Enter the range of the Fibonacci series: ");
    scanf("%d",&n);
    printf("Fibonacci Series: ");
    printf("%d \n %d \n",0,1);
    printFibonacci(n);
    return 0;
    }
void printFibonacci(int n)
  {
     static long int first=0,second=1,sum;
      if(n>0)
       {
          sum = first + second;
```

```
        first = second;
        second = sum;
        printf("%ld \n",sum);
        printFibonacci(n-1);
        }
    }
```

Output:



Q42. Write a program to find the average of 5 numbers.

```
#include<stdio.h>
#include<stdlib.h>
  void main()
   {
      int s1,s2,s3,s4,s5,sum;
      float avg;
      printf("\n Enter 1st no : ");
      scanf("%d",&s1);
      printf("\n Enter 2nd no : ");
      scanf("%d",&s2);
      printf("\n Enter 3rd no : ");
      scanf("%d",&s3);
      printf("\n Enter 4th no : ");
      scanf("%d",&s4);
      printf("\n Enter 5th no : ");
      scanf("%d",&s5);
      sum = s1+s2+s3+s4+s5;
      printf("\n\n THE SUMATION IS %d ",sum);
      avg = sum/5;
```

```
printf("\n\n THE AVERAGE IS %.2f \n",avg);

 }
```

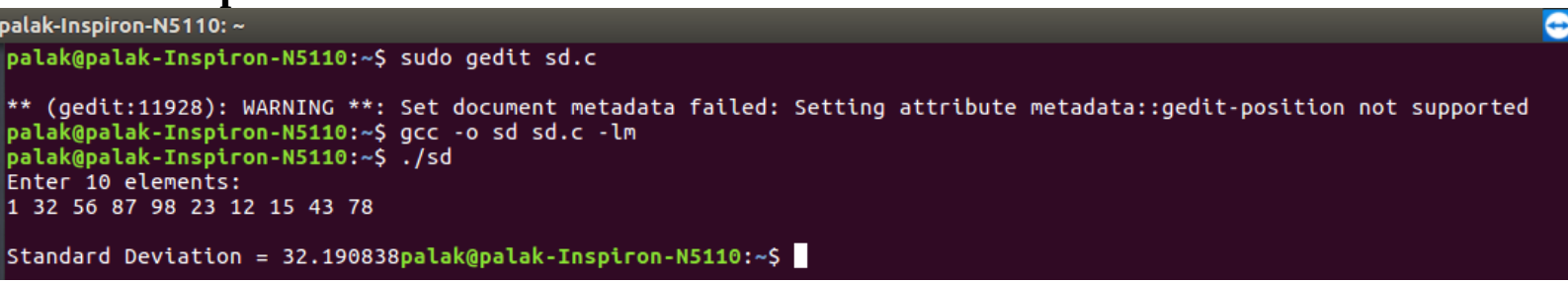
Output:

Q43. Write a program to find the standard deviation of 10 numbers.

```
 #include <stdio.h>
#include <math.h>
float calculateSD(float data[]);
int main()
{
   int i;
   float data[10];
   printf("Enter 10 elements: ");
   for(i=0; i < 10; ++i)
  scanf("%f", &data[i]);
  printf("\nStandard Deviation = %.6f", calculateSD(data));
  return 0;
 }
float calculateSD(float data[])
 {
    float sum = 0.0, mean, standardDeviation = 0.0;
    int i;
   for(i=0; i<10; ++i)
      {
```

```
        sum += data[i];
      }
   mean = sum/10;
   for(i=0; i<10; ++i)
  standardDeviation += pow(data[i] - mean, 2);
  return sqrt(standardDeviation/10);
}
```

Output:



Q44. Write a program to record the average temperature for 10 days.

```
#include <stdio.h>

int main()

{
  int n=10, i;

  float sum = 0.0, average, num[10];

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

     {
       printf(" Enter the temperature of day %d ", i+1);

       scanf("%f", &num[i]);

       sum += num[i];

       }

  average = sum / n;

 printf("Average = %f \n", average);

 return 0;

}
```

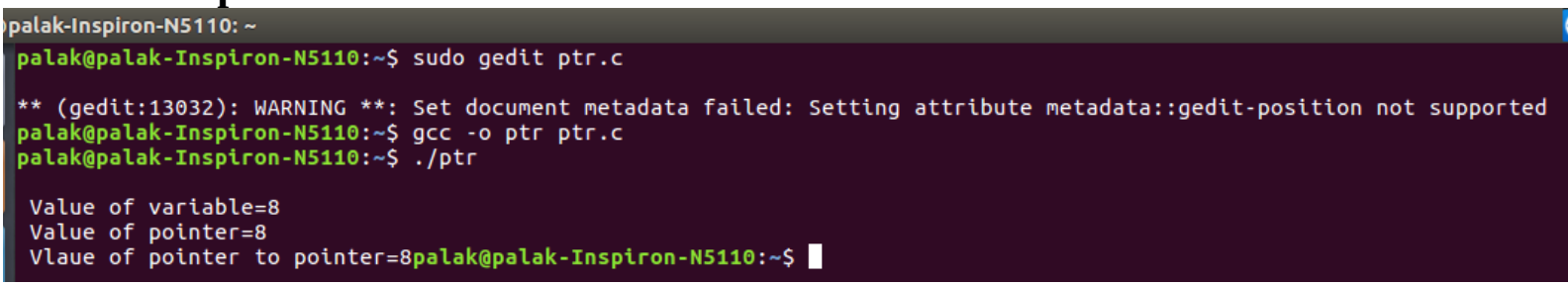
Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit avg10.c

** (gedit:6227): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o avg avg10.c
palak@palak-Inspiron-N5110:~$ ./avg
 Enter the temperature of day 1 30
 Enter the temperature of day 2 35
 Enter the temperature of day 3 37
 Enter the temperature of day 4 40
 Enter the temperature of day 5 39
 Enter the temperature of day 6 45
 Enter the temperature of day 7 42
 Enter the temperature of day 8 37
 Enter the temperature of day 9 41
 Enter the temperature of day 10 40
Average = 38.599998
```

Q45. Write a program to illustrate the working of pointer to pointer.

```
#include<stdio.h>
#include<curses.h>
void main()
 {
   int a=8,*p,*p1;
   p=&a;
   p1=p;
   printf("\n Value of variable=%d",a);
   printf("\n Value of pointer=%d",*p);
   printf("\n Vlaue of pointer to pointer=%d",*p1);
   }
```

Output:

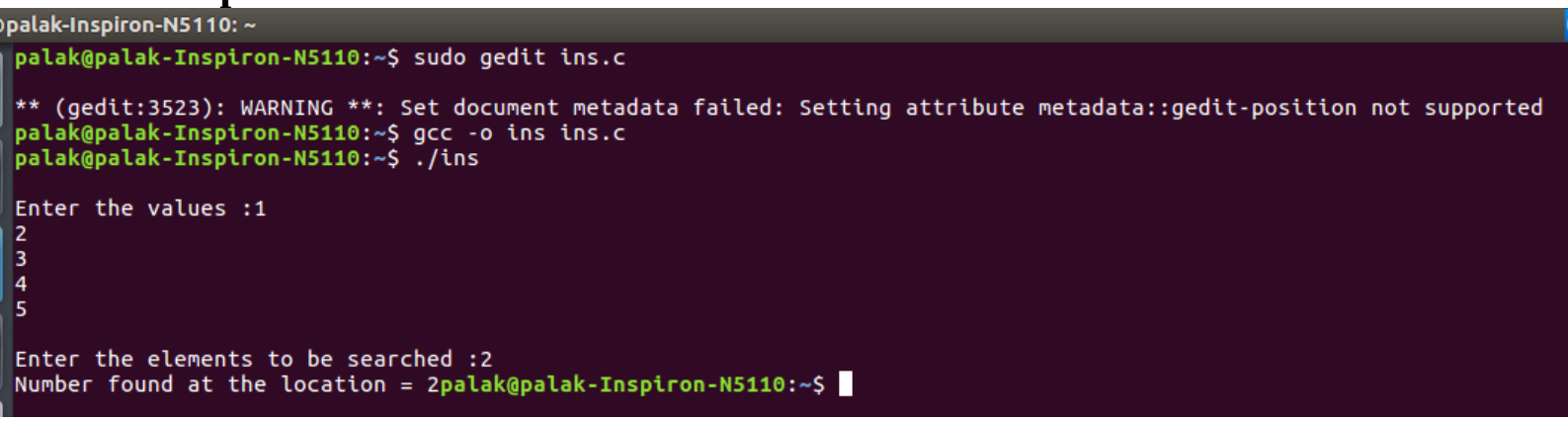


Q46. Write a program to input 5 numbers and a key(number to be searched) output the position of key if found , else output 1.

```
#include<stdio.h>

int main()

 {

   int a[5], ele, num=5, i;

   printf("\nEnter the values :");

   for (i = 0; i < num; i++)

       {

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

          }

  //Read the element to be searched

    printf("\nEnter the elements to be searched :");

    scanf("%d", &ele);

 //Search starts from the zeroth location

   i = 0;

  while (i < num && ele != a[i])

   {

      i++;

       }
```

```
//If i < num then Match found
 if (i < num)
   {
      printf("Number found at the location = %d", i + 1);
       }
 else
      {
         printf("\n1 \n");
          }
 return (0);
 }
```

Output:

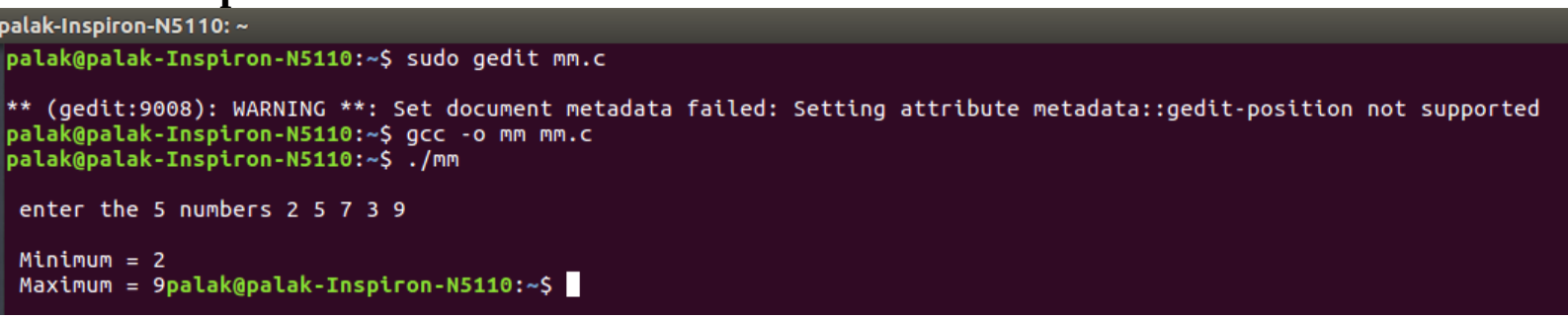


Q47. Write a program to find the maximum and minimum among 5 numbers.

```
#include<stdio.h>

#include<curses.h>

void main()

 {

   int a[5],i,j,temp;

   printf("\n enter the 5 numbers");

    for(i=0;i<5;i++)

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

    for(i=0;i<4;i++)

        {

         for(j=0;j<4-i;j++)

              {

                  if(a[j]>a[j+1])

                      {

                        temp=a[j];

                        a[j]=a[j+1];

                        a[j+1]=temp;

                       }
```

```
        }
    }
    printf("\n Minimum = %d",a[0]);
    printf("\n Maximum = %d",a[4]);
}
```

Output:



Q48. Write a program to add 2 matrices.

```
#include<stdio.h>
void main()
{
  int a[3][3],b[3][3],c[3][3],i,j;
  printf("Enter the First matrix->");
  for(i=0;i<3;i++)
  {
    for(j=0;j<3;j++)
     {
       scanf("%d",&a[i][j]);
       }
  }
  printf("\nEnter the Second matrix->");
  for(i=0;i<3;i++)
     {
       for(j=0;j<3;j++)
          {
 scanf("%d",&b[i][j]);
     }
```

```
}
printf("\nThe First matrix is\n");
for(i=0;i<3;i++)
    {
       printf("\n");
       for(j=0;j<3;j++)
           {
              printf("%d\t",a[i][j]);
              }
       }
    printf("\nThe Second matrix is\n");
   for(i=0;i<3;i++)
        {
           printf("\n");
           for(j=0;j<3;j++)
               {
                  printf("%d\t",b[i][j]);
                   }
              }
   for(i=0;i<3;i++)
```

```
    {
      for(j=0;j<3;j++)
      c[i][j]=a[i][j]+b[i][j];
      }
  printf("\nThe Addition of two matrix is\n");
  for(i=0;i<3;i++)
    {
      printf("\n");
      for(j=0;j<3;j++)
      printf("%d\t",c[i][j]);
    }
}
```

Output:

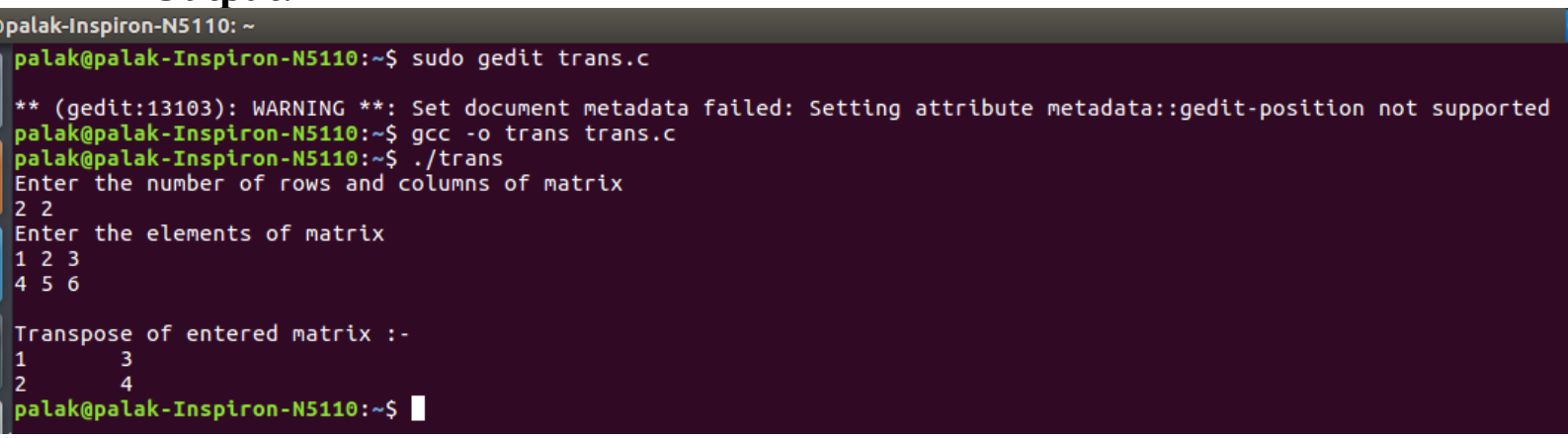
```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit add.c
[sudo] password for palak:

** (gedit:9316): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o add add.c
palak@palak-Inspiron-N5110:~$ ./add
Enter the First matrix->1 2 3 4 5 6 7 8 9

Enter the Second matrix->9 8 7 6 5 4 3 2 1

The First matrix is

1       2       3
4       5       6
7       8       9
The Second matrix is

9       8       7
6       5       4
3       2       1
The Addition of two matrix is

10      10      10
10      10      10
10      10      10      palak@palak-Inspiron-N5110:~$
```

Q49. Write a program to find the transpose of a matrix.

```
#include <stdio.h>
 int main()
  {
     int m, n, c, d, matrix[10][10], transpose[10][10];
     printf("Enter the number of rows and columns of matrix\n");
     scanf("%d%d", &m, &n);
     printf("Enter the elements of matrix\n");
      for (c = 0; c < m; c++)
      for(d = 0; d < n; d++)
          scanf("%d\t",&matrix[c][d]);
          printf("\n");
      for (c = 0; c < m; c++)
      for( d = 0 ; d < n ; d++ )
           transpose[d][c] = matrix[c][d];
      printf("Transpose of entered matrix :-\n");
      for (c = 0; c < n; c++) {
      for (d = 0; d < m; d++)
      printf("%d\t",transpose[c][d]);
      printf("\n");
```

```
    }
  return 0;
}
```

Output:



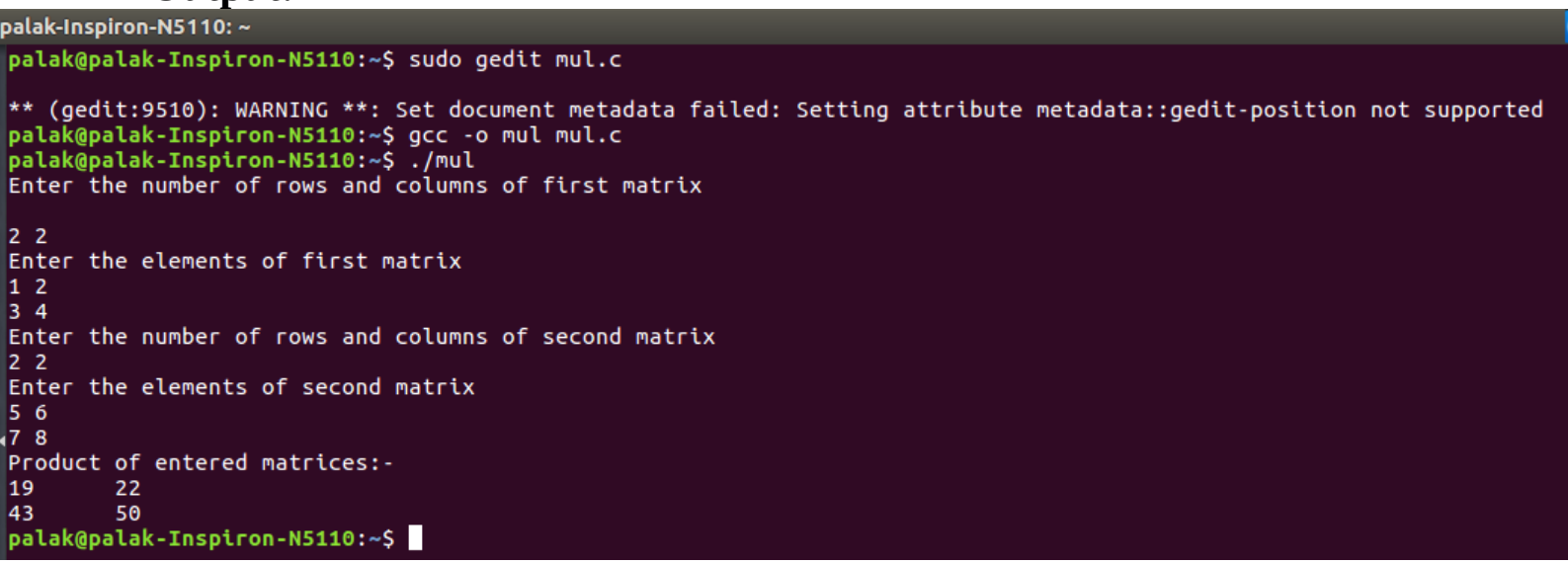
Q50. Write a program to multiply 2 matrices.

```
#include <stdio.h>

 void main()

   {

    int m,n,p,q,c,d,k,sum=0;

    int first[10][10],second[10][10],multiply[10][10];

    printf("Enter the number of rows and columns of first matrix\n");

    scanf("%d%d",&m,&n);

    printf("Enter the elements of first matrix\n");

    for(c=0;c<m;c++)

    for(d=0;d<n;d++)

    scanf("%d",&first[c][d]);

    printf("Enter the number of rows and columns of second
    matrix\n");

    scanf("%d%d",&p,&q);

    if(n!=p)

    printf("Matrices with entered orders can't be multiplied with each
    other.\n");

    else

       {

          printf("Enter the elements of second matrix\n");
```

```
        for(c=0;c<p;c++)
        for(d=0;d<q;d++)
        scanf("%d",&second[c][d]);
        for(c=0;c<m;c++)
            {
              for(d=0;d<q;d++)
               {
                  for(k=0;k<p;k++)
                    {
                       sum=sum+first[c][k]*second[k][d];
                         }
       multiply[c][d]=sum;
      sum=0;
          }
 }
printf("Product of entered matrices:-\n");
for(c=0;c<m;c++)
    {
       for(d=0;d<q;d++)
       printf("%d\t",multiply[c][d]);
```

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

Output:



Q51. Write a program to subract two matrices.

```
#include<stdio.h>
 void main()
  {
     int a[3][3],b[3][3],c[3][3],i,j;
     printf("Enter the First matrix->");
     for(i=0;i<3;i++)
         {
            for(j=0;j<3;j++)
               {
                  scanf("%d",&a[i][j]);
                  }
            }
        printf("\nEnter the Second matrix->");
        for(i=0;i<3;i++)
           {
             for(j=0;j<3;j++)
                 {
                    scanf("%d",&b[i][j]);
                     }
```

```
        }
printf("\nThe First matrix is\n");
for(i=0;i<3;i++)
    {
       printf("\n");
       for(j=0;j<3;j++)
            {
               printf("%d\t",a[i][j]);
                }
        }
   printf("\nThe Second matrix is\n");
   for(i=0;i<3;i++)
       {
          printf("\n");
          for(j=0;j<3;j++)
               {
                  printf("%d\t",b[i][j]);
                   }
           }
       for(i=0;i<3;i++)
```

```
{
  for(j=0;j<3;j++)
   c[i][j]=a[i][j]-b[i][j];
  }
printf("\nThe subtraction of two matrix is\n");
for(i=0;i<3;i++)
  {
    printf("\n");
    for(j=0;j<3;j++)
     printf("%d\t",c[i][j]);
    }
}
```

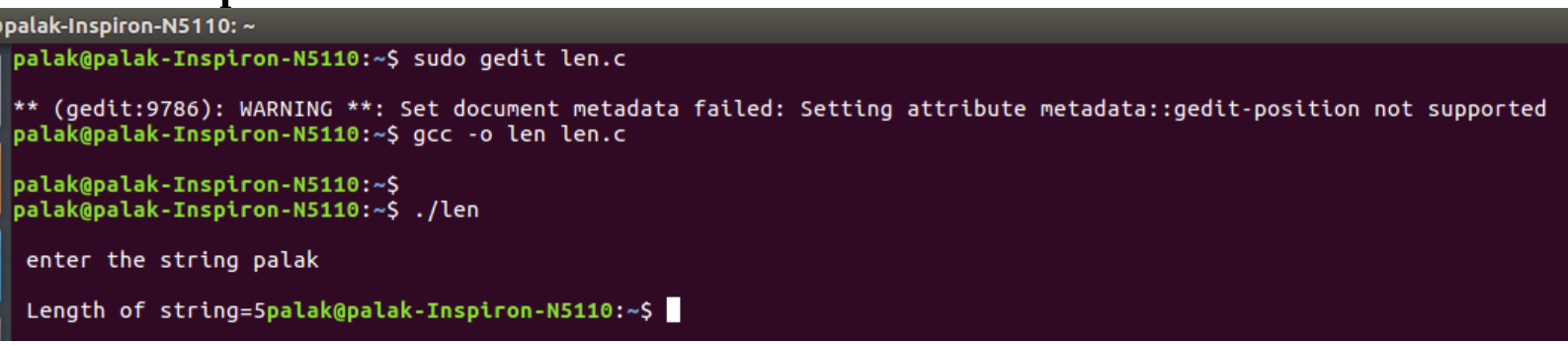
Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit sub.c

** (gedit:9590): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o sub sub.c
palak@palak-Inspiron-N5110:~$ ./sub
Enter the First matrix->9 8 7 6 5 4 3 2 1

Enter the Second matrix->1 2 3 4 5 6 7 8 9

The First matrix is

9       8       7
6       5       4
3       2       1
The Second matrix is

1       2       3
4       5       6
7       8       9
The subtraction of two matrix is

8       6       4
2       0       -2
-4      -6      -8      palak@palak-Inspiron-N5110:~$
```

Q52. Write a program to find the length of string without using library functions.

```
#include<stdio.h>

#include<curses.h>

 void main()

 {
    char s[50];

    int i=0;

    printf("\n enter the string");

    scanf("%s",s);

    for(i=0;s[i]!='\0';i++);

    printf("\n Length of string=%d",i);

     }
```

Output:

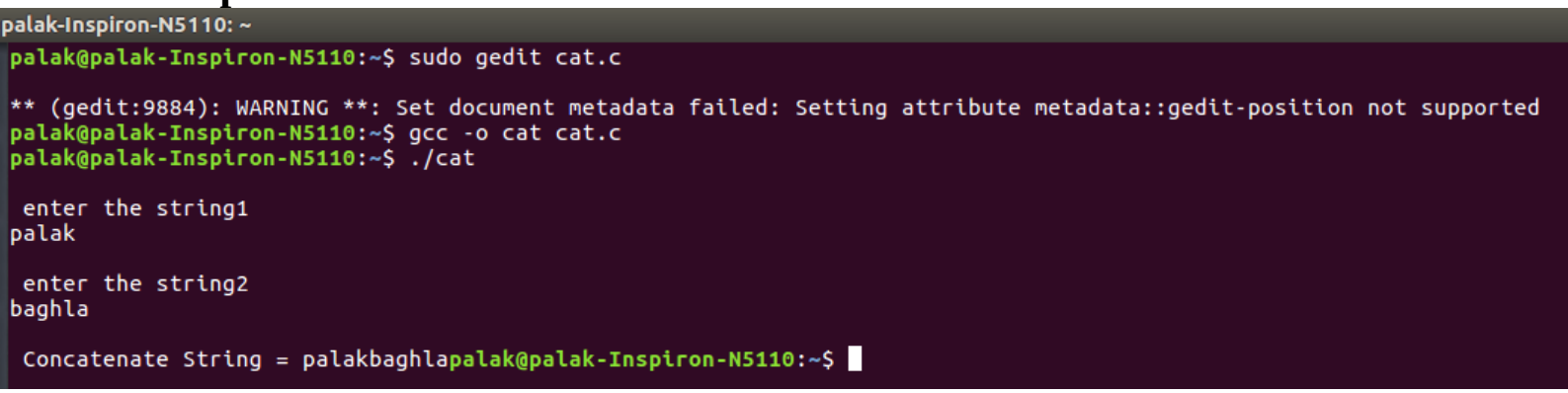


Q53. Write a program to concatenate two strings without using library functions.

```
#include<stdio.h>

#include<curses.h>

 void main()

  {

      char s1[10],s2[10],s3[20];

      int i,j,l;

       printf("\n enter the string1");

       scanf("%s",s1);

       printf("\n enter the string2");

       scanf("%s",s2);

         for(i=0;s1[i]!='\0';i++)

             {

                s3[i]=s1[i];

                }

        l=i;

        for(i=0;s2[i]!='\0';i++)

            {

               s3[l]=s2[i];
```

```
        l++;
        }
 s3[l]='\0';
printf("\n Concatenate String = %s",s3);
}
```

Output:



Q54. Write a program to copy a string without using library functions.

```
#include<stdio.h>
#include<curses.h>
  void main()
   {
      char s1[10],s2[10];
      int i;
      printf("\n enter the string");
      scanf("%s",s1);
      for(i=0;s1[i]!='\0';i++)
         {
            s2[i]=s1[i];
           }
       s2[i]='\0';
       printf("\n Copied String = %s",s2);
        }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit copy.c

** (gedit:9993): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o copy copy.c
palak@palak-Inspiron-N5110:~$ ./copy

 enter the string palak

 Copied String = palakpalak@palak-Inspiron-N5110:~$
```

Q55. Write a program to compare two strings without using library functions.

```
#include<stdio.h>

#include<curses.h>

 void main()

  {

    char s1[10],s2[10];

    int i,flag=0;

    printf("\n enter the string");

    scanf("%s",s1);

    printf("\n enter the second string");

    scanf("%s",s2);

    for(i=0;s1[i]!='\0';i++)

       {

         if(s1[i]==s2[i])
                flag=flag+1;

          }

       if(flag==i)

         printf("\n Strings are equal");

      else

         printf("\n Strings are not equal");
```

}

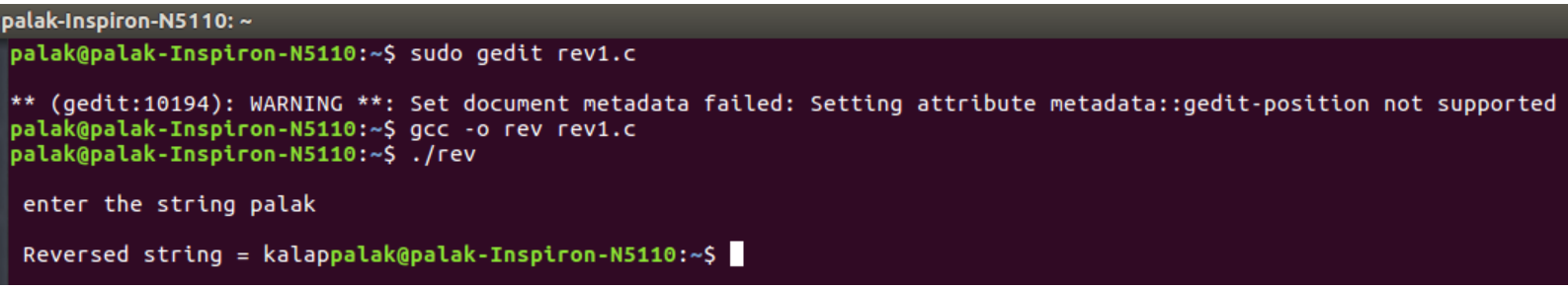
Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit comp.c
** (gedit:10098): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o comp comp.c
palak@palak-Inspiron-N5110:~$ ./comp
enter the string palak
enter the second string palak
Strings are equalpalak@palak-Inspiron-N5110:~$ ./comp
enter the string palak
enter the second string pragya
Strings are not equalpalak@palak-Inspiron-N5110:~$

Q56. Write a program to reverse a string without using library functions.

```
#include<stdio.h>

#include<curses.h>

 void main()

  {

     char s1[10],s2[10];
      int i,l,j;

      printf("\n enter the string");

      scanf("%s",s1);

      for(i=0;s1[i]!='\0';i++);

           j=0;

      for(l=i-1;l>=0;l--)

          {

             s2[j]=s1[l];

              j++;

           }

       s2[j]='\0';

      printf("\n Reversed string = %s",s2);

    }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit rev1.c
** (gedit:10194): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o rev rev1.c
palak@palak-Inspiron-N5110:~$ ./rev
enter the string palak
Reversed string = kalappalak@palak-Inspiron-N5110:~$

Q57. Write a program using function to output sum of all numerals , in an alphanumeric string given by the user.

```
#include <stdio.h>

 void main()

   {
     char string[80];

     int count, nc = 0, sum = 0;

     printf("Enter the string containing both digits and alphabet \n");
     scanf("%s", string);

     for (count = 0; string[count] != '\0'; count++)

         {
           if ((string[count] >= '0') && (string[count] <= '9'))

             {
               nc += 1;
               sum += (string[count] - '0');

                }

           }

       printf("NO. of Digits in the string = %d\n", nc);
       printf("Sum of all digits = %d\n", sum);

    }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit soalnum.c

** (gedit:5244): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o sum soalnum.c
palak@palak-Inspiron-N5110:~$ ./sum
Enter the string containing both digits and alphabet
palak12345
NO. of Digits in the string = 5
Sum of all digits = 15
```

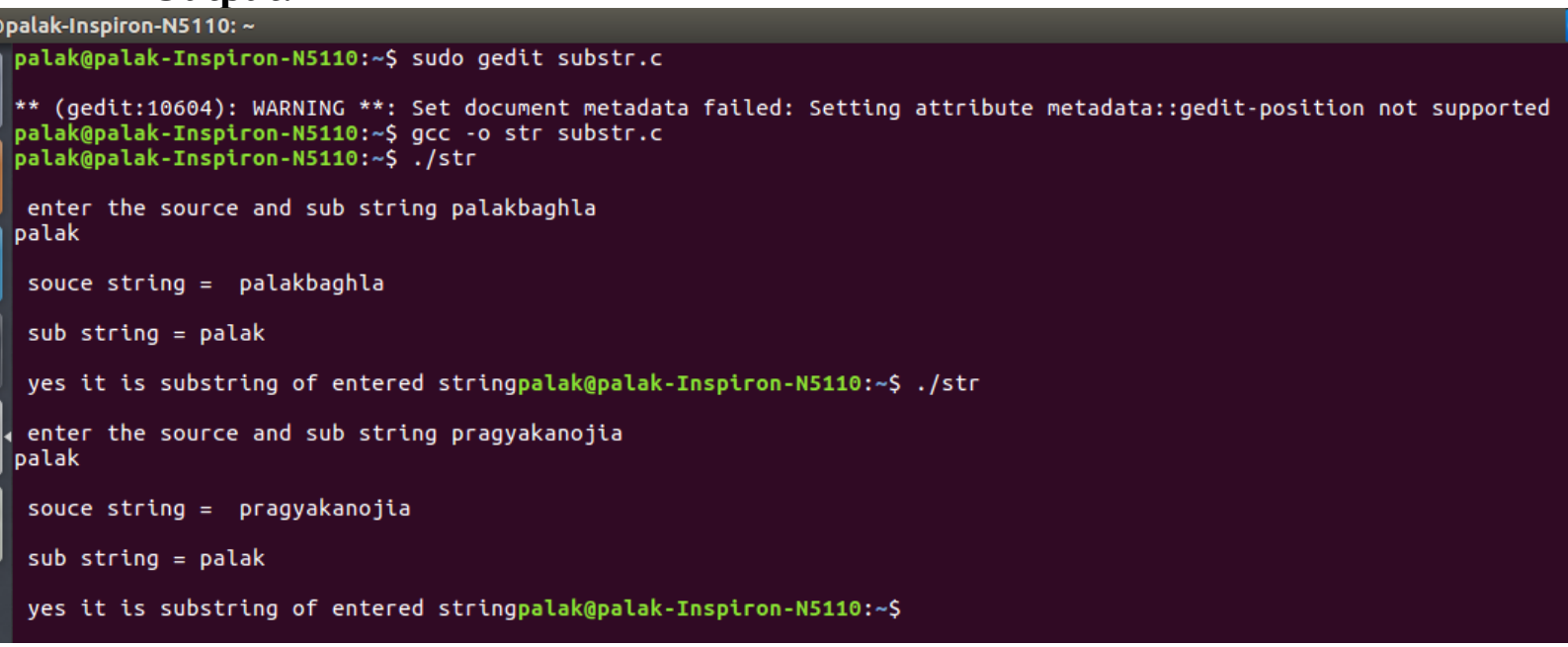
Q58. Write a program using function to output “yes” if str2 is present as a sub-string in str1 else output “no”, str1 and str2 are input strings by the user.

```
#include<stdio.h>

#include<string.h>

int subStringDetector(char s[],char p[])

 {

  int i,j,flag=0,n1,n2;

  n1=strlen(s);

  n2=strlen(p);

  for(i=0;i<=n1-n2;i++)

     {

        for(j=i;j<i+n2;j++)

           {

              flag=1;

             if(s[j]==p[j+1])

               {

                 flag=0;

                 break;

               }

           }
```

```
        if(flag==1)
           break;
         }
     if(flag==1)
        return 1;
    else
        return 0;
     }
void main()
 {
        char s[100],c[50];
        printf("\n enter the source and sub string");
        fgets(s,100,stdin);
        fgets(c,50,stdin);
        printf("\n souce string = %s",s);
        printf("\n sub string = %s",c);
        if(subStringDetector(s,c)==1)
                printf("\n yes it is substring of entered string");
        else
                printf("\n no it is not substring of entered string");
```

}

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit substr.c
** (gedit:10604): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o str substr.c
palak@palak-Inspiron-N5110:~$ ./str
enter the source and sub string palakbaghla
palak
souce string = palakbaghla
sub string = palak
yes it is substring of entered stringpalak@palak-Inspiron-N5110:~$ ./str
enter the source and sub string pragyakanojia
palak
souce string = pragyakanojia
sub string = palak
yes it is substring of entered stringpalak@palak-Inspiron-N5110:~$

Q59. Write a program using function to reverse a string.Input is given by the user as an output sentence(read it into a string).

```
#include<stdio.h>

#include<curses.h>

#include<string.h>

void reverseSentence(char b[])

 {

    char c[50];

    int len,i,index,wstart,wend;

    len=strlen(b);

    index=0;

    wstart=len-1;

    wend=len-1;

     while(wstart>0)

       {

           if(b[wstart]==' ')

             {

                i=wstart+1;

                while(i<=wend)

                        {
```

```
                    c[index]=b[i];
                    i++;
                    index++;
                    }
            c[index++]=' ';
            wend=wstart-1;
             }
          wstart--;
         }
        for(i=0;i<=wend;i++)
            {
              c[index]=b[i];
              index++;
              }
        c[index]='\0';
        printf("\n Reverse Sentence ");
        puts(c);
        }
void main()
    {
```

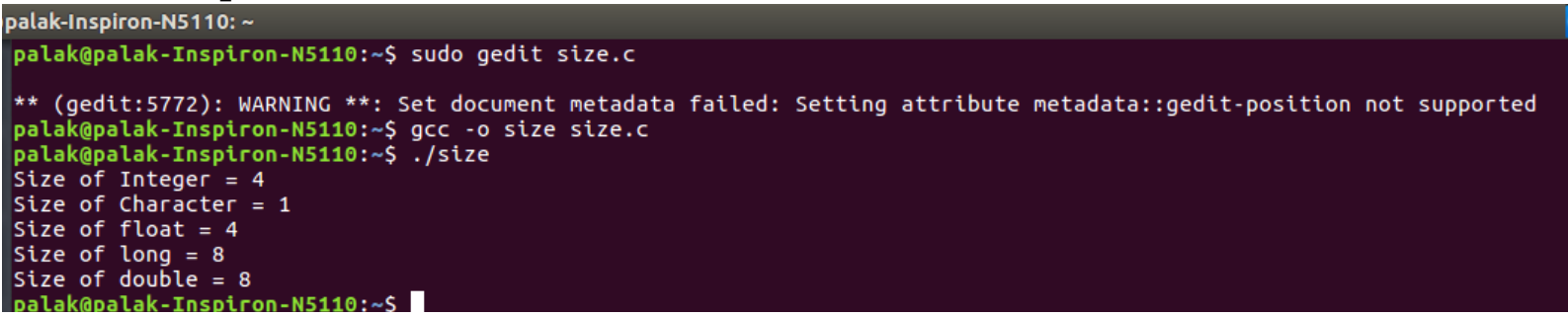
```
char s[50];

printf("\n enter any string");

fgets(s,50,stdin);

printf("\n original sentence\n");

puts(s);

reverseSentence(s);

   }
```

Output:

Q60. Write a program to illustrate the size of all positive data types.

```
#include<stdio.h>

 void main()

  {

     int a,b,c,d,e;

     a=sizeof(int);

     b=sizeof(char);

     c=sizeof(float);

     d=sizeof(long);

     e=sizeof(double);

     printf("Size of Integer = %d \n", a);

     printf("Size of Character = %d \n", b);

     printf("Size of float = %d \n", c);

     printf("Size of long = %d \n", d);

     printf("Size of double = %d \n", e);

   }
```

Output:

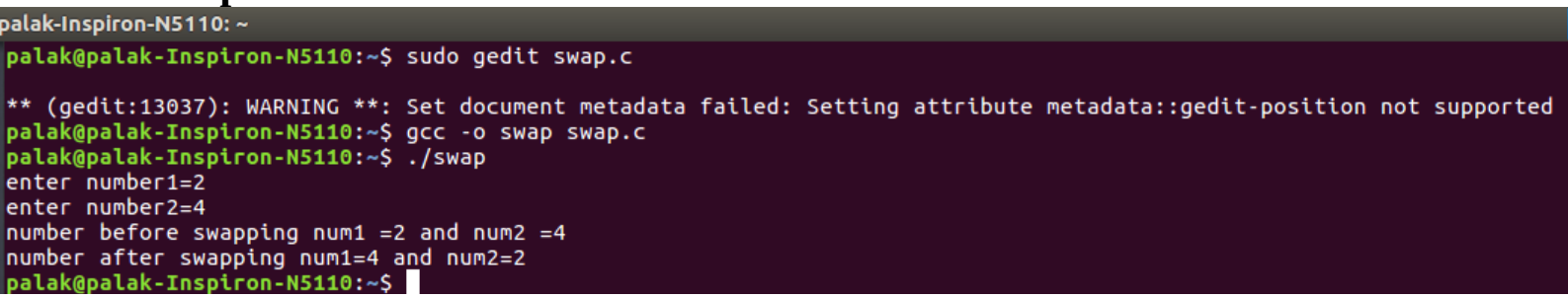


Q61. Write a program to swap 2 numbers using pointers.

```
 #include<stdio.h>
#include<curses.h>
int swap(int *a , int *b)
  {
    int temp;
    temp=*a;
    *a=*b;
    *b=temp;
     };
 int main()
   {
      int a,b;
       printf("enter number1=");
       scanf("%d",&a);
       printf("enter number2=");
       scanf("%d",&b);
      printf("number before swapping num1 =%d and num2 =%d
      \n",a,b);
      swap(&a,&b);
```

```
printf("number after swapping num1=%d and num2=%d \n", a , b);

return 0;

}
```

Output:



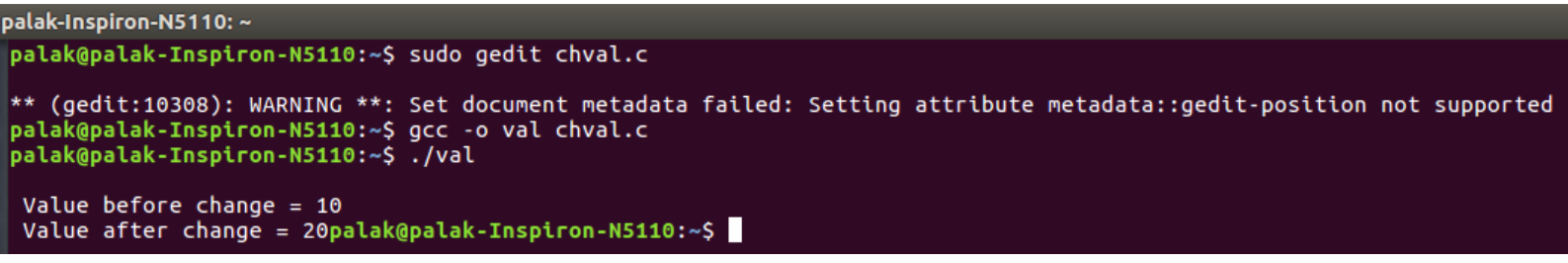
Q62. Write a program to count the vowels and consonants in a string using pointers.

Q63. Write a program to compute the sum of all elements stored in an array using pointers.

Q64. Write a program to change the value of a constant integer using pointers.

```
#include<stdio.h>

#include<curses.h>

 void main()

  {

    int a=10;

    int *p;

    p=&a;

    printf("\n Value before change = %d",a);

   *p= 20;

    printf("\n Value after change = %d",a);

    }
```

Output:

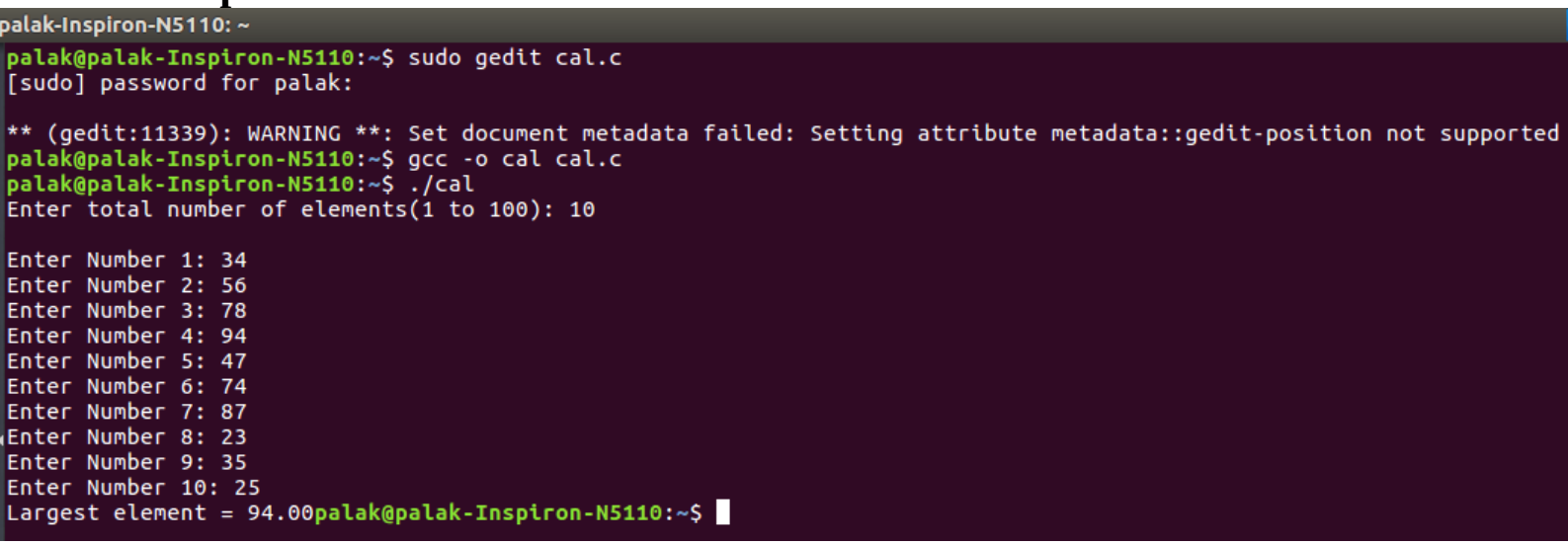


Q65. Write a program to find the largest element using dynamic memory allocation calloc().

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

int main()
{
   int i, num;
   float *data;

   printf("Enter total number of elements(1 to 100): ");
   scanf("%d", &num);


   data = (float*) calloc(num, sizeof(float));

   if(data == NULL)
   {
      printf("Error!!! memory not allocated.");
      exit(0);
   }

   printf("\n");

      for(i = 0; i < num; ++i)
   {
     printf("Enter Number %d: ", i + 1);
     scanf("%f", data + i);
   }


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

     if(*data < *(data + i))
         *data = *(data + i);
   }
```

```
    printf("Largest element = %.2f", *data);

    return 0;
}
```

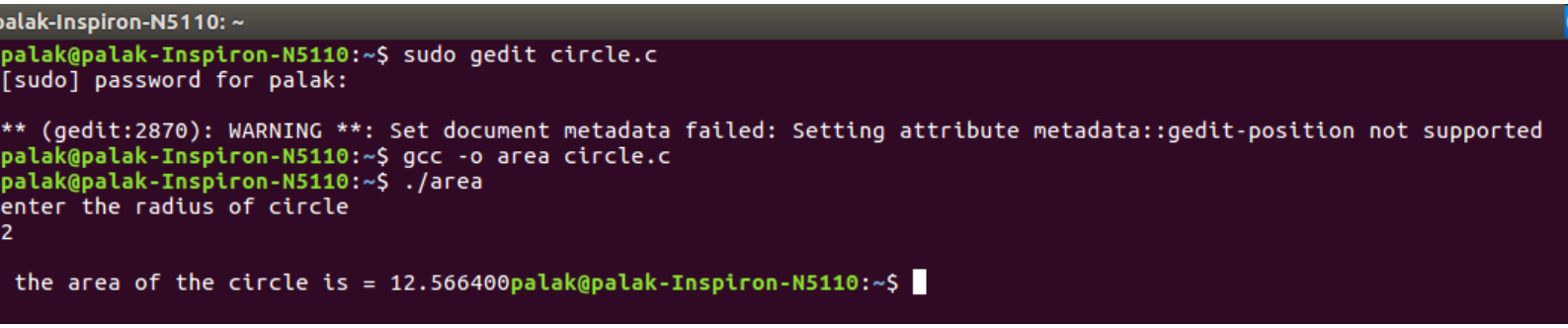
Output:



Q66. Write a program to find the area of circle using PI as a macro.

```
#include<stdio.h>

#define pi 3.1416

int main()

{

float area, radius;

printf("enter the radius of circle \n");

scanf("%f",&radius);

area=pi*radius*radius;

printf("\n the area of the circle is = %f" , area);

return 0;

}
```

Output:



Q67. Write a program to copy a source text file into a target text file.

Q68. Write a program to read a file as input and count the number of characters, words and lines.

```
#include<stdio.h>
 void main()
  {
     FILE *fp;
     int l=0,w=0,c=0;
     char str,fname[50];
     printf("\n enter filename");
     scanf("%s",fname);
     printf("\n write content in file");
     fp=fopen(fname,"w");
     while((str=getchar())!=EOF)
         putc(str,fp);
      fclose(fp);
      fp=fopen(fname,"r");
      while((str=fgetc(fp))!=EOF)
             {
                 if(str=='\n')
                    {
```

```
            l++;
            w++;
            }
        else if(str==' ')
            w++;
        else
            c++;
    }
    fclose(fp);
printf("\n Lines=%d\nWords=%d\nCharacters=%d",l,w,c);
  }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit count.c
[sudo] password for palak:

** (gedit:14726): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o count count.c
palak@palak-Inspiron-N5110:~$ ./count

 enter filename palak.txt

 write content in file
my name is palak.

 Lines=3
Words=7
Characters=14palak@palak-Inspiron-N5110:~$
```

Q69. Write a program that takes input as details of book(titles, pages and cost) and displays the same. Take input for 10 books and arrange them in increasing order of cost.

```
#include<stdio.h>

struct book

{

  char title[50];

  int page;

  float cost;

 };

void main()

{

  int i,j;

  struct book b[10],*p;

  p=&b[0];

  for(i=0;i<10;i++)
      {

        printf("\n enter the book title");

        fgets((p+i)->title,50,stdin);

        fflush(stdin);

        printf("\n enter the page");
```

```
  scanf("%d",&(p+i)->page);
  fflush(stdin);
  printf("\n enter the cost");
  scanf("%f",&(p+i)->cost);
  fflush(stdin);
  }
for(i=0;i<9;i++)
   {
      for(j=0;j<9-i;j++)
           {
              if((p+j)->cost>(p+(j+1))->cost)
                 {
                   struct book temp;
                   temp=*(p+j);
                  *(p+j)=*(p+(j+1));
                   *(p+(j+1))=temp;
                 }
         }
  }
 for(i=0;i<10;i++)
```

```
        {
          printf("\n enter the book title = %s",(p+i)->title);
          fflush(stdin);
          printf("\n enter the page = %d",(p+i)->page);
          fflush(stdin);
          printf("\n enter the cost = %.2f",(p+i)->cost);
         }
}
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit book.c

** (gedit:11605): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o book book.c
palak@palak-Inspiron-N5110:~$ ./book

 enter the book title pk sinha

 enter the page 100

 enter the cost100

 enter the book title
 enter the page 200

 enter the cost 350

 enter the book title
 enter the page 1900

 enter the cost 4500

 enter the book title
 enter the page 300

 enter the cost 600

 enter the book title
 enter the page 200

 enter the cost 400

 enter the book title
 enter the page 800

 enter the cost 1000

 enter the book title
 enter the page 560

 enter the cost 800

 enter the book title
```

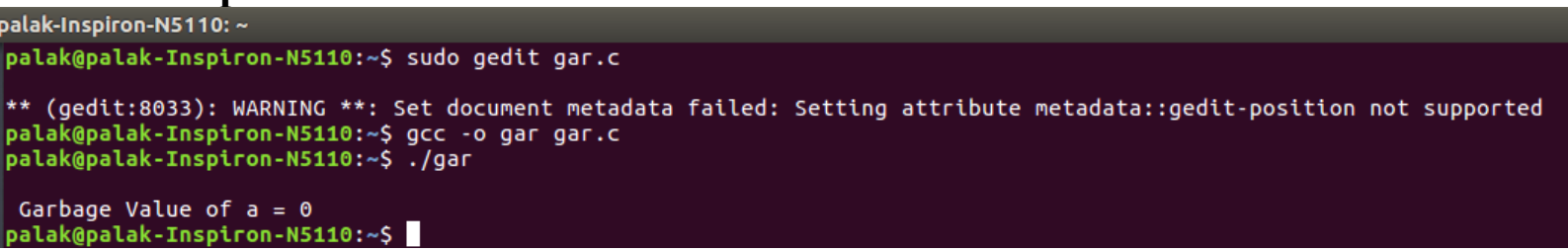
```
palak-Inspiron-N5110: ~

enter the book title
enter the page 400

enter the cost 550

enter the book title
enter the page 100

enter the cost 200

enter the book title
enter the page 800

enter the cost 2500

enter the book title =  pk sinha

enter the page = 100
enter the cost = 100.00
enter the book title =

enter the page = 100
enter the cost = 200.00
enter the book title =

enter the page = 200
enter the cost = 350.00
enter the book title =

enter the page = 200
enter the cost = 400.00
enter the book title =

enter the page = 400
enter the cost = 550.00
enter the book title =

enter the page = 300
enter the cost = 600.00
enter the book title =

enter the page = 560
```

```
enter the cost = 600.00
enter the book title =

enter the page = 560
enter the cost = 800.00
enter the book title =

enter the page = 800
enter the cost = 1000.00
enter the book title =

enter the page = 800
enter the cost = 2500.00
enter the book title =

enter the page = 1900
enter the cost = 4500.00palak@palak-Inspiron-N5110:~$
```

Q70. Write a program illustrating the garbage values of uninitialized variable.

```
#include<stdio.h>

#include<curses.h>

void main()

{

  int a;

  printf("\n Garbage Value of a = %d \n",a);

 }
```

Output:

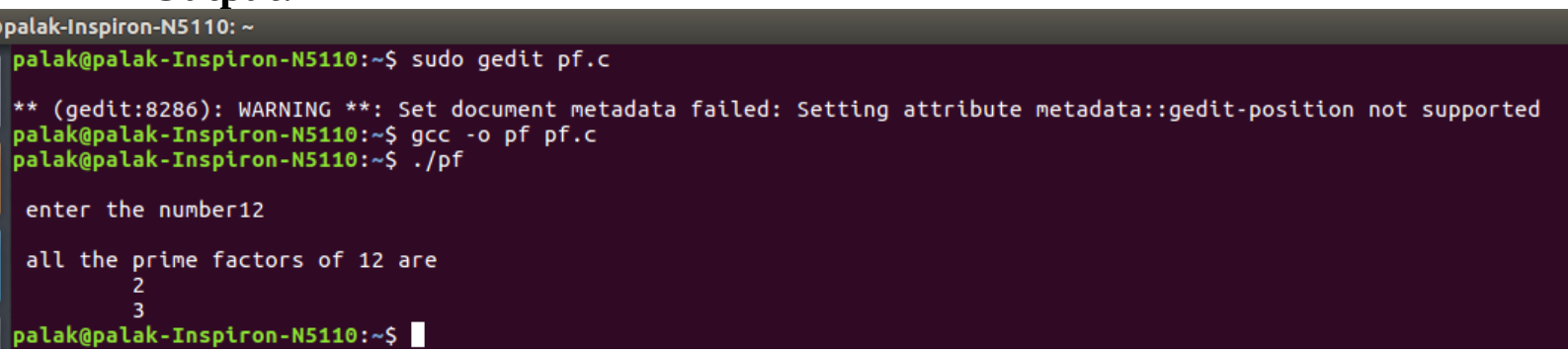


Q71. Write a program to find all the prime factors of any given number.

```
#include<stdio.h>
#include<curses.h>
#include<string.h>
void main()
    {
        int i,n,j,count,a[10],s;
        printf("\n enter the number");
        scanf("%d",&n);
        printf("\n all the prime factors of %d are\n",n);
            for(i=1;i<=n;i++)
                {
                 if(n%i==0)
                   {
                      count=0;
                      for(j=1;j<=i;j++)
                          {
                            if(i%j==0)
                            count++;
```

```
                    }
            if(count==2)
            printf("\t %d\n",i);
             }
        }
    }
```

Output:

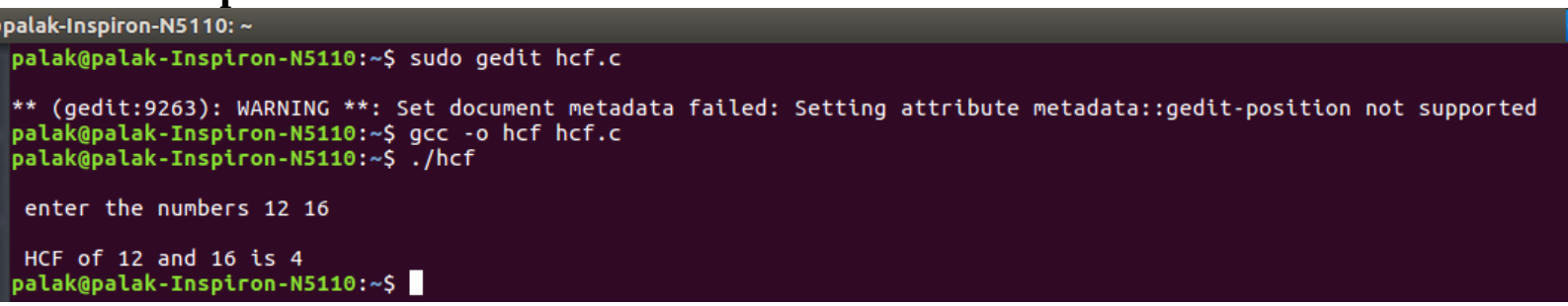


Q72. Write a program to find hcf of two numbers.

```
#include<stdio.h>
#include<curses.h>
 void main()
  {
    int n,m,t,r,a,b;
    printf("\n enter the numbers");
    scanf("%d %d",&n,&m);
    a=n;
    b=m;
    while(r!=0)
            {
              if(n<m)
               {
                 r=m%n;
                 m=n;
                 n=r;
               }
              else
                 {
```

```
                t=m;
                m=n;
                n=t;
                 }
            }
        printf("\n HCF of %d and %d is %d\n",a,b,m);
    }
```

Output:

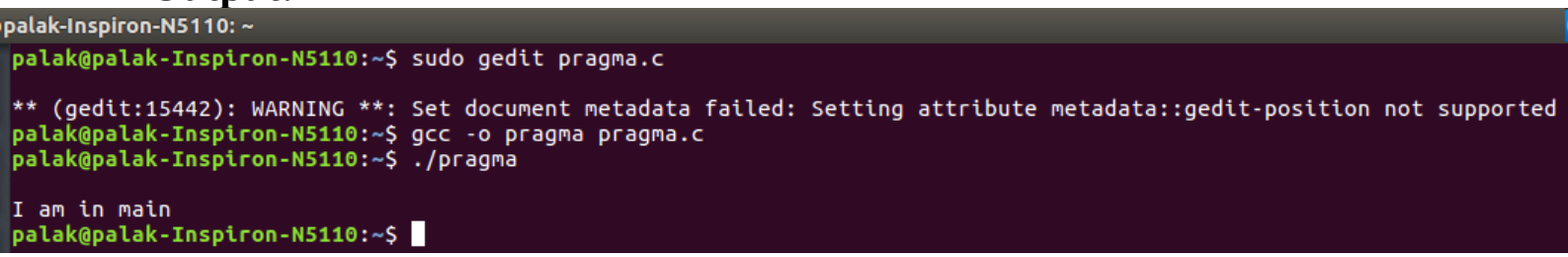


Q73. Write a program to illustrate the use of #pragma.

```
#include<stdio.h>
#include<curses.h>
void School();
void College() ;
#pragma startup School 105
#pragma startup College
#pragma exit College
#pragma exit School 105
void main()
{
   printf("\nI am in main\n");
    }
void School()
{
    printf("\nI am in School\n");
    }
void College()
{
     printf("\nI am in College\n");
```

}

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit pragma.c
** (gedit:15442): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o pragma pragma.c
palak@palak-Inspiron-N5110:~$ ./pragma
I am in main
palak@palak-Inspiron-N5110:~$

Q74. Illustrate pointer to structure.

```
#include<stdio.h>
 struct book
 {
    char title[50];
    int page;
    float cost;
    };
  void main()
   {
     int i,j;
     struct book b,*p;
     p=&b;
      printf("\n enter the book title");
      fgets((p+i)->title,50,stdin);
       fflush(stdin);
       printf("\n enter the page");
       scanf("%d",&(p+i)->page);
       fflush(stdin);
        printf("\n enter the cost");
```

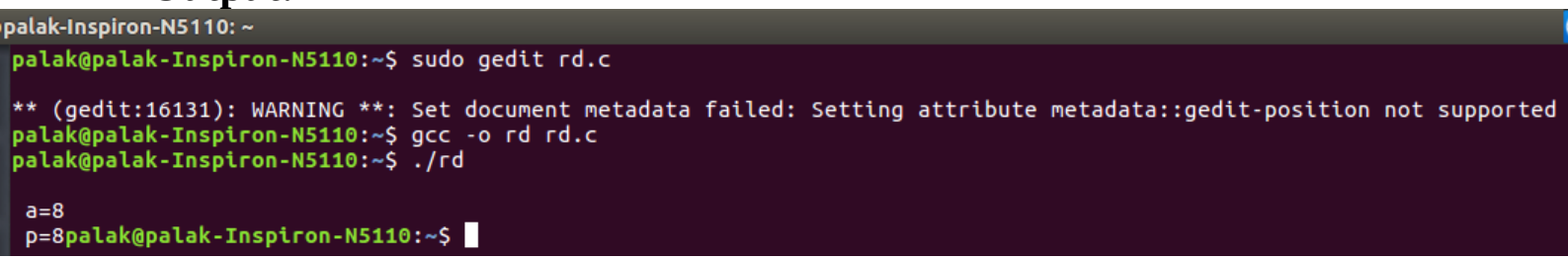
```
scanf("%f",&(p+i)->cost);

fflush(stdin);

printf("\n enter the book title = %s",(p+i)->title);

fflush(stdin);

printf("\n enter the page = %d",(p+i)->page);

fflush(stdin);

printf("\n enter the cost = %.2f",(p+i)->cost);

  }
```

Output:

Q75. Write a program to illustrate referencing and deferencing of pointers.

```
#include<stdio.h>

#include<curses.h>

void main()

  {

    int a=8,*p;

    p=&a;

    printf("\n a=%d",a);

    printf("\n p=%d",*p);

   }
```

Output:



Q76. Write a program using all the string functions.

```
#include<stdio.h>

#include<curses.h>

#include<string.h>

void main()

 {
    char s1[10],s2[20],s3[20];

    printf("\n enter the string1");

    scanf("%s",s1);

    printf("\n enter the string2");

    scanf("%s",s2);

    printf("\n Copy of second string in third string =
     %s",strcpy(s3,s2));

    printf("\n Concatenated String = %s",strcat(s1,s2));

    printf("\n Comparison of String2 and string3 =
    %d",strcmp(s2,s3));

      }
```

Output:

```
palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit string.c

** (gedit:16218): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o str string.c
palak@palak-Inspiron-N5110:~$ ./str

 enter the string1 palak

 enter the string2 pragya

 Copy of second string in third string = pragya
 Concatenated String = palakpragya
 Comparison of String2 and string3 = 0palak@palak-Inspiron-N5110:~$
```

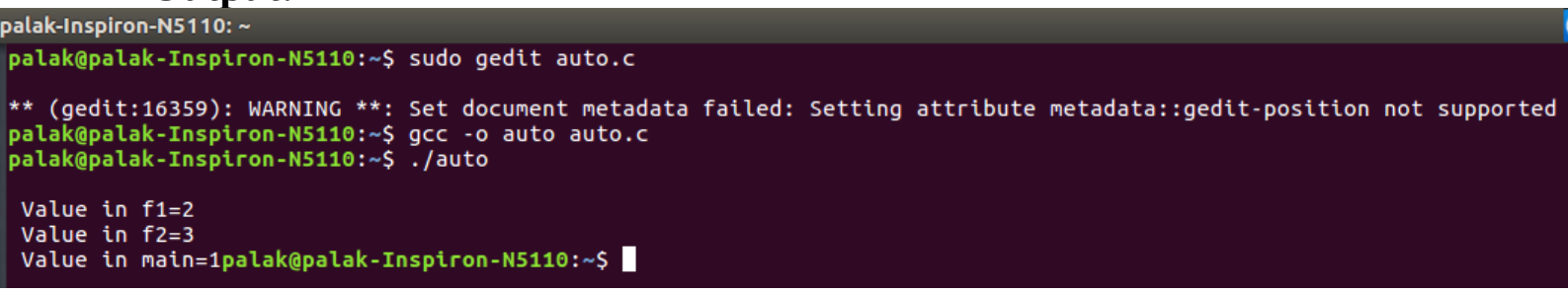
Q77. Write a program to illustrate scope,visibility and lifetime of various storage classes.

a.)Auto Class

```
#include<stdio.h>

#include<curses.h>
void f1()

 {

      auto int i=2;

      printf("\n Value in f1=%d",i);
      }

void f2()

  {

      auto int i=3;

      printf("\n Value in f2=%d",i);

      }

 void main()

    {

       auto int i=1;

       f1();

       f2();

       printf("\n Value in main=%d",i);
```

}

Output:

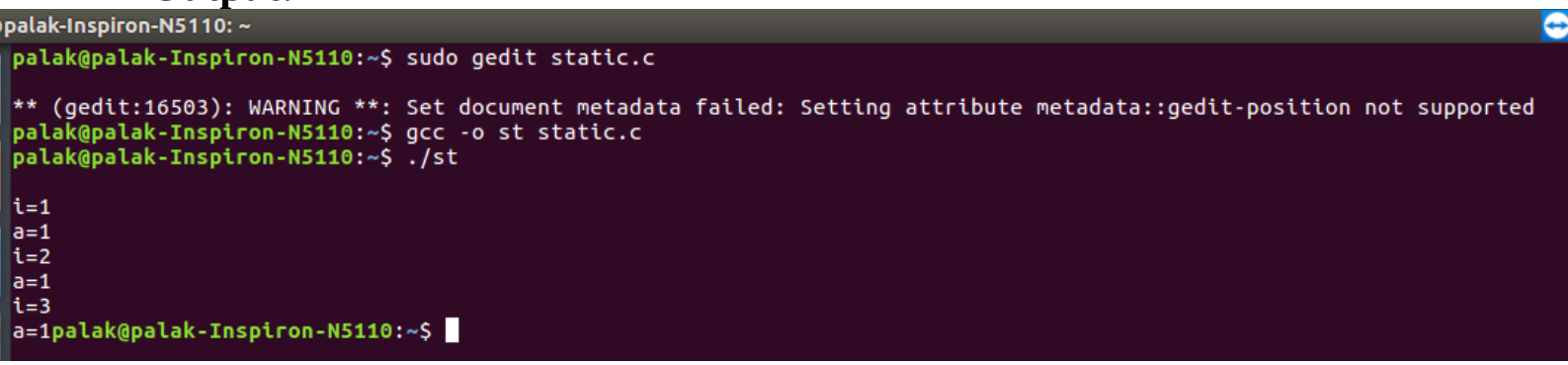


b.)Static Class

```
#include<stdio.h>

#include<curses.h>

 void increment()

   {

     static int i=0;

     int a=0;

     i++;

     a++;

     printf("\ni=%d",i);

     printf("\na=%d",a);

      }

  void main()

   {
```

```
    increment();

    increment();
    increment();

    }
```

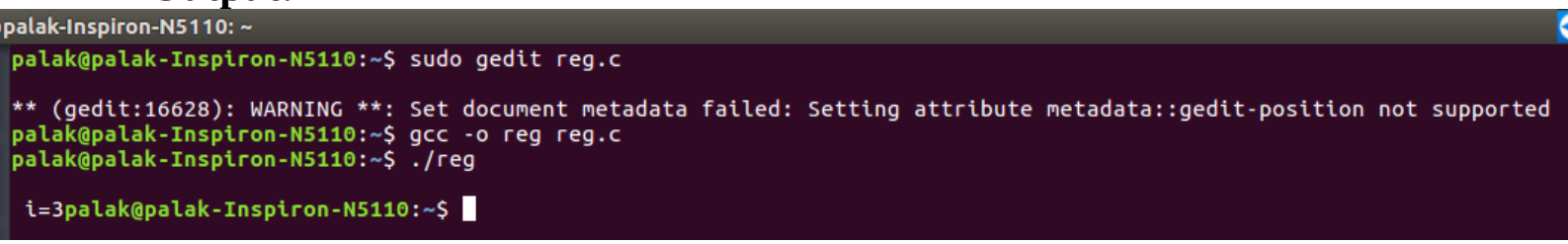
Output:



c.)Register Class

```
#include<stdio.h>

#include<curses.h>

void main()

  {

    register int i;

    i=3;

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

     }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit reg.c
** (gedit:16628): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o reg reg.c
palak@palak-Inspiron-N5110:~$ ./reg
i=3palak@palak-Inspiron-N5110:~$

Q78. Write a program to input details of as much as book using malloc and display the same.

```
#include<stdio.h>
#include<stdlib.h>
struct book
 {
    char title[50];
    int page;
   float cost;
   };
void main()
 {
     int n,i;
    printf("\n enter the no of books you want to enter");
   scanf("%d",&n);
    struct book *b=(struct book *)malloc(n*sizeof(struct book));
      for(i=0;i<n;i++)
          {
            fflush(stdin);
            printf("\n enter the book title");
```

```
 fgets(b[i].title,50,stdin);
 fflush(stdin);
  printf("\n enter the page");
  scanf("%d",&b[i].page);
  fflush(stdin);
  printf("\n enter the cost");
  scanf("%f",&b[i].cost);
  }
for(i=0;i<n;i++)
    {
       printf("\n Book Name = %s",b[i].title);
       printf("\n Book Pages = %d",b[i].page);
       printf("\n Book Cost = %.2f",b[i].cost);
         }
  }
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit mal.c
** (gedit:16713): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o mal mal.c
palak@palak-Inspiron-N5110:~$ ./mal
enter the no of books you want to enter 2
enter the book title
enter the page 200
enter the cost 300
enter the book title
enter the page 400
enter the cost 550
Book Name =
Book Pages = 200
Book Cost = 300.00
Book Name =
Book Pages = 400
Book Cost = 550.00palak@palak-Inspiron-N5110:~$

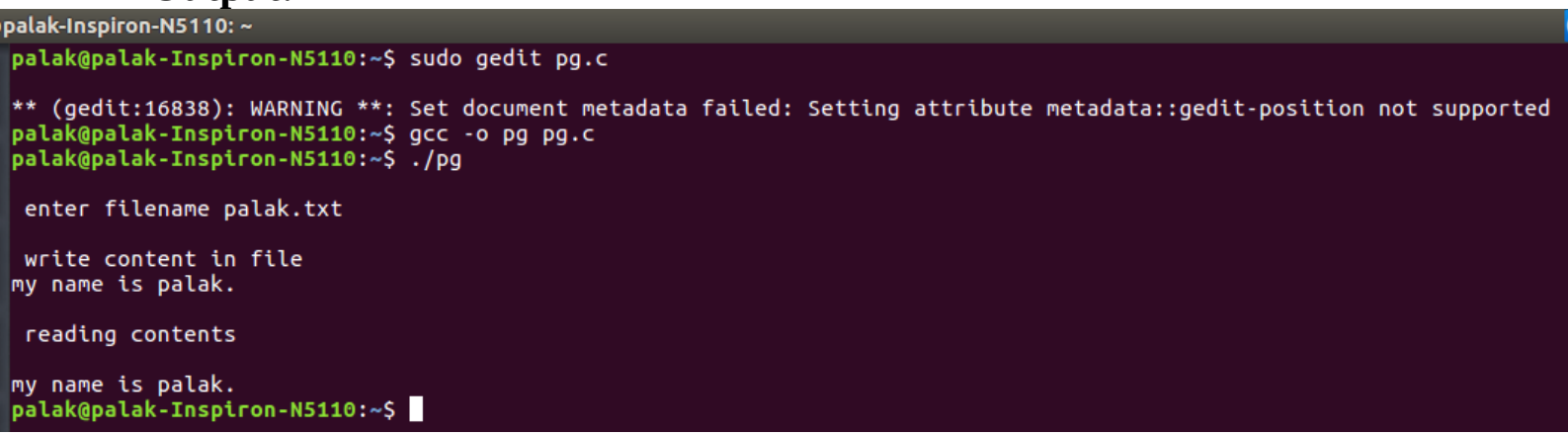
Q79. Write a program to read and write the file using following commands

a.)fgetc() and fputc()

```
#include<stdio.h>

void main()

 {

   FILE *fp;

   int ch;

   char str,fname[50];

   printf("\n enter filename");

   scanf("%s",fname);

   printf("\n write content in file");

   fp=fopen(fname,"w");
    while((str=getchar())!=EOF)

     fputc(str,fp);

    fclose(fp);

   printf("\n reading contents");

   fp=fopen(fname,"r");

   fflush(stdin);

   while((str=fgetc(fp))!=EOF)

    {
```

```
        putchar(str);
         }
      fclose(fp);
    }
```

Output:

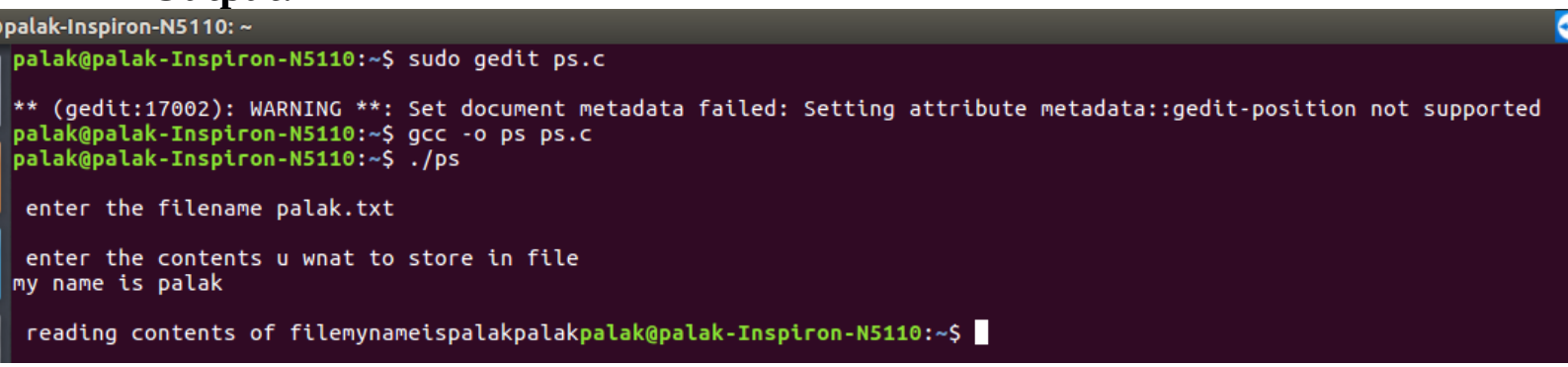


b.)fprintf() and fscanf()

```
#include<stdio.h>
 #include<curses.h>
   void main()
    {
      FILE *fp;
      char str[50],fname[10];
      printf("\n enter the filename");
      scanf("%s",fname);
```

```
 fp=fopen(fname,"w");
 printf("\n enter the contents u wnat to store in file");
 while(fgets(str,50,stdin)!=NULL)
        {
         fgets(str,50,stdin);
         fprintf(fp,"%s",str);
          }
 fclose(fp);
 fp=fopen(fname,"r");
 printf("\n reading contents of file");
 while(!feof(fp))
     {
        fscanf(fp,"%s",str);
          printf("%s",str);
         }
   fclose(fp);
}
```

Output:

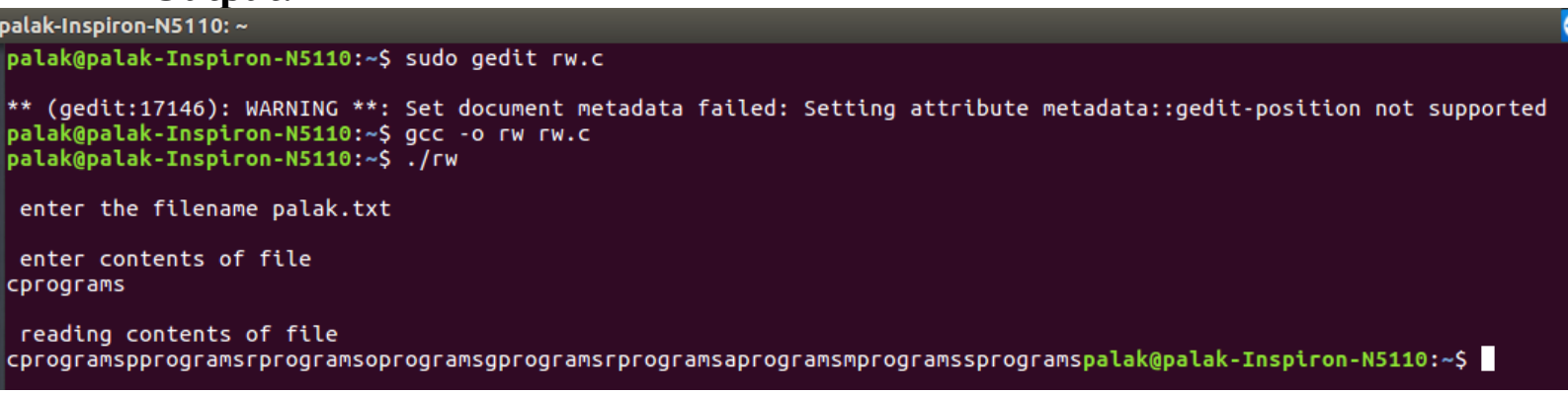


c.)fread() and fwrite()

```
#include<stdio.h>

#include<string.h>

 void main()

  {

     FILE *fp;

     int ch;

     char str[100],fname[10];

      printf("\n enter the filename");

     scanf("%s",fname);
      printf("\n enter contents of file");

      fp=fopen(fname,"wb");

      fflush(stdin);

      while(scanf("%s",str)!=EOF)

       fwrite(str,strlen(str),1,fp);
```

```
fclose(fp);
 printf("\n reading contents of file\n");
 fp=fopen(fname,"rb");
 fflush(stdin);
 while(fread(&str,sizeof(char),1,fp))
  printf("%s",str);
  fclose(fp);
    }
```

Output:

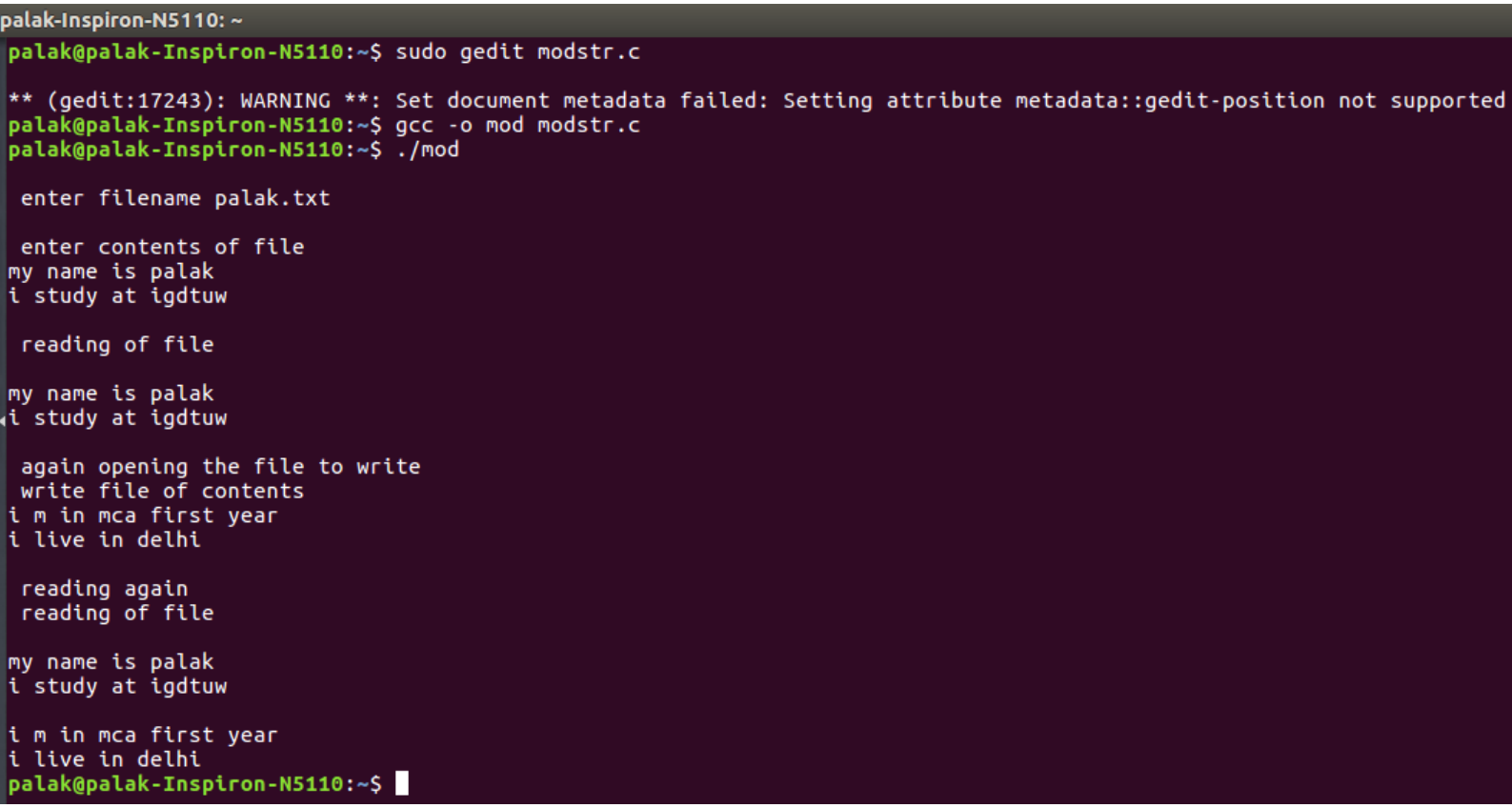


Q80. Modify the file copy program to avoid over writing the existing target file, instead if taget file has some contents, then target file is appended by contents of source file.

```
#include<stdio.h>

 void main()

 {

   FILE *fp1;

   int ch;

   char str,fname[50];

   printf("\n enter filename");

   scanf("%s",fname);

   fp1=fopen(fname,"w");

   printf("\n enter contents of file");

   while((str=getchar())!=EOF)

           putc(str,fp1);

  fclose(fp1);

 fp1=fopen(fname,"r");

  printf("\n reading of file");

 while((str=fgetc(fp1))!=EOF)

      {

        putchar(str);
```

```
        }
  fclose(fp1);
  printf("\n again opening the file to write");
  fp1=fopen(fname,"a");
  printf("\n write file of contents");
  while((str=getchar())!=EOF)
           putc(str,fp1);
  fclose(fp1);
  printf("\n reading again");
  fp1=fopen(fname,"r");
  printf("\n reading of file");
  while((str=fgetc(fp1))!=EOF)
         {
               putchar(str);
              }
 fclose(fp1);
}
```

Output:


palak-Inspiron-N5110: ~
palak@palak-Inspiron-N5110:~$ sudo gedit modstr.c
** (gedit:17243): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-position not supported
palak@palak-Inspiron-N5110:~$ gcc -o mod modstr.c
palak@palak-Inspiron-N5110:~$ ./mod
enter filename palak.txt
enter contents of file
my name is palak
i study at igdtuw
reading of file
my name is palak
i study at igdtuw
again opening the file to write
write file of contents
i m in mca first year
i live in delhi
reading again
reading of file
my name is palak
i study at igdtuw
i m in mca first year
i live in delhi
palak@palak-Inspiron-N5110:~$