1. Write a program to find the perfect number?

2. Write a program to generate the amstrong number within the range 1 to 10000

3. Write a program to find the strong number?

4. Write a program to find the number is palindrome or not?

5. Write a program to find the second largest element using command line argument?

6. Write a program to reverse a number using command line argument.

7. Write a program to multiply a number by 8 without using * operator

8. Write a program to swap the two numbers without using temp variable

9. Write a program to find the decimal to octal and vice versa

10. Write a program to find the decimal to binary and vice versa

11. Write a program to find the decimal to hexadecimal and vice versa

12. Write a c program to check given string is palindrome number or not

Definition of Palindrome string:
A string is called palindrome if it symmetric. In other word a string is called palindrome if string remains same

if its characters are reversed. For example: asdsa

If we will reverse it will remain same i.e. asdsa

Example of string palindrome: a,b, aa,aba,qwertrewq etc.

```
int main()
{
char a[10];
printf(“enter a string:”);
scanf(“%s”,&a);
if(strrev(a)==a)
{
printf(“%s is a palindrome”,a);
}
}
```

Decimal to octal

16

20

// convert binary to decimal

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

// function prototype
int convert(int);
```

```
int main() {
  int n;
  printf("Enter a binary number: ");
  scanf("%d", &n);
  printf("%d in binary = %d in decimal", n, convert(n));
  return 0;
}

// function definition
int convert(int n) {
  int dec = 0, i = 0, rem;

  while (n!=0) {
    rem = n % 10;
    n /= 10;
    dec += rem * pow(2, i);
    ++i;
  }

  return dec;
}
```

decimal to octal

```
#include <stdio.h>

int main()
{
    int decimalnum, remainder;
    int octalNumber[10], i = 1, j;
```

```
    printf("Enter the decimal number: ");
    scanf("%d", &decimalnum); //16

    while (decimalnum != 0)
    {
        octalNumber[i++] = decimalnum % 8;  //
octalNumber[2] = 2%8 = 2
        decimalnum = decimalnum / 8;    //
decimalnum=16/8 = 2
    } //i=3
    printf("Equivalent octal value of decimal no %d: ",
decimalnum);
    for (j = i - 1; j > 0; j--)
        printf("%d", octalNumber[j]);
    return 0;
}
```

1. Write a program for decimal to octal and vice-versa
2. Write a program for decimal to binary and vice-versa
3. Write a program for hexa decimal to decimal and vice-versa

//pgm to convert decimal to hexadecimal

```
#include <stdio.h>

int main() {
   int decimal,rem,i,j=0;
   char hexa[50];
   printf("Enter the decimal number: ");
   scanf("%d",&decimal); //196
```

```
   while(decimal!=0){
       rem = decimal%16;  //rem=4 , rem=12
       if(rem<10)
        hexa[j++]=48+rem; //hexa[0]=52
       else
        hexa[j++]=55+rem; //hexa[1]=67 = C
       decimal=decimal/16;   //decimal=12, decimal=0
   }
   for(i=j-1;i>=0;i--)
   printf("%c",hexa[i]);
    return 0;
}
```

Input:
100
Output:
64

Input:
196
Output:
C4

Input:
266
Output:
10A

//pgm to convert hexadecimal to decimal

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

```
#include<math.h>

int main() {
   char hex[17];
   int decimal;
   int i=0,val,len;
   decimal=0;
   printf("Enter any hexa decimal number: ");
   scanf("%s",hex);  //C4
   len=strlen(hex);   //len=2
   len--;             //len=1

   for(i=0;hex[i]!='\0';i++){     //i=0 hex[0]=C  , i=1 hex[1]=4
       if(hex[i]>='0' && hex[i]<='9')
          val=hex[i]-48;                  //val = 52-48 = 4
       else if(hex[i]>='a' && hex[i]<='f')
          val=hex[i]-97+10;
       else if(hex[i]>='A' && hex[i]<='F')
          val=hex[i]-65+10;      //val = 67-65+10 = 2+10 =
12
       decimal+=val*pow(16,len);  //decimal =
12*pow(16,1) = 12*16 = 192 , decimal = 4*pow(16,0) =
4*1
       len--;                     //len=0
   }
   printf("Hexadecimal number= %s\n",hex);
   printf("Decimal number = %d",decimal);  //decimal =
196
    return 0;
}
```

Output:

Hexadecimal number= 127F
Decimal number = 4735

- Input: arr[]={1,2,0,4,3,0,5,0};
- Output:arr[]={1,2,4,3,5,0,0};

```
int arr[]={1,2,0,4,3,0,5,0};
int len=sizeof(arr)/sizeof(arr[0]);  //32/4 = 8
for(i=0;i<len-1;i++){
    if(arr[i]==0){
        for(j=i+1;j<len;j++)
            arr[j-1]=arr[j];
        arr[len-1]=0;
    }
}
for(i=0;i<len;i++)
    printf("%d ",arr[i]);
```

Ques. Find the 15th term of the series?
0,0,7,6,14,12,21,18, 28

Questions : 1
Let us find out whether the sum of the digits of the given positive integer number N is UNO or not.
Given a positive integer number N, reduce the number of digits of N by computing the sum of all
the digits to get a new number. If this new number exceeds 9, then sum the digits of this new number
to get another number and continue this way until a single digit value is obtained as the 'digit sum'.
The task here is to find out whether the result of the digit sum done this way is '1' or not.

If the digital sum result is 1, display a message UNO if the digit sum is not 1, display a message
NOT UNO

N=157
sum=13
sum%9 = 4

N=51112
sum=10
if(sum%9==1)

Example:
Input:
51112 - Value of N

5+1+1+1+2 - we got 10. Adding the digit again 1+0 = 1 , We get the digit sum = 1, so therefor output will be UNO

Question : 3

A physical education teacher asks students to assemble in a straight line for the morning assembly.
In spite of repeated instructions, the students do not obey the teacher.
Given an array of N number of arguments in which each element represents the height of the
student in that position. The task here is to find the number of students, only for students numbered
1 to N -1(a[1] to a[N-1]), whose height is less than the

height of their adjacent students.

Example 1:
Input :

5-Value of N
(35,15,45,25,55) - a[]. Elements a[0] to a[n-1]
where each input element is separated by a new line

Output:
2-Number of elements whose adjacent elements are greater

Output 2 Number of elements whose

Explanation:

From the input array given above

a[0] = 35
a[1] = 15
a[2] = 45
a[3] = 25
a[4] = 55
The elements whose adjacent values are greater are 15 and 25 as a[0]>a[1]15<45 a[2]>a[3]25<55

Hence, the output is 2.