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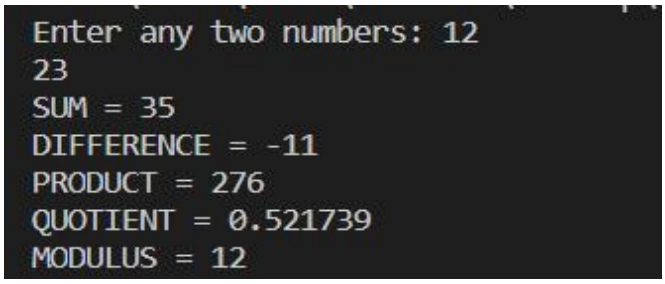
SECTION – ‘U’

ROLL NO. (21)

1–

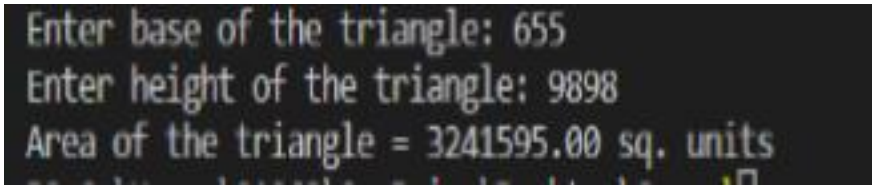
```
#include <stdio.h>
int main()
{
int num1, num2;
int sum, sub, mult, mod;
float div;
printf("Enter any two numbers: ");
scanf("%d%d", &num1, &num2);
sum = num1 + num2;
sub = num1 - num2;
mult = num1 * num2;
div = (float)num1 / num2;
mod = num1 % num2;
printf("SUM = %d\n", sum);
printf("DIFFERENCE = %d\n", sub);
printf("PRODUCT = %d\n", mult);
printf("QUOTIENT = %f\n", div);
printf("MODULUS = %d", mod);
return 0;
}
```



2

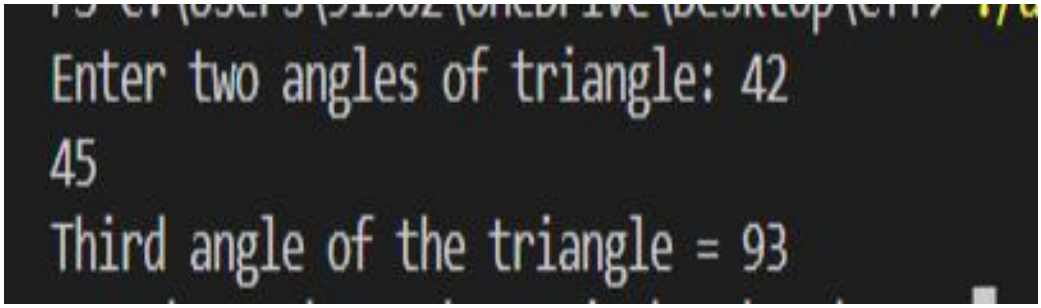
–

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

float base, height, area;
printf("Enter base of the triangle: ");
scanf("%f", &base);
printf("Enter height of the triangle: ");
scanf("%f", &height);
area = (base * height) / 2;
printf("Area of the triangle = %.2f sq. units", area);
return 0;
}
```



3–

```
#include <stdio.h>
int main()
{
int a, b, c;
printf("Enter two angles of triangle: ");
scanf("%d%d", &a, &b);
c = 180 - (a + b);

printf("Third angle of the triangle = %d", c);
return 0;
}
```



4--

```
#include <stdio.h>
int main()
{
int days, years, weeks;
printf("Enter days: ");
scanf("%d", &days);

years = (days / 365);
weeks = (days % 365) / 7;
days = days - ((years * 365) + (weeks * 7));
printf("YEARS: %d\n", years);
printf("WEEKS: %d\n", weeks);
printf("DAYS: %d", days);
return 0;
}
```

5–

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

```
   int sq,x,pw;


   printf("enter the value\n  ");
   scanf("%d",&x);
   printf("enter the pow\n");
   scanf("%d",&pw);
   int a=sqrt(x);
   int b=pow(x,pw);
   printf("THE SQUARE ROOT OF GIVEN NUM IS %d\n THE POWER OF GIVEN NUM IS %d",a,b);
   return 0;
}
```

```
enter the value
  16
enter the pow
2
THE SQUARE ROOT OF GIVEN NUM IS 4
 THE POWER OF GIVEN NUM IS 256
```

6—

```
#include <stdio.h>

int main()

{

float eng, phy, chem, math, comp;

float total, average, percentage;

printf("Enter marks of five subjects: :- ");

scanf("%f%f%f%f%f", &eng, &phy, &chem, &math, &comp);

total = eng + phy + chem + math + comp;

average = total / 5.0;

percentage = (total / 500.0) * 100;

printf("Total marks = %.2f\n", total);

printf("Average marks = %.2f\n", average);

printf("Percentage = %.2f", percentage);

return 0;

}
```

```
Enter marks of five subjects: :- 36
63
48
89
47
Total marks = 283.00
Average marks = 56.60
Percentage = 56.60
```

7–

```
#include <stdio.h>
#define BITS sizeof(int)
int main()
{
int num, msb;
printf("Enter any number: ");
scanf("%d", &num);
msb = 1 << (BITS - 1);
if(num & msb)
printf("MSB of %d is set (1).", num);
else
printf("MSB of %d is unset (0).", num);
return 0;
}
```

```
Enter any number: 5
MSB of 5 is unset (0).
```

8–

```
#include <stdio.h>
int main()
{
int var1, var2, temp;
```

```
printf("Enter two integers ");

scanf("%d%d", &var1, &var2);

printf("Before SwappingnFirst variable = %d\nSecond variable = %d\n", var1, var2);

temp = var1;

var1 = var2;

var2 = temp;

printf("After SwappingnFirst variable = %d\nSecond variable = %d\n", var1, var2);


return 0;

}
```

```
Enter two integers2
8
Before SwappingnFirst variable = 2
Second variable = 8
After SwappingnFirst variable = 8
Second variable = 2
```

9—

```
#include<stdio.h>

int main() {

int a, b, c, max;

printf("Enter Three Integers\n");

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

max = (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c);

printf("Maximum Number is = %d\n", max);

return 0;

}
```

```
Enter Three Integers
8
6
4
Maximum Number is = 8
```

—

10

```
#include <stdio.h>

int main()

{
```

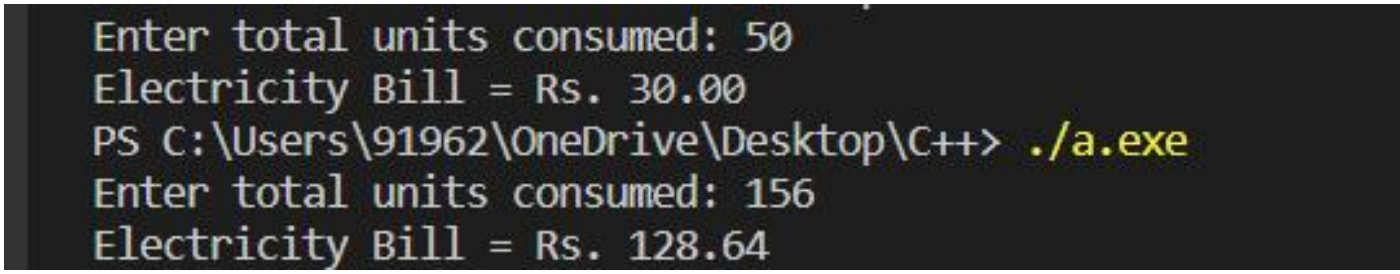
```
char ch;
printf("Enter any character: ");
scanf("%c", &ch);
if((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z'))
{
printf("'%c' is alphabet.", ch);
}
else if(ch >= '0' && ch <= '9')
{
printf("'%c' is digit.", ch);
}
else
{
printf("'%c' is special character.", ch);
}
return 0;
}
```

```
Enter any character: a
'a' is alphabet.
PS C:\Users\91962\OneDrive\Desktop\C++> ./a.exe
Enter any character: %
'%' is special character.
```

11—

```
#include <stdio.h>
int main()
{
int unit;
float amt, total_amt, sur_charge;
printf("Enter total units consumed: ");
scanf("%d", &unit);
```

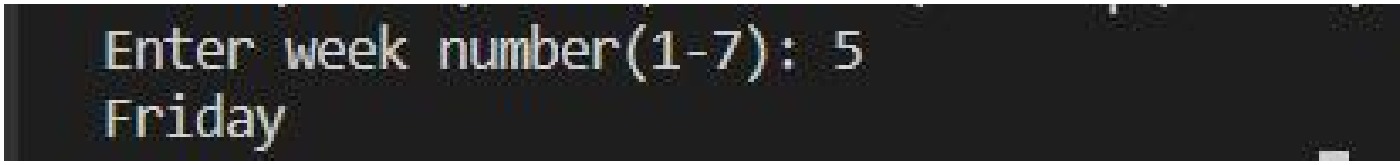
```
if(unit <= 50)
{
amt = unit * 0.50;
}
else if(unit <= 150)
{
amt = 25 + ((unit-50) * 0.75);
}
else if(unit <= 250)
{
amt = 100 + ((unit-150) * 1.20);
}
else
{
amt = 220 + ((unit-250) * 1.50);
}
sur_charge = amt * 0.20;
total_amt = amt + sur_charge;
printf("Electricity Bill = Rs. %.2f", total_amt);
return 0;
}
```



12–

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

```
int week;
printf("Enter week number(1-7): ");
scanf("%d", &week);
switch(week)
{
case 1:
printf("Monday");
break;
case 2:
printf("Tuesday");
break;
case 3:
printf("Wednesday");
break;
case 4:
printf("Thursday");
break;
case 5:
printf("Friday");
break;
case 6:
printf("Saturday");
break;
case 7:
printf("Sunday");
break;
default:
printf("Invalid input! Please enter week number between 1-7.");
}
return 0;
}
```



13–

```
#include <stdio.h>
int main()
{
char ch;
printf("Enter any alphabet: ");
scanf("%c", &ch);
switch(ch)
{
case 'a':
printf("Vowel");
break;
case 'e':
printf("Vowel");
break;
case 'i':
printf("Vowel");
break;
case 'o':
printf("Vowel");
break;
case 'u':
printf("Vowel");
break;
case 'A':
printf("Vowel");
break;
```

```
case 'E':
printf("Vowel");
break;
case 'I':
printf("Vowel");
break;
case 'O':
printf("Vowel");
break;
case 'U':
printf("Vowel");
break;
default:
printf("Consonant");
}
return 0;
}
```

14—

```
#include <stdio.h>
int main()
{
int num;
printf("Enter any number: ");
scanf("%d", &num);
switch (num > 0)
{
```

```
case 1:
printf("%d is positive.", num);
break;
case 0:
switch (num < 0)
{
case 1:
printf("%d is negative.", num);
break;
case 0:
printf("%d is zero.", num);
break;
}
break;
}
return 0;
}
```

```
Enter any number: 54
54 is positive.
PS C:\Users\91962\OneDrive\Desktop\C++> ./a.exe
Enter any number: -7
-7 is negative.
```

15–

```
#include<stdio.h>
int main(){
int side1, side2, side3;
printf("Enter sides of triangle:");
scanf("%d%d%d",&side1,&side2,&side3);
if(side1 == side2 && side2 == side3)
printf("Triangle is equilateral");
else if(side1 == side2 || side2 == side3 || side3 == side1)
```

```
printf("Triangle is isosceles");
else
printf("Triangle is scalene");
return 0;
}
```

```
Enter sides of triangle:3
4
5
Triangle is scalene
```

16—

```
#include <stdio.h>
int main()
{
int i, n, sum=0;
printf("Enter upper limit: ");
scanf("%d", &n);
for(i=1; i<=n; i++)
{
sum += i;
}
printf("Sum of first %d natural numbers = %d", n, sum);
return 0;
}
```

```
Enter upper limit: 10
Sum of first 10 natural numbers = 55
```

17—-

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

```
int main()
{
int i, n;
printf("Print all even numbers till: ");
scanf("%d", &n);
printf("Even numbers from 1 to n %d are: \n", n);
for(i=1; i<=n; i++)
{
if(i%2 == 0)
{
printf("%d\n", i);
}
}
return 0;
}
```

AND

```
#include <stdio.h>
int main()
{
int i, n, sum=0;
printf("Enter upper limit: ");
scanf("%d", &n);
for(i=2; i<=n; i+=2)
{
sum += i;
}
printf("Sum of all even number between 1 to n %d = %d", n, sum);
return 0;
}
```

```
Even numbers from 1 to n 7 are:
2
4
6
```

18—

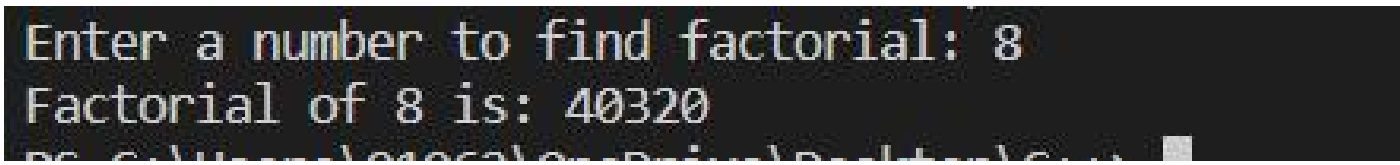
```
#include <stdio.h>
int main()
{
int i, num;
printf("Enter number to print table: ");
scanf("%d", &num);
for(i=1; i<=10; i++)
{
printf("%d * %d = %d\n", num, i, (num*i));
}
return 0;
}
```

```
Enter number to print table: 8
8 * 1 = 8
8 * 2 = 16
8 * 3 = 24
8 * 4 = 32
8 * 5 = 40
8 * 6 = 48
8 * 7 = 56
8 * 8 = 64
8 * 9 = 72
8 * 10 = 80
```

19—

```
#include<stdio.h>
int main(){
int x,fact=1,n;
printf("Enter a number to find factorial: ");
scanf("%d",&n);
```

```
for(x=1;x<=n;x++)
fact=fact*x;
printf("Factorial of %d is: %d",n,fact);
return 0;
}
```



20—

```
#include <stdio.h>
int main() {
int n, reversed = 0, remainder, original;
printf("Enter an integer: ");
scanf("%d", &n);
original = n;
while (n != 0) {
remainder = n % 10;
reversed = reversed * 10 + remainder;
n /= 10;
}
if (original == reversed)
printf("%d is a palindrome.", original);
else
printf("%d is not a palindrome.", original);
return 0;
}
```

21–

```
#include <stdio.h>
#define BASE 10
int main()
{
long long num, n;
int i, lastDigit;
int freq[BASE];
printf("Enter any number: ");
scanf("%lld", &num);
for(i=0; i<BASE; i++)
{
freq[i] = 0;
}
n = num;
while(n != 0)
{
lastDigit = n %10;
n /= 10;
freq[lastDigit]++;
}
printf("Frequency of each digit in %lld is: \n", num);
for(i=0; i<BASE; i++)
{
printf("Frequency of %d = %d\n", i, freq[i]);
}
return 0;
```

}

```
Enter any number: 45
Frequency of each digit in 45 is:
Frequency of 0 = 0
Frequency of 1 = 0
Frequency of 2 = 0
Frequency of 3 = 0
Frequency of 4 = 1
Frequency of 5 = 1
Frequency of 6 = 0
Frequency of 7 = 0
Frequency of 8 = 0
Frequency of 9 = 0
```

22—

```
#include <stdio.h>
int main() {
int a, b, x, y, t, gcd, lcm;
printf("Enter two integers\n");
scanf("%d%d", &x, &y);
a = x;
b = y;
while (b != 0) {
t = b;
b = a % b;
a = t;
}
gcd = a;
lcm = (x*y)/gcd;
printf("Greatest common divisor of %d and %d = %d\n", x, y, gcd);
printf("Least common multiple of %d and %d = %d\n", x, y, lcm);
return 0;
}
```

```
Enter two integers
3
8
Greatest common divisor of 3 and 8 = 1
Least common multiple of 3 and 8 = 24
```

23—

```
#include<stdio.h>
int main(){
int num,i,count,n;
printf("Enter max range: ");
scanf("%d",&n);
for(num = 1;num<=n;num++){
count = 0;
for(i=2;i<=num/2;i++){
if(num%i==0){
count++;
break;
}
}
if(count==0 && num!= 1)
printf("%d ",num);
}
return 0;
}
```

```
Enter max range: 80
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79
```

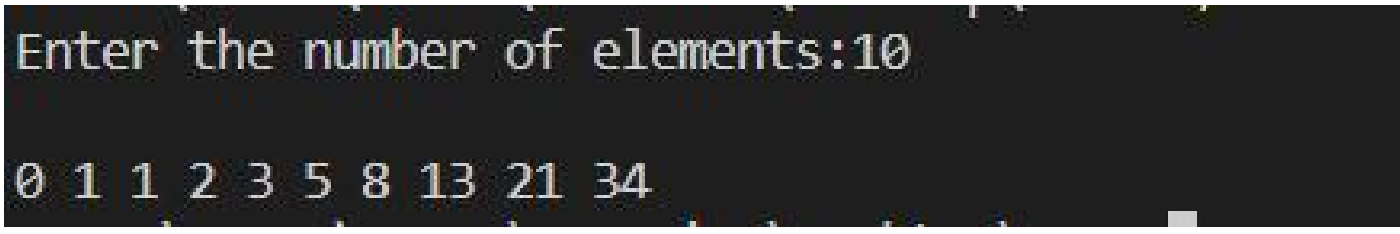
24—-

```
#include <stdio.h>
int main()
{
int n;
int sum=0;
```

```
printf("Enter a number");
scanf("%d",&n);
int k=n;
int r;
while(k!=0)
{
r=k%10;
int f=fact(r);
k=k/10;
sum=sum+f;
}
if(sum==n)
{
printf("\nNumber is a strong");
}
else
{
printf("\nNumber is not a strong");
}
return 0;
}
int fact(int r)
{
int mul=1;
for(int i=1;i<=r;i++)
{
mul=mul*i;
}
return mul;
}
```

25—

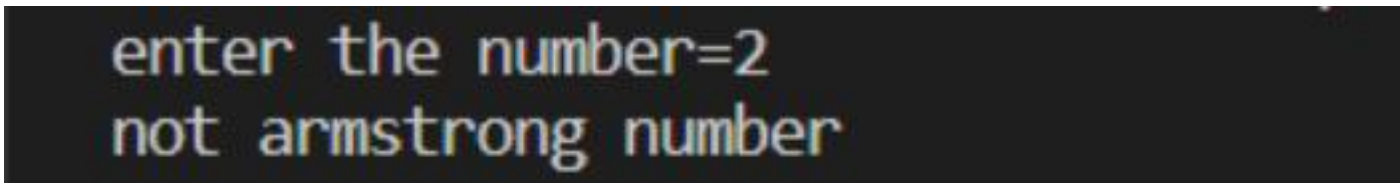
```
#include<stdio.h>
int main()
{
int n1=0,n2=1,n3,i,number;
printf("Enter the number of elements:");
scanf("%d",&number);
printf("\n%d %d",n1,n2);
for(i=2;i<number;++i)
{
n3=n1+n2;
printf(" %d",n3);
n1=n2;
n2=n3;
}
return 0;
}
```



26—

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

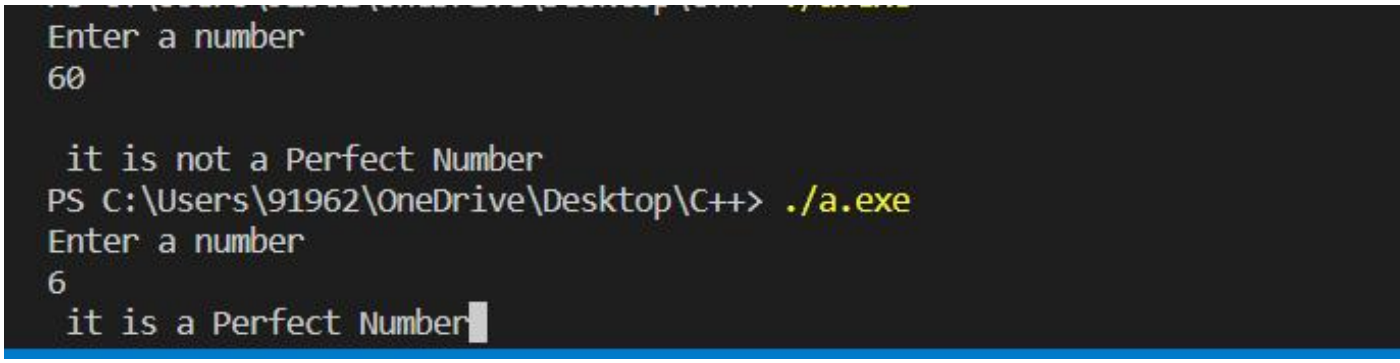
```
int n,r,sum=0,temp;
printf("enter the number=");
scanf("%d",&n);
temp=n;
while(n>0)
{
r=n%10;
sum=sum+(r*r*r);
n=n/10;
}
if(temp==sum)
printf("armstrong number ");
else
printf("not armstrong number");
return 0;
}
```



27—

```
#include<stdio.h>
#include<conio.h>
void main()
{
int num, rem, sum = 0, i;
printf("Enter a number\n");
scanf("%d", &num);
for(i = 1; i < num; i++)
{
rem = num % i;
```

```
if (rem == 0)
{
sum = sum + i;
}
}
if (sum == num)
printf(" it  is a Perfect Number");
else
printf("\n  it is not a Perfect Number");
getch();
}
```



28—

```
#include <stdio.h>
int main()
{
int base, exponent;
long long power = 1;
int i;
printf("Enter base: ");
scanf("%d", &base);
printf("Enter exponent: ");
scanf("%d", &exponent);
for(i=1; i<=exponent; i++)
{
```

```
power = power * base;
}
printf("%d ^ %d = %lld", base, exponent, power);
return 0;
}
```

```
Enter base: 4
Enter exponent: 2
4 ^ 2 = 16
```

29—

```
#include <stdio.h>
int main() {
char c;
printf("Enter a character: ");
scanf("%c", &c);
printf("ASCII value of %c = %d", c, c);
return 0;
}
```

```
Enter a character: d
ASCII value of d = 100
PS C:\Users\91962\OneDrive\Desktop\C++> gcc com.c
PS C:\Users\91962\OneDrive\Desktop\C++> ./a.exe
Enter a character: 3
ASCII value of 3 = 51
```

30—

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

```
int row, rows, i, value;
printf("Enter Number of Rows:");
scanf("%d", &rows);
for(row = 0; row < rows; row++)
{
for(i = row; i <= rows; i++)
printf(" ");
for(i = 0; i <= row; i++)
{
value = getFactorial(row)/(getFactorial(i)*getFactorial(row-i));
printf("%4d", value);
}
printf("\n");
}
return 0;
}
int getFactorial(int N){
if(N < 0){
printf("Invalid Input: factorial not defined for \
negative numbers\n");
return 0;
}
int nFactorial = 1, counter;
for(counter = 1; counter <= N; counter++){
nFactorial = nFactorial * counter;
}
return nFactorial;
}
```

31—

```
#include<stdio.h>
int main()
{
int arr[100], size, i, sum = 0;
printf("Enter array size=");
scanf("%d",&size);
printf("Enter array elements=");
for(i = 0; i < size; i++)
scanf("%d",&arr[i]);
for(i = 0; i < size; i++) sum = sum + arr[i];
printf("Sum of the array = %d\n",sum);
return 0;
}
```

32—

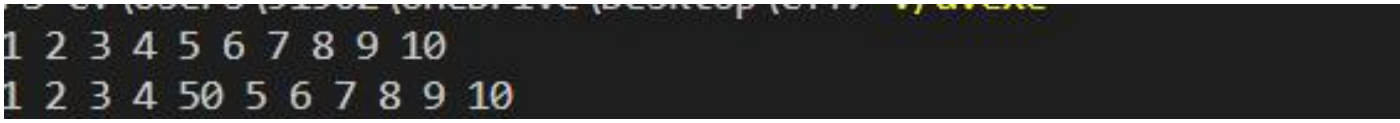
```
#include<stdio.h>
int main()
{
int i, Size, a[20], b[20];
printf("\n Please Enter the Array Size \n");
scanf("%d", &Size);
printf("\n Please Enter the Array Elements \n");
```

```
for(i = 0; i < Size; i++)
{
scanf("%d", &a[i]);
}
for(i = 0; i < Size; i++)
{
b[i] = a[i];
}
printf("\n Elements of Second Array are: \n");
for(i = 0; i < Size; i++)
{
printf("\n Value Inside Array b[%d] = %d", i, b[i]);
}
return 0;;
}
```

33—

```
#include <stdio.h>
int main()
{
int arr[100] = { 0 };
int i, x, pos, n = 10;
for (i = 0; i < 10; i++)
arr[i] = i + 1;
for (i = 0; i < n; i++)
printf("%d ", arr[i]);
printf("\n");
```

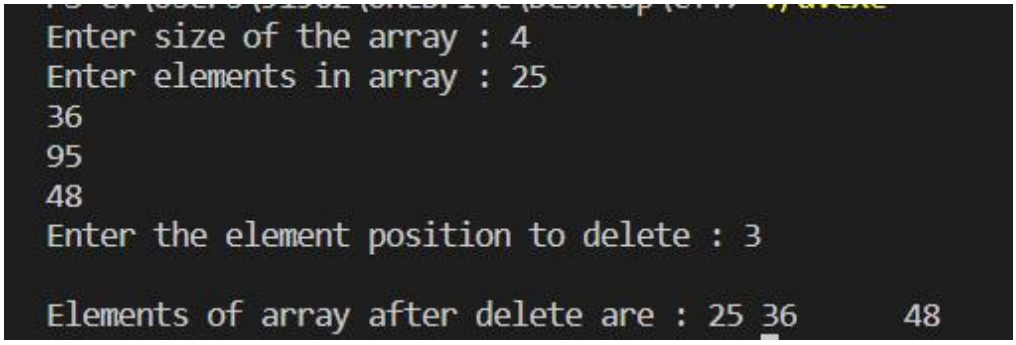
```
x = 50;
pos = 5;
n++;
for (i = n - 1; i >= pos; i--)
arr[i] = arr[i - 1];
arr[pos - 1] = x;
for (i = 0; i < n; i++)
printf("%d ", arr[i]);
printf("\n");
return 0;
}
```



34—

```
#include <stdio.h>
#define MAX_SIZE 100
int main()
{
int arr[MAX_SIZE];
int i, size, pos;
printf("Enter size of the array : ");
scanf("%d", &size);
printf("Enter elements in array : ");
for(i=0; i<size; i++)
{
scanf("%d", &arr[i]);
}
printf("Enter the element position to delete : ");
scanf("%d", &pos);
```

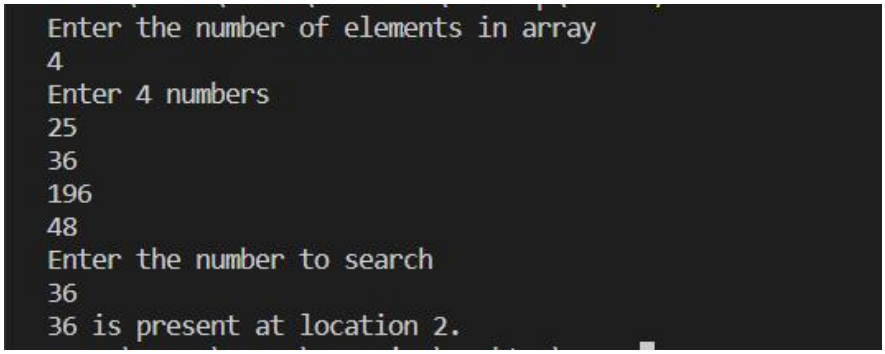
```
if(pos < 0 || pos > size)
{
printf("Invalid position! Please enter position between 1 to %d", size);
}
else
{
for(i=pos-1; i<size-1; i++)
{
arr[i] = arr[i + 1];
}
size--;
printf("\nElements of array after delete are : ");
for(i=0; i<size; i++)
{
printf("%d\t", arr[i]);
}
}
return 0;
}
```



35—

```
#include <stdio.h>
int main()
{
int array[100], search, c, number;
```

```
printf("Enter the number of elements in array\n");
scanf("%d",&number);
printf("Enter %d numbers\n", number);
for ( c = 0 ; c < number ; c++ )
scanf("%d",&array[c]);
printf("Enter the number to search\n");
scanf("%d",&search);
for ( c = 0 ; c < number ; c++ )
{
if ( array[c] == search ) /* if required element found */
{
printf("%d is present at location %d.\n", search, c+1);
break;
}
}
if ( c == number )
printf("%d is not present in array.\n", search);
return 0;
}
```



36—

```
#include <stdio.h>
void main()
{
int a[100],i,j,n,temp;
```

```
printf ("Enter the number of elements:");
scanf ("%d",&n);
printf("Enter the values:");
for (i=0;i<n;i++){
scanf("%d",&a[i]);
}
for(i=0;i<n;i++)
{
for(j=i+1;j<n;j++)
{
if(a[i]>a[j])
{
temp = a[i];
a[i]=a[j];
a[j]=temp;
}
}
}
printf("Second largest element:%d",a[n-2]);
}
```

```
Enter the number of elements:6
Enter the values:5
69
58
67
58

495
Second largest element:69
```

37—-

```
#include <stdio.h>
#define MAX_SIZE 100
int main()
```

```
{
int arr[MAX_SIZE];
int i, j, size, count = 0;
printf("Enter size of the array : ");
scanf("%d", &size);
printf("Enter elements in array : ");
for(i=0; i<size; i++)
{
scanf("%d", &arr[i]);
}
for(i=0; i<size; i++)
{
for(j=i+1; j<size; j++)
{
if(arr[i] == arr[j])
{
count++;
break;
}
}
}
printf("\nTotal number of duplicate elements found in array = %d", count);
return 0;
}
```

```
Enter size of the array : 5
Enter elements in array : 48
25
36
25
36

Total number of duplicate elements found in array = 2
```

```
#include <stdio.h>
#define SIZE 3
int main()
{
int A[SIZE][SIZE];
int num, row, col;
printf("Enter elements in matrix of size %dx%d: \n", SIZE, SIZE);
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
{
scanf("%d", &A[row][col]);
}
}
printf("Enter any number to multiply with matrix A: ");
scanf("%d", &num);
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
{
A[row][col] = num * A[row][col];
}
}
printf("\nResultant matrix c.A = \n");
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
{
printf("%d ", A[row][col]);
}
printf("\n");
```

```
}
return 0;
}
```

```
Enter elements in matrix of size 3x3:
4
5
8
69
7
8
4
5
6
Enter any number to multiply with matrix A: 45

Resultant matrix c.A =
180 225 360
3105 315 360
180 225 270
```

39—

```
#include <stdio.h>
#define SIZE 3
int main()
{
int A[SIZE][SIZE];
int row, col, sum = 0;
printf("Enter elements in matrix of size %dx%d: \n", SIZE, SIZE);
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
{
scanf("%d", &A[row][col]);
}
}
for(row=0; row<SIZE; row++)
{
sum = sum + A[row][row];
```

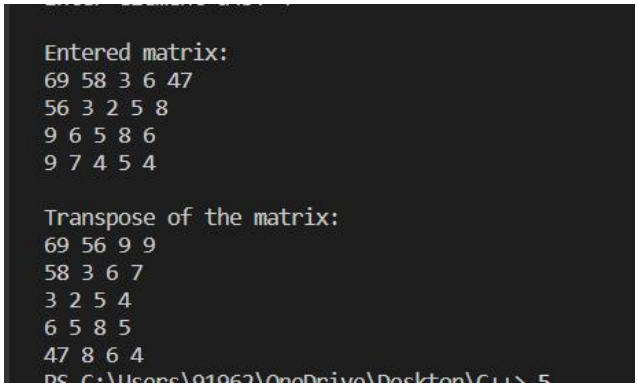
```
}
printf("\nSum of diagonal = %d", sum);
return 0;
}
```

```
Enter elements in matrix of size 3x3:
4
8
5
9
6
5
6
5
4

Sum of diagonal = 14
```

40–

```
#include <stdio.h>
int main() {
int a[10][10], transpose[10][10], r, c;
printf("Enter rows and columns: ");
scanf("%d %d", &r, &c);
printf("\nEnter matrix elements:\n");
for (int i = 0; i < r; ++i)
for (int j = 0; j < c; ++j) {
printf("Enter element a%d%d: ", i +1, j +1);
scanf("%d", &a[i][j]);
}
printf("\nEntered matrix: \n");
for (int i = 0; i < r; ++i)
for (int j = 0; j < c; ++j) {
printf("%d ", a[i][j]);
if (j == c - 1)
printf("\n");
}
for (int i = 0; i < r; ++i)
```

```
for (int j = 0; j < c; ++j) {
transpose[j][i] = a[i][j];
}
printf("\nTranspose of the matrix:\n");
for (int i = 0; i < c; ++i)
for (int j = 0; j < r; ++j) {
printf("%d ", transpose[i][j]);
if (j == r - 1)
printf("\n");
}
return 0;
}
```



41—

```
#include <stdio.h>
#define SIZE 3
int main()
{
int A[SIZE][SIZE];
int row, col, isIdentity;
printf("Enter elements in matrix 3x3: \n");
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
```

```
{
scanf("%d", &A[row][col]);
}
}
isIdentity = 1;
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
{
if(row==col && A[row][col]!=1)
{
isIdentity = 0;
}
else if(row!=col && A[row][col]!=0)
{
isIdentity = 0;
}
}
}
if(isIdentity == 1)
{
printf("\nAn Identity Matrix.\n");
for(row=0; row<SIZE; row++)
{
for(col=0; col<SIZE; col++)
{
printf("%d ", A[row][col]);
}
printf("\n");
}
}
```

```
else
{
printf("Not Identity Matrix");
}
return 0;
}
```

```
PS C:\Users\91962\OneDrive\Desktop\C++>
Enter elements in matrix 3x3:
4
5
6
8
9
5
76
2
56
Not Identity Matrix
```

42—-

```
#include <stdio.h>
#include <stdlib.h>
int main(void)
{
int i, n, j, k;
printf("Enter the size of the first array: ");
scanf("%d", &n);
int arr1[n];
printf("Enter the elements of the first array: \n");
for (i = 0; i < n; i++)
{
scanf("%d", &arr1[i]);
}
printf("Enter the size of the second array: ");
scanf("%d", &k);
int arr2[k];
```

```
printf("Enter the elements of the second array: \n");
for (j = 0; j < k; j++)
{
scanf("%d", &arr2[j]);
}
int arr3[n + k];
i = j = 0;
int in;
for (in = 0; in < n + k; in ++)
{
if (i < n && j < k)
{
if (arr1[i] < arr2[j])
{
arr3[in] = arr1[i];
i++;
}
else
{
arr3[in] = arr2[j];
j++;
}
}
else if (i < n)
{
arr3[in] = arr1[i];
i++;
}
else
{
arr3[in] = arr2[j];
```

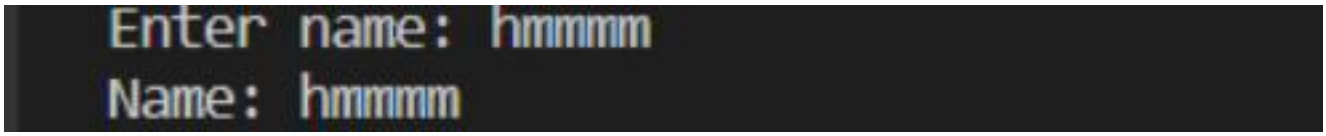
```
j++;
}
}
printf("The merged array is: \n");
for (in = 0; in < n + k; in++)
{
printf("%d ", arr3[in]);
}
printf("\n");
return 0;
}
```

```
Enter the size of the first array: 5
Enter the elements of the first array:

45
4
5
9
8
Enter the size of the second array: 4
Enter the elements of the second array:
5
4
8
9
The merged array is:
5 4 8 9 45 4 5 9 8
```

43—

```
#include<stdio.h>
int main()
{
char name[30];
printf("Enter name: ");
gets(name); //Function to read string from user.
printf("Name: ");
puts(name); //Function to display string.
return 0;
```

}



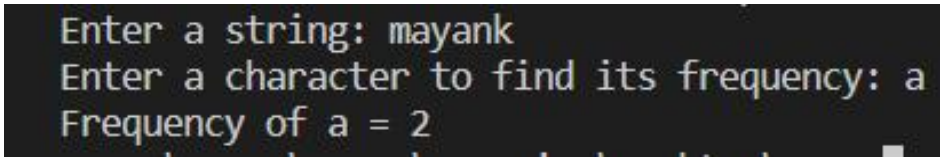
44—

```
#include <stdio.h>
#include <string.h>
int main()
{
char str[] = { "abbba" };
int l = 0;
int h = strlen(str) - 1;
while (h > l) {
if (str[l++] != str[h--]) {
printf("%s is not a palindrome\n", str);
return 0;
}
}
printf("%s is a palindrome\n", str);
return 0;
}
```

45—

```
#include <stdio.h>
int main() {
char str[1000], ch;
int count = 0;
printf("Enter a string: ");
fgets(str, sizeof(str), stdin);
```

```
printf("Enter a character to find its frequency: ");
scanf("%c", &ch);
for (int i = 0; str[i] != '\0'; ++i) {
if (ch == str[i])
++count;
}
printf("Frequency of %c = %d", ch, count);
return 0;
}
```



46—-

```
#include <stdio.h>
int main()
{
float radius, diameter, circumference, area;
printf("Enter radius of circle: ");
scanf("%f", &radius);
diameter = 2 * radius;
circumference = 2 * 3.14 * radius;
area = 3.14 * (radius * radius);
printf("Diameter of circle = %.2f units \n", diameter);
printf("Circumference of circle = %.2f units \n", circumference);
printf("Area of circle = %.2f sq. units ", area);
return 0;
}
```

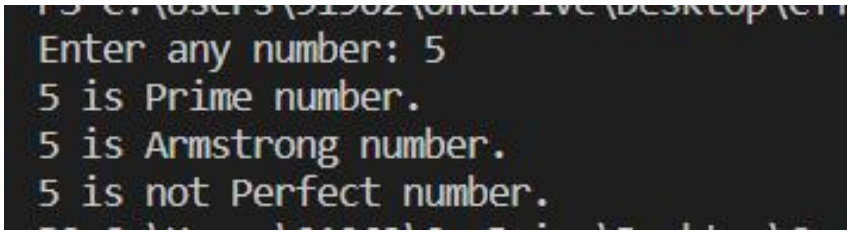
```
Enter radius of circle: 45
Diameter of circle = 90.00 units
Circumference of circle = 282.60 units
Area of circle = 6358.50 sq. units
```

47—

```
#include <stdio.h>
#include <math.h>
int isPrime(int num);
int isArmstrong(int num);
int isPerfect(int num);
int main()
{
int num;
printf("Enter any number: ");
scanf("%d", &num);
if(isPrime(num))
{
printf("%d is Prime number.\n", num);
}
else
{
printf("%d is not Prime number.\n", num);
}
if(isArmstrong(num))
{
printf("%d is Armstrong number.\n", num);
}
else
{
printf("%d is not Armstrong number.\n", num);
}
if(isPerfect(num))
```

```
{
printf("%d is Perfect number.\n", num);
}
else
{
printf("%d is not Perfect number.\n", num);
}
return 0;
}
int isPrime(int num)
{
int i;
for(i=2; i<=num/2; i++)
{
if(num%i == 0)
{
return 0;
}
}
return 1;
}
int isArmstrong(int num)
{
int lastDigit, sum, originalNum, digits;
sum = 0;
originalNum = num;
digits = (int) log10(num) + 1;
while(num > 0)
{
lastDigit = num % 10;
sum = sum + round(pow(lastDigit, digits));
```

```
num = num / 10;
}
return (originalNum == sum);
}
int isPerfect(int num)
{
int i, sum, n;
sum = 0;
n = num;
for(i=1; i<n; i++)
{
if(n%i == 0)
{
sum += i;
}
}
return (num == sum);
}
```



48—

```
#include <stdio.h>
int main()
{
int first, second, *p, *q, sum;
printf("Enter two integers to add\n");
scanf("%d%d", &first, &second);
p = &first;
```

```
q = &second;
sum = *p + *q;
printf("Sum of the numbers = %d\n", sum);
return 0;
}
```

```
Enter two integers to add
45
85
Sum of the numbers = 130
```

49—

```
#include<stdio.h>
void swap(int *,int *);
void main( )
{
int n1,n2;
printf("Enter the two numbers to be swapped\n");
scanf("%d%d",&n1,&n2);
printf("\nThe values of n1 and n2 in the main function before calling the swap function are
n1=%d n2=%d",n1,n2);
swap(&n1,&n2);
printf("\nThe values of n1 and n2 in the main function after calling the swap function are
n1=%d n2=%d",n1,n2);
}
void swap(int *n1,int *n2)
{
int temp;
temp=*n1;
*n1=*n2;
*n2=temp;
printf("\nThe values of n1 and n2 in the swap function after swapping are n1=%d
```

n2=%d",*n1,*n2);

}

```
Enter the two numbers to be swapped
45
65

The values of n1 and n2 in the main function before calling the swap function are n1=45 n2=65
The values of n1 and n2 in the swap function after swapping are n1=65 n2=45
The values of n1 and n2 in the main function after calling the swap function are n1=65 n2=45
```

50–

```
#include <stdio.h>
#define MAX_SIZE 100
void printArray(int arr[], int size);
int main()
{
int source_arr[MAX_SIZE], dest_arr[MAX_SIZE];
int size, i;
int *source_ptr = source_arr;
int *dest_ptr = dest_arr;
int *end_ptr;
printf("Enter size of array: ");
scanf("%d", &size);
printf("Enter elements in array: ");
for (i = 0; i < size; i++)
{
scanf("%d", (source_ptr + i));
}
end_ptr = &source_arr[size - 1];
printf("\nSource array before copying: ");
printArray(source_arr, size);
printf("\nDestination array before copying: ");
printArray(dest_arr, size);
while(source_ptr <= end_ptr)
```

```
{
*dest_ptr = *source_ptr;
source_ptr++;
dest_ptr++;
}
printf("\n\nSource array after copying: ");
printArray(source_arr, size);
printf("\nDestination array after copying: ");
printArray(dest_arr, size);
return 0;
}
void printArray(int *arr, int size)
{
int i;
for (i = 0; i < size; i++)
{
printf("%d, ", *(arr + i));
}
}
```

AND

```
#include <stdio.h>
#define MAX_SIZE 100
void printArr(int *arr, int size);
int main()
{
int arr[MAX_SIZE];
int size;
int *left = arr;
int *right;
printf("Enter size of array: ");
scanf("%d", &size);
```

```
right = &arr[size - 1];
printf("Enter elements in array: ");
while(left <= right)
{
scanf("%d", left++);
}
printf("\nArray before reverse: ");
printArr(arr, size);
left = arr;
while(left < right)
{
*left ^= *right;
*right ^= *left;
*left ^= *right;
left++;
right--;
}
printf("\nArray after reverse: ");
printArr(arr, size);
return 0;
}
void printArr(int * arr, int size)
{
int * arrEnd = (arr + size - 1);
while(arr <= arrEnd)
{
printf("%d, ", *arr);
arr++;
}
}
```

```
Enter size of array: 4
Enter elements in array: 5
6
3

2

Source array before copying: 5, 6, 3, 2,
Destination array before copying: 2002224077, -32, 0, 29889504,

Source array after copying: 5, 6, 3, 2,
Destination array after copying: 5, 6, 3, 2,
```

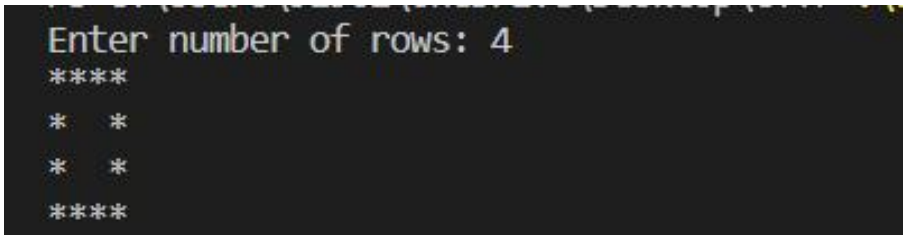
51—

```
#include <stdio.h>

int main()

{

int i, j, N;

printf("Enter number of rows: ");

scanf("%d", &N);

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

{

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

{

printf("*");

}

printf("\n");

}

return 0;

}
```

```
Enter number of rows: 4
****
****
****
****
```

52—

```
#include <stdio.h>
int main()
{
int i, j, N;
printf("Enter number of rows: ");
scanf("%d", &N);
for(i=1; i<=N; i++)
{
for(j=1; j<=N; j++)
{
if(i==1 || i==N || j==1 || j==N)
{
printf("*");
}
else
{
printf(" ");
}
}
printf("\n");
}
return 0;
}
```



53—

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

```
int main()
{
int i, j, N;
printf("Enter number of rows: ");
scanf("%d", &N);
for(i=1; i<=N; i++)
{
for(j=1; j<=N; j++)
{
if(i==1 || i==N || j==1 || j==N || i==j || j==(N - i + 1))
{
printf("*");
}
else
{
printf(" ");
}
}
printf("\n");
}
return 0;
}
```

54—

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

```
int i, j, rows;
printf("Enter rows: ");
scanf("%d", &rows);
for(i=1; i<=rows; i++)
{
for(j=1; j<=rows - i; j++)
{
printf(" ");
}
for(j=1; j<=rows; j++)
{
printf("*");
}
printf("\n");
}
return 0;
}
```

55—-

```
#include <stdio.h>
int main()
{
int i, j, rows;
printf("Enter rows : ");
scanf("%d", &rows);
for(i=1; i<=rows; i++)
```

```
{
for(j=1; j<=rows-i; j++)
{
printf(" ");
}
for(j=1; j<=rows; j++)
{
if(i==1 || i==rows || j==1 || j==rows)
printf("*");
else
printf(" ");
}
printf("\n");
}
return 0;
}
```