//1) Given number greater than 20 or not

```
#include <stdio.h>
int main()
{
   int n;
   printf("Enter a Number:");
   scanf("%d",&n);
   if(n>20){
      printf("%d is greater than 20",n);
   }
   else {
      printf("%d is smaller than 20",n);
   }
}
```

//2)Given number is positive or negative or zero

```
#include<stdio.h>
int main(){
   int n;
   printf("Enter a Number:");
   scanf("%d",&n);
   if(n>0){
      printf("%d is a positive number",n);
   }
   else if(n<0){
      printf("%d is a negative number",n);
   }
   else{
```

```
    printf("%d is zero",n);
  }
}
```

//3)Leap year or not

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

//4)Adding the digits in a number

```
#include<stdio.h>
int addDigits(int num){
  while(num>=10){
    int sum=0;
    while(num>0){
      sum+=num%10;
      num/=10;
      }
    num=sum;
```

```
    }
    printf("%d",num);
}
int main(){
    addDigits(45);
}
```

//5)Finding Prime numbers

```
#include<stdio.h>
int main(){
    int n,i,count=0;
    printf("Enter a Number:");
    scanf("%d",&n);
    for(int i=1;i<n;i++){
        if(n%i==0){
            count++;
        }
    }
    if(count==1){
        printf("%d is a prime Number",n);
    }
    else {
        printf("%d is not a prime Number",n);
    }
}
```

//6)Days finding using Switch Case

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

```
int n;
printf("Enter a Number:");
scanf("%d",&n);
switch(n)
{
   case 1:
    printf("SUNDAY");
    break;
    case 2 :
    printf("MONDAY");
    break;
    case 3:
    printf("TUESDAY");
    break;
    case 4:
    printf("WEDNESDAY");
    break;
    case 5:
    printf("THURSDAY");
    break;
    case 6:
    printf("FRIDAY");
    break;
    case 7:
    printf("SATURDAY");
    break;
    default:
    printf("INVALID INPUT");
```

```
    }
    return 0;
}
```

//7)Fibonaaci Series

```
#include<stdio.h>
int main(){
    int n;
    printf("Enter a Number: ");
    scanf("%d",&n);
    int a=0,b=1,i;
    printf("%d %d ",a,b);
    for(i=3;i<=n;i++){
        int c=a+b;
        printf("%d ",c);
        a=b;
        b=c;
    }
    return 0;
}
```

//8)Minimum number of cuts for equal parts of circle

```
#include <stdio.h>
int main() {
    int n;
    printf("Enter number of slices: ");
    scanf("%d", &n);
```

```
    if (n == 1) {
        printf("Minimum cuts = 0\n");
    }
    else if (n % 2 == 0) {
        printf("Minimum cuts = %d\n", n / 2);
    }
    else {
        printf("Minimum cuts = %d\n", n);
    }
    return 0;
}
```

//9)Game for predicting the computer generated number

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
int main() {
    int number, guess;
    srand(time(0));
    number = rand() % 100 + 1;
    printf("Guess a number between 1 and 100: ");
    guess=0;
    while(guess!=number){
    printf("Enter your guess:");
    scanf("%d", &guess);
    if(guess>number){
        printf("Too high!try again\n");
    }
```

```
   else if(guess<number){
      printf("Too low !try again\n");
   }
   else{
      printf("Correct!you guessed the number\n");
   }
}
}
```

//10)Adding the even and odd number in array

```
#include <stdio.h>
int main() {
    int n,even=0,odd=0;
    scanf("%d",&n);
    int arr[n];
   for(int i=0;i<n;i++){
      scanf("%d",&arr[i]);
   }
    for(int i=0;i<n;i++){
       if(arr[i]%2==0){
          even=even+arr[i];
       }
       else{
          odd=odd+arr[i];
       }
    }
   printf("%d %d",even,odd);
   return 0;
```

```
}
```

//11)Moving zeros in an array

```
#include <stdio.h>
void moveZeros(int *nums, int numsSize) {
   int j = 0;
   for (int i = 0; i < numsSize; i++) {
      if (nums[i] != 0) {
         int temp = nums[i];
         nums[i] = nums[j];
         nums[j] = temp;
         j++;
      }
   }
}
int main() {
   int nums[] = {0, 1, 0, 3, 12};
   int size = sizeof(nums) / sizeof(nums[0]);
   moveZeros(nums, size);
   printf("Output: ");
   for (int i = 0; i < size; i++) {
      printf("%d ", nums[i]);
   }
   return 0;
}
```

//12)Palindrome of a number

```
#include<stdio.h>
int main()
{
   int n,reverse=0,dig,temp;
   scanf("%d",&n);
   temp=n;
   while(n>0){
      dig =n%10;
      rev=rev*10+dig;
      n=n/10;
   }
   if(reverse==temp){
      printf("it is a palindrome");
   }
   else{
      printf("it is not a palindrome");
   }
   return 0;
}
```

//13)Reverse the array

```
#include <stdio.h>
int main() {
   int n;
   scanf("%d",&n);
   int arr[n];
   for(int i=0;i<n;i++){
```

```
    scanf("%d",&arr[i]);
  }
  for(int i=n-1;i>=0;i--){
    printf("%d ",arr[i]);
  }
  return 0;
}
```

//14)Sum of elements in an array

```
#include <stdio.h>
int main() {
  int n;
  scanf("%d",&n);
   int arr[n];
   for(int i=0;i<n;i++){
     scanf("%d",&arr[i]);
   }
   int sum=0;
   for(int i=0;i<n;i++){
     sum=sum+arr[i];
   }
   printf("%d",sum);
   return 0;
}
```

//15)sum of even and odd elements and even and odd index elements

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

```
int main() {
    int n,even=0,odd=0,evenin=0,oddin=0;
    scanf("%d",&n);
    int arr[n];
   for(int i=0;i<n;i++){
      scanf("%d",&arr[i]);
   }
    for(int i=0;i<n;i++){
       if(arr[i]%2==0){
          even=even+arr[i];
       }
       else{
          odd=odd+arr[i];
       }
    }
   for(int i=0;i<n;i++){
      if(i%2==0){
         evenin=evenin+arr[i];
      }
      else
         oddin=oddin+arr[i];
   }
   printf("%d %d %d %d",even,odd,evenin,oddin);
   return 0;

}
```

//16)Descending stars

```
#include <stdio.h>
int main(){
   int n;
   scanf("%d",&n);
   for(int i=1;i<=n;i++){
      for(int j=i;j<=n;j++){
         printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

//17)Staircase of stars

```
#include <stdio.h>
int main(){
   int n;
   scanf("%d",&n);
   for(int i=0;i<n;i++){
      for(int j=0;j<=i;j++){
         printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

//18)Rectangle Pattern

```
#include <stdio.h>
int main(){
   int a,b;
   scanf("%d %d",&a,&b);
   for(int i=1;i<=a;i++){
      for(int j=1;j<=b;j++){
         printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

//19)Armstrong Number

```
#include<stdio.h>
int main(){
   int n,sum=0,digit,temp;
   scanf("%d",&n);
   temp=n;
   while(n>0){
      digit=n%10;
      sum=sum+(digit*digit*digit);
      n=n/10;
      }
      if(sum == temp){
      printf("it is an armstrong number");
      }
```

```
    else{
    printf("it is not an armstrong number");
    }
    return 0;
}
```

//20)Count of common factors

```
#include<stdio.h>
int main()
{
  int a,b,i,count=0;
  scanf("%d %d",&a,&b);
  for(i=1;i <= a && i <= b;i++){
    if(a % i == 0 && b % i == 0){
      count++;
    }
  }
  printf("count of common factors:%d",count);
  return 0;
}
```

//21)Tribonaaci Series

```
#include <stdio.h>
int main() {
  int n, a = 0, b = 1, c=1,d, i;
   scanf("%d", &n);
    for (i = 3; i <= n; i++) {
      d= a + b+c;
```

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

//22)Filled Alphabet pyramid

```
#include <stdio.h>
int main() {
    int N;
    scanf("%d", &N);
    for (int i = 1; i <= N; i++) {
        // Leading spaces for center alignment
        for (int s = 1; s <= N - i; s++) {
            printf("  ");
        }
        // Print alphabets
        char ch = 'A';
        for (int j = 1; j <= 2 * i - 1; j++) {
            printf("%c ", ch);
            ch++;
        }

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

```
    return 0;
}
```

//23)Hollow Diamond Pattern

```
#include <stdio.h>
int main() {
    int N;
    scanf("%d", &N);
    int totalRows = 2 * N - 1;
    for (int i = 1; i <= totalRows; i++) {
        int spaces, stars;
        if (i <= N) {
            spaces = N - i;
            stars = 2 * i - 1;
        } else {
            spaces = i - N;
            stars = 2 * (totalRows - i) + 1;
        }
        // Leading spaces
        for (int s = 0; s < spaces; s++) {
            printf(" ");
        }
        // Hollow stars
        if (stars == 1) {
            printf("*");
        } else {
            printf("*");
```

```
        for (int s = 0; s < stars - 2; s++) {
            printf(" ");
        }
        printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

//24)Rectangle Pattern

```
#include <stdio.h>
int main(){
   int a,b;
   scanf("%d %d",&a,&b);
   for(int i=1;i<=a;i++){
      for(int j=1;j<=b;j++){
         printf("*");
      }
      printf("\n");
   }
   return 0;
}
```

//25)Descending Star Pattern

```
#include <stdio.h>
int main() {
 int n,i,j;
```

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