Program 1

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

int isPrime(int n)
{
    int m = sqrt(n);
    int i;
    if (n<2) return 0;
    for(i=2;i<=m;i++)
    if (n%i==0) return 0;
    return 1;
}

int main()
{
    int n,i;
    do
    {
        printf("Nhap n:");
        scanf("%d", &n);
    }
    while (n<2);
    for(i=2;i<=n;i++){
        if(isPrime(i)==1){
            printf("%d ", i);
        }
    }
    getchar();
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p1.exe
Nhap n:100
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89 97
--------------------------------
Process exited after 2.149 seconds with return value 0
Press any key to continue . . .
```

Program 2

```c
#include<stdio.h>
int validDate(int d, int m, int y){
    int maxd = 31;
    if (d<1||d>31||m<1||m>12) return 0;
    if (m==4||m==6||m==9||m==11) maxd=30;
    else if (m==2){
        if (y%400==0 || y%4==0 && y%100!=0) maxd=29;
        else maxd=28;
    }
    return d<maxd;
}
int main(){
    int d,m,y;
    printf("Nhap ngay: ");
    scanf("%d", &d);
    printf("Nhap thang: ");
    scanf("%d", &m);
    printf("Nhap nam: ");
    scanf("%d", &y);

    if (validDate(d,m,y)==1){
        printf("Ngay %d/%d/%d la valid date\n", d,m,y);
    } else {
        printf("Ngay %d/%d/%d ko la valid date", d,m,y);
    }
}
```

```
Nhap ngay: 12
Nhap thang: 12
Nhap nam: 2022
Ngay 12/12/2022 la valid date

--------------------------------
Process exited after 12.62 seconds with return value 30
Press any key to continue . . .
```

```
C:\Users\phamm\Documents\Ws3 p2.exe
Nhap ngay: 12
Nhap thang: 30
Nhap nam: 2022
Ngay 12/30/2022 ko la valid date
--------------------------------
Process exited after 5.251 seconds with return value 32
Press any key to continue . . .
```

Program 3

```c
#include<stdio.h>
int getRelPos(double x, double y, double r){
    double d2=x*x + y*y;
    double r2=r*r;
    if (d2<r2) return 1;
    else if (d2==r2) return 0;
    return -1;
}
int main() {
    double x,y,r,result;
    printf("Nhap x: ");
    scanf("%lf", &x);
    printf("Nhap y: ");
    scanf("%lf", &y);
    do {
        printf("Nhap r: ");
        scanf("%lf", &r);
    }
    while(r<0);
    result = getRelPos(x,y,r);
    if (result == 1){
        printf("The point is in the circle");
    }else if (result == 0){
        printf("The point is on the circle");
    }else {
        printf("The point is out the circle");
        return 0;
    }
}
```

```
C:\Users\phamm\Documents\Ws3 p3.exe
Nhap x: 1
Nhap y: 2
Nhap r: 3
The point is in the circle
--------------------------------
Process exited after 2.168 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\phamm\Documents\Ws3 p3.exe
Nhap x: 3
Nhap y: 4
Nhap r: 5
The point is on the circle
--------------------------------
Process exited after 3.345 seconds with return value 0
Press any key to continue . . .
```

```
C:\Users\phamm\Documents\Ws3 p3.exe
Nhap x: 6
Nhap y: 5
Nhap r: 4
The point is out the circle
--------------------------------
Process exited after 16.33 seconds with return value 0
Press any key to continue . . .
```

Program 4

```c
#include<stdio.h>
double factorial(int n){
    double p=1;
    int i;
    for (i=2;i<=n;i++) p*=i;
    return p;
}
int main(){
    int n;
    do{
        printf("Nhap n: ");
        scanf("%d", &n);
    }
    while (n<=0);
    printf("Factorial: %.lf ", factorial(n));
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p4.exe
Nhap n: 5
Factorial: 120
--------------------------------
Process exited after 1.772 seconds with return value 0
Press any key to continue . . .
```

Program 5

```c
#include<stdio.h>
double fibo (int n){
    int t1=1,t2=1,f=1,i;
    for (i=3;i<=n;i++){
        f=t1+t2;
        t1=t2;
        t2=f;
    }
    return f;
}
int main(){
    int n;
    do{
        printf("Nhap n: ");
        scanf("%d", &n);
    }
    while (n<1);
    printf("Gia tri n la: %.lf", fibo(n));
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p5.exe
Nhap n: 13
Gia tri n la: 233
--------------------------------
Process exited after 1.02 seconds with return value 0
Press any key to continue . . .
```

```
Compilation results...
--------
- Errors: 0
```

Program 6

```c
#include<stdio.h>
int isFibonacci (int n){
    int t1=2, t2=1, f=1;
    if(n==1) return 1;
    while (f<n)
    { f=t1 + t2;
      t1=t2;
      t2=f;
    }
    return n==f;
}
int main(){
    int n;
    do{
        printf("Nhap n: ");
        scanf("%d", &n);
    }   while (n<1);
    if (isFibonacci(n) == 1){
        printf("It is a Fibonacci element");
    } else {
      printf("It is not a Fibonacci element");
    }
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p6.exe
Nhap n: 10
It is not a Fibonacci element
--------------------------------
Process exited after 1.262 seconds with return valu
Press any key to continue . . .
```

```
C:\Users\phamm\Documents\Ws3 p6.exe
Nhap n: 1
It is a Fibonacci element
--------------------------------
Process exited after 0.4532 seconds with return val
Press any key to continue . . .
```

Program 7

```c
#include<stdio.h>
int sumDigits (int n)
{ int sum=0;
  do
  {
    int remainder = n%10;
    n = n/10;
    sum += remainder;
  }
  while(n>0);
  return sum;
}
int main(){
    int n, S;
    do
    {
        printf("\nNhap n= ");
        scanf("%d", &n);
        if (n>=0)
        {
            S = sumDigits(n);
            printf("S= %d", S);
        }
    } while (n>=0);
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p7.exe

Nhap n= 23
S= 5
Nhap n= 19
S= 10
Nhap n= 25
S= 7
Nhap n= 90
S= 9
Nhap n= -9

--------------------------------
Process exited after 11.11 seconds with return value 0
Press any key to continue . . .
```

Program 8

```c
#include<stdio.h>
double makeDouble(int ipart, int fraction)
{
    double d_f = fraction;
    while (d_f>=1) d_f = d_f/10;
    if (ipart<0) return ipart - d_f;
    return ipart + d_f;
}
int main()
{
    int ipart, fraction;
    double value;
    printf("Nhap ipart: ");
    scanf("%d", &ipart);
    do{
        printf("Nhap fraction: ");
        scanf("%d", &fraction);
    }while (fraction<0);
    value = makeDouble(ipart,fraction);
    printf("Value : %lf", value);
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p8.exe
Nhap ipart: 20
Nhap fraction: 30
Value : 20.300000
--------------------------------
Process exited after 4.424 seconds with return value 0
Press any key to continue . . .
```

Program 9

```c
#include<stdio.h>
int gcd(int a,int b)
{ while (a!=b)
    if (a>b) {
        a-=b;
    } else {
        b-=a;
    }
    return a;
}
int lcm(int a, int b)
   { return a*b/gcd(a,b);
}
int main()
{
    int a,b,d,m;
    do{
        printf("Nhap a: ");
        scanf("%d", &a);
        printf("Nhap b: ");
        scanf("%d", &b);
    }
    while (a<=0 || b<=0);
    d = gcd(a,b);
    m = lcm(a,b);
    printf("d= %d", d);
    printf("m= %d", m);
    return 0;
}
```

```
C:\Users\phamm\Documents\Ws3 p9.exe
Nhap a: 20
Nhap b: 30
d= 10m= 60
--------------------------------
Process exited after 4.559 seconds with return value 0
Press any key to continue . . .
```

Program 10

```c
#include<stdio.h>
void printMinMaxDigits(int n){
    int digit;
    int min,max;
    digit=n% 10;
    n=n/10;
    min = max = digit;
    while (n>0)
    {
        digit = n%10;
        n=n/10;
        if (min > digit) min=digit;
        if (max < digit) max=digit;
    }
    printf("Max digit: %d\n", max);
    printf("Min digit: %d\n", min);
}
int main(){
    int n;
    do {
        printf("Nhap n: ");
        scanf("%d", &n);
        printMinMaxDigits(n);
    }   while (n<0);
}
```

```
C:\Users\phamm\Documents\Ws3 p10.exe
Nhap n: 15268
Max digit: 8
Min digit: 1

--------------------------------
Process exited after 4.15 seconds with return value 15268
Press any key to continue . . .
```