

1.

```
#include <iostream>
#include <windows.h>
#include <time.h>
#include <cstdlib>
#include <cctype>
using namespace std;
void gotoxy(int x, int y)
{
    HANDLE hConsoleOutput;
    COORD dwCursorPosition;
    cout.flush();
    dwCursorPosition.X = x;
    dwCursorPosition.Y = y;
    hConsoleOutput = GetStdHandle(STD_OUTPUT_HANDLE);
    SetConsoleCursorPosition(hConsoleOutput, dwCursorPosition);
}

int main()
{
    int i, n, list[100];
    char ch;
    do
    {
        system("cls");
        cout << "Banyak Bilangan Acak (Maksimum 100) : ";
        do
        {
            gotoxy(40, 0);
            cin >> n;
        } while ((n <= 0) or (n > 100));
        srand(time(0));
        for (i = 0; i < n; i++)
        {
            list[i] = rand() % 1000;
            cout << list[i] << ' ';
            if ((i + 1) % 12 == 0)
            {
                cout << endl;
            }
        }
        gotoxy(20, 24);
        cout << "Mau Ulang Lagi ? [Y/N] ";
        do
        {
            cin >> ch;
            ch = (char)toupper(ch);
        } while (!(ch == 'Y' && ch == 'N'));
        cout << ch;
    } while (ch == 'Y');
    return 0;
}
```

2.

```
Program Bilangan_random;
uses crt;
var
```

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list: Array[1..100] of integer;
i, n, j, dummy: integer;
ch : char;
begin
Repeat
clrscr;
Write('Banyak Bilangan Acak (Maksimum 100) : ');
repeat
gotoxy(40,1); clrscr; readln(n);
until (n > 0) and (n <= 100);
randomize;
// menambahkan bilangan random ke list
for i:= 1 to n do
begin
list[i] := random(1000);
end;

for i:= 1 to n do
begin
for j := 1 to n - i do
begin
dummy := 0;
if (list[j] > list[j+1]) then
begin
dummy := list[j];
list[j] := list[j+1];
list[j+1] := dummy;
end;
end;
end;

for i:= 1 to n do
begin
write(list[i]:5);
if (i mod 12 = 0) then writeln;
end;

gotoxy(20,24); write('Mau Ulang Lagi ? [Y/N]');
repeat ch := readkey; Until upcase(ch) in ['Y','N'];
until upcase(ch) = 'N';
end.

```

```

#include <iostream>
#include <windows.h>
#include <time.h>
#include <cstdlib>
#include <cctype>
using namespace std;
void gotoxy(int x, int y)
{
HANDLE hConsoleOutput;
COORD dwCursorPosition;
cout.flush();
dwCursorPosition.X = x;
dwCursorPosition.Y = y;
hConsoleOutput = GetStdHandle(STD_OUTPUT_HANDLE);

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```

SetConsoleCursorPosition(hConsoleOutput, dwCursorPosition);
}

int main()
{
    int i, n, list[100];
    char ch;
    do {
        do
        {
            system("cls");
            cout << "Banyak Bilangan Acak (Maksimum 100) : ";

            gotoxy(40, 0);
            cin >> n;
        } while ((n <= 0) or (n > 100));

        srand(time(0));

        for (i = 0; i < n; i++)
        {
            list[i] = rand() % 1000;
        }

        for (i = 0; i < n; i++)
        {
            for(int j = 0; j < n - i - 1; j++) {
                if(list[j] > list[j+1]){
                    int dummy = list[j];
                    list[j] = list[j+1];
                    list[j+1] = dummy;
                }
            }
        }

        for (i = 0; i < n; i++)
        {
            cout << list[i] << ' ';
            if ((i + 1) % 12 == 0)
            {
                cout << endl;
            }
        }

        gotoxy(20, 24);
        cout << "Mau Ulang Lagi ? [Y/N] ";
        do
        {
            cin >> ch;
            ch = (char) toupper(ch);
            //if ((ch > 90)) ch -= 32;
        } while (!(ch == 'Y' || ch == 'N'));

    } while(ch == 'Y');

    return 0;
}

```

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}
```

3.

Linear search

```
Program Bilangan_random;
uses crt;
var
list: Array[1..100] of integer;
i, n,j, dummy, angka, indeks: integer;
ch : char;
kondisi : boolean;
begin
Repeat
clrscr;
Write('Banyak Bilangan Acak (Maksimum 100) : ');
repeat
gotoxy(40,1); clrscr; readln(n);
until (n > 0) and (n <= 100);
randomize;
// menambahkan bilangan random ke list
for i:= 1 to n do
begin
list[i] := random(1000);
end;

for i:= 1 to n do
begin
for j := 1 to n - i do
begin
dummy := 0;
if (list[j] > list[j+1]) then
begin
dummy := list[j];
list[j] := list[j+1];
list[j+1] := dummy;
end;
end;
end;

for i:= 1 to n do
begin
write(list[i]:5);
if (i mod 12 = 0) then writeln;
end;
writeln;
write('Ingin mencari angka berapa ? '); readln(angka);

for i := 1 to n do
begin
if list[i] = angka then
begin
indeks := i;
kondisi := false;
break
end
else kondisi := true;
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end;
if kondisi = true then writeln('angka tidak ada pada barisan')
else writeln('angka ada pada barisan pada urutan : ', indeks);

gotoxy(20,24); write('Mau Ulang Lagi ? [Y/N]');
repeat ch := readkey; Until upcase(ch) in ['Y','N'];
until upcase(ch) = 'N';
end.

```

```

#include <iostream>
#include <windows.h>
#include <time.h>
#include <cstdlib>
#include <cctype>
using namespace std;
void gotoxy(int x, int y)
{
    HANDLE hConsoleOutput;
    COORD dwCursorPosition;
    cout.flush();
    dwCursorPosition.X = x;
    dwCursorPosition.Y = y;
    hConsoleOutput = GetStdHandle(STD_OUTPUT_HANDLE);
    SetConsoleCursorPosition(hConsoleOutput, dwCursorPosition);
}

int main()
{
    int i, n, list[100];
    char ch;
    int angka, indeks;
    bool kondisi;
    do {
        do
        {
            system("cls");
            cout << "Banyak Bilangan Acak (Maksimum 100) : ";

            gotoxy(40, 0);
            cin >> n;
        } while ((n <= 0) or (n > 100));

        srand(time(0));

        for (i = 0; i < n; i++)
        {
            list[i] = rand() % 1000;
        }

        for (i = 0; i < n; i++)
        {
            for(int j = 0; j < n - i - 1; j++) {
                if(list[j] > list[j+1]){
                    int dummy = list[j];
                    list[j] = list[j+1];
                    list[j+1] = dummy;
                }
            }
        }
    }
}

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    }
}

for (i = 0; i < n; i++)
{
    cout << list[i] << ' ';
    if ((i + 1) % 12 == 0)
    {
        cout << endl;
    }
}

cout << endl;
cout << "ingin mencari angka berapa ? ";

cin >> angka;
for (i = 0; i < n; i++) {
    if(list[i] == angka) {
        indeks = i;
        kondisi = false;
        break;
    }
    else kondisi = true;
}

if(kondisi == true ) {
    cout << "angka tidak ada pada barisan " << endl;
}
else{
    cout << "angka ada pada barisan pada urutan : "<<indeks << endl;
}

gotoxy(20, 24);
cout << "Mau Ulang Lagi ? [Y/N] ";
do
{
    cin >> ch;
    ch = (char) toupper(ch);
    //if ((ch > 90)) ch -= 32;
} while (!(ch == 'Y' || ch == 'N'));

} while(ch == 'Y');

return 0;
}

```

Binary  
Pengayaan :)