# **Assignment-Solution Week-02**

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# Day 8/180: Pattern Printing

First Pattern:

```
04-Pattern Printing > Assignment Solution > ♥ Question1.cpp > ♥ main()
       #include<iostream>
       using namespace std;
       int main(){
               First Pattern:
          int row, col;
          for ( row = 1; row \leftarrow 5; row++)
           for ( col = 1; col <= 5; col++)
 17
               cout<<4<<" ";
           cout<<endl;
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                   TERMINAL
                                              PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\04-Pattern Printing\/
estion1 }
44444
44444
44444
44444
44444
```

# Second Pattern:

```
#include<iostream>
      using namespace std;
      int main(){
              Second Pattern:
              1 4 9 16 25
              1 4 9 16 25
 11
         int row, col;
         for ( row = 1; row <= 6; row++)
          for ( col = 1; col <= 5; col++)
              cout<<col*col<<" ";</pre>
          cout<<endl;</pre>
          OUTPUT
PROBLEMS
                  DEBUG CONSOLE
                                         PORTS
                                TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\04-Pattern
estion2 }
1 4 9 16 25
1 4 9 16 25
1 4 9 16 25
1 4 9 16 25
1 4 9 16 25
1 4 9 16 25
PS E:\om\DSA in c++\C++ code\04-Pattern Printing\Assignment Solution>
```

# Third Pattern:

```
1 8 27 64 125 216
1 8 27 64 125 216
1 8 27 64 125 216
1 8 27 64 125 216
1 8 27 64 125 216
```

```
04-Pattern Printing > Assignment Solution > G Question3.cpp > 🕅 main()
       #include<iostream>
       using namespace std;
       int main(){
                Third Pattern:
                1 8 27 64 125 216
                1 8 27 64 125 216
                1 8 27 64 125 216
                1 8 27 64 125 216
                1 8 27 64 125 216
          int row,col;
          for ( row = 1; row \leftarrow 5; row++)
           for ( col = 1; col <= 6; col++)
 16
                cout<<col*col*col<<" ";</pre>
           cout<<endl;</pre>
           OUTPUT
                    DEBUG CONSOLE
PROBLEMS
                                    TERMINAL
                                               PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\04-Pattern Printi
estion3 }
1 8 27 64 125 216
1 8 27 64 125 216
1 8 27 64 125 216
1 8 27 64 125 216
1 8 27 64 125 216
PS E:\om\DSA in c++\C++ code\04-Pattern Printing\Assignment Solution>
```

## Fourth Pattern:

FGHIJK FGHIJK FGHIJK FGHIJK

```
04-Pattern Printing > Assignment Solution > ← Question4.cpp > ← main()
       #include<iostream>
       using namespace std;
       int main(){
               Fourth Pattern:
 11
          int row;
 12
          char col;
          for ( row = 1; row \leftarrow 5; row++)
           for ( col = 'F'; col <= 'K'; col++)
 16
               COUTAGE LAST ".
                  std::ostream & cdecl std::endl<char, std::char tr
           cout<<endl;
PROBLEMS
           OUTPUT
                   DEBUG CONSOLE
                                  TERMINAL
                                             PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\04-Pattern P
estion4 }
FGHIJK
FGHIJK
FGHIJK
FGHIJK
FGHIJK
PS E:\om\DSA in c++\C++ code\04-Pattern Printing\Assignment Solution>
```

# Day 9/180: Pattern Printing-2

First Pattern:

```
05-Pattern Printing-2 → Assignment Solution → G Question1.cpp → 🕅 main()
        #include<iostream>
        using namespace std;
        int main(){
 12
            int row, col;
            for ( row = 1; row \leftarrow 7; row++)
                 for ( col = 1; col <= row; col++)
                     cout<<col<<" ";</pre>
                 cout<<endl;</pre>
 PROBLEMS
            OUTPUT
                     DEBUG CONSOLE
                                      TERMINAL
                                                 PORTS
 PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\05-Pattern Printing
 Question1 }
1 2
1 2 3
1 2 3 4
1 2 3 4 5
1 2 3 4 5 6
1 2 3 4 5 6 7
 PS E:\om\DSA in c++\C++ code\05-Pattern Printing-2\Assignment Solution>
```

# Second Pattern:

A AB ABC ABCD ABCDE

```
05-Pattern Printing-2 → Assignment Solution → G Question2.cpp → 🕅 main()
       #include<iostream>
       using namespace std;
       int main(){
                Second Pattern:
                АВ
                ABCDE
 11
           int row;
            char col;
            for ( row = 1; row <= 5; row++)
                for ( col = 'A'; col <= 'A'+row-1; col++)
                    cout<<col<<" ";</pre>
                cout<<endl;</pre>
                    DEBUG CONSOLE
           OUTPUT
                                    TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\05-Pattern Printing-2\Assignmer
Question2 }
A B
A B C
A B C D
PS E:\om\DSA in c++\C++ code\05-Pattern Printing-2\Assignment Solution> []
```

# Third Pattern:

```
10
10 11
10 11 12
10 11 12 13
10 11 12 13 14
10 11 12 13 14 15
```

```
05-Pattern Printing-2 > Assignment Solution > ♥ Question3.cpp > ♥ main()
       #include<iostream>
       using namespace std;
       int main(){
               Third Pattern:
               10 11 12
               10 11 12 13 14
            int row,col;
            for ( row = 1; row <= 6; row++)
 14
                for ( col = 10; col <= 10+row-1; col++)
                    cout<<col<<" ";
                cout<<endl;</pre>
PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                    TERMINAL
                                               PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\05-Pattern Pri
Question3 }
10
10 11
10 11 12
10 11 12 13
10 11 12 13 14
10 11 12 13 14 15
PS E:\om\DSA in c++\C++ code\05-Pattern Printing-2\Assignment Solution>
```

# Fourth Pattern:

ABCD ABC AB A

```
#include<iostream>
      using namespace std;
      int main(){
          Fourth Pattern:
           ABCD
           A B C
           АВ
          int row;
 13
          char col;
          for ( row = 1; row <= 4; row++)
             for ( col = 'A'; col <= 'D'-(row-1); col++)
                 cout<<col<<" ";
             cout<<endl;</pre>
PROBLEMS
         OUTPUT
                 DEBUG CONSOLE TERMINAL
                                       PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\05-Pattern Pri
Question4 }
ABCD
A B C
А В
PS E:\om\DSA in c++\C++ code\05-Pattern Printing-2\Assignment Solution>
```

# Day 10/180: Pattern Printing-2

First Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

```
#include<iostream>
      using namespace std;
      int main(){
          First Pattern: Take an input n from the user,
          and create a pattern like below,
 13
         int row,col,n;
         cout<<"Enter number: ";</pre>
          cin>>n;
          for ( row = 1; row <= n; row++)
              for ( col = 1; col <= n-row; col++)
                 cout<<" ";
              for ( col = row; col >= 1; col--)
                 cout<<col<<" ";
             cout<<endl;
                               TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\06-Pattern Prin
Enter number: 5
      2 1
    3 2 1
   E:\om\DSA in c++\C++ code\06-Pattern Printing-3\Assignment Solution> []
```

Second Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

A BB CCC DDDD EEEEE Solution:-

```
06-Pattern Printing-3 → Assignment Solution → G Question2.cpp → 🕏 main()
       #include<iostream>
       using namespace std;
       int main(){
  9
          int row, col, n;
           cout<<"Enter number: ";</pre>
           cin>>n;
           for ( row = 1; row \leftarrow n; row++)
                for ( col = 1; col <= n-row; col++)
                    cout<<" ";
                for ( col = 1; col <= row; col++)
                    char name='A'+row-1;
                    cout<<name<<" ";
                cout<<endl;
           OUTPUT
                    DEBUG CONSOLE
                                   TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\06-Pattern Prin
Enter number: 5
       в в
  DDDD
PS E:\om\DSA in c++\C++ code\06-Pattern Printing-3\Assignment Solution> ☐
```

Third Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

```
06-Pattern Printing-3 → Assignment Solution → G Question3.cpp → G main()
      #include<iostream>
      using namespace std;
      int main(){
  8
         int row,col,n;
         cout<<"Enter number: ";</pre>
         cin>>n;
         for ( row = 1; row \leftarrow n; row++)
             for ( col = 1; col <= n-row; col++)
                 cout<<" ";
             for ( col = n; col >= n-(row-1); col--)
                 cout<<col<<" ";
             cout<<endl;</pre>
         OUTPUT
                 DEBUG CONSOLE
                              TERMINAL
Enter number: 5
     5 4
  5 4 3 2
PS E:\om\DSA in c++\C++ code\06-Pattern Printing-3\Assignment Solution> ☐
```

Fourth Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

EDC EDCB EDCBA Solution:-

```
06-Pattern Printing-3 > Assignment Solution > ♥ Question5.cpp > ♥ main()
       #include<iostream>
       using namespace std;
       int main(){
          int row,col,n;
           cout<<"Enter number: ";</pre>
           cin>>n;
           for ( row = 1; row \leftarrow n; row++)
                for ( col = 1; col <= n-row; col++)
 21
                    cout<<" ";
                for ( char name='A'+n-1;name>='A'+(n-row);name--)
                    cout<<name<<" ";
               cout<<endl;
                                   TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\06-Pattern Printing-3\Ass
Enter number: 5
       E D
    E D C
  E D C B
E D C B A
PS E:\om\DSA in c++\C++ code\06-Pattern Printing-3\Assignment Solution> []
```

# Day 11/180: Pattern Printing- Super Hard

First Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.



```
#include<iostream>
      using namespace std;
      int main(){
 12
          int row, col, n;
          cout<<"Enter number: ";</pre>
          cin>>n;
          for(row=1;row<=n;row=row+1){</pre>
              for(col=1;col<=n-row;col++)</pre>
                 cout<<" ";
              for(col=1;col<=row;col++)</pre>
                 cout<<"* ";
              cout<<endl;</pre>
          OUTPUT
                  DEBUG CONSOLE
                                TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\07-Pattern Prir
Enter number: 5
PS E:\om\DSA in c++\C++ code\07-Pattern Printing-4\Assignment Solution> []
```

Second Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

```
1
123
12345
1234567
123456789
```

```
#include<iostream>
      using namespace std;
      int main(){
          /* Second Pattern: Take an input n from the user,
          for n=5, we have output like this.
          int row,col,n;
          cout<<"Enter number: ";</pre>
          cin>>n;
          for(row=1;row<=n;row++){</pre>
 12
              for(col=1;col<=n-row;col++)</pre>
                  cout<<" ";
                  //1 to 2*row-1
              for(col=1;col<=2*row-1;col++)</pre>
                  cout<<col<<" ";
 19
              cout<<endl;</pre>
PROBLEMS
          OUTPUT
                  DEBUG CONSOLE
                                TERMINAL
                                          PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\07-Pattern Print
Question2 }
Enter number: 5
      1 2 3
    12345
  1234567
123456789
PS E:\om\DSA in c++\C++ code\07-Pattern Printing-4\Assignment Solution>
```

Third Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

A ABA ABCBA ABCDCBA ABCDEDCBA

```
#include<iostream>
      using namespace std;
      int main(){
          /* Third Pattern: Take an input n from the user,
 11
          int row, col, n;
          cout<<"Enter number: ";</pre>
          cin>>n;
          for(row=1;row<=n;row++){
              for(col=1;col<=n-row;col++)</pre>
                 cout<<" ";
                  //1 to row
              for(char col='A';col<='A'+row-1;col++)</pre>
                 cout<<col<<" ";
              for(char col='A'+row-2;col>='A';col--)
                 cout<<col<<" ";
              cout<<endl;
          OUTPUT
                 DEBUG CONSOLE
                               TERMINAL
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\07-Pattern Pri
Enter number: 5
        Α
      А В А
    ABCBA
  ABCDCBA
ABCDEDCBA
PS E:\om\DSA in c++\C++ code\07-Pattern Printing-4\Assignment Solution> ■
```

Fourth Pattern: Take an input n from the user, and create a pattern like below, for n=5, we have output like this.

\*

\* \* \*

\* \* \* \*

\* \* \* \*

\* \* \* \*

\* \* \* \*

# Day 12/180 Operator in C++

1: Temperature Range: Write a program that checks if a given temperature is suitable for swimming. If the temperature is between 70 and 90 (Excluded) degrees Fahrenheit print yes, else NO.

```
C+ Question1.cpp U X
                   #include<iostream>
      using namespace std;
      int main(){
          1: Temperature Range: Write a program that checks
          if a given temperature is suitable for swimming.
          If the temperature is between 70 and 90 (Excluded)
          degrees Fahrenheit print yes, else NO.
         int temp;
         cout<<"Please Enter Temperature: ";</pre>
 11
 12
         cin>>temp;
 13
         if(temp > 70 && temp < 90){
          cout<<"Yes";</pre>
 15
         }else{
          cout<<"No";</pre>
 17
 18
PROBLEMS
          OUTPUT
                  DEBUG CONSOLE
                                TERMINAL
                                          PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\08-Operators i
on1.cpp -o Question1 } ; if ($?) { .\Question1 }
Please Enter Temperature: 50
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution> cd
gnments Solution\" ; if ($?) { g++ Question1.cpp -o Question1 } ; if ($?)
Please Enter Temperature: 80
Yes
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution>
```

2: Even and Positive Number: Write a program that prints "YES" if a given number is both even and positive, otherwise it will print "NO".

```
	← Question1.cpp U

08-Operators in C++ > Assignments Solution > ← Question2.cpp > ♦ main()
       #include<iostream>
       using namespace std;
       int main(){
           2: Even and Positive Number: Write a program
           that prints "YES" if a given number is both
           even and positive, otherwise it will print "NO".
          int num;
          cout<<"Please Enter your Number: ";</pre>
  11
          cin>>num;
  12
          if(num > 0 && (num % 2 == 0)){
  13
           cout<<"Yes";</pre>
          }else{
           cout<<"No";</pre>
 17
 PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                   TERMINAL
                                              PORTS
on2.cpp -o Question2 } ; if ($?) { .\Question2 }
 Please Enter your Number: -5
 PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution> cd
 gnments Solution\" ; if ($?) { g++ Question2.cpp -o Question2 } ; if ($?)
 Please Enter your Number: 5
 No
 PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution> cd
 gnments Solution\" ; if ($?) { g++ Question2.cpp -o Question2 } ; if ($?)
 Please Enter your Number: 6
 Yes
```

3: Age Check: Implement a program that checks if a person is a teenager. A teenager is someone whose age is between 13 and 19 (inclusive).

```
← Question2.cpp U

                                      Question1.cpp U
#include<iostream>
      using namespace std;
      int main(){
          3: Age Check: Implement a program that checks if a person is a teenager.
          A teenager is someone whose age is between 13 and 19 (inclusive).
         int age;
         cout<<"Please Enter your Age: ";</pre>
         cin>>age;
         if(age >= 13 && age<=19){
          cout<<"Teenager";</pre>
 12
         }else{
          cout<<"Not Teenager";</pre>
PROBLEMS
                  DEBUG CONSOLE
          OUTPUT
                                TERMINAL
                                          PORTS
PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\08-Operators in C++\Assignm
on3.cpp -o Question3 } ; if ($?) { .\Question3 }
Please Enter your Age: 13
Teenager
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution> cd "e:\om\DSA in
gnments Solution\" ; if ($?) { g++ Question3.cpp -0 Question3 } ; if ($?) { .\Question3
Please Enter your Age: 15
Teenager
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution> cd "e:\om\DSA in
gnments Solution\" ; if ($?) { g++ Question3.cpp -0 Question3 } ; if ($?) { .\Question3
Please Enter your Age: 20
Not Teenager
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution>
```

4: Take three numbers a,b,c from the user, print yes if a is either greater than b or c. Otherwise print NO.

```
← Question1.cpp U

← Question3.cpp U

                                                                08-Operators in C++ > Assignments Solution > © Question4.cpp > ♡ main()
       #include<iostream>
       using namespace std;
       int main(){
           4: Take three numbers a,b,c from the user,
           print yes if a is either greater than b or c.
           Otherwise print NO.
          int a,b,c;
          cout<<"Please Enter value of a: ";</pre>
 11
          cin>>a;
          cout<<"Please Enter value of b: ";</pre>
 12
          cin>>b:
          cout<<"Please Enter value of c: ":</pre>
          cin>>c;
          if(a>b || a>c){
 17
           cout<<"YES";</pre>
 18
          }else{
           cout<<"NO";</pre>
 21
 PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                   TERMINAL
                                             PORTS
 PS E:\om\DSA in c++\C++ code> cd "e:\om\DSA in c++\C++ code\08-Operators in C++\/
 on4.cpp -o Question4 } ; if ($?) { .\Question4 }
 Please Enter value of a: 10
 Please Enter value of b: 20
Please Enter value of c: 5
YES
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution>
```

5: What will be the result below according to the precedence table.

- 2\*3-48==5/4\*6
- 6<<2-4\*8/2</p>
- 5>4<3/2-8%4+5</li>
- 14-8+92>>2+70

```
08-Operators in C++ > Assignments Solution > € • Question5.cpp > ♥ main()
       #include<iostream>
       using namespace std;
       int main(){
            5: What will be the result below according to the precedence table.
           a \rightarrow 2*3-48==5/4*6
           b-> 6<<2-4*8/2
           c-> 5>4<3/2-8%4+5
           d-> 14-8+92>>2+70
 11
          int a=(2*3-48==(5/4)*6);
 12
          int b=((6<<2)-(4*8)/2);
 13
          int c=(5>4<3/2-(8%4)+5);
          int d=((14-8+92>>2)+70);
          cout<<"a. "<<a<<endl;</pre>
          cout<<"b. "<<b<<endl;</pre>
          cout<<"c. "<<c<<endl;</pre>
 18
          cout<<"d. "<<d<<endl;</pre>
 PROBLEMS
           OUTPUT
                    DEBUG CONSOLE
                                               PORTS
                                    TERMINAL
 PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution> cd "e:\om\DSA
on\" ; if ($?) { g++ Question5.cpp -0 Question5 } ; if ($?) { .\Question5 }
 a. 0
b. 8
c. 1
d. 94
PS E:\om\DSA in c++\C++ code\08-Operators in C++\Assignments Solution>
```