

# Pattern 3

## Program 1:

```
Activities Terminal Sep 10 12:35 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
/*
 *
 * 1 2 3 4
 * 1 3 5 7
 * 1 4 7 10
 * 1 5 9 13
 */

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    for(int i=1;i<=rows;i++) {

        int num=1;

        for(int j=1;j<=rows;j++) {

            printf("%-4d ",num);
            num = num+i;

        }

        printf("\n");

    }

}

"pro1.c" 29L, 320B 1,1 All
```

```
Activities Terminal Sep 10 12:36 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
1 2 3 4
1 3 5 7
1 4 7 10
1 5 9 13
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:5
1 2 3 4 5
1 3 5 7 9
1 4 7 10 13
1 5 9 13 17
1 6 11 16 21
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 2:

```
Activities Terminal Sep 10 12:37 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
```

```
/*
 * Program 2:
 *      3 b 1 d
 *      a 2 c 0
 *      3 b 1 d
 *      a 2 c 0
 */

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int num=rows;
    char ch;

    for(int i=1;i<=rows;i++) {

        ch = 'a';

        for(int j=1;j<=rows;j++) {

            if(((i%2!=0 && j%2!=0) || (i%2==0&&j%2==0)))
                printf("%-3d ",rows-j);
            else
                printf("%-3c ",ch);

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

"pro2.c" 38L, 428B 31,15-50 All

```
Activities Terminal Sep 10 12:38 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
```

```
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
3 b 1 d
a 2 c 0
3 b 1 d
a 2 c 0
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:5
4 b 2 d 0
a 3 c 1 e
4 b 2 d 0
a 3 c 1 e
4 b 2 d 0
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

### Program 3:

```
Activities Terminal Sep 10 12:38 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

/*
 * Program 3:
 *      4 a 3 b
 *      4 a 3 b
 *      4 a 3 b
 *      4 a 3 b
 */

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    for(int i=1;i<=rows;i++) {

        int num=rows;
        char ch = 'a';

        for(int j=1;j<=rows;j++) {

            if(j%2==0)
                printf("%c ",ch++);
            else
                printf("%d ",num--);

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

"pro3.c" 35L, 380B 1,1 All

```
Activities Terminal Sep 10 12:39 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
4 a 3 b
4 a 3 b
4 a 3 b
4 a 3 b
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:5
5 a 4 b 3
5 a 4 b 3
5 a 4 b 3
5 a 4 b 3
5 a 4 b 3
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 4:

```
Activities Terminal Sep 10 12:39 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

/*
 * Program 4:
 *
 * a B c D
 * b C d E
 * c D e F
 * d E f G
 */

#include<stdio.h>

void main() {
    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    for(int i=1;i<=rows;i++) {
        char ch = 'a'+i-1;

        for(int j=1;j<=rows;j++) {
            if(j%2==0)
                printf("%c ",ch-32);
            else
                printf("%c ",ch);

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

"pro4.c" 35L, 370B 1,1 All

```
Activities Terminal Sep 10 12:40 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ vim pro4.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ gcc pro4.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
a B c D
b C d E
c D e F
d E f G
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 5:

```
Activities Terminal Sep 10 12:40 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
```

```
/*
 * Program 5:
 *      1  4  3
 *     16 5 36
 *    7  64 9
 */

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int num=1,flg=0;

    for(int i=1;i<=rows;i++) {

        for(int j=1;j<=rows;j++) {

            if(flg==0) {
                printf("%-4d ",num);
                flg=1;
            }
            else {
                printf("%-4d ",num*num);
                flg=0;
            }

            num++;

        }

        printf("\n");

    }

}
```

"pro5.c" 37L, 405B 1,1 All

```
Activities Terminal Sep 10 12:41 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
```

```
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:3
1  4  3
16 5 36
7  64 9
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
1  4  3  16
5 36 7  64
9 100 11 144
13 196 15 256
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:5
1  4  3  16  5
36 7  64 9  100
11 144 13 196 15
256 17 324 19 400
21 484 23 576 25
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 6:

```
Activities Terminal Sep 10 12:42 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

/*
 * Program 6:
 *
 * == == == == ==
 * $ $ $ $ $ $ $
 * @ @ @ @ @ @ @
 * == == == == ==
 * $ $ $ $ $ $ $
 * @ @ @ @ @ @ @
 */

#include<stdio.h>

void main() {
    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int flg=1;

    for(int i=1;i<=rows;i++) {
        for(int j=1;j<=rows;j++) {
            if(flg%3==1)
                printf("= ");
            else if(flg%3==2)
                printf("$ ");
            else if(flg%3==0)
                printf("@ ");
        }
        flg++;
        printf("\n");
    }
}
```

"pro6.c" 40L, 495B 1,1 All

```
Activities Terminal Sep 10 12:43 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ vim pro6.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ gcc pro6.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:6
== == == == ==
$ $ $ $ $ $ $
@ @ @ @ @ @ @
== == == == ==
$ $ $ $ $ $ $
@ @ @ @ @ @ @
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:8
== == == == ==
$ $ $ $ $ $ $ $ $
@ @ @ @ @ @ @ @ @
== == == == ==
$ $ $ $ $ $ $ $ $
@ @ @ @ @ @ @ @ @
== == == == ==
$ $ $ $ $ $ $ $ $
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:10
== == == == ==
$ $ $ $ $ $ $ $ $ $ $
@ @ @ @ @ @ @ @ @ @ @
== == == == ==
$ $ $ $ $ $ $ $ $ $ $
@ @ @ @ @ @ @ @ @ @ @
== == == == ==
$ $ $ $ $ $ $ $ $ $ $
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 7:

```
Activities Terminal Sep 10 12:48
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

/* Program 7:
 *      1  4  27
 *      4  27 16
 *      27 16 125
 */

#include<stdio.h>

void main() {
    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int num,flg=0;

    for(int i=1;i<=rows;i++) {
        num=i;
        for(int j=1;j<=rows;j++) {
            if(flg==0) {
                printf("%-4d",num*num*num);
                flg=1;
            }
            else {
                printf("%-4d",num*num);
                flg=0;
            }
            num++;
        }

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

"pro7.c" 40L, 431B 32,10-45 All

```
Activities Terminal Sep 10 12:50
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:3
1  4  27
4  27 16
27 16 125
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 8:

```
Activities Terminal Sep 10 12:50 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

* Program 8:
*
* 16 15 14 13
* L K J I
* 8 7 6 5
* D C B A
*
*/

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int num = rows*rows;
    char ch = 'A'+num-1;

    for(int i=1;i<=rows;i++) {

        for(int j=1;j<=rows;j++) {

            if(i%2==0)
                printf("%-4c",ch);
            else
                printf("%-4d",num);

            num--;
            ch--;

        }

        printf("\n");

    }

}

"pro8.c" 38L, 439B 1,1 All
```

```
Activities Terminal Sep 10 12:51 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ vim pro8.c
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ gcc pro8.c
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
16 15 14 13
L K J I
8 7 6 5
D C B A
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$
```



## Program 9:

```
Activities Terminal Sep 10 12:51
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3

/*
 *
 *
 *
 *
 *
 *
 *
 *
 *
 *
 */

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int curr=0,next=1,sum=curr+next;

    for(int i=1;i<=rows;i++) {

        for(int j=1;j<=rows;j++) {

            if(i==1 && j==1)
                printf("0\t");
            else if(i==1 && j==2)
                printf("1\t");
            else {
                printf("%d\t",sum);
                curr = next;
                next = sum;
                sum = curr+next;
            }

            printf("\n");

        }

    }

}

"pro9.c" 41L, 523B 1,1 All
```

```
Activities Terminal Sep 10 12:52
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ vim pro9.c
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ gcc pro9.c
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
0      1      1      2
3      5      8      13
21     34     55     89
144    233    377    610
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:5
0      1      1      2      3
5      8      13     21     34
55     89     144    233    377
610    987    1597   2584   4181
6765   10946  17711  28657  46368
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3$
```

## Program 10:

```
Activities Terminal Sep 10 12:52
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
/* Program 10:
 *
 * D1 C2 B3 A4
 * e5 f4 g3 h2
 * F3 E4 D5 C6
 * g7 h6 i5 j4
 */

#include<stdio.h>

void main() {

    int rows;
    printf("Enter no of rows:");
    scanf("%d",&rows);

    int num = 1;

    for(int i=1;i<=rows;i++) {

        char ch = 'A'+rows+i-2;

        for(int j=1;j<=rows;j++) {

            if(i%2==0) {
                printf("%c%-3d",ch+32,num);
                num--;
                ch++;
            }
            else {
                printf("%c%-3d",ch,num);
                num++;
                ch--;
            }
        }
        if(i%2==0)
            num+=2;

        printf("\n");

    }

}
-- INSERT -- 35,3-17 All
```

```
Activities Terminal Sep 10 12:54
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Pattern3
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ vi pro10.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ gcc pro10.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:4
D1 C2 B3 A4
e5 f4 g3 h2
F3 E4 D5 C6
g7 h6 i5 j4
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$ ./a.out
Enter no of rows:5
E1 D2 C3 B4 A5
f6 g5 h4 i3 j2
G3 F4 E5 D6 C7
h8 i7 j6 k5 l4
I5 H6 G7 F8 E9
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Pattern3$
```