

# Pattern 1

## Program 1:

```
Activities Terminal Sep 3 19:05
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

/*
 * Program 1:
 *
 * 1 2 3 4
 * 2 3 4 5
 * 3 4 5 6
 * 4 5 6 7
 */

#include<stdio.h>

void main() {
    int rows;

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

    for(int i=1;i<=rows;i++) {
        int k=i;
        for(int j=1;j<=rows;j++) {
            printf("%d ",k++);
        }
        printf("\n");
    }
}

"program1.c" 32L, 309B 1,1 All
```

```
Activities Terminal Sep 3 19:07
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program1.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program1.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
1 2 3 4
2 3 4 5
3 4 5 6
4 5 6 7
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

Program 2:

A screenshot of a Linux terminal window. The title bar at the top shows 'Activities', 'Terminal', and the date 'Sep 3 19:07'. The terminal window has a dark background with light green text. The code being executed is a C program named 'Program 2:'. The code includes a comment block with the program name and a description, followed by the main function. The main function prompts the user to enter the number of rows, which is then used in a nested loop to print a pattern of numbers and letters. The terminal output shows the program's execution, including the prompt 'Enter no of rows:' and the resulting pattern. The status bar at the bottom of the terminal window shows the file name 'program2.c', the line number '35L', and the byte count '366B'. The bottom right corner of the terminal window shows the text '1,1 All'.

Activities Terminal Sep 3 19:08 81 %

sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

```
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vi program2.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program2.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
1 2 3 4
a b c d
1 2 3 4
a b c d
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:3
1 2 3
a b c
1 2 3
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

## Program 3:

```
Activities Terminal Sep 3 19:08 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
```

```
/*
 * Program 3:
 *
 * 1 1 1 1
 * 2 2 2 2
 * 3 3 3 3
 * 4 4 4 4
 */

#include<stdio.h>

void main() {
    int rows;

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

    for(int i=1;i<=rows;i++) {
        for(int j=1;j<=rows;j++) {
            printf("%d ",i);
        }
        printf("\n");
    }
}
```

```
"program3.c" 30L, 311B 1,1 All
```

```
Activities Terminal Sep 3 19:08 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
```

```
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program3.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program3.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
1 1 1 1
2 2 2 2
3 3 3 3
4 4 4 4
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:3
1 1 1
2 2 2
3 3 3
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

## Program 4:

```
Activities Terminal Sep 3 19:09 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

/*
 * Program 4:
 *
 * A B C
 * D E F
 * G H I
 */

#include<stdio.h>

void main() {
    int rows;

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

    char ch = 'A';

    for(int i=1;i<=rows;i++) {
        for(int j=1;j<=rows;j++) {
            printf("%c ",ch++);
        }
        printf("\n");
    }
}

"program4.c" 30L, 307B 1,1 All
```

```
Activities Terminal Sep 3 19:09 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program4.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program4.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:3
A B C
D E F
G H I
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
A B C D
E F G H
I J K L
M N O P
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

## Program 5:

```
Activities Terminal Sep 3 19:10 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
/*
 *   Program 5:
 *
 *   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=65;i<65+rows;i++) {

        char ch = i;

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

            printf("%c ",ch++);

        }
        printf("\n");

    }

}
```

"program5.c" 32L, 329B 1,1 All

```
Activities Terminal Sep 3 19:10 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program5.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program5.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./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/Assignment2$ ./a.out
Enter no of rows:5
A B C D E
B C D E F
C D E F G
D E F G H
E F G H I
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

## Program 6:

```
Activities Terminal Sep 3 19:11
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

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

#include<stdio.h>

void main() {
    int rows;

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

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

"program6.c" 33L, 347B written 2,12-17 All
```

```
Activities Terminal Sep 3 19:12
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program6.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program6.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
$ = $ =
$ = $ =
$ = $ =
$ = $ =
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:5
$ = $ = $
$ = $ = $
$ = $ = $
$ = $ = $
$ = $ = $
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

## Program 7:

```
Activities Terminal Sep 3 19:12
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

/*
 * Program 7:
 *
 * 1 2 9 4
 * 25 6 49 8
 * 81 10 121 12
 * 168 14 225 16
 */

#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++) {

        for(int j=1;j<=rows;j++) {
            if(j%2==0) {
                printf("%-5d",num);
                num++;
            } else {
                printf("%-5d",num*num);
                num++;
            }
        }
        printf("\n");
    }
}

"program7.c" 38L, 442B 31,16-51 All
```

```
Activities Terminal Sep 3 19:13
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program7.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program7.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
1 2 9 4
25 6 49 8
81 10 121 12
169 14 225 16
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```

## Program 8:

```
Activities Terminal Sep 3 19:13 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
```

```
/*
 *   Program 8:
 *
 *   1  3  5
 *   7  9 11
 *  13 15 17
 */

#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++) {
        for(int j=1;j<=rows;j++) {
            printf("%-3d  ",num);
            num+=2;
        }

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

```
"program8.c" 35L, 322B 26,15-50 All
```

```
Activities Terminal Sep 3 19:14 sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
```

```
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program8.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program8.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:3
1  3  5
7  9 11
13 15 17
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
1  3  5  7
9 11 13 15
17 19 21 23
25 27 29 31
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```



### Program 9:

A screenshot of a terminal window on a Linux system. The window title is "sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2". The terminal shows the execution of a C program named "program9.c". The program's output is a multiplication table with 3 rows and 3 columns. The first row contains "2 5 10", the second row contains "17 26 37", and the third row contains "50 65 82". The program's source code is visible in the background, showing a main function that takes the number of rows as input and uses nested loops to calculate and print the products. The status bar at the bottom indicates the file "program9.c" is 35 lines long and 334 bytes in size. The system clock shows "Sep 3 19:15" and the battery level is at "79 %".

```

sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program9.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program9.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:3
2      5      10
17     26     37
50     65     82
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
2      5      10     17
26     37     50     65
82     101    122    145
170    197    226    257
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$

```

## Program 10:

```
Activities Terminal Sep 3 19:17
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

/*
 *   Program 10:
 *
 *   D4  C3  B2  A1
 *   D4  C3  B2  A1
 *   D4  C3  B2  A1
 *   D4  C3  B2  A1
 */

#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'+rows-i;

        for(int j=rows;j>=1;j--) {

            printf("%c%d  ",ch--,j);

        }

        printf("\n");

    }

}

"program10.c" 36L, 363B 24,21-42 All
```

```
Activities Terminal Sep 3 19:17
sandy@sandys-Machine: ~/Desktop/Study/core2web/C/Assignments/Assignment2

sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ vim program10.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ gcc program10.c
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:4
D4  C3  B2  A1
D4  C3  B2  A1
D4  C3  B2  A1
D4  C3  B2  A1
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$ ./a.out
Enter no of rows:7
G7  F6  E5  D4  C3  B2  A1
G7  F6  E5  D4  C3  B2  A1
G7  F6  E5  D4  C3  B2  A1
G7  F6  E5  D4  C3  B2  A1
G7  F6  E5  D4  C3  B2  A1
G7  F6  E5  D4  C3  B2  A1
G7  F6  E5  D4  C3  B2  A1
sandy@sandys-Machine:~/Desktop/Study/core2web/C/Assignments/Assignment2$
```