**NESTED LOOPS**

**1. Get the values from the user and store it in 3\*3 matrix. Display the matrix.**

Sample Output:  
1 2 3  
4 5 6  
7 8 9

**CODE:**

#include <stdio.h>

int main() {

int matrix[3][3];

printf("Enter values for a 3x3 matrix:\n");

for (int i = 0; i < 3; ++i) {

for (int j = 0; j < 3; ++j) {

printf("Enter value for matrix[%d][%d]: ", i, j);

scanf("%d", &matrix[i][j]);

}

}

printf("\nMatrix:\n");

for (int i = 0; i < 3; ++i) {

for (int j = 0; j < 3; ++j) {

printf("%d ", matrix[i][j]);

}

printf("\n");

}

return 0;

}

**2. Write a program to get the output**

Input: a1b10  
Output: abbbbbbbbb

Input: b3c6d15  
Output: bbbccccccddddddddddddddd

**CODE:**

#include <stdio.h>

#include <ctype.h>

int main() {

char a[100];

char alpha = 0;

int num = 0;

int i, j;

printf("Enter the input:");

scanf("%s", a);

for (i = 0; a[i]; i++) {

if ((a[i] >= 'A' && a[i] <= 'Z') || (a[i] >= 'a' && a[i] <= 'z')) {

if (alpha != 0) {

for (j = 0; j < num; j++)

printf("%c", alpha);

}

alpha = a[i];

num = 0;

} else if (isdigit(a[i])) {

num = num \* 10 + (a[i] - '0');

}

}

if (alpha != 0) {

for (j = 0; j < num; j++)

printf("%c", alpha);

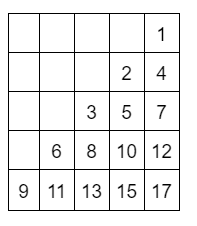
}

return 0;

}

**3. Print the pattern without using arrays.**

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**CODE:**

#include <stdio.h>

void printPattern(int n) {

int row, col, num;

for (row = 1; row <= n; row++) {

num = row \* (row - 1) / 2 + 1;

for (col = 1; col <= n - row; col++) {

printf(" ");

}

for (col = 1; col <= row; col++) {

printf("%-3d", num);

num += 2;

}

printf("\n");

}

}

int main() {

int n;

printf("Enter the number of rows: ");

scanf("%d", &n);

printPattern(n);

return 0;

}