Swati Mall. Programming in C. 06-04-2020

CS-1st yr

Programs to display pyramid and inverted pyramid using * and digits

Program to print full pyramid using *

```
        *
      * * *
    * * * * *
  * * * * * * *
* * * * * * * * *
```

Source Code

```
#include<stdio.h>
int main() {
    int i, space, rows, k=0;
    printf("Enter number of rows: ");
    scanf("%d", &rows);
    for (i=1; i<=rows; ++i,k=0) {
        for (space=1; space<=rows-i; ++space)
        { printf("  "); }
        while (k!=2*i-1) {
            printf("* ");
            ++k;
        }
        printf("\n");
    }
    return 0;
}
```

Program to print pyramid using numbers

```
        1
      2 3 2
    3 4 5 4 3
  4 5 6 7 6 5 4
```

```
5 6 7 8 9 8 7 6 5
```

Source Code

```
#include<stdio.h>
int main() {
    int i, space, rows, k=0, count=0, count1=0;
    printf("Enter number of rows: ");
    scanf("%d", &rows);
    for (i=1; i<=rows; ++i) {
        for (space=1; space<=rows-i; ++space) {
          printf("  ");
          ++count;
        }
        while (k!=2*i-1) {
            if (count <= rows-1)
            { printf("%d ", i+k);
              ++count;
            }
            else {
              ++count1;
              printf("%d ", (i+k-2*count1));
            }
            ++k;
        }
        count1=count=k=0;
        printf("\n");
    }
    return 0;
}
```

Inverted full pyramid using *

```
* * * * * * * * *
  * * * * * * *
    * * * * *
```

```
      * * *
        *
```

Source Code

```
#include<stdio.h>
int main() {
    int rows, i, j, space;
    printf("Enter number of rows: ");
    scanf("%d", &rows);
    for (i=rows; i>=1; --i) {
        for (space=0; space<rows-i; ++space)
            printf("  ");
        for (j=i; j<=2*i-1; ++j)
            printf("* ");
        for (j=0; j<i-1; ++j)
            printf("* ");
        printf("\n");
    }
    return 0;
}
```

Print Pascal's triangle

```
          1
        1   1
      1   2   1
    1   3   3    1
  1  4    6   4   1
 1  5   10   10  5   1
```

Source Code

```
#include<stdio.h>
int main() {
```

```
    int rows, coef=1, space, i, j;
    printf("Enter number of rows: ");
    scanf("%d", &rows);
    for (i=0; i<rows; i++) {
        for (space=1; space <= rows-i; space++)
            printf("  ");
        for (j=0; j<=i; j++) {
            if (j==0 || i==0)
                coef = 1;
            else
                coef=coef*(i-j+1)/j;
            printf("%4d", coef);
        }
        printf("\n");
    }
    return 0;
}
```