31. Pattern 11

```
1                 1
1 2             2 1
1 2 3         3 2 1
1 2 3 4 4 3 2 1
```

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int i, j, k;
   clrscr();

   for (i = 1; i <= 5; i++)
   {
      for (j = 1; j <= 5; j++)
      {
         if (j <= i)
         {
            printf("%d ", j);
         }
         else
         {
            printf(" ");
         }
      }
      for (j = 5; j >= 1; j--)
      {
         if (j <= i)
         {
            printf("%d ", j);
         }
         else
         {
            printf(" ");
         }
      }
      printf("\n");
   }
   getch();
}
```

32. Floyd's triangle

```
1
2 3
4 5 6
7 8 9 10
11 12 13 14
```

```
#include<stdio.h>
#include<conio.h>
void main()
```

```
{
   int n, i, c, a = 1;
   clrscr();

   printf("Enter the number of rows : ");
   scanf("%d", &n);

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

      for (c = 1; c <= i; c++) {

         printf("%d ", a);
         a++;

      }

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

33. Pyramid

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

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int row, c, n, temp;
   clrscr();

   printf("Enter the number of rows : ");
   scanf("%d", &n);

   temp = n;

   for (row = 1; row <= n; row++)
   {
      for (c = 1; c < temp; c++)
         printf(" ");

      temp--;

      for (c = 1; c <= 2 * row - 1; c++)
         printf("*");

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

34. Pyramid 2

```
      *
     *A*
    *A*A*
   *A*A*A*
  *A*A*A*A*
*A*A*A*A*A*
```

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int n, c, k, space, count = 1;
   clrscr();

   printf("Enter the number of rows : ");
   scanf("%d", &n);

   space = n;

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

      for (k = 1; k < space; k++)
         printf(" ");

      for (k = 1; k <= c; k++)
      {
         printf("*");

         if (c > 1 && count < c)
         {
            printf("A");
            count++;
         }
      }

      printf("\n");
      space--;
      count = 1;
   }
   getch();
}
```

35. Number Pyramid

```
      1
     232
    34543
   4567654
  567898765
```

```
#include<stdio.h>
#include<conio.h>
```

```
void main()
{
   int n, c, d, num = 1, space;
   clrscr();

   printf("Enter the number of rows : ");
   scanf("%d", &n);

   space = n - 1;

   for (d = 1; d <= n; d++)
   {
      num = d;

      for (c = 1; c <= space; c++)
         printf(" ");

      space--;

      for (c = 1; c <= d; c++)
      {
         printf("%d", num);
         num++;
      }

      num--;
      num--;

      for (c = 1; c < d; c++)
      {
         printf("%d", num);
         num--;
      }
      printf("\n");
   }
   getch();
}
```

36. Pascal triangle

```
   1
  1 1
 1 2 1
1 3 3 1
1 4 6 4 1
```

```
#include<stdio.h>
#include<conio.h>

long fact(int);

void main()
{
   int line, i, j;
   clrscr();
```

```
   printf("Enter the number : ");
   scanf("%d", &line);

   for (i = 0; i < line; i++)
   {
      for (j = 0; j < line - i - 1; j++)
      {
         printf(" ");
      }

      for (j = 0; j <= i; j++)
      {
         printf("%ld ", fact(i) / (fact(j) * fact(i - j)));
      }

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

long fact(int num)
{
   long f = 1;
   int i = 1;

   while (i <= num)
   {
      f = f * i;
      i++;
   }
   return f;
}
```

37. Pascal triangle without using function

```
   1
  1 1
 1 2 1
1 3 3 1
1 4 6 4 1
```

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int x, y, n, a, z, s;
   clrscr();

   printf("Enter the number : ");
   scanf("%d", &n);
   s = n;

   for (x = 0; x <= n; x++)
   {
      a = 1;
      for (z = s; z >= 0; z--)
```

```
      printf(" ");

    s--;

    for (y = 0; y <= x; y++)
    {
      printf("%d ", a);
      a = (a * (x - y) / (y + 1));
    }
    printf("\n");
  }
  getch();
}
```

38. Pascal triangle 2

```
    1
   121
  12321
 1234321
123454321
```

```
#include<stdio.h>
#include<conio.h>
void main()
{
  int n, c, k, number = 1, space = n;
  clrscr();

  printf("Enter number of rows : ");
  scanf("%d", &n);
  printf("\n");
  space = n;

  for (c = 1; c <= n; c++)
  {
    for (k = space; k > 1; k--)
      printf(" ");

    space--;

    for (k = 1; k <= 2 * c - 1; k++)
    {
      if (k <= c)
      {
        printf("%d", number);

        if (k < c)
          number++;
      }
      else
      {
        number--;
        printf("%d", number);
      }
    }
```

```
      number = 1;
      printf("\n");
   }
   getch();
}
```

39. Number Alphabet Pattern

```
1
A B
2 3 4
C D E F
5 6 7 8 9
G H I J K L
```

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int num, r, c;
   int i = 1;
   char ch = 'A';
   clrscr();

   printf("Enter the number of rows : ");
   scanf("%d", &num);
   printf("\n");

   for (r = 1; r <= num; r++)
   {
      for (c = 1; c <= r; c++)
      {
         if (r % 2 == 0)
         {
            printf(" %c", ch++);
         }
         else
         {
            printf(" %d", i++);
         }
      }
      printf("\n");
   }
   getch();
}
```

40. Number Diamond Pattern

```
        1
      1 2 3
    1 2 3 4 5
  1 2 3 4 5 6 7
1 2 3 4 5 6 7 8 9
  1 2 3 4 5 6 7
    1 2 3 4 5
```

```
      1 2 3
        1
```

```
#include<stdio.h>
#include<conio.h>
void main()
{
   int i, j, k;
   clrscr();

   for(i=1;i<=5;i++)
   {
      for(j=i;j<5;j++)
      {
         printf(" ");
      }
      for(k=1;k<(i*2);k++)
      {
            printf("%d",k);
      }
      printf("\n");
   }
   for(i=4;i>=1;i--)
   {
      for(j=5;j>i;j--)
      {
            printf(" ");
      }
      for(k=1;k<(i*2);k++)
      {
            printf("%d",k);
      }
      printf("\n");
   }
   getch();
}
```

Schmick