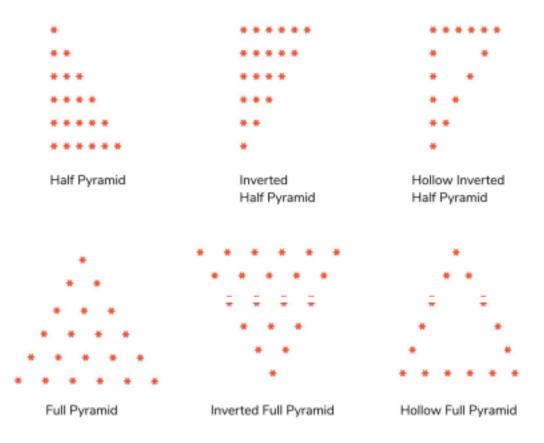# Assignment 5 – Nested Loop

Pattern programs are nothing but patterns consisting of numbers, alphabets, or symbols in a particular form. These kinds of pattern programs can be solved easily using for loop condition.

#1 - Rectangle Pattern Programs in C++

```
*   *   *   *   *        Hollow Rectangle

*   *   *   *   *
                         *   *   *   *   *
*   *   *   *   *
                         *               *
Solid Rectangle
                         *   *   *   *   *
```

#2 - Pyramid Pattern Programs in C++ using stars

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

* *             * * * * *           *         *

* * *           * * * *             *       *

* * * *         * * *               *     *

* * * * *       * *                 * *

* * * * * *     *                   *
```

Half Pyramid

Inverted
Half Pyramid

Hollow Inverted
Half Pyramid

```
        *           * * * * * *                 *

      * *           * * * * *                 *   *

    * * *           * * * *                 *       *

  * * * *           * * *                 *     *

* * * * *           * *                 *           *

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

Full Pyramid

Inverted Full Pyramid

Hollow Full Pyramid

Assignment 5 – Nested Loop

#3 - Pyramid Pattern Programs in C++, using numbers

```
1                    1 2 3 4 5            1
1 2                  1 2 3 4              1 2
1 2 3                1 2 3                1     3
1 2 3 4              1 2                  1        4
1 2 3 4 5            1                    1 2 3 4 5

Half Pyramid         Inverted             Hollow
                     Half Pyramid         Half Pyramid
```

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

Full Pyramid         Hollow Full Pyramid     Hollow Inverted
                                             Half Pyramid
```

#5 - Diamond Pattern Programs in C++, using stars

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

Solid Diamond        Hollow Diamond       Solid Half
                                          Diamond
```