CS2021 ASSIGNMENT 13 (Due Date: Jan 7, 2022)

Problem 1

Write a program, named square, to generate a square like the following.

```
C:\>square 5
*****
*****
*****
*****
*****
C:\>
```

Here, the number after the program name is specified by the user.

Answer:

```
/********************************
 square.cpp
 -------------------------------
 Usage: C:>square length
 Example: C:>square 5
*********************************/
#include<stdio.h>
#include<stdlib.h>

main(int argc,  char *argv[])
{
    int i,j, length;

    length = atoi(argv[1]);
    for(i = 0; i< length; i++)
    {
        for(j=0; j<length; j++)
        {
            printf("*");
        }
        if(i<length-1)
        {
            printf("\n");
        }
    }
}
```

Problem 2

Write a program, named rectangle, to generate a rectangle like the following.

```
C:\>rectangle 5 3
*****
*****
*****
C:\>
```

Here, the numbers after the program name are the length and the height of the rectangle.

Answer:

```
/********************************
 rectangle.cpp
 -------------------------------
 Usage: C:>rectangle length height
 Example: C:>rectangle 6 3
*********************************/
#include<stdio.h>
#include<stdlib.h>

main(int argc,  char *argv[])
{
    int i,j, length, height;

    length = atoi(argv[1]);
    height = atoi(argv[2]);
    for(i = 0; i< height; i++)
    {
        for(j=0; j<length; j++)
        {
            printf("*");
        }
        if(i<height-1)
        {
            printf("\n");
        }
    }
}
```

Problem 3

Write a program, named triangle, to generate a triangle like the following.

```
C:\>triangle 4
*
**
***
****
***
**
*
C:\>
```

Here, the number after the program name is specified by the user.

Answer:

```
/*********************************
 triangle.cpp
 --------------------------------
 Usage: C:>triangle length
 Example: C:>triangle 5
*********************************/
#include<stdio.h>
#include<stdlib.h>

main(int argc,  char *argv[])
{
    int i,j, length;

    length = atoi(argv[1]);
    for(i = 0; i< length; i++)
    {
        for(j=0; j<i+1; j++)
        {
            printf("*");
        }
        printf("\n");
    }
    for(i = length-1; i>0; i--)
    {
        for(j=0; j<i; j++)
        {
            printf("*");
        }
        if(i>1)
        {
            printf("\n");
        }
    }
}
```