Make a new directory called lab13.
Find the knot vector of an order 3 B-spline with 7 control points.

Total knots are n+m = 10
Order = 3 = m, so the first 3 knots are 0.
\( u_0 = u_1 = u_2 = 0 \)

n-m = 4, so we increment from 1 to 4
\( u_3 = 1 \)
\( u_4 = 2 \)
\( u_5 = 3 \)
\( u_6 = 4 \)

the remaining knots are equal to n-m + 1 = 5
\( u_7 = u_8 = u_9 = 5 \)

So the knot vector is
\[ [0 \ 0 \ 0 \ 1 \ 2 \ 3 \ 4 \ 5 \ 5 \ 5] \]

Compile and run the program 'bezsurf.c' presented at the 'Curves and Surfaces' section.

Default output:
• Modify the control points of the program to display your desired surface.

The modified output and code changes:

```c
GLfloat ctrlpoints[4][4][3] = {
    {{-4.0, -4.0, 4.0}, {-0.5, -4.0, 2.0}, 
     {0.5, -4.0, -1.0}, {1.5, -4.0, 2.0}},
    {{-4.0, -0.5, 1.0}, {-0.5, -0.5, 3.0},
     {0.5, -0.5, 0.0}, {1.5, -0.5, -1.0}},
    {{-4.0, 0.5, 4.0}, {-0.5, 0.5, 0.0},
     {0.5, 0.5, 3.0}, {1.5, 0.5, 4.0}},
    {{-4.0, 1.5, -2.0}, {-0.5, 1.5, -2.0},
     {0.5, 1.5, 0.0}, {1.5, 1.5, -1.0}}
};
```

**Evaluation:** I successfully completed all parts of the lab and am giving myself 20 points.