Graphics P1 Usage

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1 2d Tool

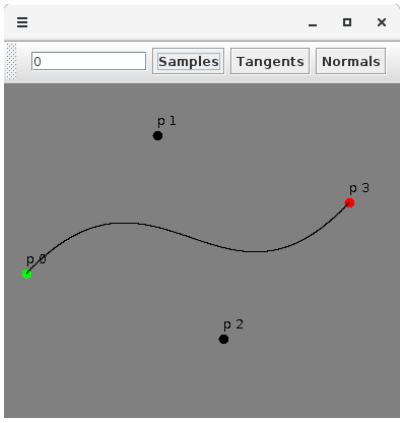
Run the 2d tool by entering the practical directory and running:

```
java -cp bin draw.BezierDraw2d
```

1.1 Control Points

Input	Description
Left Click	Insert a new Point
Scroll Wheel Click	Drag to move a Control Point
Right Click	Delete a Point

Figure 1: Inserting Control Points.



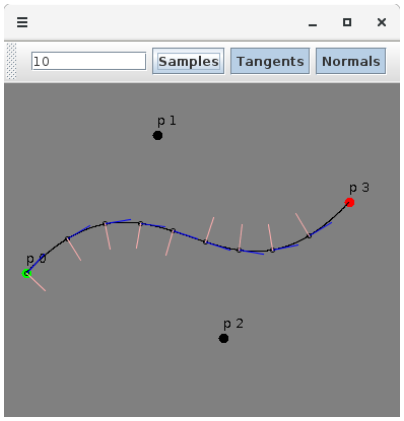
1.2 Tangents and Curvature Normals

After inserting some control points, specify number of sample points and press "Samples".

Click Tangents and Normals to toggle them on or off.

Tangents in blue and normals in pink.

Figure 2: Tangents and Curvature Normals.



2 3d Tool

Run the 3d tool by entering the practical directory and running:

```
java -cp bin draw.BezierDraw3d
```

2.1 Generate a Curve or Surface

2.2 Camera

Reposition Camera using WASD.

Look around using the Arrow Keys.

Figure 3: Specify n and click Curve to draw a Bezier Curve.

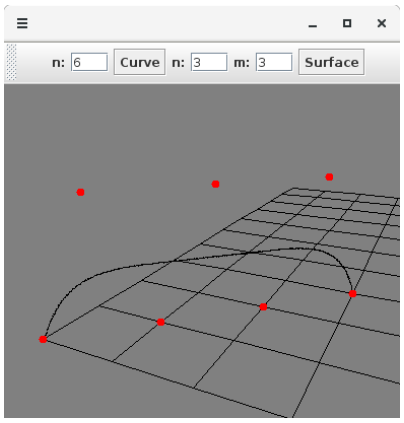
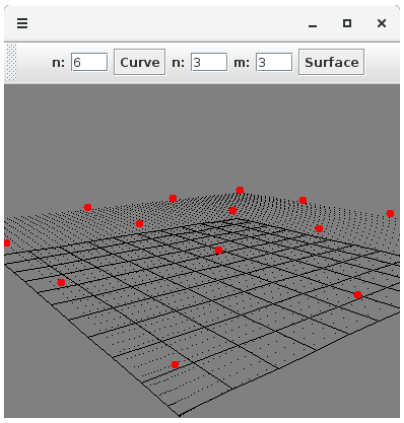


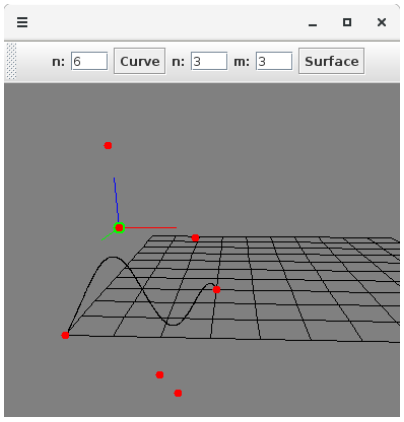
Figure 4: Specify n, m and click Surface to draw a Bezier Surface.



Input	Description
W	Move Forward
A	Strafe Left
S	Move Back
D	Strafe Right

Input	Description
↑	Look Up
↓	Look Down
←	Look Left
→	Look Right

Figure 5: Select a Control Point by clicking on it, edit control point using WASD and RF for elevation.



2.3 Edit Control Point

Movement along z axis (green).

Input	Description
W	− Movement along z axis
S	+ Movement along z axis

Movement Along x axis (red).

Input	Description
A	− Movement along x axis
D	+ Movement along x axis

Elevation (blue).

Input	Description
R	+ Movement along y axis
F	− Movement along y axis

Figure 6: A cool Bezier Surface.