

Bezier Curve Generation

```
public List<Vector2> GenerateCurveLeft(Vector2 enemyPos)
{
    path = new List<Vector2>();
    Vector2 PlotPoint;

    Vector2 control1, control2;
    Vector2 key2;

    //set the key point to the bottom right hand corner of the screen
    key2.X = GraphicsDevice.Viewport.Width;
    key2.Y = GraphicsDevice.Viewport.Height;

    control1.X = enemyPos.X - 300;
    control1.Y = enemyPos.Y + 50;

    control2.X = control1.X;
    control2.Y = control1.Y + 100;

    for (float t = 0; t <= 1.0f; t += 0.01f)
    {
        PlotPoint = GetCurveCoordinates(t, enemyPos, control1, control2, key2);
        path.Add(PlotPoint);
    }

    return path;
}

public Vector2 GetCurveCoordinates(double t, Vector2 p0, Vector2 p1, Vector2 p2, Vector2 p3)
{
    Vector2 b;
    b.X = (float)(Math.Pow((1 - t), 3) * p0.X + 3 * Math.Pow((1 - t), 2) * t * p1.X +
3 * (1 - t) * Math.Pow(t, 2) * p2.X + Math.Pow(t, 3) * p3.X);
    b.Y = (float)(Math.Pow((1 - t), 3) * p0.Y + 3 * Math.Pow((1 - t), 2) * t * p1.Y + 3 * (1 -
t) * Math.Pow(t, 2) * p2.Y + Math.Pow(t, 3) * p3.Y);
    return b;
}
```