

The MapBuilder

You will be learning how to use the Chiara's advanced vision system

```
#nodeclass MapBuilderTest: VisualRoutinesStateNode

#shortnodeclass FindGreenBalls :
MapBuilderNode($,MapBuilderRequest::cameraMap) : constructor
mapreq.addObjectColor(ellipseDataType,"green")

#shortnodemethod setup
    #statemachine
        startnode: FindGreenBalls
        startnode =MAP=> Speak($, "done")
    #endstatemachine
#endnodeclass
```

Notice how we manually created a new node type called “FindGreenBalls” that we were able to use in the state-machine. To create your own nodes, you need the #shortnodeclass to start, then give it a name followed by the type definition like you would in the state machine. Then depending on what you want the node to do, you say either **constructor**, **doStart**, **doStop**, or **setup**. You’ll learn more about these later, so just use constructor for now.

New Info:

VisualRoutinesStateNode A new node type if you’re working with the vision system

MapBuilderNode A new node type that executes the mapbuilder

=MAP=> A new transition that moves whenever the mapbuilder has finished

mapreq The variable to set all attributes of the mapbuilder

- Run this behavior on your Chiara.
- When the behavior has finished, click the button on the righthand side of the ControllerGUI that has the letter C on it.
- Two new windows should pop-up.
- Click on the line that says “camFrame” and see what comes up. Compare this to when you click “rawY”

- If shapes were found, click on the ones that say “ellipse...” to see where it thinks ellipses are. If none exist, get a green egg half, put it in the camera’s view, and re-run the behavior. If you re-run, you may need to hit “Refresh Listing”.

- Play around with different shapes at different distances

: Notice the parameters to addObjectColor inside the new class we made. It has ellipseDataType and the string “green”. You can request different objects depending on what color and what data type you use. The available colors are very basic: essentially ROYGBP, with some working better than others.

The available shape types that you will use are ellipseDataType, lineDataType, and blobDataType.

- Ellipse looks for round things that may be oblong

- Line looks for lines

- Blob looks for any collection of the same color.

Create a new node that looks for pink lines and change your behavior to look for pink lines rather than green ellipses. Get the pink tape to make sure that a pink line is actually in view. Show me.