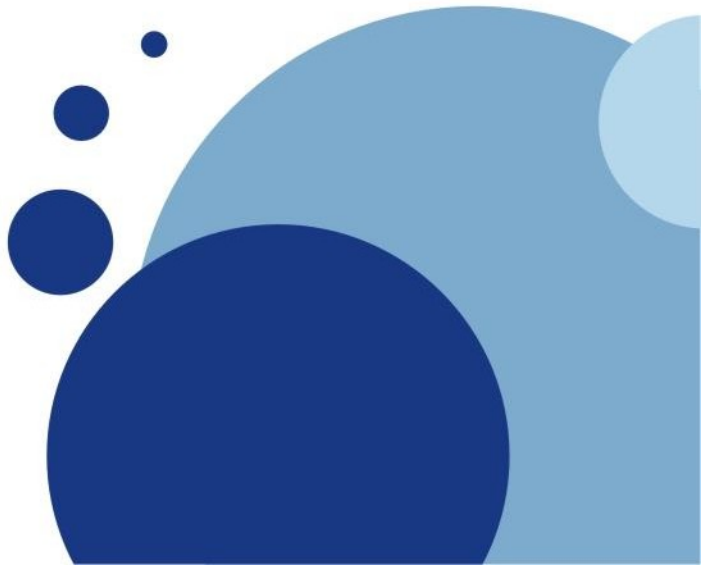
GEOG 178/258
Week 8:

Model Viewer Controller: MVC

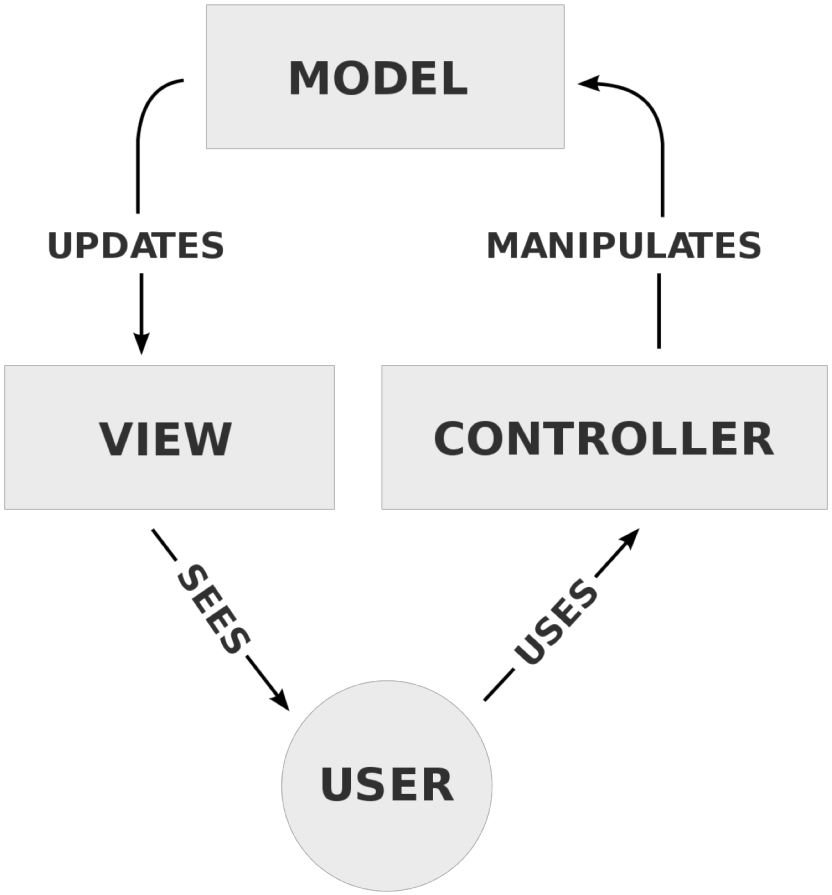
mike johnson



Model View Controller

Week 8

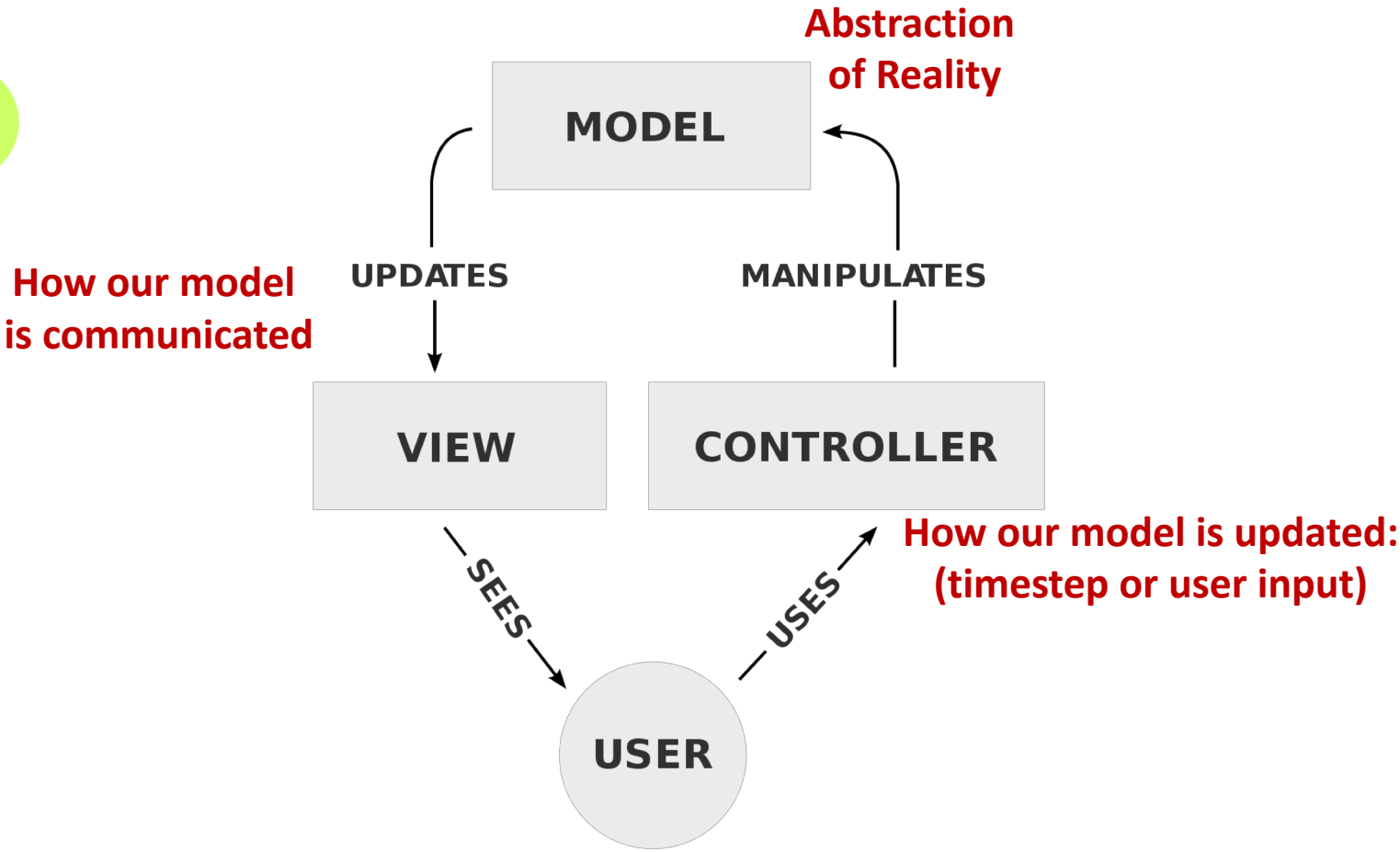
MVC



Model View Controller

Week 8

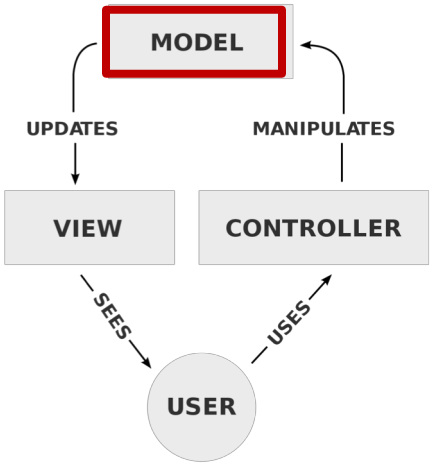
EX1



Model View Controller

Week 8

MVC



1) What are we trying to model? (Movement, physical process, behavior…?)

2) What is the abstraction we are interested in?

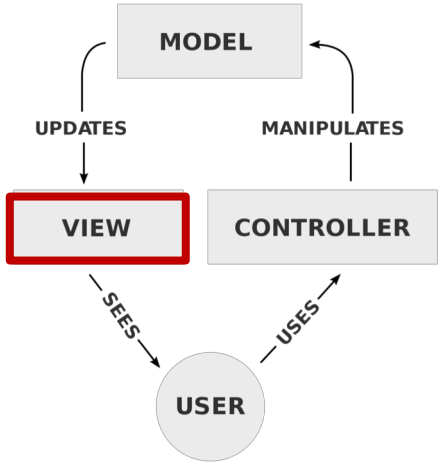
3) How will we represent the pieces in the most basic form (think back to the ‘essence’ of the object)

4) What classes can we inherit and which need to be built?

Model View Controller

Week 8

MVC



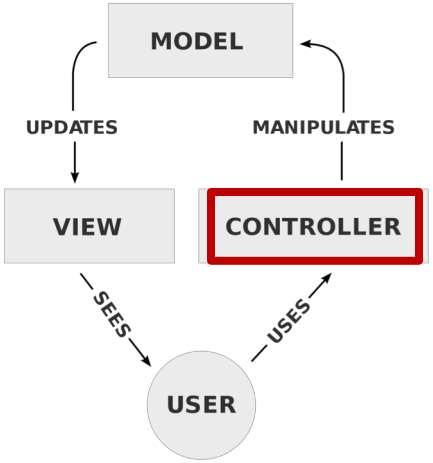
1) How will results communicated? (Map, plot, text…)

2) What aspects of the model are we interested in as ‘results’

Model View Controller

Week 8

MVC



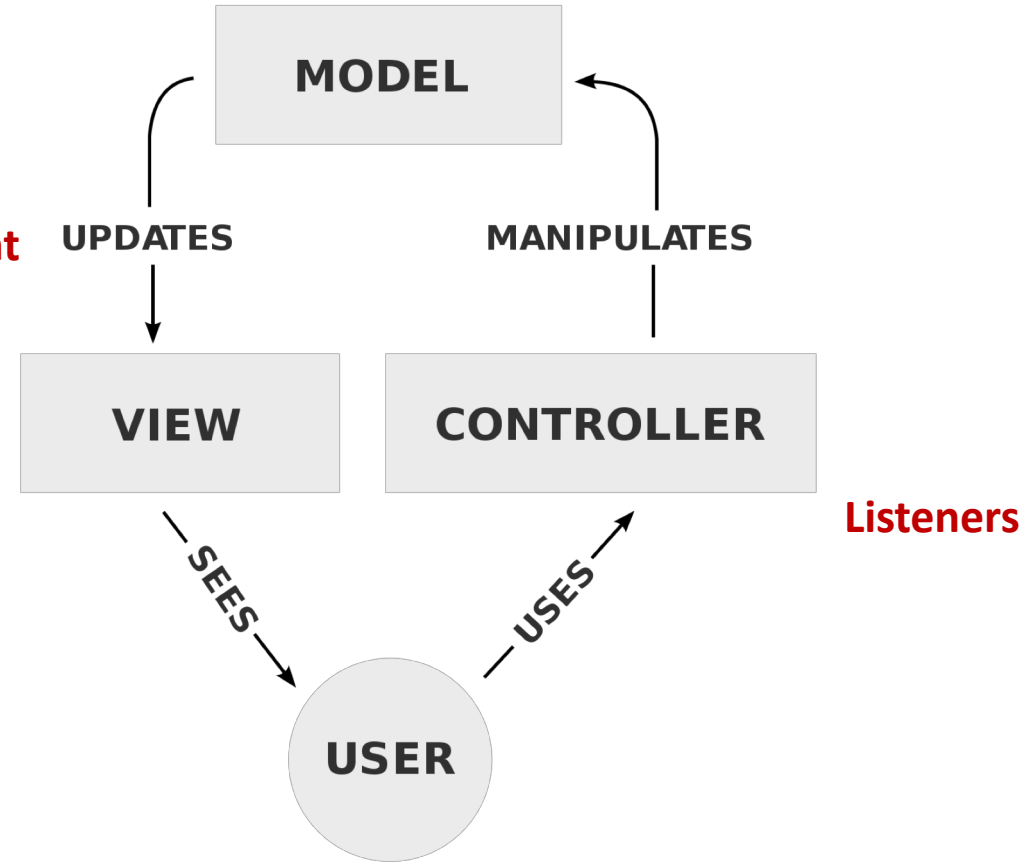
1) How will the model run? (timesteps, user input, single case…)

Model View Controller

Week 8

EX2

Member Variables



PaintComponent

Listeners

Model View Controller

Week 8

EX3

```
public class tinyGIS extends JPanel implements MouseListener, ActionListener {
```

Model View Controller

Model View Controller

Week 8

EX4

```
public class tinyGIS extends JPanel implements MouseListener, ActionListener {

// MODEL

    private int x;
    private Point y;
    private boolean z;

    public tinyGIS() {
    }

//VIEW

    public void paintComponent(Graphics g) {
    }

// CONTROL

    public void mouseClicked(MouseEvent e) {...}

    public void mousePressed(MouseEvent e) {...}

    @Override
    public void mouseReleased(MouseEvent e) {
    }

    public void mouseEntered(MouseEvent e) {...}

    public void mouseExited(MouseEvent e) {...}

    @Override
    public void actionPerformed(ActionEvent e) {
    }
}
```

Model

View

Controller

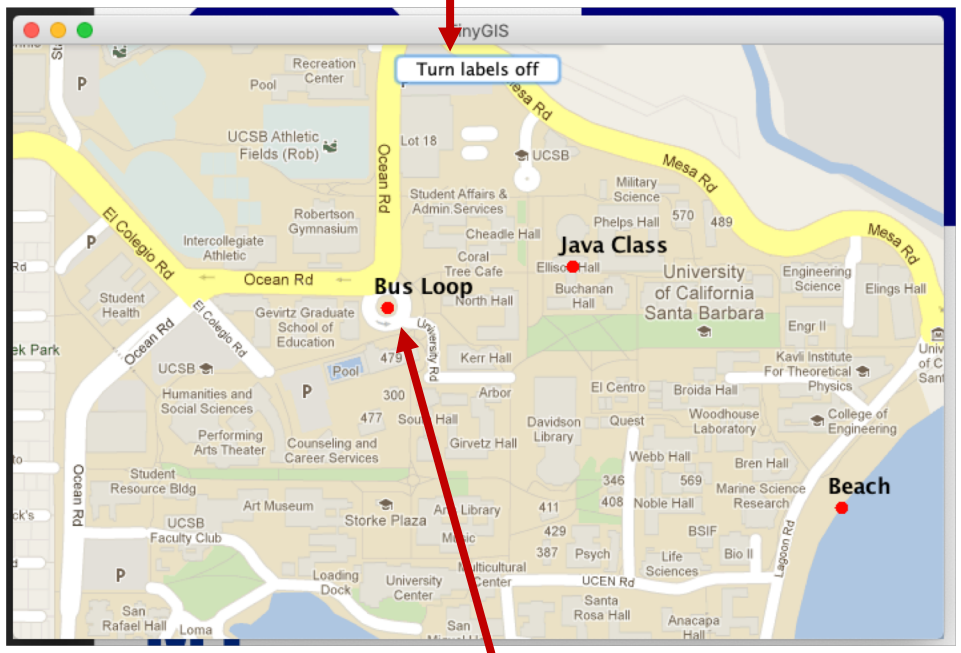
RUBRIC

Week 8

MVC

View

Controller



Model

HW MVC

ToDo (Due Feb 27 2019, EOD)

- Implement a POI App that allows you to **digitize a path** as well as **POIs** via **mouse** clicks (and store both types of geometries).
- **Show the names** of the POIs when they are **visited** (via the digitized path)
- Allow the user to **name POIs** and **check** their names by clicking on them [GEOG 258 only] (http://docs.oracle.com/javase/tutorial/uiswing/components/dialog.html)
- Implement the **path** in a way that it can be **reset** which also causes the display to hide the POI names. [GEOG 258 only]

HW MVC

Week 8

MVC

Model:

POIs: Have **names**, and can be **visited** (Extend PointBuffer?)
Paths: Can visit POIs and be reset (PolyLine)

Viewer:

Map (campus.png; g.drawImage())
POI (w and w/o **names**) (g.fillOval(x,y))
Path (d.drawLine(x1,y1,x2,y2)

Controller:

Clicks let you **draw** new points, and **name** existing points (MouseListener)
Path can be **reset** (ActionListener?)

In Class Example

HW Hints

Week 8

MVC

1. Can you change to ‘labels’ button and flag to change drawing mode?
2. Can you make use of POI.isInside() to change POI ‘visited’
3. Can you make use POI ‘visited’ to label features?
4. Can you make use of our temporary Point to population both paths and POIs?

RUBRIC

Week 8

MVC

GEOG 178	Points
Can I import your code w/o modification?	2
Can I draw POIs	2
Can I draw paths	2
Can I switch between drawing modes	2
Do names appear when visited	2

GEOG 278	Points
Can I import your code w/o modification?	2
Can I draw POIs	1
Can I draw paths	1
Can I switch between drawing modes	1
Do names appear when visited	1
Can I check/change a POIs name by clicking	2
Can I reset the path in a way that hides POI names	2