CS 5410

Intro to Mouse Input Handling

Handling Mouse Input

1. Define a Input Manager
   - Event listeners for...
     - mousedown
     - mouseup
     - mousemove
   - Invoke handlers on update
2. Register handler for mouse events
   - Concept of ‘capture’
3. Correct for HTML element offset

Event Listeners – Input Manager

```
let that = {
        mouseDown : [],
        mouseUp : [],
        mouseMove : [],
        handlersDown : [],
        handlersUp : [],
        handlersMove : []
    };
```

Event Listeners

```
function mouseDown(e) {
    that.mouseDown.push(e);
}
```

```
let canvas = document.getElementById('id-canvas');

canvas.addEventListener('mousedown', mouseDown);
canvas.addEventListener('mouseup', mouseUp);
canvas.addEventListener('mousemove', mouseMove);
```

Input Manager - Register

```
that.register = function(type, handler) {
    if (type === 'mousedown') {
        that.handlersDown.push(handler);
    }
    else if (type === 'mouseup') {
        that.handlersUp.push(handler);
    }
    else if (type === 'mousemove') {
        that.handlersMove.push(handler);
    }
};
```

Client Code - Register

```
let canvas = document.getElementById('id-canvas');
let mouseCapture = false;
myMouse.register('mousedown', function(e, elapsedTime) {
    mouseCapture = true;
    myTexture.moveTo({ x : e.clientX,
        y : e.clientY });
});

myMouse.register('mouseup', function(e, elapsedTime) {
    mouseCapture = false;
});

myMouse.register('mousemove', function(e, elapsedTime) {
    if (mouseCapture) {
        myTexture.moveTo({ x : e.clientX,
            y : e.clientY });
    }
});
```

Client Code – Account for HTML element offset

```
let canvas = document.getElementById('id-canvas');
let mouseCapture = false;
myMouse.register('mousedown', function(e, elapsedTime) {
    mouseCapture = true;
    myTexture.moveTo({ x : e.clientX - canvas.offsetLeft,
        y : e.clientY - canvas.offsetTop });
});

myMouse.register('mouseup', function(e, elapsedTime) {
    mouseCapture = false;
});

myMouse.register('mousemove', function(e, elapsedTime) {
    if (mouseCapture) {
        myTexture.moveTo({ x : e.clientX - canvas.offsetLeft,
            y : e.clientY - canvas.offsetTop });
    }
});
```