CSC116 DISCUSSION 12

GINA BAI

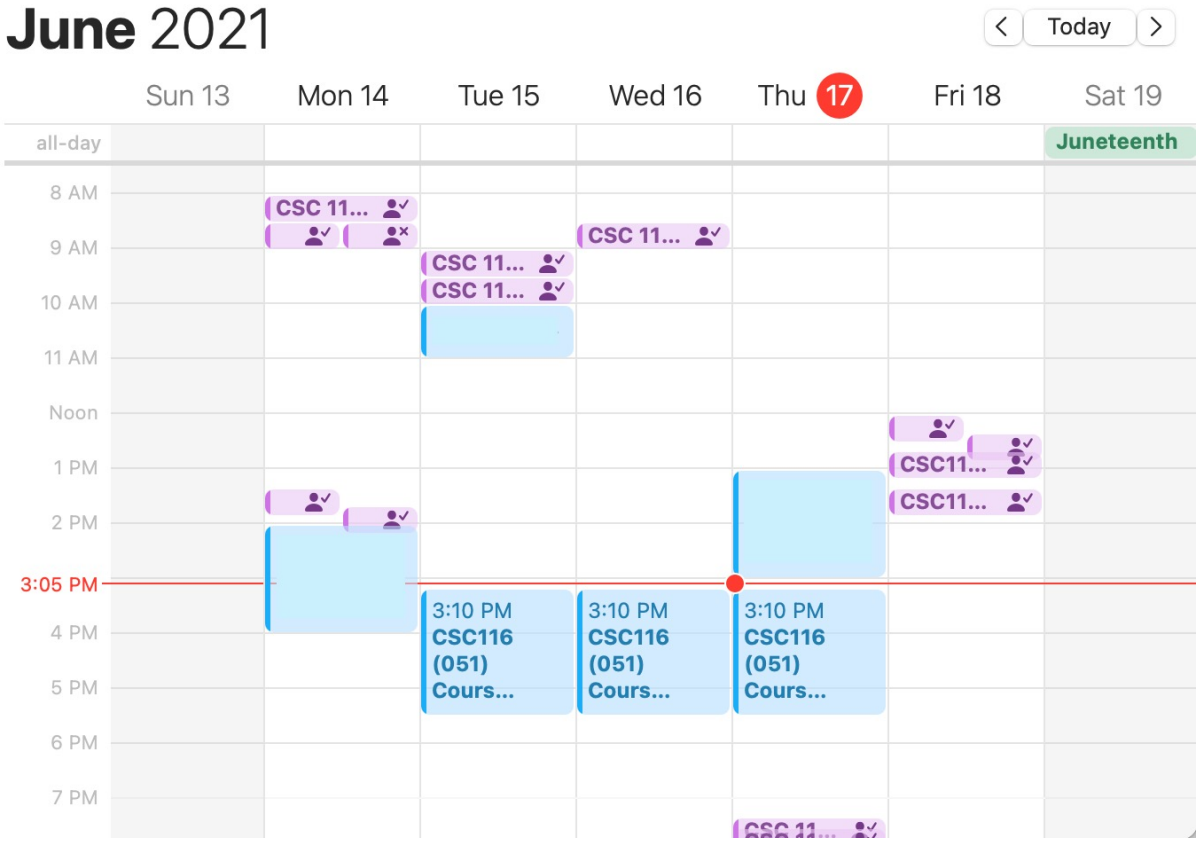
LOGISTICS

- Growth Mindset #2
  - Tonight at 11:45pm
- Project 2
  - June 18th, at 11:45pm
- Next week…
  - Lecture 13 & Exam 2 Review &. No Class

TOPICS

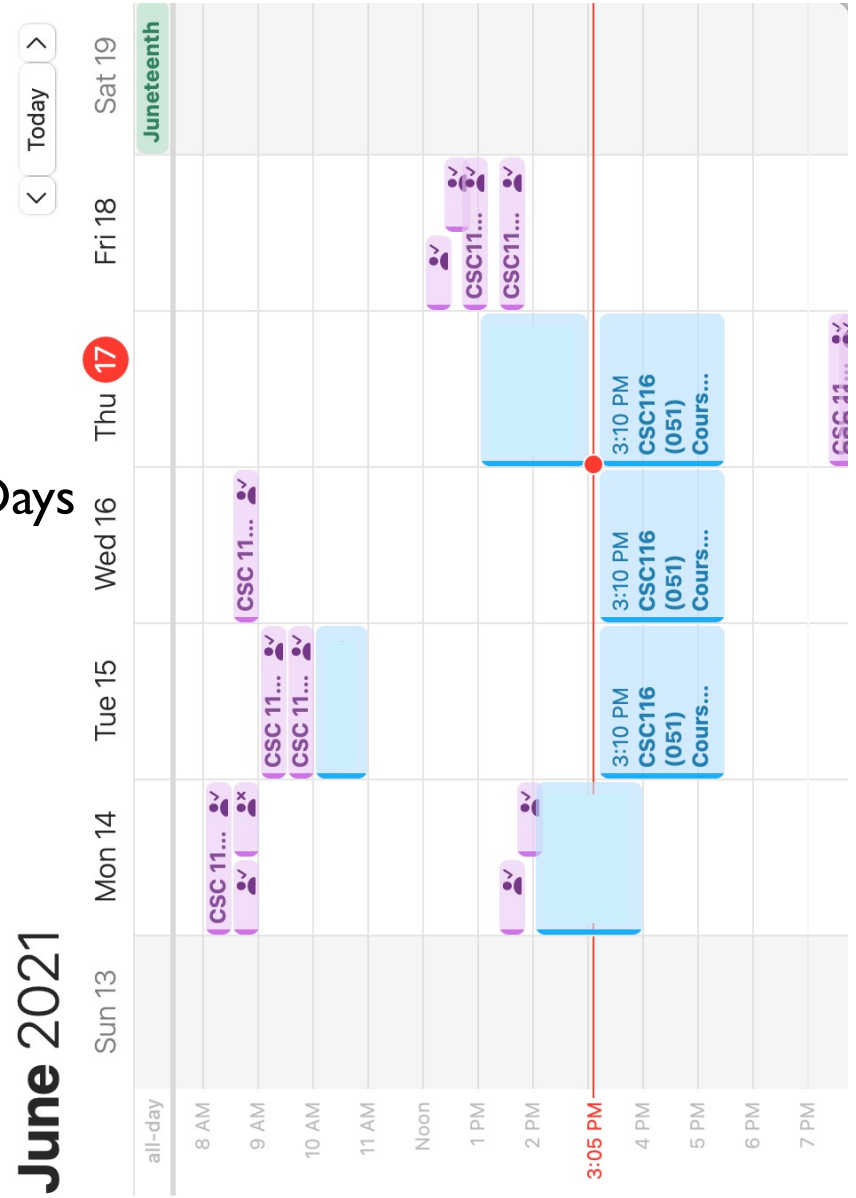
- for each loop
  - Iterates through each element in an array
  - Cannot modify array elements
  - **for(<type > <name> : <array>){…}**
- Multi-dimensional arrays
  - 2D array
  - **<type>[][] <arrayName> = new <type> [<numRow size>][<numColumn>];**

2D ARRAY



Columns: Daily To-dos

Rows: Days



TOPICS

- for each loop
  - Iterates through each element in an array
  - Cannot modify array elements
  - **for(<type > <name> : <array>){…}**
- Multi-dimensional arrays
  - 2D array
    - **<type>[][] <arrayName> = new <type> [<numRow size>][<numColumn>];**
    - Jagged array
      - construct rows array, construct array for each row
- Array of objects
  - Default value is **null**
  - 2-phase initialization
    - Initialize the array
    - Initialize the array elements

PRINTING A MULTIDIMENSIONAL ARRAY

- Q: What control structure should we use?

  nested for loops

- Q: What are the bounds for the outer loop?

  0 to number of rows

- Q: What are the bounds for the inner loop?

  0 to number of columns

```
public static void print(double[][] grid) {
    for (int i = 0; i < grid.length; i++ ) {
        for (int j = 0; j < grid[i].length; j++ ) {
            System.out.print(grid[i][j] + "\t");
        }
        System.out.println();
    }
}
```

LAB 12 – TWO PROGRAMS

- Append

```
int[] a = {2, 4, 6};
int[] b = {1, 3};
int[] c = append(a, b);
System.out.println(Arrays.toString(c));
```

Expected Output:

[2, 4, 6, 1, 3]

- MultiplicationTable

```
int[][] smallTable = createMultiplicationTable(3);
printMultiplicationTable(smallTable);
```

Expected Output

1 2 3

2 4 6

3 6 9