CS 161 Recitation
Worksheet: Week 10

1. Review Quiz 9.

In small groups, finish last week's worksheet, especially questions 4 and 5.

2. How can you create a jagged 2-d array? What other kind of structures can you create with a double pointer?

3. How would you deallocate the memory of a 2D array? This you can answer with the problem below.

Practice for Final: Multiply a number times a matrix of size rows x cols and store the result in a different matrix of size rows x cols. The number of rows and cols, as well as the number to multiply the matrix by, are provided as command-line arguments. **First, find the two logic errors and two syntax errors.**

```
//assume libraries and using namespace std
int ** create_matrix(int, int);
void fill_matrix(int **, int, int);
void multiply_matrix(int, int **, int **, int, int);
void delete_matrix(int **, int);

int main (int argc, char *argv[]) {
   int **m, **result, rows, cols, num;

   rows=atoi(argv[0]);
   cols=atoi(argv[1]);
   num=atoi(argv[2]);

   //How would you create m using create_matrix()?

   //How would you create result using create_matrix()?

   //How would you fill m using fill_matrix()?

   //How would you multiply num * m using multiply_matrix()?

   //How would you delete m and result using delete_matrix()?



   return 0;
}
```

```
int ** create_matrix(int r, int c) {
   int **p=new int*[r];
   for(int i=0; i<c; i++)
      p[i]=new int[c];
   return *p;
}

void fill_matrix(int **p, int r, int c) {
   for(int i=0; i<r; i++)
      for(int j=0; j<c; j++) {
         cout << “Enter a matrix value: ”;
         cin >> p[i][j];
      }
}

void multiply_matrix(int n, int **p, int r, int c) {
   for(int i=0; i<r; i++)
      for(int j=0; j<c; j++)
         p2[i][j]=n*p[i][j];
}

//Write the function for delete_matrix() that corresponds to the
//declaration/prototype above
```