257 / 757 Programming in the Arts with Processing **In Class Exercise #18**	Day: Due: Goal:	Tue 4.3.14 In Class OOPs again…

Course Web Site:

http://www.andrew.cmu.edu/course/60-257/

Assignment:

1. Find your ICE #17 file and open it. Save it as ICE18.

2. Click on the Figure tab. Copy the code below and paste it into the code in the Figure tab immediately under the variable declarations:

```
Figure( int tx, int ty, int tdim, int tcol )
{
    x = tx;
    y = ty;
    dim = tdim;
    col = tcol;
 }
```

This code is called the constructor that was discussed in class.

3. Click on the ICE18 tab and erase all of the existing code in the tab. Then copy the code on the next page into the ICE18 tab.

4. This code declares an array and initializes an array of Figure objects named **`allFigures`**. This is done in the **`setup( )`** and the **`initFigures( )`** functions.

5. Define a function named **`moveFigures( )`** that traverses the **`allFigures`** array and calls the **`moveFigure( )`** function of each object in the array.

6. Define a function named **`drawFigures( )`** that traverses the **`allFigures`** array and calls the **`drawFigure( )`** function of each object in the array.

```
final int MAX_FIGURES = 10;

Figure  [ ] allFigures;

void setup ( )
{
  size( 400, 400 );
  allFigures = initFigures(  );
}

void draw( )
{
  background( 0 );
  moveFigures( );
  drawFigures( );
}

Figure [ ] initFigures( )
{
  Figure [ ] temp = new Figure[ MAX_FIGURES ] ;

  for ( int i = 0; i < temp.length; i++)
  {
     int x = int( random( width ) );
     int y = int( random( height ) );
     int dim = int( random( 50 ) );
     int col = color( random( 255 ),
                      random( 255 ),
                      random( 255 ) );
     temp[i] = new Figure( x, y, dim, col );
  }

  return temp;
}
```