# CS372 - CPS

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*The best way to predict the future is to invent it*

**– Alan Kay**

# Problems

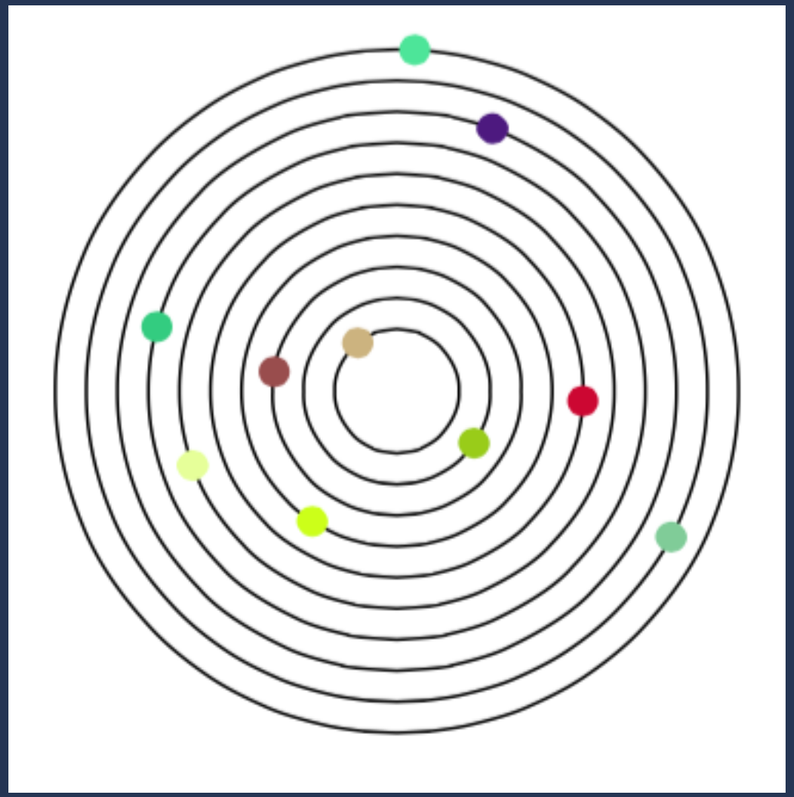
- Testing double values!
- Initializer list for vectors
- Xcode crashing!

# Interesting Parts!

- Used decorator pattern for building Shapes, Rotating, etc...
- CustomShape can take parameters and implements an element of randomness!

# CustomShape

```
CustomShape solar_system(20, 10);
```



# Loop for how the solar system is built

```
for(auto ii=0; ii<numberPlanets; ++ii)
{
    shared_ptr<Shape> orbit = make_shared<Circle>(firstOrbit + (ii*otherOrbit));
    _shapes.push_back(orbit);

    shared_ptr<Vertical> aPlanet = make_shared<Vertical>(std::initializer_list<shared_ptr<Shape>>({ spacer1 }));

    for(auto jj=0; jj<=ii-1; ++jj)
        aPlanet->push_back(spacer2);

    aPlanet->push_back(planet);
    shared_ptr<Rotate> rotated = make_shared<Rotate>(aPlanet, orientation());

    _shapes.push_back(rotated);
}
```

# Thought about our implementation

- Overall it seems to be fairly flexible for compositing different shapes together, although the code required to do so is very verbose
- Would benefit from some sort of Factory implementation