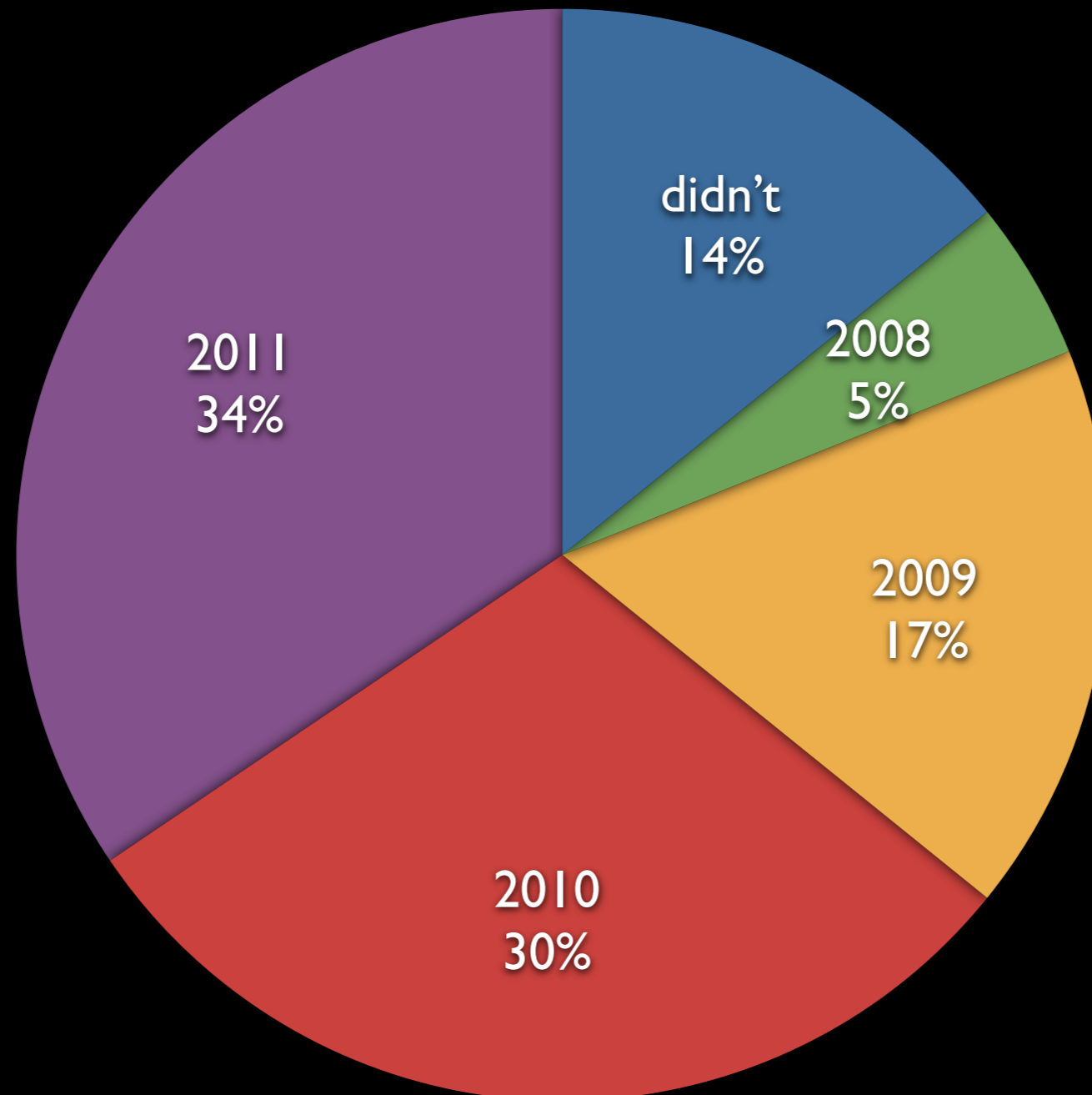


# lecture 3

design patterns

This is ~~CS164~~ CS164

# when did classmates take CS50?



# changes

sections

~~labs~~ design reviews, code reviews, office hours

alphas

new release cycle

# new release cycle

<b>Mon</b>	<b>Tue</b>	<b>Wed</b>	<b>Thu</b>	<b>Fri</b>
Proposal				
	Design Doc, Style Guide			
	Alpha			
				Release

workload

project I

# project 1

## Project 1: Students' Choice of Web Apps

Mon	Tue	Wed	Thu	Fri
<b>2/20</b> Proposal				
	<b>2/28</b> Design Doc, Style Guide			
	<b>3/6</b> Alpha			
				<b>3/23</b> Release



<https://projects.cs50.net/projects/mobile/>

# lectures

OOP

iOS

iOS, continued

iOS, continued

Unit Tests

...

Scalability

Security

1.5x

# design patterns

MVC

singleton

DAO

active record

factory

lazy loading

observer

...

active record

```
$course = new Course();  
$course->cat_num = 7295;  
$course->title = "Mobile Software Engineering";  
$course->save();
```

singleton

# DAO

data access object



# ORM

Doctrine

Propel

...

# frameworks

CodeIgniter

Kohana

Symphony

Yii

Zend

...

to be continued...