Working With Legacy Code

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What is legacy code?

Code is legacy code as soon as it's written.

Michael Feathers, Working Effectively with Legacy Code

What is legacy code?

- Code without tests*
- Inherited code
- Poorly designed code
- Too complicated code
- Illegible code

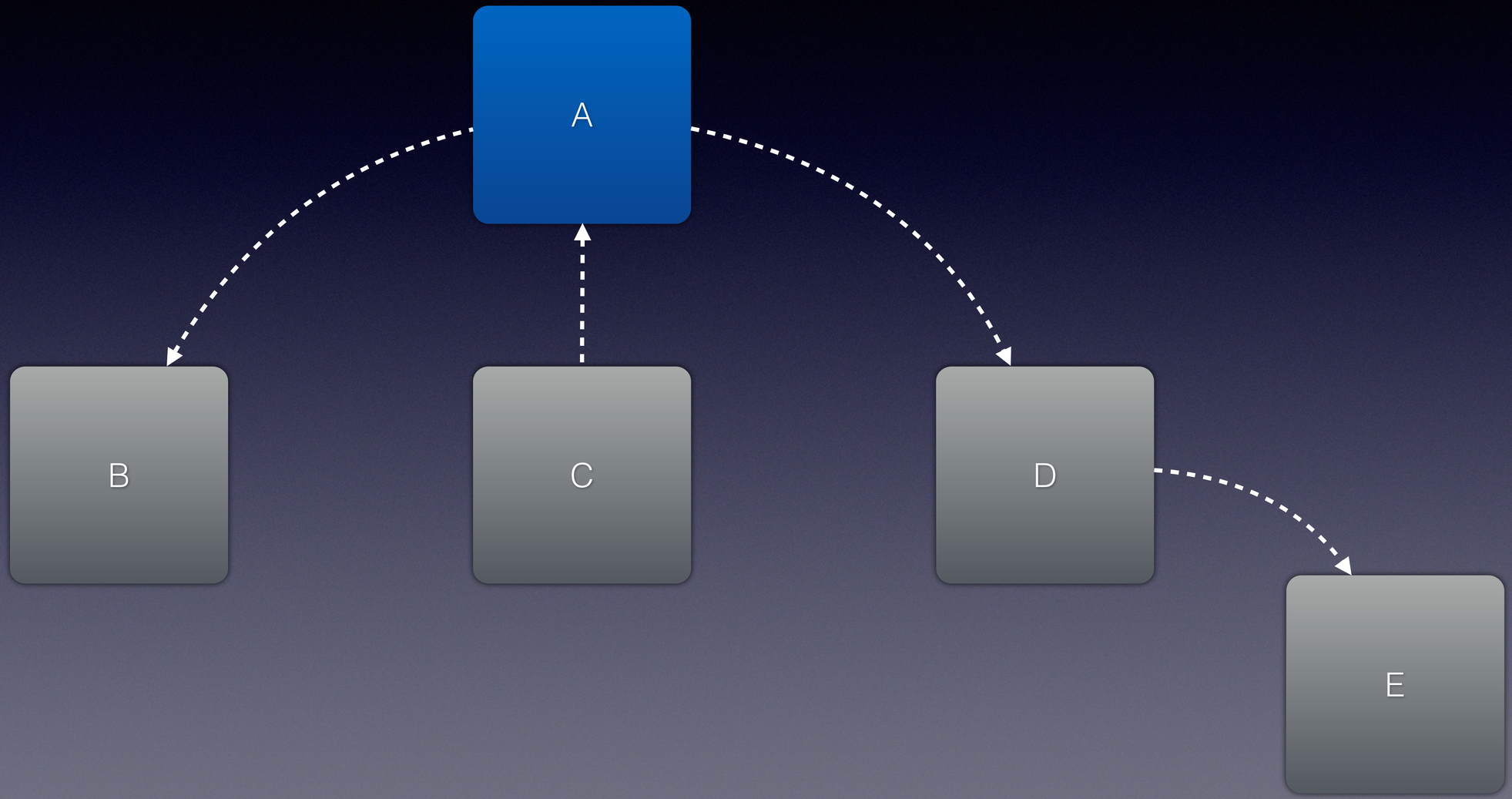
**Michael Feathers*

Testing scenario #1 Task

How to approach it?

- Identify change points
- Find an inflection point
- **Cover the inflection point**
- Make changes
- Refactor the covered code

Inflection point



Inflection point

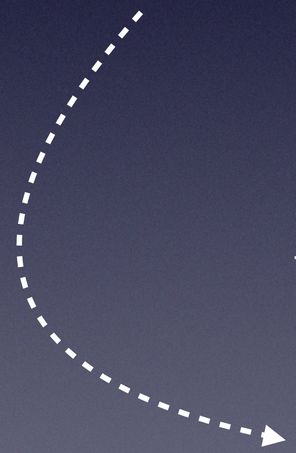
- Violation of Single Responsibility Principle
- Violation of Open-Closed Principle

Covering inflection point

- Break external dependencies
- Break internal dependencies
- Write tests

Breaking **external** dependencies

```
- (NSUInteger)calculatePrice {
    ...
    StockAnalyzer *analyzer = [[StockAnalyzer alloc] init];
    ...
}
```



```
- (id)initWithAnalyzer:(id <AnalyzerProtocol>)analyzer {
    self = [super init];
    if (self) {
        _analyzer = analyzer;
    }
    return self;
}
```

Breaking **internal** dependencies

```
- (CGSize)calculateSize {
    ...
    UIScreen *screen = [UIScreen mainScreen];
    ...
}
```

```
- (CGSize)calculateSize {
    ...
    UIScreen *screen = [self screen];
    ...
}

- (UIScreen *)screen {
    return [UIScreen mainScreen];
}
```

Write tests

Make changes

Testing scenario #2 Task

When to Refactor?

- Too wide class responsibility
- Duplicated code
- Not readable code
- Too many method arguments (more than 2)
- Method has more than 20 lines
- Class has more than 200 lines

Keep in mind

- Composition over inheritance
- Avoid singletons
- Isolate dependencies
- Inject dependencies

Thanks!

@maciejoczko