

Object Oriented Caesar Cipher

Visibility

Visibility: Public vs Private

```
public class CaesarCipher {  
    private String alphabet;  
    private String shiftedAlphabet;  
    public CaesarCipher(int key) {  
        alphabet = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";  
        shiftedAlphabet = alphabet.substring(key) +  
            alphabet.substring(0,key);  
    }  
    .....  
}
```

Visibility: Public vs Private

```
public class CaesarCipher {  
    private String alphabet;  
    private String shiftedAlphabet;  
    public CaesarCipher(int key) {  
        alphabet = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";  
        shiftedAlphabet = alphabet.substring(key) +  
            alphabet.substring(0,key);  
    }  
    .....  
}
```

Public

```
public class CaesarCipher {
```

```
    private String alphabet;
```

```
    private String shiftedAlphabet;
```

```
    public CaesarCipher(int key) {
```

```
        alphabet = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
```

```
        shiftedAlphabet = alphabet.substring(key) +
```

```
            alphabet.substring(0,key);
```

```
    }
```

```
    .....
}
```

Any code can access
public fields/methods

Private

```
public class CaesarCipher {
```

```
    private String alphabet;
```

```
    private String shiftedAlphabet;
```

```
    public CaesarCipher(int key) {
```

```
        alphabet = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";
```

```
        shiftedAlphabet = alphabet.substring(key) +
```

```
            alphabet.substring(0,key);
```

```
    } shiftedAlphabet has private access in CaesarCipher
```

?

.....

Only code inside this class
can access **private** fields/methods

Why Private?

- Why private?
 - Easier to just make all public?
- Abstraction:
 - Separation of **interface** + **implementation**

Interface: What It Does

Implementation: How It Does It

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public Interface: What It Does

private Implementation: How It Does It

General Guidance

- Fields: private
 - Typically part of implementation
- Methods: depends
 - Things object does: public
 - Helpers: private
- Classes: public
 - For now: always
- Constructors: public
 - For now: always