

# 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

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Implementation: How It Does It

# Why Private?

- Why private?
  - Easier to just make all public?
- Abstraction:
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**public**      Interface: What It Does

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**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