Factory Method Pattern

Tea tea = getTea()
tea.prepare()
tea.brew()
tea.put()

TeaCreator
...
+ making()
+ getTea(): Tea

<<Interface>>
Tea
+ prepare()
+ brew()
+ put()

MilkTeaCreator
...
+ getTea()

GreenTeaCreator
...
+ getTea()

LemonTeaCreator
...
+ getTea()

return new GreenTea()

LemonTea
...
+ prepare()
+ brew()
+ put()

GreenTea
...
+ prepare()
+ brew()
+ put()

MilkTea
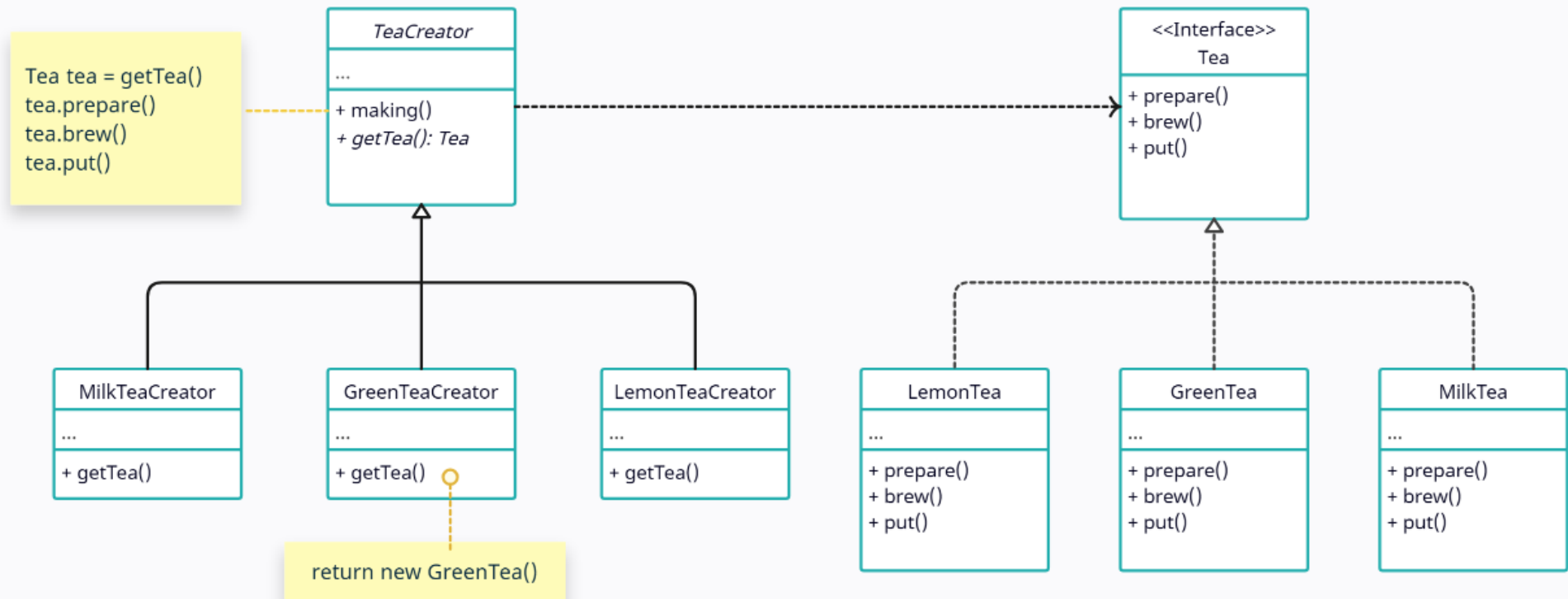...
+ prepare()
+ brew()
+ put()

Factory Method Pattern

Tea.java ✕

```java
package Pattern_01_FactoryMethod_TeaCreator;

interface Tea {    8 usages  3 implementations
    void prepare();    1 usage  3 implementations
    void brew();    1 usage  3 implementations
    void put();    1 usage  3 implementations
}

```

GreenTea.java ✕

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class GreenTea implements Tea{    1 usage
    @Override    1 usage
    public void prepare() {
        System.out.println("Prepare GreenTea");
    }

    @Override    1 usage
    public void brew() {
        System.out.println("Brew GreenTea");
    }

    @Override    1 usage
    public void put() {
        System.out.println("Put GreenTea");
    }
}

```

MilkTea.java ✕

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class MilkTea implements Tea{    1 usage
    @Override    1 usage
    public void prepare() {
        System.out.println("Prepare Milk");
    }

    @Override    1 usage
    public void brew() {
        System.out.println("Brew Milk");
    }

    @Override    1 usage
    public void put() {
        System.out.println("Put Milk");
    }
}

```

LemonTea.java ✕

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class LemonTea implements Tea{    1 usage
    @Override    1 usage
    public void prepare() {
        System.out.println("Prepare LemonTea");
    }

    @Override    1 usage
    public void brew() {
        System.out.println("Brew LemonTea");
    }

    @Override    1 usage
    public void put() {
        System.out.println("Put LemonTea");
    }
}

```

Factory Method Pattern

TeaCreator.jav ×

```java
package Pattern_01_FactoryMethod_TeaCreator;

abstract class TeaCreator {   5 usages   3 inheritors
    public void making() {   1 usage
        System.out.println("Making Tea...");
        Tea tea = getTea();
        tea.prepare();
        tea.brew();
        tea.put();
    }

    public abstract Tea getTea();   1 usage   3 implementations
}
```

LemonTeaCreator.jav ×

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class LemonTeaCreator extends TeaCreator {   1 usage
    @Override   1 usage
    public Tea getTea() {
        return new LemonTea();
    }
}
```

MilkTeaCreator.jav ×

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class MilkTeaCreator extends TeaCreator {   1 usage
    @Override   1 usage
    public Tea getTea() {
        return new MilkTea();
    }
}
```

GreenTeaCreator.jav ×

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class GreenTeaCreator extends TeaCreator{   1 usage
    @Override   1 usage
    public Tea getTea() {
        return new GreenTea();
    }
}
```

Main.java ×

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class Main {

    public static void client(TeaCreator tea) {   3 usages
        tea.making();
        System.out.println();
    }

    public static void main(String[] arg) {
        TeaCreator tea = new GreenTeaCreator();
        client(tea);

        tea = new LemonTeaCreator();
        client(tea);

        tea = new MilkTeaCreator();
        client(tea);
    }
}
```

Factory Method Pattern

```java
package Pattern_01_FactoryMethod_TeaCreator;

public class Main {

    public static void client(TeaCreator tea) {  3 usages
        tea.making();
        System.out.println();
    }

    public static void main(String[] arg) {
        TeaCreator tea = new GreenTeaCreator();
        client(tea);

        tea = new LemonTeaCreator();
        client(tea);

        tea = new MilkTeaCreator();
        client(tea);
    }
}
```

```
Making Tea...
Prepare GreenTea
Brew GreenTea
Put GreenTea

Making Tea...
Prepare LemonTea
Brew LemonTea
Put LemonTea

Making Tea...
Prepare Milk
Brew Milk
Put Milk


Process finished with exit code 0
```

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