LB 15 - “Metoda szablonu”

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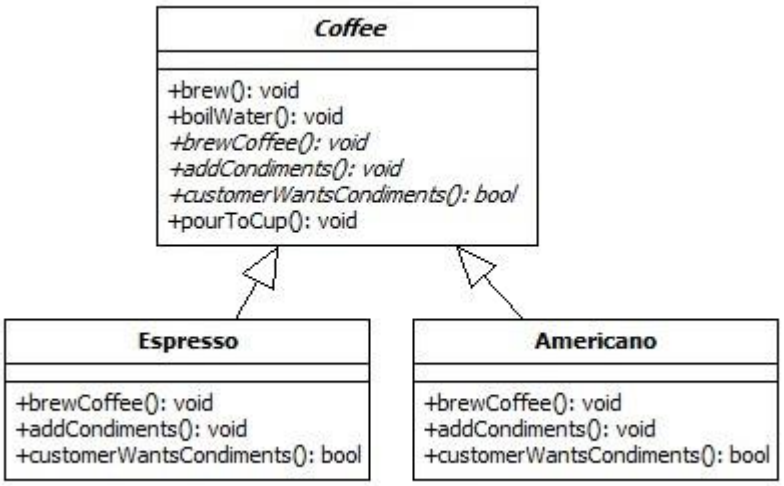
Diagram klas



Kod

```cpp
#if !defined(_COFFEE_H)
#define _COFFEE_H
#include <iostream>
using namespace std;

class Coffee {
public:
    void brew();
    void boilWater();
    virtual void brewCoffee() = 0;
    virtual void addCondiments() = 0;
    virtual bool customerWantsCondiments() = 0;
    void pourToCup();
};

#endif  //_COFFEE_H
```

```cpp
#include "Coffee.h"

void Coffee::brew() {
    boilWater();
    brewCoffee();
    pourToCup();
    if(customerWantsCondiments()){
        addCondiments();
    }
}

void Coffee::boilWater() {
    cout << "Boiling water" <<endl;
}

void Coffee::pourToCup() {
    cout <<"Pouring coffee to the cup" <<endl;
}
```

```cpp
#if !defined(_AMERICANO_H)
#define _AMERICANO_H

#include "Coffee.h"

class Americano : public Coffee {
public:
    void brewCoffee() override;
    void addCondiments() override;
    bool customerWantsCondiments() override;
};

#endif  //_AMERICANO_H
```

```cpp
void Americano::brewCoffee() {
    cout<<"Brewing Americano Coffee"<<endl;
}

void Americano::addCondiments() {
    cout<<"Adding sugar"<<endl;
}

bool Americano::customerWantsCondiments() {
    return true;
}
```

```cpp
#if !defined(_ESPRESSO_H)
#define _ESPRESSO_H

#include "Coffee.h"

class Espresso : public Coffee {
public:
    void brewCoffee() override;
    void addCondiments() override;
    bool customerWantsCondiments() override;
};

#endif  //_ESPRESSO_H
```

```cpp
#include "Espresso.h"

void Espresso::brewCoffee() {
    cout<<"Brewing Espresso coffee"<<endl;
}

void Espresso::addCondiments() {
    cout<<"Giving the customer a glass of water"<<endl;
}

bool Espresso::customerWantsCondiments() {
    return false;
}
```

```cpp
#include "Coffee.h"
#include "Americano.h"
#include "Espresso.h"

int main() {
    Coffee *americano = new Americano();
    Coffee *espresso = new Espresso();

    cout<<"Concrete Class 1: Americano Coffee "<<endl;
    americano->brew();
    cout<<"==============================="<<endl;
    cout <<"Concrete Class 2: Espresso Coffee"<<endl;
    espresso->brew();
    return 0;
}
```

Wyniki kodu

```
Concrete Class 1: Americano Coffee
Boiling water
Brewing Americano Coffee
Pouring coffee to the cup
Adding sugar
===============================
Concrete Class 2: Espresso Coffee
Boiling water
Brewing Espresso coffee
Pouring coffee to the cup
```