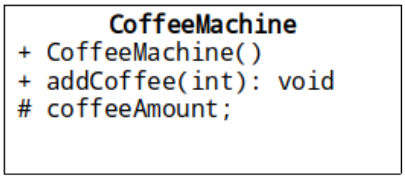
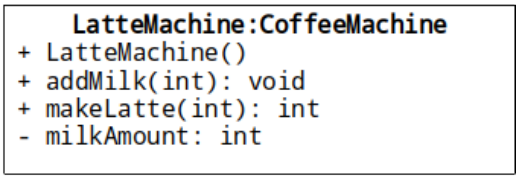
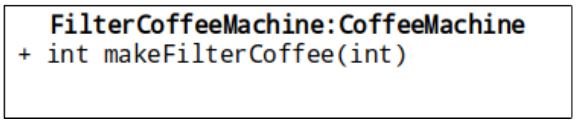
CENG241 Labwork 7

1. Implement the following **CoffeeMachine**, **FilterCoffeeMachine** and **LatteMachine** classes:







   - Constructors should set amounts of coffee/milk to 0.
   - Both the **makeFilterCoffee** and the **makeLatte** accepts number of cups as parameter.
   - **makeFilterCoffee** function returns 0 if enough coffee is in the machine, otherwise returns -1.
   - **makeLatte** function returns 0 if enough coffee and milk is in the machine, -1 if coffee is not enough, -2 if milk is not enough.
   - Both of these functions should decrease amounts of coffee/milk in the machine by one.

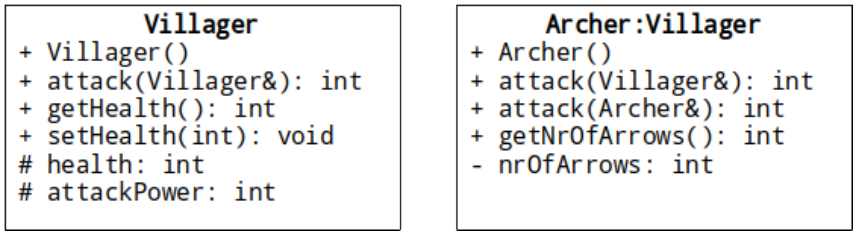
   Write a program in loop which asks the user what type of coffee is wanted ("none" to exit the loop), how many cups are wanted, and appropriate messages are printed on screen.

```
Filter or latte? filter
How many cups of coffee do you want? 1
Not enough coffee! Add: 3
Enjoy!

Filter or latte? latte
How many cups of coffee do you want? 2
Not enough coffee! Add: 2
Not enough milk! Add: 2
Enjoy!

Filter or latte? filter
How many cups of coffee do you want? 2
Enjoy!
Filter or latte? none
Goodbye!
```

2. Implement the following **Villager** and **Archer** classes:



- Villager constructor sets health and attack power to 20 and 0 respectively.
- **Villager::attack** function simply returns 0.
- Archer constructor sets health, attack power and number of arrows to 60, 40 and 5 respectively.
- **Archer::attack** functions checks if target health is below 0 (return -1), or number of arrows is 0 (return -2). Otherwise, subtract a random amount of damage (between 0 and attack power) from target health, decrease number of arrows and return damage inflicted on the target.

Using these classes, develop a simple game where a group of villagers and archers try to attack and kill each other. Be creative! Output from a sample game is below (archers and villagers are defined as object arrays, game is set to end when a villager/archer attacks himself):

```
Enter command #1: Villager 1 attack Villager 2
Villager1 can't attack!

Enter command #2: Villager 1 attack Archer 1
Villager1 can't attack!

Enter command #3: Archer 1 attack Villager 1
Archer1 made 29 damage to Villager1.
Villager1 died!

Enter command #4: Archer 1 attack Archer 5
Archer1 made 37 damage to Archer5.

Enter command #5: Archer 1 attack Archer 5
Archer1 made 39 damage to Archer5.
Archer5 died!

Enter command #6: Archer 1 attack Archer 3
Archer1 made 20 damage to Archer3.

Enter command #7: Archer 1 attack Archer 3
Archer1 made 26 damage to Archer3.

Enter command #8: Archer 1 attack Archer 3
Archer1 is out of arrows!

Enter command #9: Villager 2 attack Villager 2
```