

Lab 5.3.12 Inheritance basics: part 2

Objectives

Familiarize the student with:

- inheritance syntax and operation;
- sharing functionality between objects using inheritance.

Scenario

Let's continue with our farm example from the previous lab.

Create classes representing cows, sheep and horses:

- a sheep will consume about 1.1 liters of water per day per 10 kg of weight;
- a horse will consume about 6.8 liters of water per day per 100 kg of weight;
- a cow will consume about 8.6 liters of water per day per 100 kg of weight.

Your program should read lines of text in the following form: "[animal] [weight]".

When your program encounters an empty line, it should print the total water consumption and exit.

```
#include <iostream>

using namespace std;

class FarmAnimal{
public:
    FarmAnimal(double water_consumption);
    double getWaterConsumption();
    // ...
private:
    double water_consumption;
};

FarmAnimal::FarmAnimal(double water_consumption) {
    this->water_consumption = water_consumption;
}

double FarmAnimal::getWaterConsumption() {
    return water_consumption;
}

class ConsumptionAccumulator
{
public:
    ConsumptionAccumulator();
    double getTotalConsumption();
    void addConsumption(Animal "animal");
private:
    double total_consumption;
};

ConsumptionAccumulator::ConsumptionAccumulator() :
    total_consumption(0)
{
}

double ConsumptionAccumulator::getTotalConsumption()
{
    return total_consumption;
}

void ConsumptionAccumulator::addConsumption(Animal "animal")
{
    total_consumption += animal.getWaterConsumption();
}

int main()
{
    ConsumptionAccumulator accumulator;

    // read user input
    // create appropriate objects and add them to the accumulator

    cout << accumulator.getTotalConsumption();

    return 0;
}
```

Example input

```
cow 500  
sheep 80  
horse 400
```

Example output

```
79
```