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//CS372

//Throttle

#include <iostream>

#include <iomanip>

#include <cstdlib>

using namespace std;

class Throttle

{

private:

int position;

int Top\_Position;

public:

//Constructor

Throttle();

Throttle(int Max\_Speed);

Throttle(int Max\_Speed, int speed);

//Modification Methods

void shutoff();

void shift(int val);

//Constant Methods

double flow() const;

bool is\_on() const;

//Display Method

void showPos();

};

// Class Methods Explained

// Constructor Methods

Throttle::Throttle(int Max\_Speed)

{

Top\_Position = Max\_Speed;

position = 0;

}

Throttle::Throttle(int Max\_Speed, int speed)

{

Top\_Position = Max\_Speed;

position = speed;

}

// Modification Methods

void Throttle::shutoff()

{

position = 0;

return;

}

void Throttle::shift(int val)

{

position = position + val;

if(position > Top\_Position)

position = Top\_Position;

if(position < 0)

position = 0;

return;

}

// Constant Methods

double Throttle::flow() const

{ return (position / static\_cast<float>(Top\_Position)); }

bool Throttle::is\_on() const

{return position;}

//Display Method

void Throttle::showPos()

{

cout << position;

}

int main()

{

Throttle car(6);

Throttle truck(30);

Throttle shuttle(20, 6);

//Test car

cout << "Car Test" << endl;

car.shift(4);

car.shift(-2);

car.showPos();

cout << endl;

car.shift(6);

car.showPos();

cout << endl;

car.shift(-4);

car.shift(-5);

if(car.is\_on())

cout << "Is on" << endl;

else

cout << "Is off" << endl;

//Test truck

cout << endl << "Truck Test" << endl;

truck.shutoff();

truck.shift(4);

truck.shift(14);

truck.shift(-8);

truck.shutoff();

truck.shift(2);

cout << "Flow " << truck.flow() << endl;

truck.shutoff();

//Test Shuttle

cout << endl << "Shuttle Test" << endl;

if(shuttle.is\_on())

cout << "Is on" << endl;

else

cout << "Is off" << endl;

shuttle.shift(22);

shuttle.shift(-5);

cout << "Flow " << shuttle.flow() << endl;

shuttle.shift(-60);

shuttle.shutoff();

return 0; }

