

ASSIGNMENT 4

METHOD OVERRIDING

```
#include <iostream>
```

```
#include <string>
```

```
using namespace std;
```

```
class Vehicle {
```

```
public:
```

```
    virtual void start() const {
```

```
        cout << "The vehicle is starting." << endl;
```

```
    }
```

```
    virtual void stop() const {
```

```
        cout << "The vehicle is stopping." << endl;
```

```
    }
```

```
};
```

```
class Car : public Vehicle {
```

```
public:
```

```
    void start() const override {
```

```
        cout << "The car's engine is starting." << endl;
```

```
    }
```

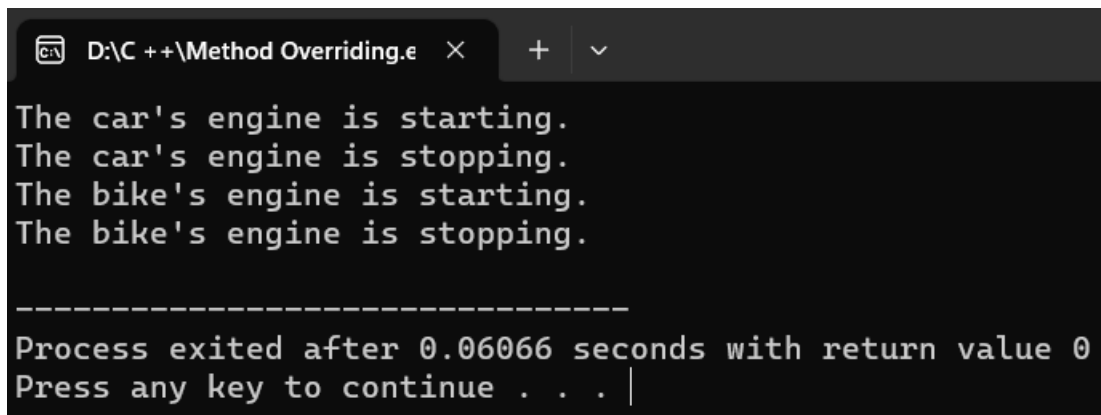
```
void stop() const override {  
    cout << "The car's engine is stopping." <<endl;  
}  
};
```

```
class Bike : public Vehicle {  
public:  
    void start() const override {  
        cout << "The bike's engine is starting." <<endl;  
    }  
  
    void stop() const override {  
        cout << "The bike's engine is stopping." <<endl;  
    }  
};
```

```
int main() {  
    Vehicle* vehiclePtr;  
    Car car;  
    Bike bike;  
  
    vehiclePtr = &car;  
    vehiclePtr->start();  
    vehiclePtr->stop();  
  
    vehiclePtr = &bike;  
    vehiclePtr->start();
```

```
vehiclePtr->stop();

return 0;
}
```

A screenshot of a C++ program's output in a terminal window. The window title is 'D:\C ++\Method Overriding.e'. The output shows four lines of text: 'The car's engine is starting.', 'The car's engine is stopping.', 'The bike's engine is starting.', and 'The bike's engine is stopping.'. Below these lines is a horizontal dashed line, followed by the text 'Process exited after 0.06066 seconds with return value 0' and 'Press any key to continue . . . |'.

FRIEND FUNCTION

```
#include <iostream>
```

```
using namespace std;
```

```
class MyNumber {
```

```
private:
```

```
    int num;
```

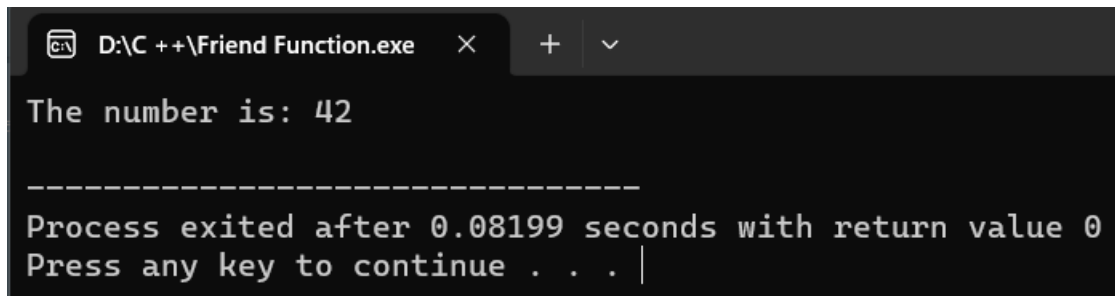
```
public:
```

```
    MyNumber(int n) : num(n) {}
```

```
    friend void printNumber(const MyNumber& number);
};
```

```
void printNumber(const MyNumber& number) {  
    cout << "The number is: " << number.num << endl;  
}
```

```
int main() {  
    MyNumber myNum(42);  
  
    printNumber(myNum);  
  
    return 0;  
}
```



The screenshot shows a Windows command prompt window with a single tab titled "D:\C ++\Friend Function.exe". The output of the program is displayed in a monospaced font: "The number is: 42". This is followed by a horizontal line of dashes. Below the dashes, the text reads: "Process exited after 0.08199 seconds with return value 0" and "Press any key to continue . . . |", where the vertical bar indicates the cursor position.

```
D:\C ++\Friend Function.exe  ×  +  ▾  
The number is: 42  
-----  
Process exited after 0.08199 seconds with return value 0  
Press any key to continue . . . |
```