

DrivingSimulation

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Chapter 1

Hierarchical Index

1.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

DataPacket	??
IDisplay	??
Distance	??
Speed	??
Object	??
RPM_Sensor	??
Vehicle	??
Car	??
WindowsDisplay	??
AnalogDisplay	??
DigitalDisplay	??

Chapter 2

Class Index

2.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

AnalogDisplay	??
Car	??
DataPacket	??
DigitalDisplay	??
Distance	??
IDisplay	??
Object	??
RPM_Sensor	??
Speed	??
Vehicle	??
WindowsDisplay	??

Chapter 3

Class Documentation

3.1 AnalogDisplay Class Reference

Inherits [WindowsDisplay](#).

Additional Inherited Members

The documentation for this class was generated from the following file:

- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/WindowsDisplay.h

3.2 Car Class Reference

Inherits [Vehicle](#).

Public Types

- using **SPter** = std::shared_ptr< [Car](#) >

Public Member Functions

- [Car](#) (double tireDim=0.6)
Constructor, saves the fileName into member and initializes tireDimension and current RPMs.
- void [Process](#) ()
Calls GetRevolutions of [RPM_Sensor](#) and stores delivered value in membervariable, starts Notificationprocess.
- unsigned int [GetRPM](#) () const
Getter.
- double [GetCurrentSpeed](#) () const
Calculates current speed based on Wheel diameter and RPMs.
- void [SetTireDim](#) (double newDim)
Replaces old value for Tire Dimension with the given Diameter.
- double [GetTireDim](#) () const
Getter.

Additional Inherited Members

3.2.1 Constructor & Destructor Documentation

3.2.1.1 Car()

```
Car::Car (
    double tireDim = 0.6 ) [inline]
```

Constructor, saves the fileName into member and initializes tireDimension and current RPMs.

Parameters

-	
---	--

Returns

-

3.2.2 Member Function Documentation

3.2.2.1 GetCurrentSpeed()

```
double Car::GetCurrentSpeed ( ) const
```

Calculates current speed based on Wheel diameter and RPMs.

Parameters

-	
---	--

Returns

current [Speed](#)

3.2.2.2 GetRPM()

```
unsigned int Car::GetRPM ( ) const
```

Getter.

Parameters

-	
---	--

Returns

current Rotations per Minute for one Wheel

3.2.2.3 GetTireDim()

```
double Car::GetTireDim ( ) const
```

Getter.

Parameters

-	
---	--

Returns

current Tire Diameter

3.2.2.4 Process()

```
void Car::Process ( )
```

Calls GetRevolutions of [RPM_Sensor](#) and stores delivered value in membervariable, starts Notificationprocess.

Parameters

-	
---	--

Returns

-

3.2.2.5 SetTireDim()

```
void Car::SetTireDim (
    double newDim )
```

Replaces old value for Tire Dimension with the given Diameter.

Parameters

<i>newDim</i>	new Dimension for Tire Diameter
---------------	---------------------------------

Returns

-

The documentation for this class was generated from the following files:

- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/Car.h
- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/Car.cpp

3.3 DataPacket Struct Reference

Public Attributes

- eCommand **command**
- unsigned int **value**

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- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/WindowsDisplay.h

3.4 DigitalDisplay Class Reference

Inherits [WindowsDisplay](#).

Additional Inherited Members

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3.5 Distance Class Reference

Inherits [IDisplay](#).

Public Member Functions

- [Distance](#) (Car::SPter const &car)
constructor for concrete observer [Distance](#); initializes Shared-Pointer and [Distance](#)
- virtual void [Update](#) () override
requests current revolutions, calculates distance travelled and saves it into member

Additional Inherited Members

3.5.1 Constructor & Destructor Documentation

3.5.1.1 Distance()

```
Distance::Distance (
    Car::SPter const & car ) [inline]
```

constructor for concrete observer [Distance](#); initializes Shared-Pointer and [Distance](#)

Parameters

<i>shared</i>	pointer to a car
---------------	------------------

Returns

3.5.2 Member Function Documentation

3.5.2.1 Update()

```
void Distance::Update ( ) [override], [virtual]
```

requests current revolutions, calculates distance travelled and saves it into member

Parameters

-	
---	--

Returns

-

Implements [IDisplay](#).

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- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/Distance.cpp

3.6 IDisplay Class Reference

Inherited by [Distance](#), and [Speed](#).

Public Types

- using **SPter** = std::shared_ptr< [IDisplay](#) >

Public Member Functions

- virtual void [Update](#) ()=0
pure virtual Function, ready to be implemented in an concrete observer

Public Attributes

- WindowsDisplay::SPter **anaDisp** = std::make_shared<[AnalogDisplay](#)>()
- WindowsDisplay::SPter **digDisp** = std::make_shared<[DigitalDisplay](#)>()

3.6.1 Member Function Documentation

3.6.1.1 Update()

```
virtual void IDisplay::Update ( ) [pure virtual]
```

pure virtual Function, ready to be implemented in an concrete observer

Parameters

-	
---	--

Returns

-

Implemented in [Distance](#), and [Speed](#).

The documentation for this class was generated from the following file:

- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/IDisplay.h

3.7 Object Class Reference

Inherited by [RPM_Sensor](#), [Vehicle](#), and [WindowsDisplay](#).

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3.8 RPM_Sensor Class Reference

Inherits [Object](#).

Public Member Functions

- unsigned int [GetRevolutions](#) ()
Getter.

3.8.1 Member Function Documentation

3.8.1.1 GetRevolutions()

```
unsigned int RPM_Sensor::GetRevolutions ( )
```

Getter.

Parameters

--	--

The documentation for this class was generated from the following files:

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- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/RPMSensor.cpp

3.9 Speed Class Reference

Inherits [IDisplay](#).

Public Member Functions

- [Speed](#) (Car::SPter const &car)
constructor for Speed-Observer
- virtual void [Update](#) () override
gets current speed of the [Car](#) pointed to

Additional Inherited Members

3.9.1 Constructor & Destructor Documentation

3.9.1.1 Speed()

```
Speed::Speed (  
    Car::SPter const & car ) [inline]
```

constructor for Speed-Observer

Parameters

<i>Shared-Pointer</i>	to a Car
-----------------------	--------------------------

Returns

-

3.9.2 Member Function Documentation

3.9.2.1 Update()

```
void Speed::Update ( ) [override], [virtual]
```

gets current speed of the [Car](#) pointed to

Parameters

-	
---	--

Returns

-

Implements [IDisplay](#).

The documentation for this class was generated from the following files:

- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/Speed.h
- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/Speed.cpp

3.10 Vehicle Class Reference

Inherits [Object](#).

Inherited by [Car](#).

Public Member Functions

- void [Attach](#) (IDisplay::SPter const &obs)
Adds given shared_ptr to observer container.
- void [Detach](#) (IDisplay::SPter const &obs)
Removes given observer-ptr from container if it's contained.

Protected Member Functions

- void [NotifyObservers](#) ()
iterates through vector of Observers and calls Update() on every observer

3.10.1 Member Function Documentation

3.10.1.1 Attach()

```
void Vehicle::Attach (
    IDisplay::SPter const & obs )
```

Adds given shared_ptr to observer container.

Parameters

<code>obs</code>	shared pointer of type IDisplay , which will be added to the container
------------------	--

Returns

3.10.1.2 Detach()

```
void Vehicle::Detach (
    IDisplay::SPter const & obs )
```

Removes given observer-ptr from container if it's contained.

Parameters

<i>obs</i>	shared pointer of type IDisplay , which will be added to the container
------------	--

Returns

-

3.10.1.3 NotifyObservers()

```
void Vehicle::NotifyObservers ( ) [protected]
```

iterates through vector of Observers and calls Update() on every observer

Parameters

-	
---	--

Returns

-

The documentation for this class was generated from the following files:

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- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/Vehicle.cpp

3.11 WindowsDisplay Class Reference

Inherits [Object](#).

Inherited by [AnalogDisplay](#), and [DigitalDisplay](#).

Public Types

- typedef std::shared_ptr< [WindowsDisplay](#) > **SPtr**

Public Member Functions

- **WindowsDisplay** (std::string const &pipeName)
- bool **SendValue** (unsigned int value)

Protected Member Functions

- **WindowsDisplay** ([WindowsDisplay](#) const &)
- [WindowsDisplay](#) & **operator=** ([WindowsDisplay](#) const &)

The documentation for this class was generated from the following files:

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- C:/Users/Daniel/OneDrive-students.fh-hagenberg.at/SS19/OneDrive - students.fh-hagenberg.at/FH/Sem 3 - 19_20/SDP3/UE/Git_Work/Exersice5/DrivingSimulation/DrivingSimulation/WindowsDisplay.cpp

