INSTRUCTIONS:
Fill out the hazard analysis and risk assessment below.
HA-001 should be for the lane departure warning function as discussed in the lecture.
HA-002 should be for the lane keeping assistance function as discussed in the lecture.
Then come up with your own situations and hazards for the lane assistance system. Fill in
When finished, export your spreadsheet as a pdf file so that a reviewer can easily see your

Hazard ID	Situational Ana			
	Operational Mode	Operational Scenario	Environmental Details	Situation Details
HA-001	Normal driving	Country Road	Normal conditions	High speed
HA-002	Normal driving	Road tunnel	Normal conditions	High speed
HA-003	Normal driving	Country Road	Fog	High speed
HA-004	Normal driving	Highway	Normal conditions	High speed

the HA-003 and HA-004 rows.
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Other Details (optional)	Item Usage (function)	Situation Description	Function	Deviation
	Correctly used	Normal Driving on a Country Road in Normal Conditions at High Speed	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	Actor effect is too much
	Correctly used	Normal Driving in a Road Tunnel in Normal Conditions at High Speed	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	Actor effect is wrong
	Correctly used	Normal Driving on a Country Road in Fog at High Speed	The lane keeping assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Function always activated
The driver is misusing the lane keeping assistance function as an autonomous function	Incorrectly used	Normal Driving on a Highway in Normal Conditions at High Speed	The lane keeping assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	Function always activated

Hazard Identification			
Deviation Details	**Hazardous Event (resulting effect)**	**Event Details**	**Hazardous Event Description**
The LDW function applies an oscillating feedback with very high torque (above limit)	Collision with other vehicle or with road infrastructure	The driver loses control of the vehicle and collides with another vehicle or with road infrastructure.	Loss of vehicle control
The LDW function applies a non-oscillating steering torque	Collision with other vehicle or with road infrastructure	The driver loses control of the vehicle and collides with another vehicle or with road infrastructure.	Loss of vehicle control
The LKA function applies steering torque when not activated	Collision with other vehicle or with road infrastructure	The driver loses control of the vehicle and collides with another vehicle or with road infrastructure.	Loss of vehicle control
The LKA function applies steering torque for a long period of time	Collision with other vehicle or with road infrastructure	The driver loses control of the vehicle and collides with another vehicle or with road infrastructure.	Loss of vehicle control

Hazardous Event Classification				
Exposure (of situation)	**Rationale (for exposure)**	**Severity (of potential harm)**	**Rationale (for severity)**	**Controllability (of hazardous event)**
E3 - Medium probability	Driving on a country road with a high speed is a regular activity	S3 - Life-threatening or fatal injuries	A vehicle drives at a high speed. A collision at high speeds can lead to fatal injuries.	C3 - Difficult to control or uncontrollable
E2 - Low probability	Driving in a tunnel with a high speed is a rare activity	S3 - Life-threatening or fatal injuries	A vehicle drives at a high speed. A collision at high speeds can lead to fatal injuries.	C3 - Difficult to control or uncontrollable
E2 - Medium probability	Driving in fog is an infrequent activity	S3 - Life-threatening or fatal injuries	A vehicle drives at a high speed. A collision at high speeds can lead to fatal injuries.	C3 - Difficult to control or uncontrollable
E2 - Low probability	Most of the time drivers will use the function as intended when driving on a highway	S3 - Life-threatening or fatal injuries	A vehicle drives at a high speed. A collision at high speeds can lead to fatal injuries.	C3 - Difficult to control or uncontrollable

	Determination of ASIL and Safety Goals	
Rationale (for controllability)	**ASIL Determination**	**Safety Goal**
At high speeds, most drivers will have difficulties controlling the vehicle when too much torque is applied to the steering wheel	ASIL C	The oscillating steering torque from the lane departure warning function shall be limited.
At high speeds, most drivers will have difficulties controlling the vehicle when constant steering torque is applied to the steering wheel	ASIL B	The frequency of the oscillating feedback from the lane departure warning function shall be above a threshold.
At high speeds, most drivers will have difficulties controlling the vehicle when steering torque is applied when the function is not activated	ASIL B	The lane keeping assistance function shall apply steering torque only when activated so the driver doesn't lose control of the vehicle.
Most drivers will have no control of the vehicle when taking hands off the steering wheel	ASIL B	The lane keeping assistance function shall be time limited, and the additional steering torque shall end after a given time interval so that the driver cannot misuse the system for autonomous driving.