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 the HA-003 and HA-004 rows.
When finished, export your spreadsheet as a pdf file so that a reviewer can easily see your work.

Hazard ID	Situational Analysis							Hazard Identification						Hazardous Event Classification						Determination of ASIL and Safety Goals	
Hazard ID	Operational Mode	Operational Scenario	Environmental Details	Situation Details	Other Details (optional)	Item Usage (function)	Situation Description	Function	Deviation	Deviation Details	Hazardous Event (resulting effect)	Event Details	Hazardous Event Description	Exposure (of situation)	Rationale (for exposure)	Severity (of potential harm)	Rationale (for severity)	Controllability (of hazardous event)	Rationale (for controllability)	ASIL Determination	Safety Goal
HA-001	OM03 - Normal driving	OS04 - Highway	EN01 - Normal conditions	SD02 - High speed		IU01 - Correctly used	Normal driving on Highway in Normal conditions at High speed and Correctly used system.	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV04 - Actor effect is too much	The LDW function applies an oscillating torque with very high torque (above limit)	EV08 - Collision with other vehicle	High haptic feedback can affect driver's ability to steer as intended. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	The LDW function applies too high an oscillating torque to the steering wheel (above limit).	E3 - Medium probability	normal driving on a highway and correctly used system occurs a few times a month	S3 - Life-threatening or fatal injuries	On highway speed of vehicle is expected to be high	C3 - Difficult to control or uncontrollable	Since the torque on the steering wheel is high, a average driver cannot control the steering wheel anymore	ASIL C	The oscillating steering torque from the lane departure warning function shall be limited.
HA-002	OM03 - Normal driving	OS03 - Country Road	EN01 - Normal conditions	SD02 - High speed		IU02 - Incorrectly used	Normal driving on Country Road in Normal conditions at High speed and Incorrectly used system.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	The driver was misusing the LKA function by taking both hands off the wheel and incorrectly treating it as an autonomous functiva	EV08 - Collision with other vehicle	Treating the car as a fully autonomous vehicle can steer the car outside the lane. The vehicle can collide with another vehicle or with road infrastructure.	The LKA function is always active and the driver misuses the system as fully autonomous.	E2 - Low probability	normal driving on a country road and incorrectly used system occurs a few times a year	S3 - Life-threatening or fatal injuries	On country roads speed of vehicle is expected to be high	C3 - Difficult to control or uncontrollable	Since the the driver is considered absent, nobody is controlling the car anymore	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.
HA-003	OM03 - Normal driving	OS02 - City Road	EN01 - Normal conditions	SD01 - Low speed		IU01 - Correctly used	Normal driving on City Road in Normal conditions at Low speed and Correctly used system.	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV04 - Actor effect is too much	The LDW function applies an oscillating torque with very high torque (above limit)	EV08 - Collision with other vehicle	High haptic feedback can affect driver's ability to steer as intended. The driver could lose control of the vehicle and collide with another vehicle or with road infrastructure.	The LDW function applies too high an oscillating torque to the steering wheel (above limit).	E4 - High probability	normal driving in the city is a regular activity	S1 - Light and moderate injuries	In city traffic, speed of vehicle is expected to be low	C3 - Difficult to control or uncontrollable	Since the torque on the steering wheel is high, a average driver cannot control the steering wheel anymore	ASIL B	The oscillating steering torque from the lane departure warning function shall be limited.
HA-004	OM03 - Normal driving	OS05 - Mountain Pass	EN01 - Normal conditions	SD01 - Low speed	Tight curves	IU02 - Incorrectly used	Normal driving on Mountain Pass in Normal conditions at Low speed, Tight curves and Incorrectly used system.	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 - Function always activated	The driver was misusing the LKA function by taking both hands off the wheel and incorrectly treating it as an autonomous function.	EV08 - Collision with other vehicle	Treating the car as a fully autonomous vehicle can steer the car outside the lane. The vehicle can collide with another vehicle or with road infrastructure.	The LKA function is always active and the driver misuses the system as fully autonomous.	E2 - Low probability	normal driving on a mountain pass and incorrectly used system occurs a few times a year	S2 - Severe and life-threatening injuries	On mountain pass, speed of vehicle is expected to be low, but the road may be small and the steering must be more acurate	C3 - Difficult to control or uncontrollable	Since the the driver is considered absent, nobody is controlling the car anymore	ASIL A	The lane keeping assistance function shall be turned of on roads with tight curves so that the driver cannot misuse the system for autonomous driving.