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	
	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	OS03 - Highway	EN06 - Rain (slippery road)	SD02 - High speed	Driver's concentration levels drops and his steering control weakens	IU01 - Correctly used	Normal Driving on a Highway at High Speed with active Lane Departure Warning function	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV04 - Actor effect is too much	Oscillating steering torque exceeds limit	EV-02 - Collision with other vehicle	Side collision with other traffic, potential collsions with road infrastructure	Driver loses control of vehicle	E3 - Medium probability	At high speed, this is a medium probability event, and happens often during a month	S3 - Life-threatening or fatal injuries	On highway, speeds of own and other cars is high	C3 - Difficult to control or uncontrollable	Since the steering wheel rotates uncontrollably, it will be difficult for a driver to control the car	C	The oscillating steering torque from the LDW function shall be limited
HA-002	OM03 - Normal Driving	OS03 - Highway	EN01 - Normal conditions	SD02 - High speed	Driver takes hands off the wheel and abuses Lane Keeping Assistance as Autopilot	IU02 - Incorrectly used	Normal Driving on a Highway at High Speed	Lane Keeping Assistance (LKA) function shall apply the steering torque when active to stay in the lane	DV03- Function always activated	LKA is always active. Driver is taking hands off the wheel.	EV-02 - Collision with other vehicle	Side collision with other traffic, potential collsions with road infrastructure	Driver loses control of vehicle	E2 - low probability	Driver abusing the LKA as Autopilot during highway driving at high speeds is a low probability event	S3 - Life-threatening or fatal injuries	On highway, speeds of own and other cars is high	C3 - Difficult to control or uncontrollable	Since the driver givus up the steering control, he cannot control the direction of the car	B	To ensure that the driver does not use the LKA system for autonomus driving, LKA shall be time limited and the additional steering torque shall end after a given time interval.
HA-003	OM03 - Normal Driving	OS03 - Highway	EN06 - Rain (slippery road)	SD02 - High speed		IU01 - Correctly used	Driving on a Highway at High Speed with slippery road	Lane Keeping Assistance (LKA) function shall apply the steering torque when active to stay in the lane	DV02 - Function unexpectedly activated	While the driver tries to evade slippery conditions on the road and tries to change lane abruptly to avoid for example aqua planning, , LKA compensates his actions	EV11 - Car spins out of control	Side collision with other traffic, potential collsions with road infrastructure	Driver loses control of vehicle	E1 - Very low probability	Quickly changing lanes on the slippery roads is best avoided and does not happen happen	S3 - Life-threatening or fatal injuries	High speed lane changing can be dangerous and effects can be catastrophic leading to fatalities	C3 - Difficult to control or uncontrollable	Slippery conditions	A	LKA should not be activated in rainy conditions and driver should have sole control of the car
HA-004		OS03 - Highway	En 04-Snowfall (degraded view)	SD02 - High speed	Poor visibilty and tricky road surface	IU01 - Correctly used	Driver receive extra feedback from the car when handling tricky driving conditions	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic	DV04 - Actor effect is too much	Oscillating steering torque distracts the driver as he is driving though tricky drive conditions	EV-02 - Collision with other vehicle	Side collision with other traffic, potential collsions with road infrastructure	Driver loses control of vehicle	E1 - Very low probability	Driver's concentration is ususally high and they can overcome haptic feedbacks from steering	S2- Severe and life-threatening injuries	Vehicle is driving at reduced speed on the highway becuase of poor visibility and bad surface conditions	C3 - Difficult to control or uncontrollable	poor visibility and dangerous surface conditions	QM	LDW should be deactivated in poor visibility conditions and driver should control the car