INSTRUCTIONS:
Fill out the hazard analysis and risk assessment below.
HA-001 should be for the lane desarture wamino function as discussed in the lecture.
HA-002 should be for the lane keeoino 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. exsort vour soreadsheet as a odf file so that a reviewer can easily see vour 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	OS04 Highway	EN06 Rain (slippery road)	SD02 High speed		IU01 Correctly used	Normal Driving on Highway at high speed with 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 Lane Departure Warning applies too much oscillating torque (above threshold)	EV00 Collision with other vehicle	High haptic feedback can affect driver's ability to steer as intented. The driver could lose control and could collide with another vehicle, pedestrian etc	The LDW function applies above threshold oscillating torque to the steering wheel.	E3 Medium probability	Driving on a highway during rain can happen more than once for an average driver	S3 Life-threatening or fatal injuries	Collision on highway can result in life-theratening injuries.	C3 Difficult to control or uncontrollable	It is difficult to control steering wheel with excessive vibrations at high speeds for most of the drivers	ASIL C	The oscillating steering torque from the lane departure warning shall be limited
HA-002	OM03 Normal Driving	OS03 Country Road	EN01 Normal conditions	SD02 High speed		IU02 Incorrectly used	Normal Driving on Highway at high speed with incorrectly used system	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV03 Function is always activated	Lane Keeping Function always actively scans the road and tries to keep car in ego lane.	EV00 Collision with other vehicle	LKA always stays active but the driver tries to misuse it as an autonomous driving function. Thus car gets into a collision.	The Driver didn't use the LKA function as intended	E2 Low probability	Probability of a driver misusing LKA on a country road is very low under normal driving conditions.	S3 Life-threatening or fatal injuries	Collision at high speeds can result in life threatening injuries	C3 Difficult to control or uncontrollable	Lane Keeping Assistance is always on here, the driver may assume that the car is driving and take both his hands away from steering wheel thus limiting his ability to promptly react and recover from situation. This can lead to fatal accident.	ASIL B	The Lane Keeping Assistance system shall be time limited, thus after a lane keeping manoeuvre, the control is given back to the driver
HA-003	OM03 Normal Driving	OS02 City Road	EN02 Sun bare (degraded view)	SD02 High speed		IU01 Correctly used	Normal Driving on city road at high speed with correctly used system	Lane Departure Warning (LDW) function shall apply an oscillating steering torque to provide the driver with haptic feedback	DV19 Sensor detection is wrong	Straight exposure to sun rays limiting the Camera ECU's ability to detect lane lines correctly.	EV-02 Side collision with other traffic	The Lane Departure warning system doesn't work as intended in keeping car in middle of lane due to camera ECU's inability to detect lanes correctly.	The LDW function didn't work as intended, i.e. it didn't warn the driver when he is steering off the lane.	E2 Low probability	Straight exposure to sun rays happen rarely and additionally depends upon road lane conditions.	S3 Life-threatening or fatal injuries	Side Collision at high speeds can result in life threatening injuries	C3 Difficult to control or uncontrollable	The Driver believes that the system is working as intended and car is in middle of lane and there fore becomes less precautionary while driving.	ASIL B	The Lane Departure Warning System shall warn the driver when one of its sensor isn't giving proper values.
HA-004	OM03 Normal Driving	OS02 City Road	EN07 Snow (slippery road)	SD02 High speed		IU01 Correctly used	Normal Driving on city road at high speed with correctly used system	Lane Keeping Assistance (LKA) function shall apply the steering torque when active in order to stay in ego lane	DV10 Actor effect is reverse	Snowy conditions makes impossible to detect lane lines and thus limiting LKA's ability to maintin car in lane.	EV-02 Side collision with other traffic	The LKA function fails to maintain car in middle of lane .	The vehicle moves off the lane and collides with the traffic in the other lane	E1 Very low probability	Snow fall happens very rarely in most part of the country.	S3 Life-threatening or fatal injuries	Side Collision at high speeds can result in life threatening injuries	C3 Difficult to control or uncontrollable	The Driver believes that the lane keeping assistance system is keeping the car in the center of the lane and thus takes less precautions while driving.	ASIL A	The Lane Keeping Assistance system shall not adjust the steering wheel and should alert the driver when it doesn't receive proper values from camera.