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				
	Operational Mode	Operational Scenario	Environmental Details	Situation Details	Other Details (optional)
HA-001	OM03 - Normal Driving	OS04 - Highway driving	EN06 - Rain (Slippery Road)	SD02 - High Speed	
HA-002	OM03 - Normal Driving	OS03 - Country Road	EN01 - Normal Conditions	SD02 - High Speed	
HA-003	OM03 - Normal Driving	OS02 - City Road	EN01 - Normal Conditions	SD01 - Slow Speed	
HA-004	OM03 - Normal Driving	OS04 - Highway driving	EN04 - Snowfall (degraded	SD02 - High Speed	

Item Usage (function)	Situation Description	Function	Deviation
IU01 - Correctly Used	Normal Driving on a Highway in Rain (slippery road) at High Speed	Lane Departure	DV04 - Actor
IU02 - Incorrectly	Normal Driving on a Country Road in Normal Conditions at High	Lane Keeping	DV03 - Function
IU01 - Correctly Used	Normal Driving on a City Road in Normal Conditions at Low Speed	Lane Departure	DV07 - Actor
IU02 - Incorrectly	Normal Driving on a Highway during snowfall (degraded view) at	Lane Keeping	DV03 - Function

Hazard Identification	
Deviation Details	**Hazardous Event (resulting effect)**
Haptic feedback is too high	EV00 - Collision with other vehicle
The LKA function should add extra steering torque for a limited amount of time and then stop providing extra torque	EV00 - Collision with other vehicle
Haptic feedback has a delay	EV02 - Side collision with other
The LKA function should add extra steering torque for a limited amount of time and then stop providing extra torque	EV03 - Car spins out of control

Event Details	Hazardous Event Description	Exposure (of situation)
Vehicle can cause a collision with other vehicle	Collision with other vehicle	E3 - Medium
Vehicle can cause a collision with other vehicle	Vehicle is not autonomous	E2 - Low
Vehicle can cause a collision with other vehicles on the side	Driver hasn't been warned about lane departure	E4 - High
Vehicle can skid away due to slippery conditions (snowfall)	Vehicle is not autonomous	E3 - Medium

		Hazardous Event Classification	
Rationale (for exposure)	**Severity (of potential harm)**	**Rationale (for severity)**
Highway driving may not be as common as city driving	S3 - Life-threatening or fatal injuries	Driver is travelling at high speed
Country road driving doesn't happen so often	S3 - Life-threatening or fatal injuries	Driver is travelling at high speed
City road driving is common	S1 - Light and moderate injuries	Driver is travelling at low speed
Highway driving may not be as common as city driving	S3 - Life-threatening or fatal injuries	Driver is travelling at high speed

Controllability (of hazardous event)	Rationale (for controllability)	ASIL Determination
C3 - Difficult to control	Hands are not on the wheel and vehicle is on high speed	C
C3 - Difficult to control	Hands are not on the wheel and vehicle is on high speed	B
C2 - Normally controllable	Driver still has hands on the wheel so can control the situation	A
C3 - Difficult to control	Hands are not on the wheel and vehicle is on high speed	C

Determination of ASIL and Safety Goals
Safety Goal
The lane departure warning haptic feedback shall be controllable
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
The lane departure warning haptic feedback delay shall be prevented
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