Case 1

Anthony Levandowski, a former star Silicon Valley engineer whose actions triggered a high-profile lawsuit between Alphabet's Waymo (i.e., the Google Self-Driving Car Project) and Uber, was ordered by a California court to pay Google $179 million for violating the terms of his contract and separation agreement with the company. He subsequently filed for bankruptcy protection after the ruling was posted.

California Superior Court Judge Ethan Schulman confirmed the decision against Levandowski in San Francisco on Wednesday, upholding an initial determination made by an arbitration panel more than a year ago. The penalty for Levandowski, who also faces federal prosecution for stealing Google technology, includes a principal payment of nearly $175 million and $4.3 million in interest.

"The court has posted to the docket its final decision, confirming the award in Google's favour and issuing a significant judgment against Levandowski," Waymo said in a statement. "We will continue to take the necessary steps to ensure our confidential information is protected as we build the world's most experienced driver."

A founding member of Waymo, Levandowski said in a bankruptcy filing that he had assets worth between $50 million and $100 million and debts of between $100 million and $500 million. Before his Google exit, Levandowski received a massive bonus from the company, worth more than $120 million.

The Alphabet unit pursued legal action against Levandowski and Lior Ron, who leads Uber's trucking business, for violating contract and separation agreements for, among other things, convincing numerous Google employees to join them at Uber's rival self-driving program after they left Google in January 2016. Ron settled the $9.7 million judgment against him in February, which Uber covered. However, Uber may not do the same for Levandowski.

"Uber and Levandowski are parties to an indemnification agreement, whether Uber is ultimately responsible for such indemnification is subject to a dispute between the Company and Levandowski. The ultimate resolution of the matter could result in a possible loss of up to $64 million or more (depending on interest incurred) in excess of the amount accrued. Uber is not a party to either of these arbitrations." Uber said in its annual report on March 2, 2020.

Levandowski's attorney, Neel Chatterjee of Goodwin Procter, stressed that the settlement wasn't about trade secrets, "but about employees leaving Google for new opportunities and an engineer being used as a pawn by two tech giants." "Google fought tooth and nail to take back every penny paid to Anthony for his multibillion-dollar contributions, and now Uber is refusing to indemnify Anthony despite explicitly agreeing to do so," Chatterjee said. "Anthony had no choice but to file for bankruptcy to protect his rights as he pursues the relief he is legally entitled to."

Levandowski's actions sparked the biggest legal drama in the race to commercialize self-driving vehicle tech after he and Uber co-founder and former CEO Travis Kalanick and Levandowski joined forces to rapidly catch up to Waymo, the perceived leader in autonomous vehicles. Kalanick saw robotaxis that didn't need human drivers as the long-term guarantee of profitability for his ride-share business and bought Otto, the driverless truck

startup Levandowski and Ron created after they left Google, for an estimated $680 million in August 2016. Waymo sued Uber in federal court months later, claiming Levandowski took vast amounts of stolen data with him. Uber eventually fired Levandowski and settled with Waymo in early 2018, giving it pre-IPO equity valued at $245 million and agreeing not to use any of its technology.

Levandowski was indicted in August 2019 by federal prosecutors on 33 counts of theft and attempted theft of trade secrets from Google. When he left Google, Levandowski led its engineering team for lidar, a laser-based sensor technology that creates 3D point-cloud images of a self-driving car's surroundings. The federal indictment alleges that prior to his departure, he downloaded files including "circuit board schematics, instructions for installing and testing lidar, and an internal tracking document." He took the files while also involved with Tyto LiDAR LLC and 280 Systems, Inc., would-be Google competitors in self-driving tech. Ultimately, 280 Systems became trucking-oriented Ottomotto or Otto. Otto acquired Tyto in May 2016.

In an interview with Forbes in October 2016 at Otto's former headquarters in San Francisco shortly after Uber purchased it, he was adamant that none of its intellectual property (IP) came from his former employer. "We did not steal any Google IP," Levandowski said. "Just want to make sure, super clear on that. We built everything from scratch, and we have all of the logs to make that—just to be super clear."

A serial entrepreneur, Levandowski founded multiple companies before, during and after leaving Google (reportedly, he has also founded his religion). He joined the tech giant in 2007 after participating in the famed DARPA Grand Challenge robotic vehicle competitions that sparked the ongoing push to commercialize autonomous driving technology. Levandowski was also a founding member of Google's in-house self-driving car team formed in 2009, initially under the leadership of Sebastian Thrun.

(Adapted from *https://www.forbes.com/sites/alanohnsman/2020/03/05/anthony-levandowski-the-fallen-self-driving-tech-star-who-triggered-waymo-uber-legal-battle-ordered-to-pay-google-179-million/*)

a) What are the possible reasons that Google does not use legal traditions other than patents to protect its intellectual properties related to self-driving cars? Please provide detailed elaborations.

b) Assuming that Anthony Levandowski has really stolen Google's self-driving car-related intellectual properties, please use the **SIX** candidate ethical principles to tell if Anthony's action is ethically acceptable.

Case 2

An example relational database is shown below. This database stores data about wineries and the wine regions they are located. A relational database manages data in tables. There are two tables: the **winery** table that contains information about wineries and the **region** table that collects information about wine regions.

Winery Table

Winery ID	Winery name	Address	Region ID
1	Moss Brothers	Smith Rd.	3
2	Hardy Brothers	Jones St.	1
3	Penfolds	Arthurton Rd.	1
4	Lindemans	Smith Ave.	2
5	Orlando	Jones St.	1

Region Table

Region ID	Region name	State
1	Barossa Valley	South Australia
2	Yarra Valley	Victoria
3	Margaret River	Western Australia

a) Please draw the entity-relationship diagram to illustrate the relationship(s) between/among the entities in the above database.

b) Please list any **TWO** attributes of the Region Table.

c) Please list the primary key and foreign key of the Winery Table.

d) DBMS users for large and midrange computers, such as DB2, Oracle, or SQL Server, would employ SQL to retrieve the information they needed from the database. Display the results of the below SQL statement: SELECT Winery_name, State FROM Winery, Region WHERE Winery.Region_ID = Region.Region_ID