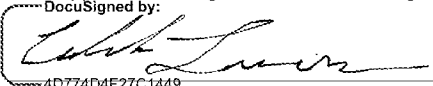


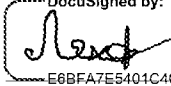
## PATENT ASSIGNMENT COVER SHEET

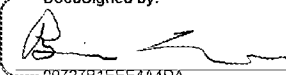
Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT6849782

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CALEB LEVINE	06/16/2021
LEONID LYAKHOVITSKIY	06/18/2021
TING CHEUNG LEE	06/18/2021
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	GOOGLE LLC
<b>Street Address:</b>	1600 AMPHITHEATRE PARKWAY
<b>City:</b>	MOUNTAIN VIEW
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	94043
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	17392728
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(908)654-7866
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	(908) 654-5000
<b>Email:</b>	assignment@lernerdavid.com
<b>Correspondent Name:</b>	LERNER, DAVID, LITTENBERG, KRUMHOLZ & MENTLIK, LLP
<b>Address Line 1:</b>	20 COMMERCE DR.
<b>Address Line 4:</b>	CRANFORD, NEW JERSEY 07016
<b>ATTORNEY DOCKET NUMBER:</b>	GOOGLE 3.0F-3100
<b>NAME OF SUBMITTER:</b>	MELINDA C. CORMIER
<b>SIGNATURE:</b>	/Melinda C. Cormier/
<b>DATE SIGNED:</b>	08/05/2021
<b>Total Attachments: 3</b>	
source=GP-301453-00-US_Assignment#page1.tif	
source=GP-301453-00-US_Assignment#page2.tif	
source=GP-301453-00-US_Assignment#page3.tif	

ASSIGNMENT OF PATENT APPLICATION	Docket Number (Optional) GOOGLE 3.0F-3100
<p>WHEREAS, I, <u>Caleb Levine of Seattle, Washington</u>, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "SQL Implication Decider For Materialized View Selection" (hereafter "Patent Application"),</p> <p><input type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application was filed with the U.S. Patent and Trademark Office on _____, Application Number _____, and</p> <p><input checked="" type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application names the following inventors: <u>Caleb Levine, Leonid Lyakhovitskiy, and Ting Cheung Lee</u> (and whereas I hereby authorize Lerner, David, Littenberg, Krumholz &amp; Mentlik, LLP, to insert in here in brackets [Application No. _____, filed on _____] the application number and filing date of the application when known), and</p> <p>WHEREAS, <u>Google LLC</u>, incorporated or otherwise formed in <u>Delaware</u> and having a place of business at <u>1600 Amphitheatre Parkway, Mountain View, CA 94043</u> (hereafter, the "assignee") is desirous of acquiring, or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in same;</p> <p>NOW, THEREFORE, for good and valuable consideration the receipt of which is hereby acknowledged, I agree as follows. I agree to assign, and hereby do assign, to the assignee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, including any and all inventions, discoveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute, reissue, re-examination or other application claiming priority or benefit to the Patent Application pursuant to any law or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do assign, to assignee the right to claim such priority or benefit. I have not previously conveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. I hereby authorize the U.S. Patent and Trademark Office, and any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applications and to record assignee's ownership thereof. At assignee's reasonable request I agree, without further remuneration, to execute and deliver documents prepared at assignee's expense and to provide other cooperation, such as testimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I agree that the assignee may affix its signature to this document as well as any other indicia of its acceptance of the provisions hereof. If any provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced, to the extent possible, with a provision most closely reflecting the purpose of the offending provision.</p> <p>I further agree to assign, and hereby do assign, to assignee my entire right, title and interest in and to Provisional Application No. <u>63/073,746</u>, filed <u>September 2, 2020</u>, such provisional application being considered an Assigned Application for all purposes herein.</p> <p>6/16/2021 _____ (Date)</p> <p>DocuSigned by:  4D774D4F27C1449... _____ (Signature)</p>	

ASSIGNMENT OF PATENT APPLICATION	Docket Number (Optional) GOOGLE 3.0F-3100
<p>WHEREAS, I, <u>Leonid Lyakhovitskiy of Sammamish, Washington</u>, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "SQL Implication Decider For Materialized View Selection" (hereafter "Patent Application"),</p> <p><input type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application was filed with the U.S. Patent and Trademark Office on _____, Application Number _____, and</p> <p><input checked="" type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application names the following inventors: <u>Caleb Levine, Leonid Lyakhovitskiy, and Ting Cheung Lee</u> (and whereas I hereby authorize Lerner, David, Littenberg, Krumholz &amp; Mentlik, LLP, to insert in here in brackets [Application No. _____, filed on _____] the application number and filing date of the application when known), and</p> <p>WHEREAS, <u>Google LLC</u>, incorporated or otherwise formed in <u>Delaware</u> and having a place of business at <u>1600 Amphitheatre Parkway, Mountain View, CA 94043</u> (hereafter, the "assignee") is desirous of acquiring, or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in same;</p> <p>NOW, THEREFORE, for good and valuable consideration the receipt of which is hereby acknowledged, I agree as follows. I agree to assign, and hereby do assign, to the assignee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, including any and all inventions, discoveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute, reissue, re-examination or other application claiming priority or benefit to the Patent Application pursuant to any law or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do assign, to assignee the right to claim such priority or benefit. I have not previously conveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. I hereby authorize the U.S. Patent and Trademark Office, and any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applications and to record assignee's ownership thereof. At assignee's reasonable request I agree, without further remuneration, to execute and deliver documents prepared at assignee's expense and to provide other cooperation, such as testimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I agree that the assignee may affix its signature to this document as well as any other indicia of its acceptance of the provisions hereof. If any provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced, to the extent possible, with a provision most closely reflecting the purpose of the offending provision.</p> <p>I further agree to assign, and hereby do assign, to assignee my entire right, title and interest in and to Provisional Application No. <u>63/073,746</u>, filed <u>September 2, 2020</u>, such provisional application being considered an Assigned Application for all purposes herein.</p> <p>6/18/2021 _____ (Date)</p> <p> E6BFA7E5401C406... _____ (Signature)</p>	

<b>ASSIGNMENT OF PATENT APPLICATION</b>	Docket Number (Optional) GOOGLE 3.0F-3100
<p>WHEREAS, I, <u>Ting Cheung Lee</u> of <u>Kirkland, Washington</u>, have invented or discovered inventions or discoveries, the subject matter of which is described in the patent application entitled "SQL Implication Decider For Materialized View Selection" (hereafter "Patent Application"),</p> <p><input type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application was filed with the U.S. Patent and Trademark Office on _____, Application Number _____, and</p> <p><input checked="" type="checkbox"/> WHEREAS (if the left box is checked), the Patent Application names the following inventors: <u>Caleb Levine, Leonid Lyakhovitskiy, and Ting Cheung Lee</u> (and whereas I hereby authorize Lerner, David, Littenberg, Krumholz &amp; Mentlik, LLP, to insert in here in brackets [Application No. _____, filed on _____]) the application number and filing date of the application when known), and</p> <p>WHEREAS, <u>Google LLC</u>, incorporated or otherwise formed in <u>Delaware</u> and having a place of business at <u>1600 Amphitheatre Parkway, Mountain View, CA 94043</u> (hereafter, the "assignee") is desirous of acquiring, or has acquired and is desirous of memorializing its acquisition further herein, the entire right, title and interest in same;</p> <p>NOW, THEREFORE, for good and valuable consideration the receipt of which is hereby acknowledged, I agree as follows. I agree to assign, and hereby do assign, to the assignee my entire right, title and interest in and to the Assigned Applications in the United States of America and all other countries, where "Assigned Applications" means the Patent Application, including any and all inventions, discoveries and other subject matter described therein, any divisional, continuation, continuation-in-part, substitute, reissue, re-examination or other application claiming priority or benefit to the Patent Application pursuant to any law or treaty, and any patent issuing from the foregoing. I agree to assign, and hereby do assign, to assignee the right to claim such priority or benefit. I have not previously conveyed, nor am I aware of an obligation to convey, my rights in the Assigned Applications to a third party. I hereby authorize the U.S. Patent and Trademark Office, and any other governmental agency in the world, to issue to assignee all patents resulting from the Assigned Applications and to record assignee's ownership thereof. At assignee's reasonable request I agree, without further remuneration, to execute and deliver documents prepared at assignee's expense and to provide other cooperation, such as testimony, as may be reasonably required to evidence or protect assignee's rights in the Assigned Applications. Assignee may assign or transfer all or part of its rights set forth herein in its sole discretion. I agree that the assignee may affix its signature to this document as well as any other indicia of its acceptance of the provisions hereof. If any provision herein is unenforceable, the requirements of the provision shall remain to the full extent permissible by law and the offending portions thereof shall be deemed replaced, to the extent possible, with a provision most closely reflecting the purpose of the offending provision.</p> <p>I further agree to assign, and hereby do assign, to assignee my entire right, title and interest in and to Provisional Application No. <u>63/073,746</u>, filed <u>September 2, 2020</u>, such provisional application being considered an Assigned Application for all purposes herein.</p> <p style="text-align: center;">6/18/2021 _____ (Date)</p> <p style="text-align: center;">DocuSigned by:  09727B1EEE4A4DA... _____ (Signature)</p>	