

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT4747865

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
KAUSHIK RAJAN	12/19/2017
AKASH LAL	12/19/2017
MATTHIAS SCHLAIPFER	12/19/2017
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<b>City:</b>	REDMOND
<b>State/Country:</b>	WASHINGTON
<b>Postal Code:</b>	98052
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	15851746
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<b>ATTORNEY DOCKET NUMBER:</b>	403310-US-NP(1777.588US1)
<b>NAME OF SUBMITTER:</b>	FARAH O'SULLIVAN
<b>SIGNATURE:</b>	/Farah O'Sullivan/
<b>DATE SIGNED:</b>	12/22/2017
<b>Total Attachments: 6</b>	
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I Kaushik Rajan ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "PROGRAM SYNTHESIS FOR QUERY OPTIMIZATION", which:

will be filed. ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S legal representative, Microsoft Technology Licensing, LLC, One Microsoft Way, Redmond, Washington 98052 (ASSIGNEE'S LEGAL REPRESENTATIVES), to insert here in parentheses (filed on December 22, 2017 and given Application No. 15/851,746 by the following Office US Patent Office) this APPLICATION's Application No., filing date, and Office, when known;

was filed on \_\_\_\_\_ and was given Application No \_\_\_\_\_ by the following Office "Patent Office";

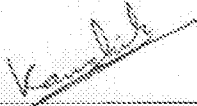
Microsoft Technology Licensing, LLC, a Washington limited liability company, on behalf of itself and its successors and assigns ("ASSIGNEE"), is entitled to, and is desirous of acquiring, the entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR hereby authorizes, and requests, ASSIGNEE'S LEGAL REPRESENTATIVES to insert the Application No., filing date, and Office into the following table for any APPLICATION DERIVATIVES after they are known;

Application No.	Filing Date	Office

For good and valuable consideration, the receipt of which is hereby acknowledged by the ASSIGNOR, the ASSIGNOR hereby sells, assigns and transfers to the ASSIGNEE, ASSIGNOR's entire and exclusive rights, title and interest, including the right of priority, in the INVENTION and the APPLICATION (and all other applications and patents derived therefrom, such as continuing applications, in whole or in part, in and for the United States, its territories, and all foreign countries ("APPLICATION DERIVATIVES"));

ASSIGNOR agrees to execute all instruments and documents required for the making and prosecution of the APPLICATION (and APPLICATION DERIVATIVES), for litigation regarding letters patent derived therefrom, and for the purpose of protecting and perfecting title to the APPLICATION (and APPLICATION DERIVATIVES).

 _____ Inventor's Signature	19-Dec-2017 _____ Date
Kaushik Rajan _____ Printed Name in English	_____ Printed Name in Native Language (if other than English)

I Akash Lal ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "PROGRAM SYNTHESIS FOR QUERY OPTIMIZATION", which:

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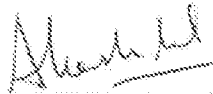
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	19-Dec-2017
Inventor's Signature	Date
Akash Lal	अकाश लाल
Printed Name in English	Printed Name in Native Language (if other than English)

I Matthias Schlaipfer ("ASSIGNOR") am the original inventor or an original joint inventor of subject matter ("INVENTION") disclosed and/or claimed in a patent application entitled "PROGRAM SYNTHESIS FOR QUERY OPTIMIZATION", which:

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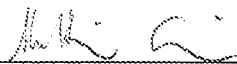
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 _____ Inventor's Signature	Dec 18 2017 _____ Date
Matthias Schlaipfer _____ Printed Name in English	_____ Printed Name in Native Language (if other than English)