SOFTWARE—PRACTICE AND EXPERIENCE
Softw. Pract. Exper. 2017; **00**:1–2
Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/spe

AZDBLAB: A Laboratory Information System for Large-Scale Empirical DBMS Studies

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SUMMARY

In database field, scientific approach has been much less prominent while very stong mathematical and engineering work has been done. Understanding database query optimizers is of critical importance in a sense that it can provide great insights into their improvements by looming which parts should be reexamined. However, there have been few systems for supporting this scientific approach in which one can simultaneously run and monitor a variety of experiments on DBMSes and analyze the results to test his/her hypotheses.
In this manuscript we present a novel DBMS-oriented research infrastructure, called *Arizona Database Laboratory* (AZDBLAB), to assist database researchers in conducting a *large-scale* empirical study across multiple DBMSes in a *scientific* manner. For them to test their hypotheses on the behavior of query optimizers, AZDBLAB can run and monitor a large-scale experiment with thousands (or millions) of queries on different DBMSes. Furthermore, AZDBLAB can help users automatically analyze these queries.
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Received . . .

KEY WORDS:

1. INTRODUCTION

2. BACKGROUND

2.1. Accuracy and Precision in Timing

3. CONCLUSION

In this paper, we presented a novel laboratory information system for empirical studies of different relational DBMSes.

4. FUTURE WORK

5. ACKNOWLEDGMENTS

We give special thanks to Rui Zhang, for his initial development on AZDBLAB. We also thank Ricardo Carlos, Preetha Chatterjee, Pallavi Chilappagari, Jennifer Dempsey, David Gallup, Kevan

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Holdaway, Andrey Kvochko, Siou Lin, Adam Robertson, Lopamudra Sarangi, Linh Tran, Cheng Yi, and Man Zhang for their contributions to the AZDBLAB. and Phil Kaslo, Tom Lowry, and John Luiten for constructing and maintaining our experimental instrument. This research was supported in part by NSF grants IIS-0639106 and IIS-1016205.

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Prepared using speauth.cls

DOI: 10.1002/spe