

Course Friction Explorer

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Introduction

CPSC 310 is a large introductory Software Engineering course.

Students work on a large project throughout the course. During the term they seek help from teaching staff.

They want find out more about the course i.e. students, TAs.

Introduction

CPSC 310 (76 unread)

https://piazza.com/class/ksp6ri6b6017ev?cid=794

piAZZO CPSC 310 Q & A Resources Statistics Manage Class Search Companies Noa Hey!

Unread Updated Unresolved Following

New Post

Valid query tests failing

Tests failing against reference implementation

Can OPTIONS come before BODY?

Can't Complete Dynamic Queries in th...

Perform Query: some tests dont show ...

Lab partner

instr: AdditionCalculator folderTes...

Got 0% for mutant coverage

Query expected behavior

CO failing tests

Issues still there...

question @794 47 views

Tests failing against reference implementation

I'm having difficulty figuring out why my tests are failing against the reference implementation. I thought at first I was not clearing the datasets properly, but I think the way I've implemented it now should work.

Why are the performQuery tests working but not my other tests?

https://github.students.cs.ubc.ca/CPSC310-2021W-T1/c0_team313/commit/62d8e537efc70ea48296201cc274e2cdf2a173744#comments

project project/c0

edit good question 0 Updated 4 days ago by

the instructors' answer, where instructors collectively construct a single answer

insightFacade is not initialized here and possibly in other places.

edit good answer 1 Updated 4 days ago by Victor Chen

followup discussions for lingering questions and comments

Resolved Unresolved

Joseph Deeth (Anon. Atom to classmates) 4 days ago

Most of my tests are still failing after I followed your suggestion, not sure what else to try.

https://github.students.cs.ubc.ca/CPSC310-2021W-T1/c0_team313/commit/59fa07ea371b160d3fa1c4200e55a7155a22bad0a

helpful 0

Average Response Time: 13 min

Anonymous answered `!atDataset` should read data... in 4 min. 13 hours ago

Online Now | This Week: 35 | 367

Queue@UBC

https://queue.students.cs.ubc.ca/queue/34

noa (falkirks@ubc.ca) Logout

CPSC 310/TA Office Hours

Zoom

Enable notifications

Queue staff message

New question

Test (test@ubc.ca)

21 hours ago

Question about data structures - will try for the 5pm office hours

Delete

GitHub



Problem

When a student is struggling in the course, the staffs don't have easy access to information to determine the cause.

Typically the most reliable signal that a student is falling behind is low scores on assessments.

Limited possibility for intervention



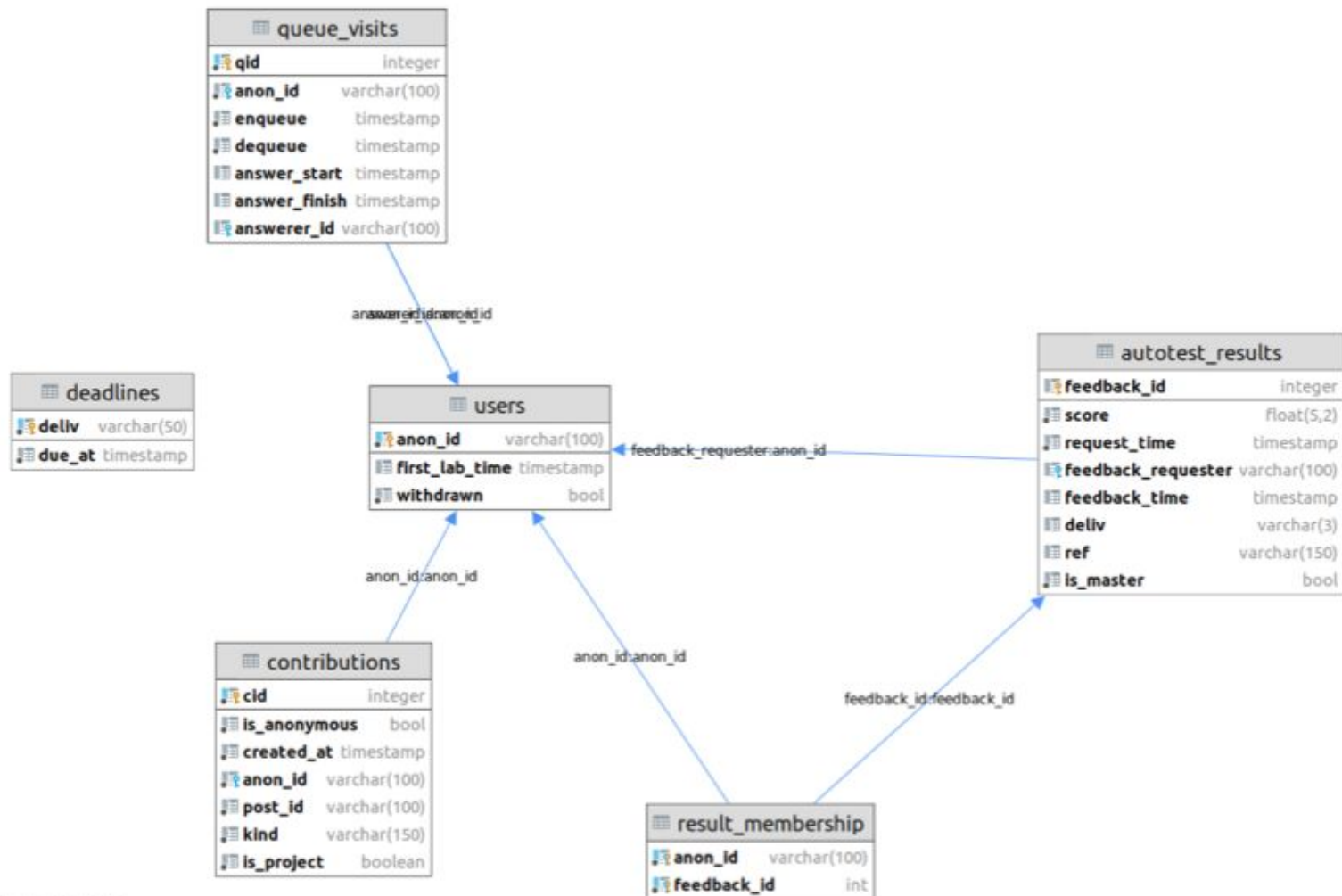
Project Motivations

- Explore student experiences and search for students with specific grade outcomes
- Identify possible causes for students' outcome
- Identify patterns of struggle or friction for a student prior to receiving a final grade.
 - Repeated/ineffectual use of resources
 - Non-standard use of version control
 - Sudden changes to work patterns



Input Data

- CPSC 310 data collected in 2020W2
 - Linked previously as part of CPSC 310 course QA work
 - Student and TA identifiers are anonymized
-
- 409 people (students + TAs)
 - 2366 Office Hours visits
 - 5801 Piazza contributions
 - 25488 Autotest results





Possible Output 1

An interactive dashboard

- Drivers chart → visualize factors contributing to an attribute
- Scatterplot, bubble chart, bar chart → visualize correlation between attributes
- Custom filters and groups

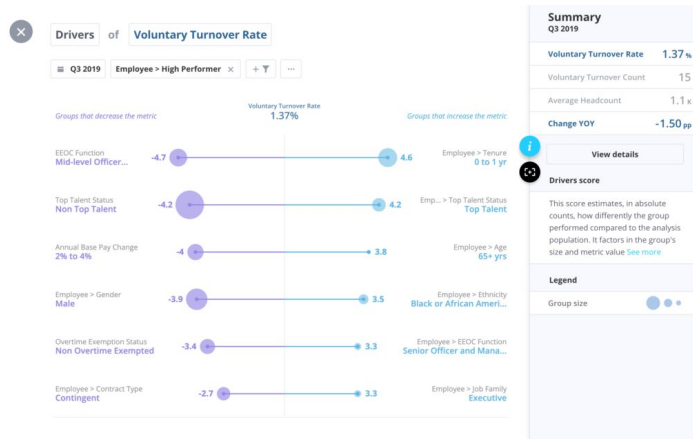


Figure 1: Visier drivers chart of voluntary turnover rate

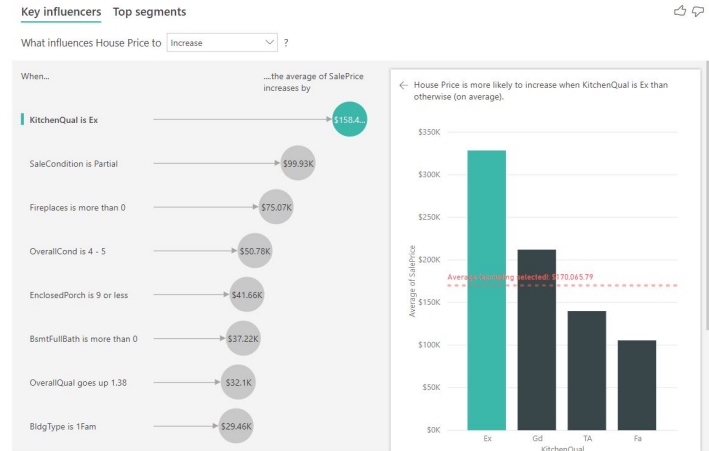


Figure 2: Power BI key influencers visualization



Possible Output 2

An interactive explainer, “How to Succeed in a Software Engineering course”

- Similar visualizations to the dashboard
- Guided
- Less flexibility to customize, explore



Sources

1. Ian Cook, *Drivers of Voluntary Turnover Rate, How To Reduce Employee Turnover with Workforce Analytics* (Clarity, October 16, 2020),
<https://www.visier.com/clarity/reduce-employee-turnover-with-workforce-analytics/>.
2. “Create Key Influencers Visualizations,” Key influencers visualizations tutorial - Power BI | Microsoft Docs, February 22, 2021,
<https://docs.microsoft.com/en-us/power-bi/visuals/power-bi-visualization-influencers>.

Thank you!

A decorative pattern at the bottom of the slide consisting of a series of overlapping, semi-transparent circles in various shades of teal and light blue, arranged in a row.