

A fun game to learn SQL with AI-generated hints and feedback

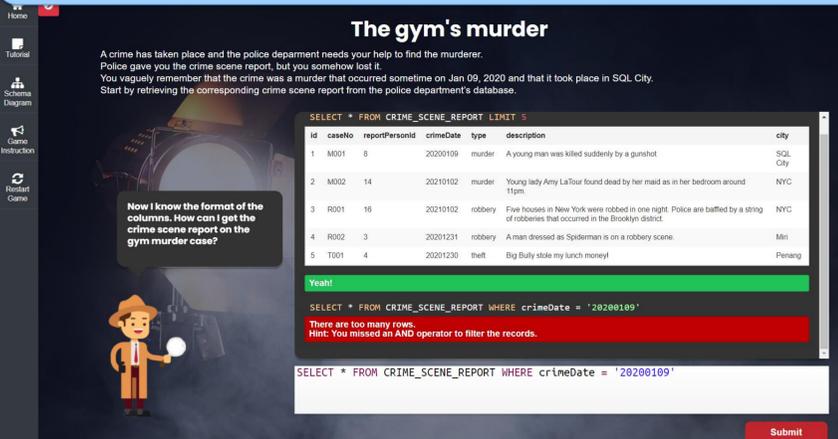
ABSTRACT

We present SQL Murder Mystery, a web-based educational detective game, for students learning database to practice Structured Query Language (SQL) in a fun way. Typically, students look for additional resources to strengthen their SQL skills (CLO2-PLO2: Psychomotor Skills in the Database Design and Organization course) through static and boring online tutorials and lose motivation to continue practising very quickly. In SQL Murder Mystery, students play the role of a detective to solve three different murder mysteries. The purpose of the game is for the players to keep collecting clues and guess the correct murderer to solve the mystery. Players are prompted by the game character to write SQL queries to retrieve information about a murder case from the game database. An AI engine then automatically performs solution checking to check if the player's SQL query correctly matches a set of template solutions stored in the game. If the SQL query provided by the player is incorrect, specific hints and corrective feedback are provided to scaffold learning. Players can only move on in the game when they provide the correct SQL query that would reveal the next clue to bring them a step closer to solving the mystery. Players reach the end of the game and earn a badge when they guess the correct murderer in the mystery. SQL Murder Mystery makes learning SQL fun and without needing any supervision by the instructor.

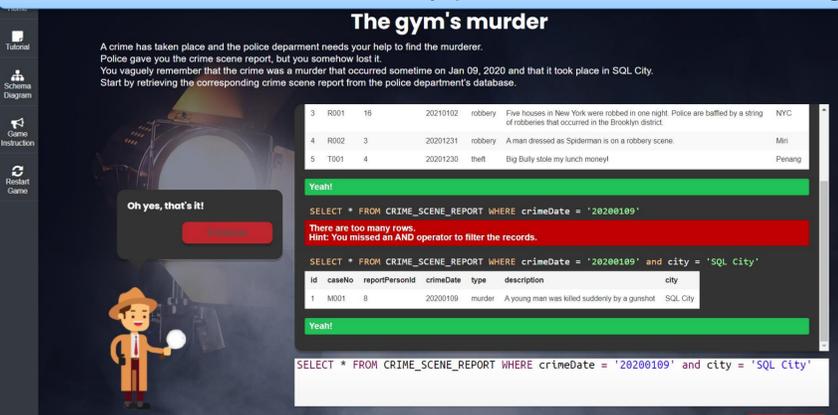
OBJECTIVE

To promote SQL self-learning through a story-based detective game with an AI engine to automatically match solutions and provide feedback.

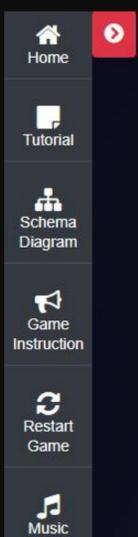
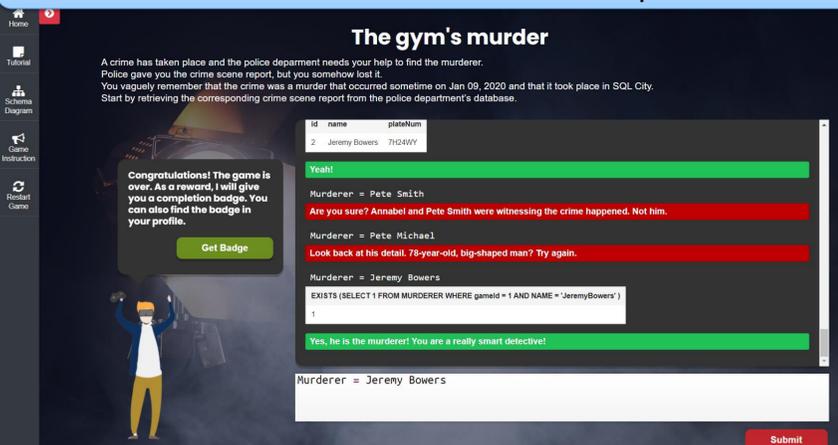
Added value: Game includes 3 different storylines designs and each storyline contains between 17 to 23 SQL puzzles for students to solve.



Added value: Automatically performs solution matching.



Added value: AI engine provides personalized feedback or hints when incorrect SQL solution is provided.



The gym's murder

A crime has taken place and the police department needs your help to find the murderer. Police gave you the crime scene report, but you somehow lost it. You vaguely remember that the crime was a murder that occurred sometime on Jan 09, 2020 and that it took place in SQL City. Start by retrieving the corresponding crime scene report from the police department's database.

This is you!

A murder crime has taken place and the police department needs your help. By making progress in the game, you will find clues to solve the intriguing crime.

Continue



Usefulness

- Encourage students to learn and practice SQL in a fun way as opposed to current static tutorials.
- Free up instructor's time from preparing and grading SQL practice questions as game is scalable to unlimited number of students.

Commercialization Potential

- Freemium model for students: Play the first 5 stories for free and charge premium to play more stories.
- Licensing or subscription-based model for instructors and educational institutions.

Recognition

- Gold medal and Top 10 Best Projects in Project Innovation & exploration in CS Education and Learning (PIXEL) 2021.

SELECT ... <--- Write your SQL query here



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