

Making Prep Tests Count



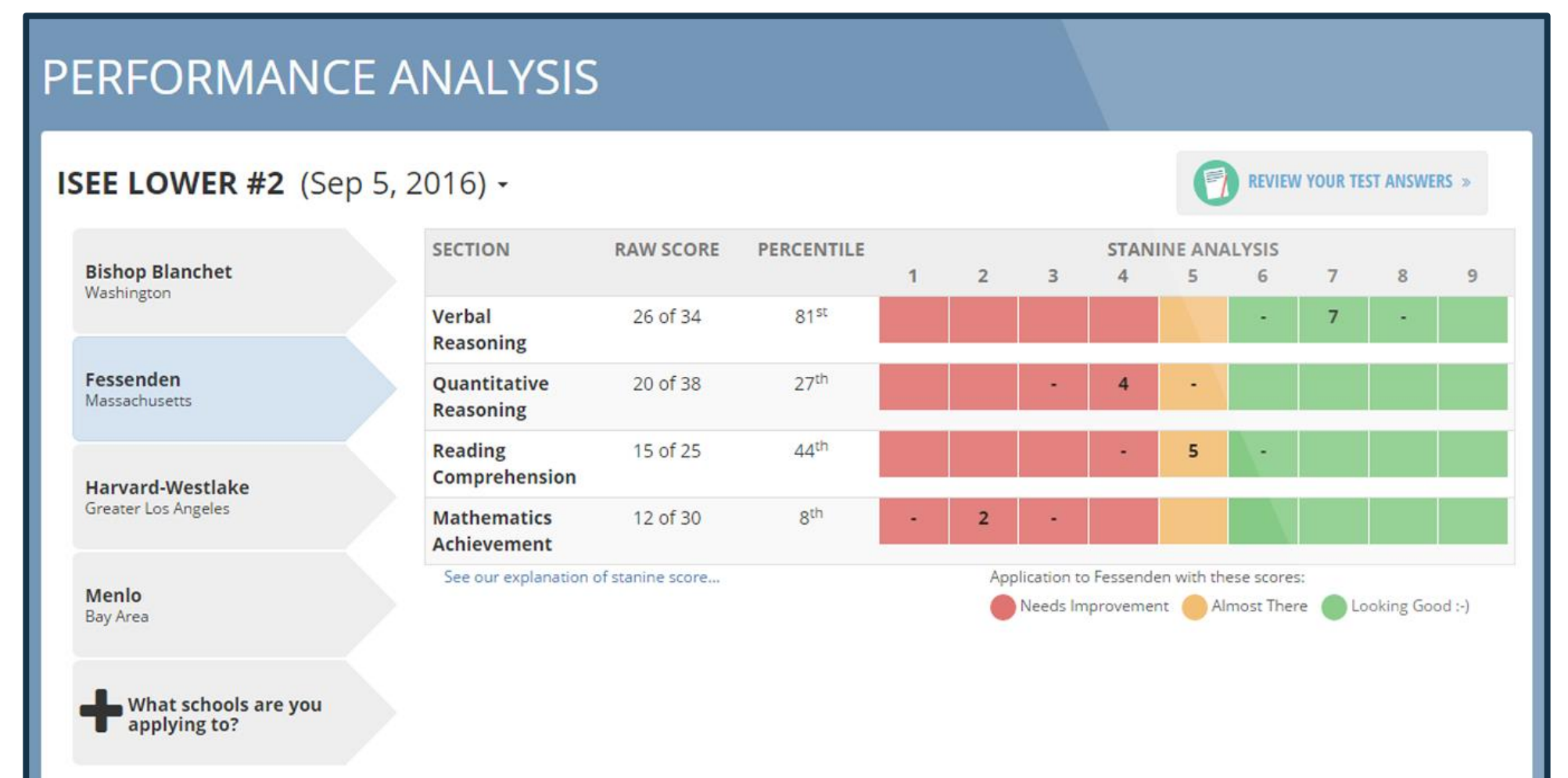
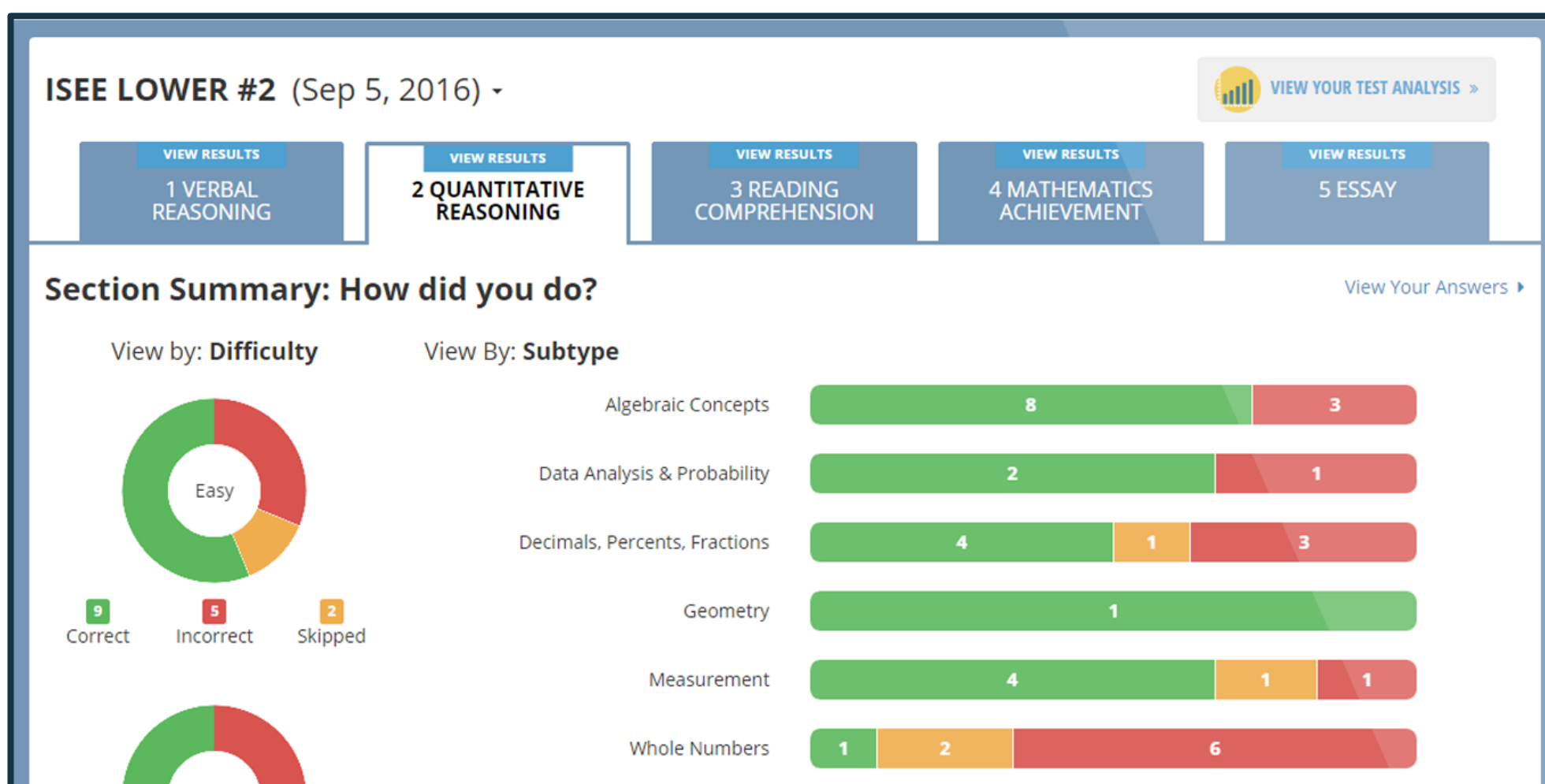
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A group of educators dedicated to helping students succeed on standardized tests like ISEE and SSAT

What They Do

Deliver a personalized prep plan for test success based on an immediate normative score report and actionable insights into a student's performance after an initial full-length practice test. The online platform then identifies areas for improvement, and question banks provide further targeted practice.

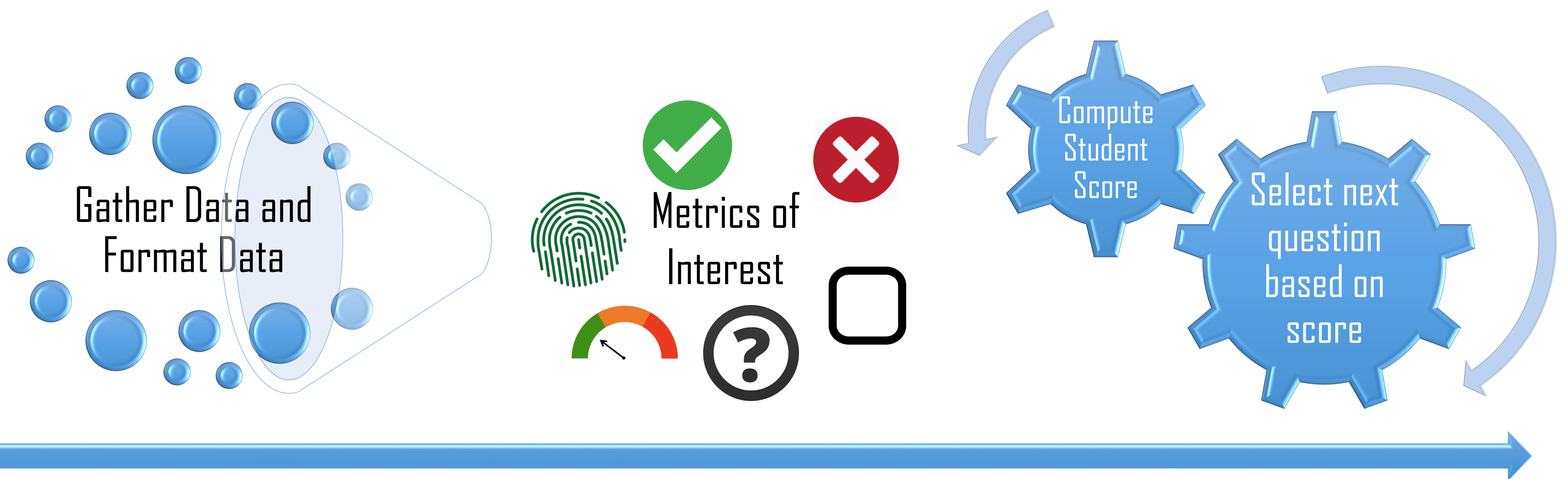


The Problem

Currently, types of questions in the practice tests are not updated automatically based on the previous test results. In order to improve their performance students have to manually select questions for practice from their respective weak and strong sections.

The Solution

We use a combination of clustering and user based collaborative filtering to segregate student performance in various sections. While clustering helps us identify and group similar strengths and weaknesses, user based collaborative filtering allows us to estimate a students' aptitude in sections that have not yet been attempted.



Score for each student, per bank,

$$S_i = \sum_{Difficulty} \text{No. of Correct Answers} / \text{Total No. of Questions} * \text{Exp}10(\text{Difficulty})$$

Scoring

Vector defining questions faced by student, per bank,

$$Q_i = \text{No. of Questions (Difficulty 1)} + \text{No. of Questions (Difficulty 2)} \times 1000 + \text{No. of Questions (Difficulty 3)} \times 100000$$

Results

- We identified metrics of interest as:
- Difficulty (Nominal variable with 3 levels)
 - Answer possibilities (Nominal variable with 3 levels)
 - User ID (Unique key for each user)
 - Bank ID (Unique key for question subject matter)
- Validation will be done upon deployment using A/B testing and measuring success rate vis a vis random question selection.