**4.8 Online Real-time Scoreboard**

**(Dr. Robin Hankin)**

The full title for this project is: Online Real-time Scoreboard for MATHEX.

**Introduction and Background**

Casio MATHEX is a mathematics contest for year 7-10 students in which about 100 teams of four students compete for prizes. See http://www.aucklandmaths.org.nz/uncategorized/mathex-resources/ for details. The event is hosted at ASB stadium, Kohimarama. It is very well attended.

The scoring system needs one judge per team and is managed with paper-and-pen. Each tournament lasts about 40 minutes but it is very difficult for the audience to know how their team is performing. The scoreboard is nothing more than a wall with 100 pieces of paper (one for each team) showing the scores.

This project proposal aims to create a digital online scoring system and display

board, using a BYOD paradigm. I am happy to provide mathematical and graphical

software components if needed.

**Description**

The new system tracks the judges responses and displays the scores online for audience

members. It comprises several components:

1. Software (android/Macosx/ Windows) for the judges whereby, in real time, the judge enters correct or incorrect for the team on a mobile device or a laptop.

2. A back-end database system, which records each judges response. The database must be capable of being updated from 100 judges simultaneously.

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3. Software for audience members. The audience member enters which team they are supporting, and the app shows, in real time, a scoreboard showing how their team is performing relative to the other teams. There should be an option for the audience member to display the leader board.

4. (if possible) Provide some sort of software to drive a large display screen and

show summary statistics.

**Objectives and Goals**

Software must be robust and maintainable. The backend must run on a PC. I would like to investigate whether we could run some sort of local WiFi. This must be powerful enough to run 100 judges and maybe 300 audience members simultaneously. The software should be released on GPL or other open-source licence.

**Summary**

• Time frame: 1 year

• Team size: 2 - 3 students

• BCIS major: Software Development, Computer Science

• Skills: programming skills, basic mathematical skills

• Client: Dr. Robin Hankin, Kerri Spooner