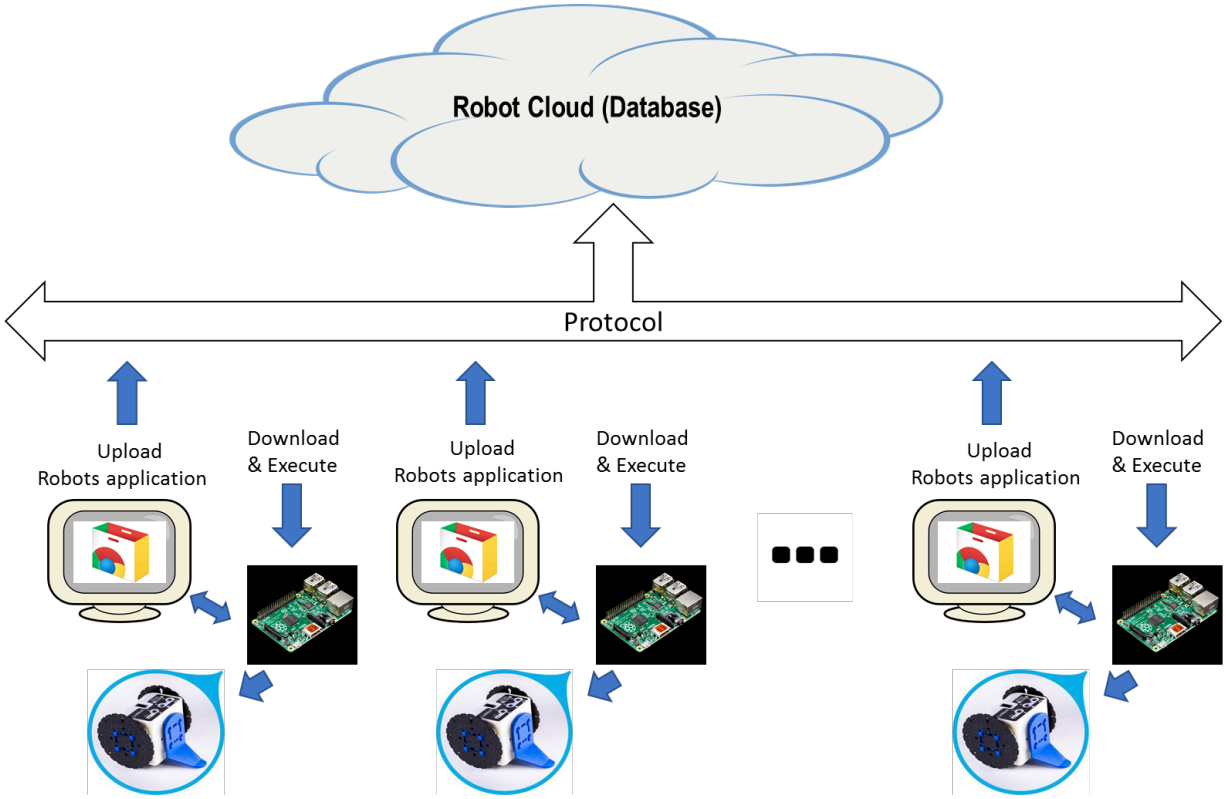

Cloud-Based Robotic Knowledge Sharing System

Background:

Educational robots have been widely used in elementary, middle, and high schools. We want to design a web-based platform to support robots' application sharing between different robot users in their respective learning level (elementary, middle, high school). The robot's application includes Ch codes, description, input data and executing result. On one hand, the users can share their fancy robot examples to all the other users who are also using the same robots. On the other, users can directly execute the shared codes on their robots from the web. This platform will enhance the knowledge interaction among teachers and students.

Description:

This system mainly consists of three parts: (Each part can be a single project design)

- **A Chrome app: an interactive Graphical User Interface:**
    - Login, logout, sign up interface;
    - Example index and search engine interface;
    - Robot example file producing, loading, displaying, uploading and downloading modules;
    - Robots connecting status displaying;
- **Communication protocol design:**

- Message packaging, sending, receiving and processing between the interaction interface and database;
- A daemon running on Raspberry Pi so that Chrome app can see them through the Internet;
- Communication between raspberry pi on robots and web; (Codes sending and executing can be realized by Mobile C from IEL lab)

- **Database management:**
  - Data of users' information and example files management;
  - Request response from interaction interface;
  - Search engine response based on tags on the example files.

Deliverables:

The students are expected to form a 3~5 person group to accomplish this challenge project. Each student can take on one part and construct the whole system from front-end to database. The group is expected to develop a chrome app on the web and database management run on the server.

Contact:

Harry H. Cheng, Ph.D
Professor, Mechanical and Aerospace Engineering, Graduate Group in Computer Science
Director, UC Davis Center for Integrated Computing
and STEM Education (C-STEM), http://c-stem.ucdavis.edu
Director, Integration Engineering Laboratory, http://iel.ucdavis.edu
University of California, One Shields Avenue, Davis, CA 95616
hhcheng@ucdavis.edu, Tel: (530) 752-5020

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