A Brookshear Machine Emulator for Teaching

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Background

- A Brookshear Machine Emulator is a teaching tool that acts as a simulation of a simple computer.

- It can help teach computing students the fundamentals of machine code and assembly code loading.

- However, at the moment there are number of low-level implementation for the emulator that exists on the web those are only partially adequate and lack a number of intermediate functions and the interface is difficult to use in an efficient manner.

The Brookshear Machine architecture

- Memory: 256 bytes – addresses 00 – FF (hexadecimal)
- CPU: 16 one byte registers – numbered 0 – F (hexadecimal)
- PC: one byte register;   IR: two byte register
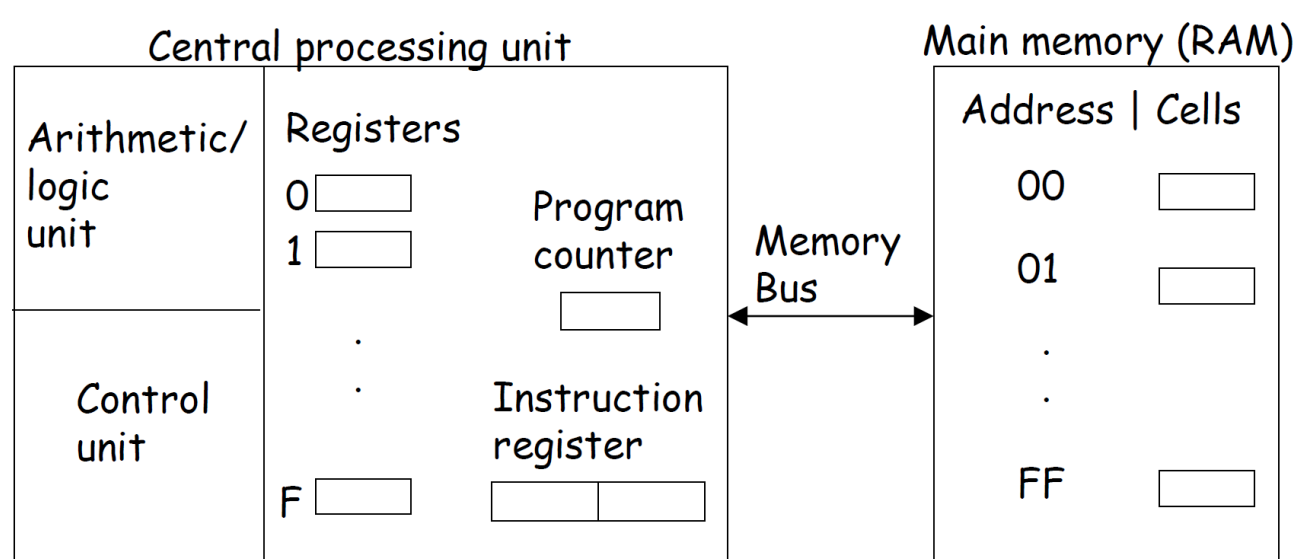
Aims of the project

- Aim of the project is to further expand on the existing implementation of Brookshear machine emulator that can be used for teaching machine code and assembly code loading.

- The project aims to use to use programming language Java and MySQL for this application.

- The project should extend the functionality; add more features with updates to the interface to the existing given implementation of the Brookshear model.

- So, that the new model can deliver even higher level teaching of machine code and assembly code loading.
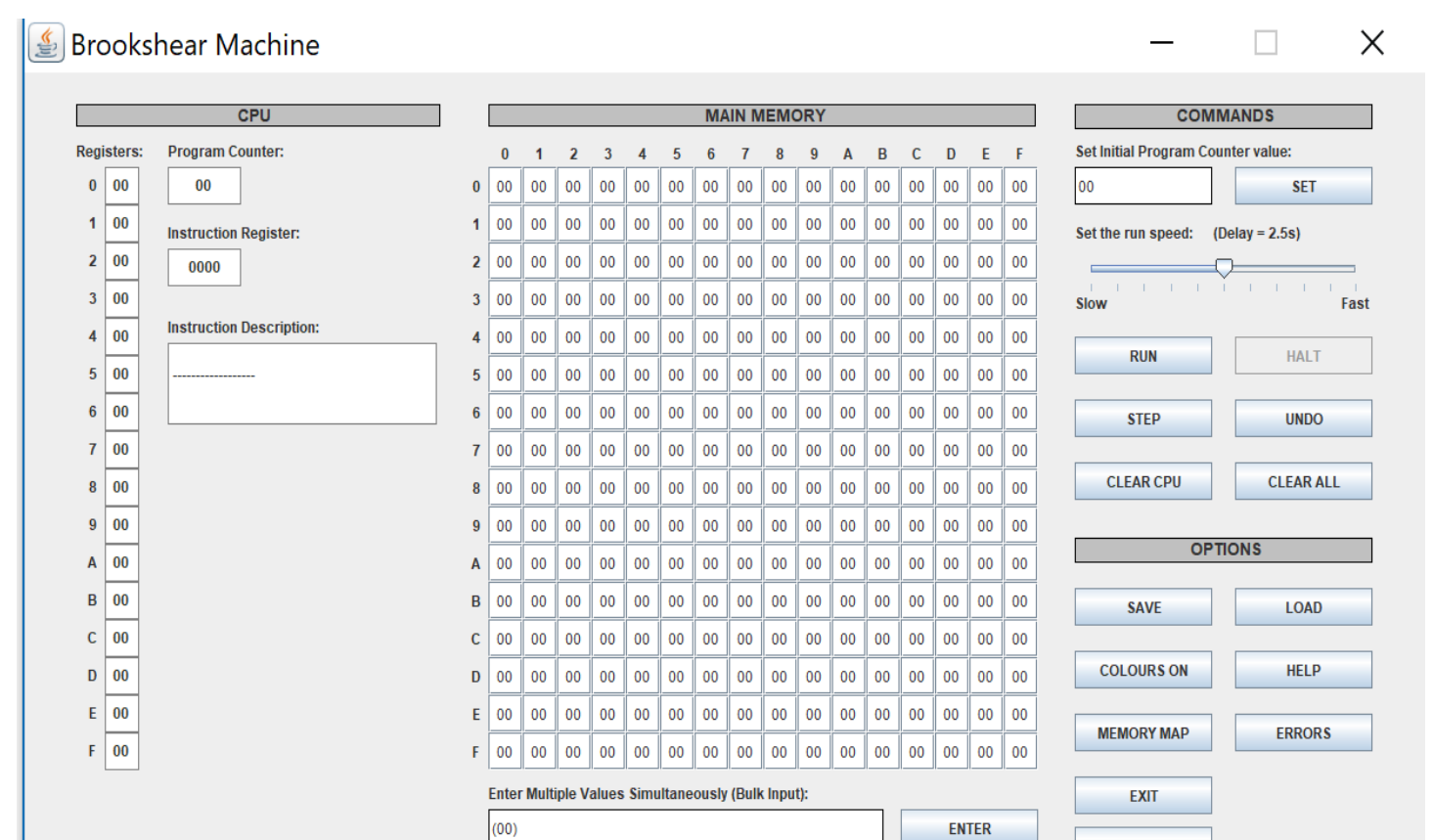
Addition of New Features

Database Connectivity

- The LoadDB Button extends the software engineering/systems development of the application

- The application can be connected with a database of ready-written example programs (with documentation) that could be downloaded straight into the Brookshear machine by the user (learner).

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