1 PPPAD – A PDA with Three Functions

PPPAD is a simple PDA device with three separate functions:

- RPN calculator,
- bookmark manager, and
- memo manager.

PPPAD is running on JAVA virtual machine with $20 \times 32$ character display.

The RPN calculator supports standard arithmetic operations. Bookmark is defined as a pair of an URL and a description, e.g. http://classes -- Course pages. The user can sort bookmarks either by URL or description. Searching is supported but only for exact matches. Memo manager maintains a list of memos, information in free text format.

The device is available in three models:

- **C**+ Each function is available after the device has been switched on. After the device has been switched off, all data is lost.

- **B** The device can be set to change to a specific function when it is switched on. If so desired, the device an be restored to the state in which it was when it switched off the previous time. This implies that the user can save the state when the device is switched off.
A As in Version B, but every data item, be it a list of bookmarks or a memo, can be larger than what fits onto the display area.

2 Implementation

This is an individual project, everything you submit should either be written by you or one of the official component suppliers, such as our textbook or material published in class. The display is a critical component, of course, and a model implementation has already been distributed. More components will be supplied as the deadline approaches.

You can adopt one or a mixture of two strategies:

LEGO In the Lego approach you put your project together using ready-made parts. This is perfectly fine, but should probably only be used for Model C+.

CUSTOM You build everything from scratch. Model A is something that probably requires this approach.

It is good to remember the design principle called KISS – Keep It Simple Stupid. In JAVA we use classes to represent concepts. By identifying the classes and their connections one has almost completed the project.

As of this writing we have not yet covered every aspect needed for Models B and A. However, C+ is almost within reach.

One clarification is probably helpful: Models B and A can be set to a certain mode when they are switched one. In our software implementation we can use command line options to represent short-cut buttons for different functions.

3 Deadlines

Three deadlines:

1. Design document, due 9 PM Thursday, August 10. This document outlines the overall design. You should not go into any details. Critical implementation aspects can be described using pseudocode. Identify the parts that you should implement and what the interaction between them should be.
   
   By submitting a particular design document does not mean that you cannot change it later.
You are allowed to form informal design groups (ideal size is three persons).

2. Alpha preview, on Thursday, August 17 - Sunday, August 20. Your finished or nearly finished implementation is previewed in a 15min session. You will get a grade prediction and suggestions on how you should spend the remaining time.

3. Completed project, due 5:30 PM Wednesday, August 23. Source code and the user manual should be submitted in class.

4 Grading Guidelines

By selecting a particular version of the PPPAD you set the grade you are aiming for. Excellent Model B can lead to a B+ or even A-.