

Stuff to say...

Slide 2 – Memory Overview

- In Palm OS all memory resides on a “card”.
- Cards can contain either RAM, ROM or both.
- A card is just a logical construct of the operating system.
- The ROM in a palm device contains the operating system code and basic applications which come with the OS.
- The RAM is divided up into two sections.
- Dynamic RAM is the working storage for the currently running program.
- Storage RAM is used for storing user data and user installed applications.
- Storage RAM is not lost when the device is powered down because a small amount of power is always being supplied.
- When the device is explicitly reset the Dynamic RAM is reinitialized but the Storage RAM remains untouched.

Slide 4 – Dynamic Ram

- The Dynamic RAM is analogous to RAM in a desktop computer.
- The dynamic RAM contains a single heap which provides memory for dynamic allocations.
- The size of this Dynamic heap is dependent on the total amount of RAM in the palm device.
- The amount of RAM reserved for dynamic RAM is fixed and cannot be resized.
- From the dynamic heap the system provides memory for dynamic data such as:
 - global variables
 - application stacks
 - temporary memory allocations
 - application dynamic allocations
- The Dynamic RAM is controlled by the Memory Manager.

Slide 5 – Memory Manager

- In Palm OS the Memory Manager has to be very efficient in space usage since there is such a limited amount of space on Palm devices to begin with. Also power since battery life is important.
- The Memory Manager must take special care to ensure that garbage collection is undertaken and no unused allocated memory hangs around. This is because when the Palm is turned off there is power to the memory still and it doesn't get wiped out.
- The Memory Manager is responsible for maintaining the size and location of every chunk in Dynamic RAM, Storage RAM and also in ROM.
- The Memory Manager provides an API for manipulation of chunks, including:
 - allocating new chunks
 - removing chunks
 - resizing chunks
 - locking and unlocking chunks
 - compacting fragmented heaps