Welcome to my Summer 2009 Intern Presentation

Christopher McNally

(Laboratory Assistant)

A LITTLE ABOUT ME!

- 17 years old
- I am a high school graduate
- I am attending Diablo Valley College (DVC) this fall
- I play Club soccer for the Diablo Futbol Club (DFC) year round
- Enjoy long-boarding, mountain-biking, hanging out with friends, attending sports games

PROJECTS AND TASKS COMPLETED THIS SUMMER

- ✓ Built up a tool kit
- ✓ Built carts for Linan
- ✓ Cleanroom readied
- ✓ New equipment entering Marvell lab
- ✓ Moved selected items from the back hallway on the 4th floor to Marchant
- ✓ Resurfaced Stable Table
- ✓ Brought METRO racks from RFS (Richmond Field Station)
- ✓ Built racks for Marvell Storeroom
- ✓Put together gowning area for Marvell Lab
- ✓Built METRO racks for mask storage
- ✓Re-terminated AC power cord
- ✓Caped hazardous bolts on catwalk in new lab
- ✓Power washed scaffolding
- ✓Drove to AMAT to receive donations
- ✓Fixed the edwards eb3 backing valve
- ✓Assisted with pqecr rebuild
- ✓Fixed DCL storage cabinets
- ✓Relocated stable table
- ✓Serviced truck

Table of Contents

Taurus

Implemented at the inception of the micro lab in 1985

The Taurus was designed to:

1) Allow qualified lab members to gain access to the equipment

2) Restricts “cheaters” or unqualified Personnel access to the equipment

3) Records Date and Time to keep a record of machine usage

Taurus cont.

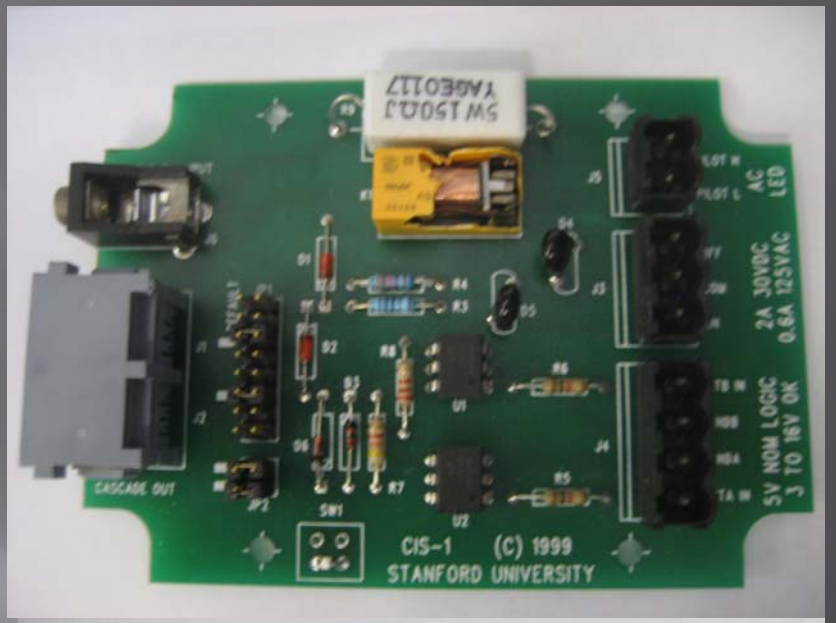
•The Taurus control system consisted of 2 very large patch panels; one on either side of the laboratory.
Each panel had hundreds of “deports”

• A total of 2 boxes were used during the Taurus era, one style of box switched 117V, the other provided a simple contact closure

•The Taurus eventually became obsolete and was soon replaced by the “WIS”. One of the reason why Taurus was replaced was because the Taurus Computer Co. went out of business making the system unsupportable

The WIS or The Walker Instrumentation System

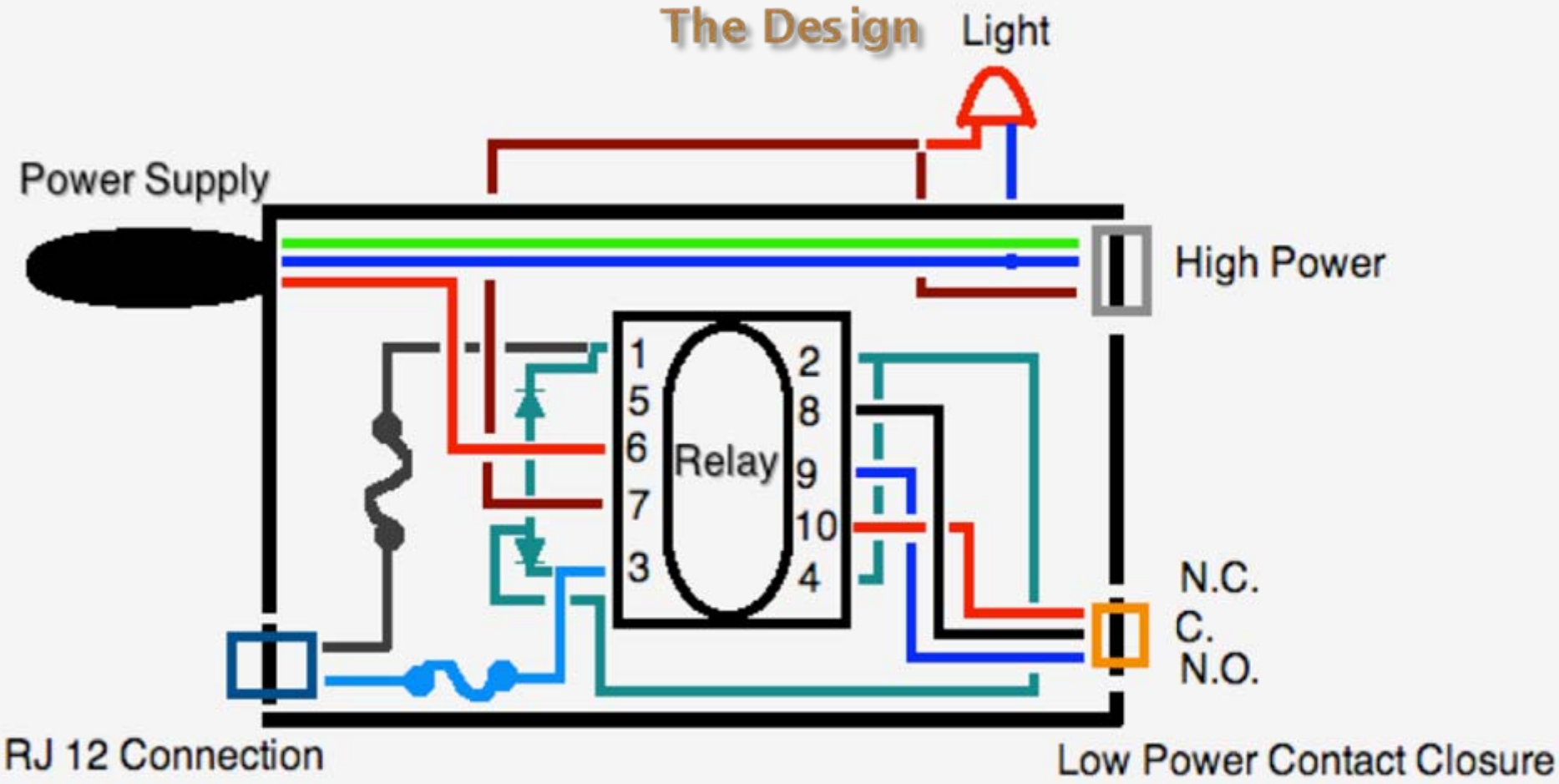
- Was introduced in 1999, a product of Terry Walker for Stanford University.
- Walker examined the Taurus and produced a similar design
- Two boxes were also used, one for switching power and the other for low-voltage switching
- WIS also became unsupportable when Walker's firm closed
- Todd Merport identified a substitute, a switch system manufactured by Hewlett Packard or, more commonly known as HP



HYDRA

HYDRA

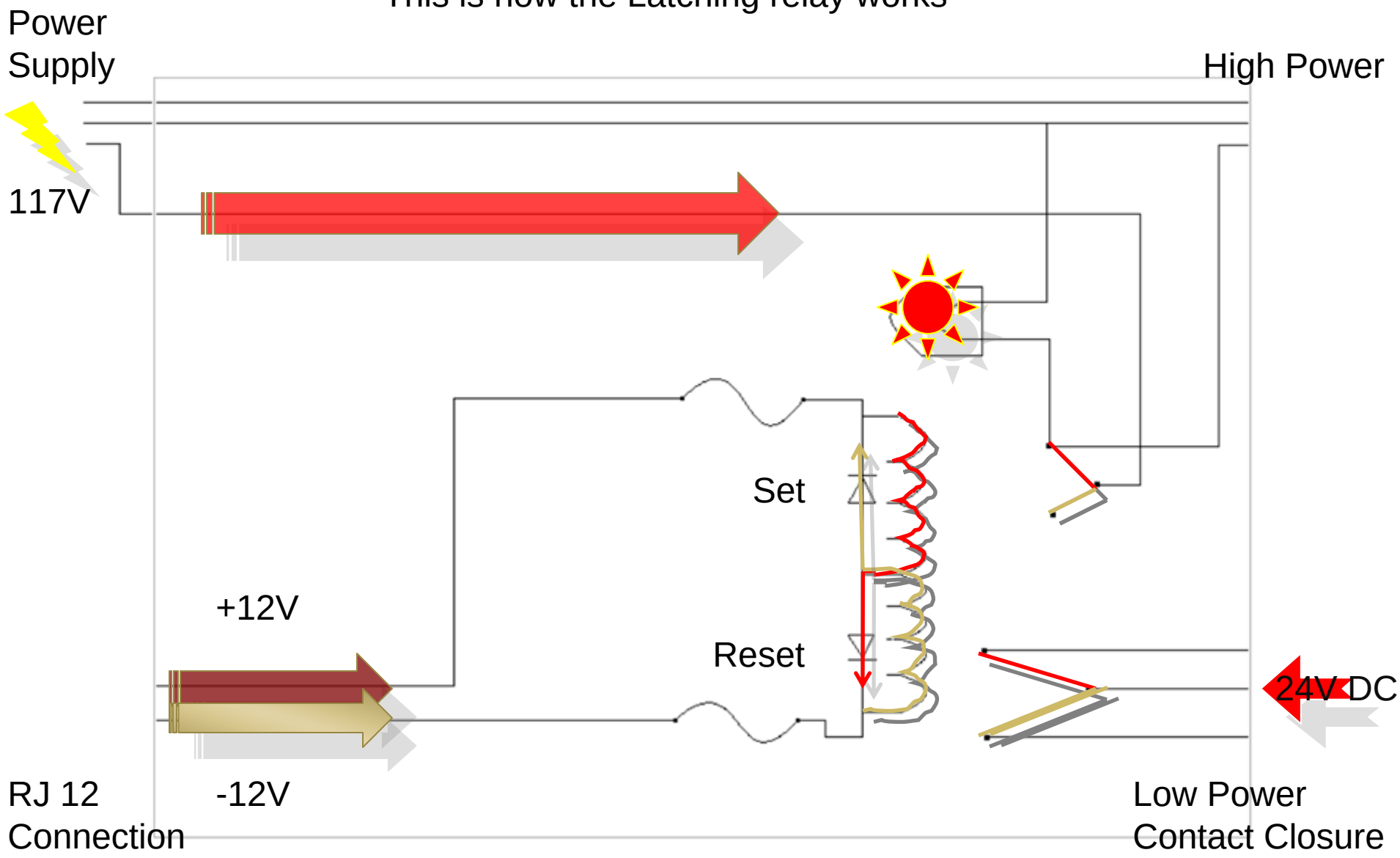
- The third and latest generation
- In this design there is only one box allowing for versatility when connecting the box to the machinery
- The box allows for 117V in the high power terminal, and also has a low power contact closure.
- The Hydra box receives its command through the Hydra computer.
- The red light, located on the front of the box, will light up when a lab member has access and the machine is enabled



When opening up the HYDRA box this is what you will see
It is the basic schematic

The Theory

This is how the Latching relay works



Engineering A Prototype

The major problems with Prototype I:

- The box walls are to thick so the connecters do not snap into the box correctly
- Everything should be attached to the front panel, makes for easy removal, and maintenance
- The box used was very large and all pieces could be easily fit into the box. It would be better if the box was downsized
- It seemed as if the pins ordered were the wrong type for the high power adapter, so I used a larger size and they worked better
- Connectors should be mounted into the middle of the box rather than having one side exposed when the box is open

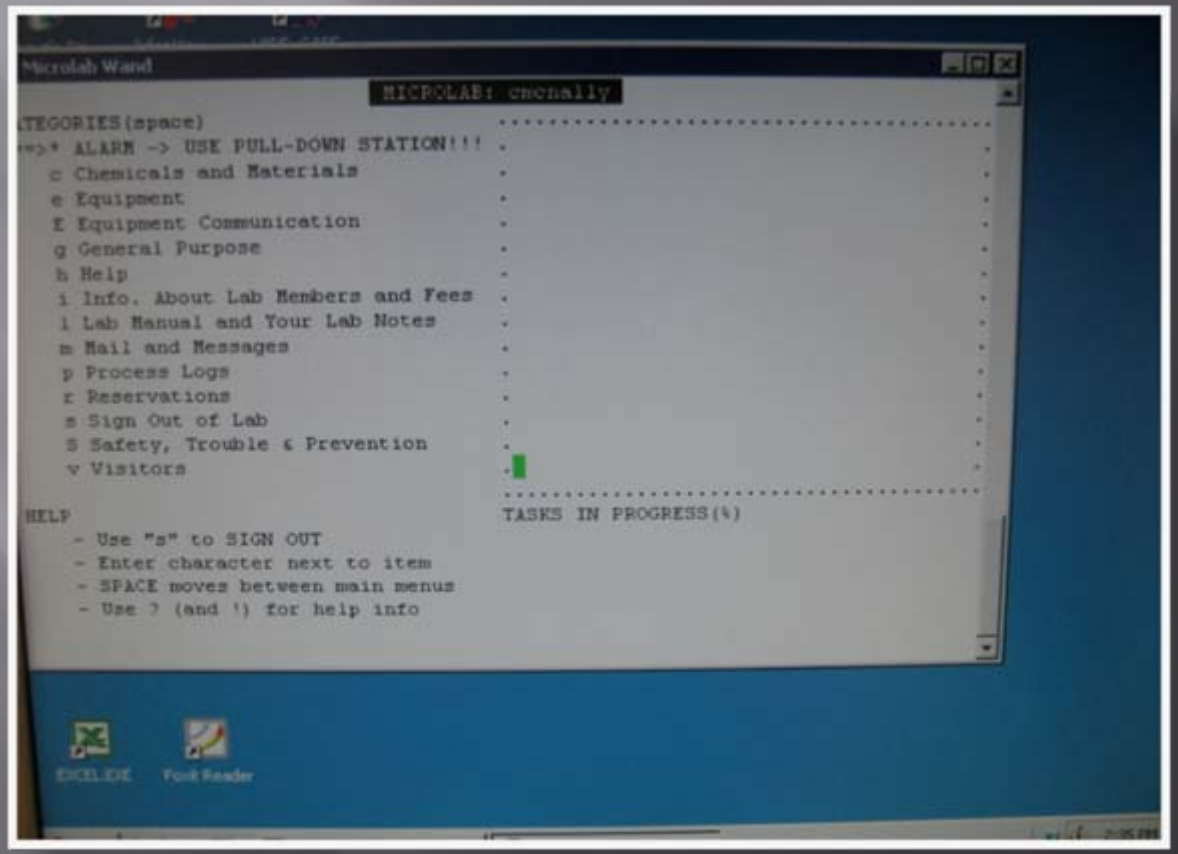
THE MYSTERY TO THE OBSCURE NAMES?

Merlin

- The First lab computer
- Named after the fictional wizard
- Giving the theme of wizardry to the computer systems

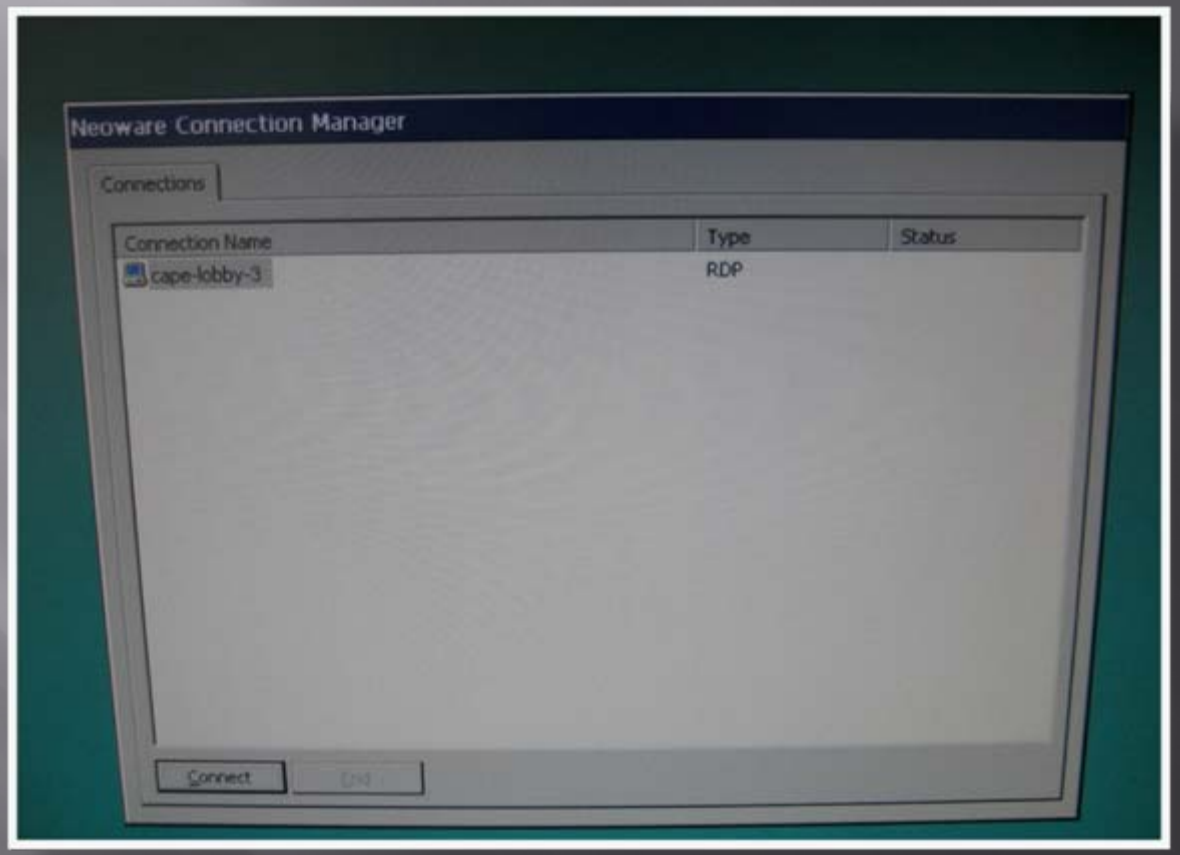
The Wand

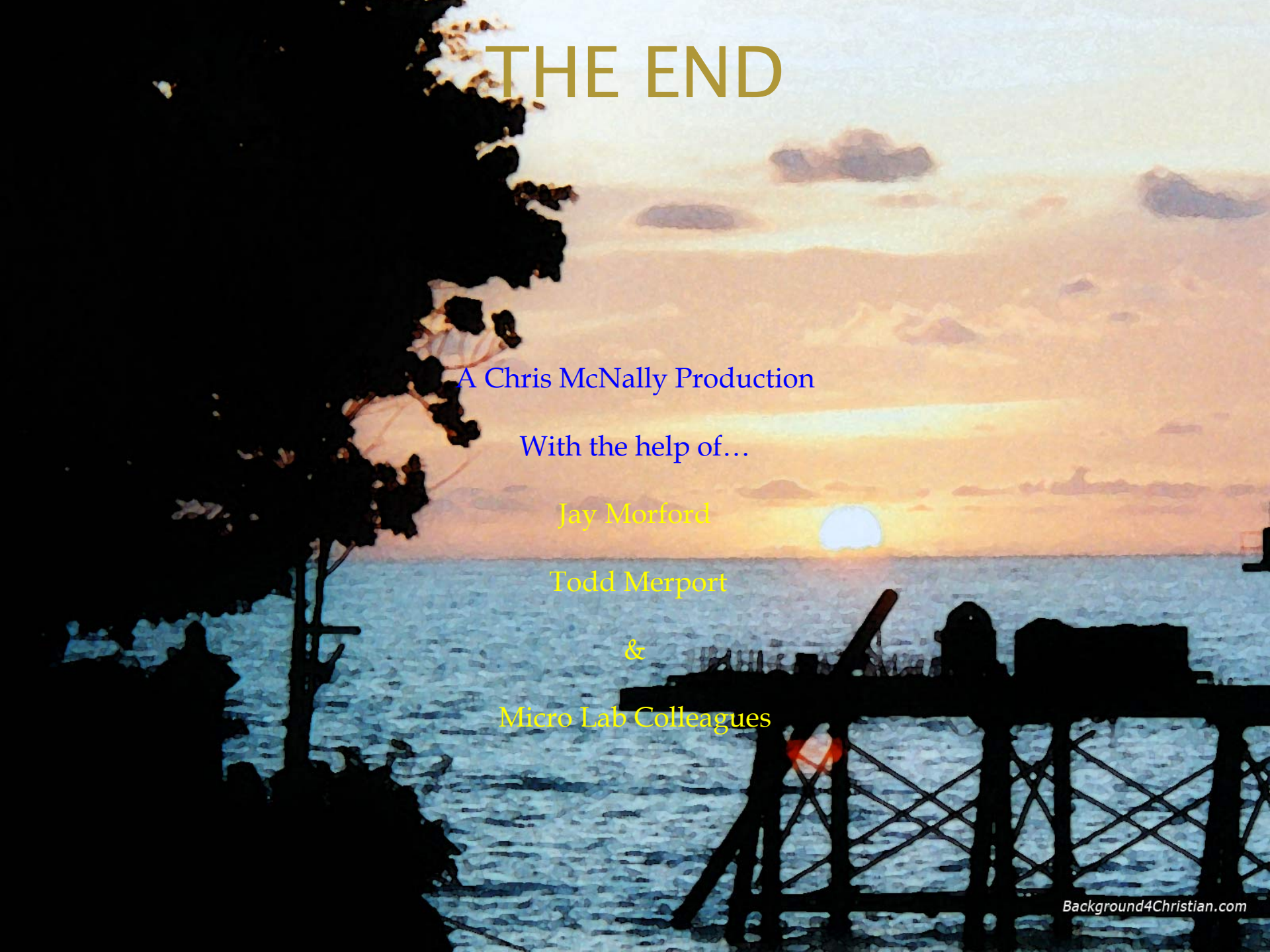
- The 1st operating system
- Named the wand because it is the wizards tool; just as it is our tool to use the machinery
- Ran on a DEC VAX computer utilizing dumb terminals



CAPE

- Runs on a SUN server using a personal computer interface
- Wizards often wear capes!




THE END
A Chris McNally Production
With the help of…
Jay Morford
Todd Merport
&
Micro Lab Colleagues
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