MAPS June 2003 Summary (inc. RESNA)

The first half of June was spent avidly preparing for the trip to the RESNA (Rehabilitation Engineering and Assistive Technology Society of North America) conference. This meant solidifying the code to a point where it wouldn't break.
Code stuff:
First I fixed a bug with the Whole Script View. When single clicking on a picture in this display, the script scroll change and time step change methods are not called directly (no explicit call is made, but they are run when those actions occur). This makes it harder to know when they are running. So I figured out that next time a hard to find bug (or seemingly invisible/non-existent bug) occurs, I should look in functions that end in "_change".
I finally completed all of the help videos, and of course this was only accomplished by weeding out some more bugs, some of which are minor, but important. Like I fixed the scroll bar on the Picture Select Display which was being displayed unnecessarily when all 12 boxes, and only twelve, were displayed. This was letting the user be able to scroll to a blank row.
After a trip to Boulder High School to discuss with Anja's people about setting them up to use our tool, we discovered some problems with the ADOBC control on the form. It turns out that when the Load Delete Script form was being referenced before the form was explicitly opened, the application would try and connect to the database. The problem occurred when it was trying to load because certain information (such as the Data Source) had not been set yet (because I was setting them programmatically), so it would crash.
One attempt to fix this was to remove the ADOBC control from the form altogether and to programmatically control everything. This lead to big problems in that the combo drop down box was tied to the ADOBC control in such a way that did not allow it to be tied to variables instead. So I was not able to get it to work when removing the control. Specifically, the database name is programmatically tied to the DSN of the connection string, and that isn't set until the form explicitly loads. I moved stuff that referenced the form until after the form was loaded, and it worked fine. Later on however, Stefan discovered that it was still being referenced from somewhere.
For the help videos, I had some issues programming them, but eventually was able to integrate it into the application. I started by making the controls for the videos be a control array, but it won't work that way. It turns out that you must have a separate control for each device (in this case the device is the avi video). I think this is stupid and makes for much lengthier code, but it doesn't seem to work any other way.
Another temperamental thing about the help video stuff was that it wouldn't accept a relative path for the name of the video to play. This is a VB thing. Instead what I did was to make it look for a folder called "HelpVideos" upon initialization of the application, then when playing the videos it looks for app.path + HelpVideos + the name of the video. If, upon initialization, there is no folder called HelpVideos, then it just creates one in which you can then put the help videos. We'll have to figure out later how to send the help videos along with the app or whatever.
To set up an ODBC connection (like we did for each of our computers to run the Maps server), we followed the following steps:

1) Go to control Panel -> Admin tools -> ODBC
2) Click System DSN tab, Add, choose Adaptive server anywhere
3) click ODBC tab. fill in Data Source Name : (name of your dsn) ours is: NetworkMAPS
4) click Login tab. fill in user and password info. ours is user:dba, password:sql
5) click Network tab. check the TCP/IP box. fill in on the first line: host=128.138.75.5;port=2638
6) click on the Database tab. fill in the Server name: (look up one on sybase) ours is: NetworkMAPS

To make sure that the application was completely ready for RESNA, and therefore uncrashable, I began whacking at it. I discovered that writing files to the database fails with the path name has a space in it (Like "Anja's Software"). For the time being this just throws up an error message saying you can't have a space, but later we'd like to actually change it so that this could be dynamically fixed somehow. This checking for a space is done before saving things to the database.

I also chopped some stuff from the DBappendNodes sqlInstruction. I removed the no longer needed parts of the database structure, since Stefan recently redid the structure to include error stuff.

A small bug that I found that we could possibly fix later occurred when adding one full node to a script, then saving that script. As it is saving it pops up a box indicating to the user that the second node is missing a picture (this is the end of script blank node). If you then say ok, then delete the blank nodes at the end (nodes 2 &3), then save again, then the next time you load the script, it will open with the full node missing.

If only one trailing blank node is deleted, say node 2, then this problem doesn't occur, so it may never be worth fixing.

RESNA

The RESNA conference was interesting. It was both useful and not useful, in different ways. Overall it was a very worthwhile experience. The ways it was useful was that we made a lot of connections and also learned a lot about the field of assistive tech that we didn't know before, mainly the view of the occupational therapists and such. It was not as useful to tell us too many things in terms of technology that we did not already know, but even that is a useful thing.

I attended a course called Fundamentals in Assistive Technology. Much of the course was spent talking briefly about all sorts of clinical disabilities and some known functionalities that are affected by each disability. A whole other large chunk was spent talking about how to position someone in a wheelchair, something I did not find useful to our research. It seems that the majority of members of RESNA are practitioners and clinicians, not researchers. This is an interesting fact, but it doesn't help us a whole lot.

I did manage to get something useful out of the course, and that was about assessment. The talk was meant to help guide practitioners in assessing what device or assistive tech would be appropriate for a particular person. Some of this would be useful to one of our other projects like TEA or Web2gether as well. Those notes are on the following page.

<u>Assessment</u>:
1. Gather information
- Observation: See what they do, listen to what they say
- Interviews, etc.
  a) Thing to know:
      1) If their disability is progressive, will it change, will their needs change?
  b) Abilities – sensory
      1) vision
          - acuity
          - visual tracking – following an object
          - visual scanning – finding an object
          - visual fields – seeing an area
          - visual perceptual function – what's being seen
      2) hearing
      3) tactile/ somatosensory
  c) abilities – physical
      1) orthopedic issues
      2) tone (hypotonicity, hypertonicity, spasticity)
      3) strength
      4) endurance
      5) coordination
      6) posture
      7) movement patterns
  d) abilities – cognitive
      1) attention
      2) problem solving
      3) memory
          -short term memory
          -long term memory
          - sensory memory
  e) abilities – language
      1) receptive – visual /audio
      2) expressive
      3) sequencing
      4) coding
      5) categorizing
  f) environment
  g) previous use of equiptment

<u>Goals:</u>
- outcome measure
- time frame

<u>Goal Categories:</u>
- Improved function
- Device mastery and appropriate use
- Improved safety

- Improved skill level (vocational, educational, independent living)
- Improved health

Define desirable features
- Tradeoffs
- Benefits
- Drawbacks

… weight features (for use in evaluating different devices)

Plan of what to do when device breaks
Write Report documenting your assessment
- include roles, who's doing what
- setup, training/support, etc.

I think the above notes on assessment will provide guidelines that can be used to assess whether or not MAPS is right for a person. What we could add to this is what level does a person need in all of these areas for MAPS to work for them. Then someone can look at this list.