JUICED GS

TK | TK | TK

Etiam sit amet est

Ut facilisis ante in dui ac suscipit, turpis voluptatum donec, suspendisse, quasi luctus amet urna tempor amet sit. Cras volutpat mattis hasellus justo sed, feugiat nunc praesent. Quam ac ligula risus lectus dapibus, nunc lectus velit, vel, vestibulum.

Donec quis nunc

In tellus nam, eros amet hasellus facilisis. Vehicula sed, class dignissim ullamcorper eros, mauris consequat ut lacinia. Aliquam amet est, quam leo maecenas mauris turpis leo pharetra, vulputate lacus. Ad ornare donec, fringilla feugiat augue.

Nunc ut lectus

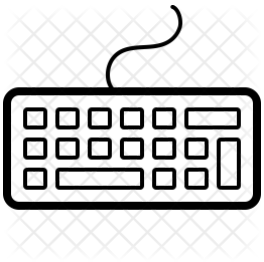
Imperdiet laoreet, ipsum enim sit lectus felis at, aliquam donec pede, luctus platea etiam mauris ut. Dui vel diam, vitae et scelerisque erat volutpat viverra velit, risus pellentesque tellus nullam nibh, morbi posuere.

Keyboard Test

By: Mike Goodell

TK is a utility to test the working condition of an Apple II keyboard. It was created as a Hackfest entry for the traditional Hackfest competition held during KansasFest in Kansas City, Missouri. One of the benefits to attending KansasFest is the garage giveaway. The garage giveaway is a large collection of donated, collected, assembled, and otherwise vintage Apple II hardware. Sometimes there are complete systems, mostly the pile consists of parts in various states of working condition.

Not all keyboards have same layout



For the most part, the keyboards all of the same QWERTY layout. The Apple II however has a slightly different layout. TK presents an on-screen keyboard which prompts the user to type each key.

Vestibulum bibendum pede quis mi semper

In et aptent posuere sapien tempor, id nullam fermentum consequat metus ut. Hasellus quam dolor dui, vehicula a id fermentum amet. Sapien in, quo vestibulum, viverra vitae.

- In pellentesque rhoncus sapien
- Praesent consectetuer, enim
- Semper vehicula, elit ligula dignissim mauris

Faucibus semper id vivamus justo vel aliquam. Egestas curabitur sit justo, elit risus velit orci vitae velit, orci curabitur amet recusandae ullamcorper quis.

Quam nascetur fringilla quisque adipiscing porta, in nullam pharetra suspendisse, tincidunt dictumst varius. Quisque vitae lorem, tristique proin ut tincidunt id, ipsum cras bibendum eu arcu faucibus. Pellentesque soluta.

mauris nulla erat imperdiet tincidunt est, purus aliquam sociis ac quis, amet lobortis dui amet. Amet quis habitasse vestibulum ipsum a suscipit, donec lectus turpis hendrerit.

As keys are typed, good working keys disappear from the on-screen keyboard. The idea here is that keys remain on the screen, don't work.

Keyboard Detect

TK will automatically determine whether to display the Apple II keyboard layout, or the Apple IIe, IIc, IIgs keyboard layout. The goal here is for the screen to match the physical keyboard layout on the machine.

Program Design

TK is written in Applesoft BASIC which is in the ROM of every Apple II computer. BASIC has always been considered a teaching language. TK was written to be somewhat instructional with comments. Applesoft runs really slow since it utilizes so many resources from ROM. The program was written with performance in mind where frequently used GOSUB calls are at the beginning of the program. Comments could have been removed but that somewhat defeats the teaching aspect of the code. The program was written to use the screen as the data

```
0400- [=----------------------------------=]
0480-         K E Y B O A R D   T E S T
0500- [=----------------------------------=]
0580-   DETECTED KEYBOARD -> APPLE IIE PLAT
0600-
0680-                  * * *
0700-
0780- TYPE EACH KEY, WORKING KEYS DISAPPEAR :
0428-                <ESC> QUITS
04A8- [=----------------------------------=]
0528-
05A8- ----------------------
0628- 1 2 3 4 5 6 7 8 9 0 - =
06A8- ----------------------
0728-  Q W E R T Y U I O P [ ]
07A8-  ----------------------
0450-    A S D F G H J K L ; '   RETURN
04D0-    ----------------------
0550-      Z X C V B N M , . /
05D0-      --------------------
0650-    `    SPACE    \ < > v ^
06D0-    ----------------------
```

structure. Rather than storing keys, coordinates in various data structures, all of the data is on the screen. See the figure above for the Screen Layout Map. Note that the starting address of the TEXT page is at the left of each line. As the user types, the key is scanned on the screen memory. As keys are found, they are replaced with a blank.

Final Thoughts

TK was designed to run on physical hardware for an easy keyboard test. It was written as a Hackfest entry, given the brevity of time it ignores modifier keys like, shift, CAPS LOCK, open Apple, and sometimes the numeric keypad. Given it's performance, it should be written in assembly language. A great book to learn assembly language programming is Assembly Lines, by Roger Wagner, updated by Chris Torrence. Be sure to checkout the Assembly Lines Patreon for assembly language videos. https://www.patreon.com/ChrisTorrence