Zonepad

Better KeyEntry

t. 01707 272255
m. 0773311 5704
tim@onebamboo.co.uk
or tim@zonepad.co.uk

A new structure to replace the Qwerty keyboard (and mouse):
Or users can continue to be treated as children who can only point to what they want.
The original computers needed a typist to enter the code for a program, and to run a program the user had to enter the name of the program followed by the newline key. So it is not surprising that the Qkeyboard became the input method. But as programs or applications became more complex they needed to improve the input control so they added the mouse to allow the user to 'point' to a icon to select a task. A bit messy, it requires 2 hands for the keyboard and another for the mouse control, although using a touch pad for the mouse, it can be controlled using the thumb,
And we've learnt to live with it.

Over the years many have tried to improve the keyboard and mouse. Basically Qkeyboard hasn't changed and nor has the mouse. And it still needs 3 hands to use (2 handed keyboard, mouse as a pointer). They should have been replaced 40 years ago but we've been lumbered with them for too long. Also, the keys have fixed markings based on the typewriter, yet some of the time they are used to do different tasks.

A better approach is a **single handed keypad** that allows all the keys from the keyboard to be accessed and also enable the mouse actions to be controlled from the keypad. The only time the mouse equivalent is needed is for drawing images. The keyboard is replaced by a set of pimples with a grid around them to be able to find each key by feel. The actions of the keys change depending on the task.

The Zonepad consists of a number of keys, except they are pimple sized (3mm diameter)
The keys are surrounded by a grid so that each key can be found by feel.
There are no prompts on the keys but there are 'keypages' that prompt the key value or actions.
T**he keypages change depending on the task**.
The actions of each key is prompted on 'keypages' that identify the actions.
All the actions of the standard keyboard can be prompted on 4 keypages, (see the keypage prompt image below) these keypage prompts are part of the keypad (with an LED to flag which one is active). They may be displayed on the screen or attached to the keypad.
There is no need for a touchscreen except for drawings but then use a scribe instead.
There are keypages for custom and specific tasks. **Applications can have their own keypages.**
It can also use the grid to 'zoom ' in on a point and select an option. (mouselike)
All this can be done single handed.
The only time a 'mouse' is needed is where a hand drawing is being generated. So use a scribe! (or keep the mouse if you want to keep the old technology)

In its simplest form it is just an alternative keyboard and mouse (with the keypad grid able to zoom in on a point) and then 'clicking' on it.

And then it is a simple task to generate the world's first REAL wordprocessor where, as letters are entered, it prompts words it knows that start with the letters so far and after a pause it enables the keypage to select prompted word. Quite a simple application, great for a computer club to write the program. And make the current wordprocessor obsolete. The new document structure consists of a database of words used in the document and pointers to those words in the text document.
There is also be an application that takes a wordprocessor document and convert it to the Zonepad structure. This layout becomes the WORDprocessor standard structure

The physical keypad is very simple and can even be made using cardboard sheets, including sheets for the PCB circuit layers (or produce a proper PCB). It needs a 'pill' to short out the rows and columns (this is the critical bit) to generate the key value as an 8bit code to send to the computer. The logic for the keyread on the chip is quite simple, another challenge for a computer club.

The whole Zonepad structure is very simple and has the potential to replace the Qkeyboard and mouse very easily and quickly.

The key icons are images which uniquely identify each key on the keypad.

Zonepad

Better KeyEntry

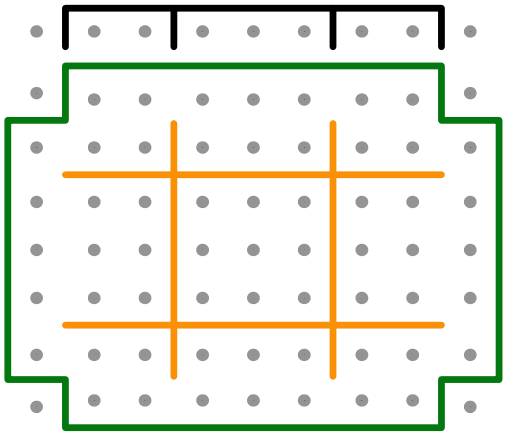
t. 01707 272255
m. 0773311 5704
tim@onebamboo.co.uk
or tim@zonepad.co.uk

Basic Concept

The input for the computer is the Qwerty keyboard and mouse. It can be replace by the Zonepad.
It can be very cheap to produce, cheaper than either the mouse or keyboard and replace both.
It can even be made out of cardboard, (initially?).
Mouse actions may (and should) be replaced by specific task keypages.

The standard Qwerty keyboard is based on the old mechanical typewriter which needed the layout of the keys to be in such a way that the striker would miss other keys on the way up to marking a piece of paper with the target letter. This requires the use of 2 hands. The mouse was then added to call routines that couldn't be accessible from the keyboard. We've had this structure for over 40 years. It should have been upgraded quite quickly but the programs were typed in by typist who were used to the typewriter.
Then they added the mouse for calling routines that couldn't be typed in and the mouse & keyboard structure was born and users were locked into the 3 handed input structure.

It should have been upgraded quite quickly but the early users were still typists and perhaps later it was a way for the Operating Systems providers to lock everyone into their systems (because the mouse software was part of (or linked to) the Operating System.



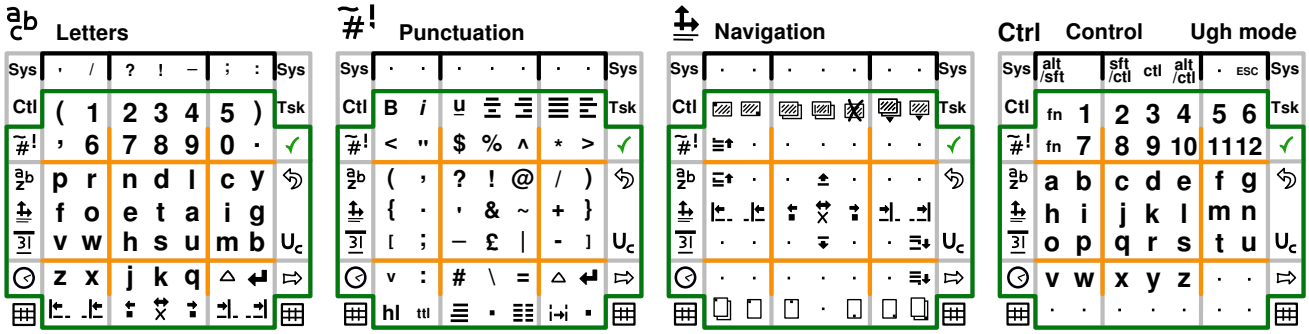
A number of pimple sized keys (3mm diameter)
there are no markings on the keys
A physical grid surrounding the keys
to be able to find each key by feel
'Keypages' of keys
The main keys are the 7x7 group in the middle
Use the full keypage grid to allow all the keys on the standard keyboard to be prompted. (using several keypages)
Use **another keypage to zoom in** on a mouse action.
The Zonepad consist of a 'keypage' of keys in a rectangle. with a row of keys above it and a column of keys each side. The side keys select the active keypage (and display their actions when selected) The top row adds further keypages as required. The bottom corners are fixed and used to select the zoom' mode. The top 2 keys on each side also have fixed tasks
All the standard keyboard keys are available using 4 keypage prompts.

It does the same as the Qwerty keyboard and mouse but in a different way, and better, and more versatile.
It could have been developed decades ago, but the operating systems locked users into the old structure.

It can be made and tried out to see how easy it is to use - without being connected to a computer,
It could be developed by any computer club, making the Keypad out of cardboard, including sheets for the PCB (or produce a PCB if prepared to generate a 2 sided PCB) and connects to the logic chip with a serial lead to the computer (which also provides the power)

Zonepad - Keypage prompts

The Standard Keypages replace all the keys on the standard qwerty keyboard :



The keys in the left column select the keypages: Letters, Punctuation, Navigation and Control (the messy group) of the computer input. While these standard keys are being used - it has LEDs above each 'keypage' to prompt which one is active. For extended tasks (normally accessed with the mouse pointer and clicking) it can select a different keypage for the alternative control normally accessed by the mouse pointer and clicking. The standard keypage prompts can be part of the keypad or displayed on the screen when needed.

Zonepad

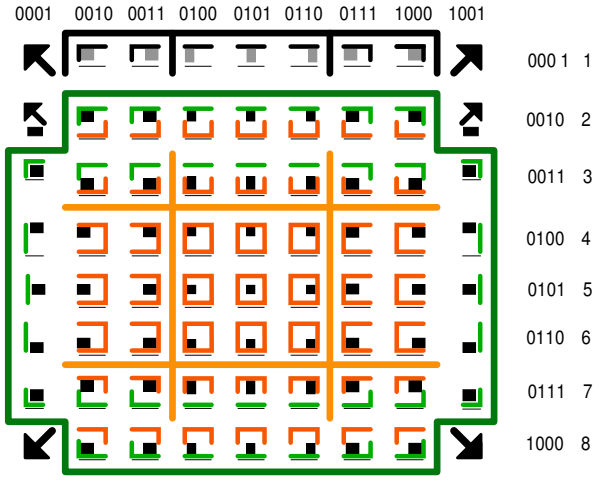
Better KeyEntry

t. 01707 272255
m. 0773311 5704
tim@onebamboo.co.uk
or tim@zonepad.co.uk

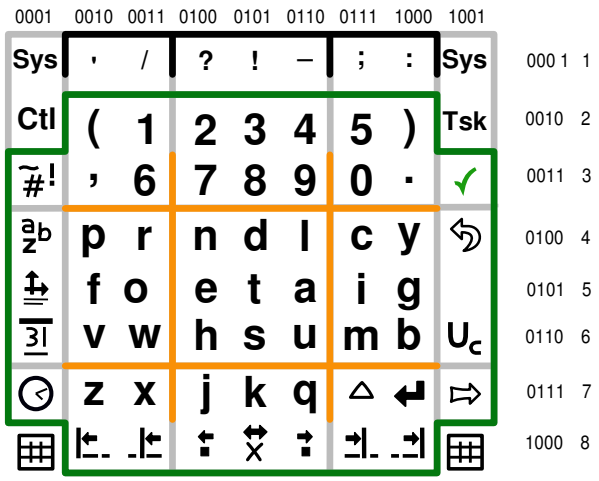
Zonepad - a different approach to the computer keyboard and computing

The first stage is to build the Zonepad with a logic chip to scan the keys.
The top grid (KeyIcons) shows icons to uniquely identify the positions of each key on the keypad.
The lower grid (Letters) shows the target character it selects. The 4 bit numbers show the row or column number of the pressed key. It shows the keypage key prompts – identifying each key by the 4 bit binary number shown by the LEDs displayed. If all the keys are lit, then multiple keys have been pressed.
The first marker identifies the area position of the key. The inner marker identifies the actual key to press.

KeyIcons with LEDs to give the Rows and Columns of the keys (as displayed on the Keypad LEDs)



Letters with LEDs to give the Rows and Columns of the keys (as displayed on the Keypad LEDs)



KeyIcons: It's a single handed keyboard that does everything the standard computer keyboard does but can do much more. The Keypad has no markings of the key actions, because they are forever changing (and they are pimples), so they have to be prompted either on a set of keypage actions (such as the Letters keys used on the Qwerty keyboard.) or on the screen, changing as required by the program.
The keypad is made up of a number of pimples as its keys and uses a physical grid to find the keys by feel.
The basic keyboard key actions are the basic keypages so can be prompted on a 'cribsheet' of all the keys (broken down into keypages). For use with application needing more specific actions they can be prompted on the screen while they are needed. A touch screen is not needed for key entry since they are selected by the keypage keys.
Each pimple on the Zonepad has a icon to identify its position, so tasks can be called up by showing the key icon followed the task icon or description.
It replaces the Qwerty keyboard by a single handed keypad but breaking it into 4 keypages that cover all the actions of the Qkeyboard and mouse.

Letters: These are all the keys used by the standard Qkeyboard but they prompt the key positions of the keys on the Zonepad. The mouse mode is also done with the Zonepad layout by using it to zoom in on a point or action and then select it. (or the keypad prompts the task icon which then prompts the task action)
The first use of the Zonepad is to replace the Qkeyboard by a single handed Zonepad that can enter all the letters and characters using a single hand. With 'mouse' control able to be done using the key grid, and then done better using the Zonepad's structure.

Example:
Take the first character of the text. The icon above identifies the key position on the grid. Repeat for the other brackets/letters
OR; Look at the KeyIcons prompt below and find its position within the KeyIcon grid above, then find the character in the same position on the Letters keypage. (repeat for all the KeyIcons)

KeyIcons for the letter/punctuation,
Try practicing finding the keys using the icons (it's easier with a physical grid)
The letters and keyicons are the same keypad positions,.

It won't take long to quickly identify the position of the key from the prompted icon.
And use the new approach for documents and programming: WORD prompts & TASKprompts, including the first WORDprocessor.

t. 01707 272255
m. 0773311 5704
tim@onebamboo.co.uk
or tim@zonepad.co.uk

NOTES:

WORD prompts & TASKprompts

The zoom mode is not explained here, but replaces the mouse actions and then does it better. It isn't very complicated and should be easy to work it out. With each keypress of the zoom, it moves closer to a single pixel. Then taskprompts select individual tasks before returning to the current keypage.

Expansion:
The standard keyboard entry are done by the above text entry keypages. Where other tasks are used, rather than using a mouse to select options, each key can be prompted for an option

The first application task: **The world's first WORD processor**.
NOT the letter processor we currently have.
The WORD processor becomes simple using the Zonepad structure, allowing word entry options as letters are entered. The resulting document being a 'database' of words used with the text section pointing to these words to display. It also makes the documents simpler, smaller and independent of the operating system.

Microsoft have done a great job locking us into their structure. Even stopping an open source document being printed, but having to convert it to a microsoft structure. (modern printers won't print open source documents, they expect the Microsoft format!)
So they have a monopoly, using a system locked into Microsoft rather than a better open structure.
The way the world is going we are going to need a cheap and simple method of communication (and computers), also not high tech options such as voice control and bloated software.

The Zonepad approach makes the computer simplier and less obviscated (a word I learnt from Microsoft)
The Zonepad input allows users to be able to define their own structures and not be locked into the operating system. It was the word processor which locked everyone into the Microsoft operating system, in the early days of the PC.

Taskprompts are applications that do a task by calling up a routine with all the options able to be accessed using the keypage prompts for the application. It doesn't just call up one routine, it allows a number of routines to be called. Almost like calling routines from the keyboard.