Aprosksimativno računanje na samostalno izrađenoj 'pametnoj ploči'

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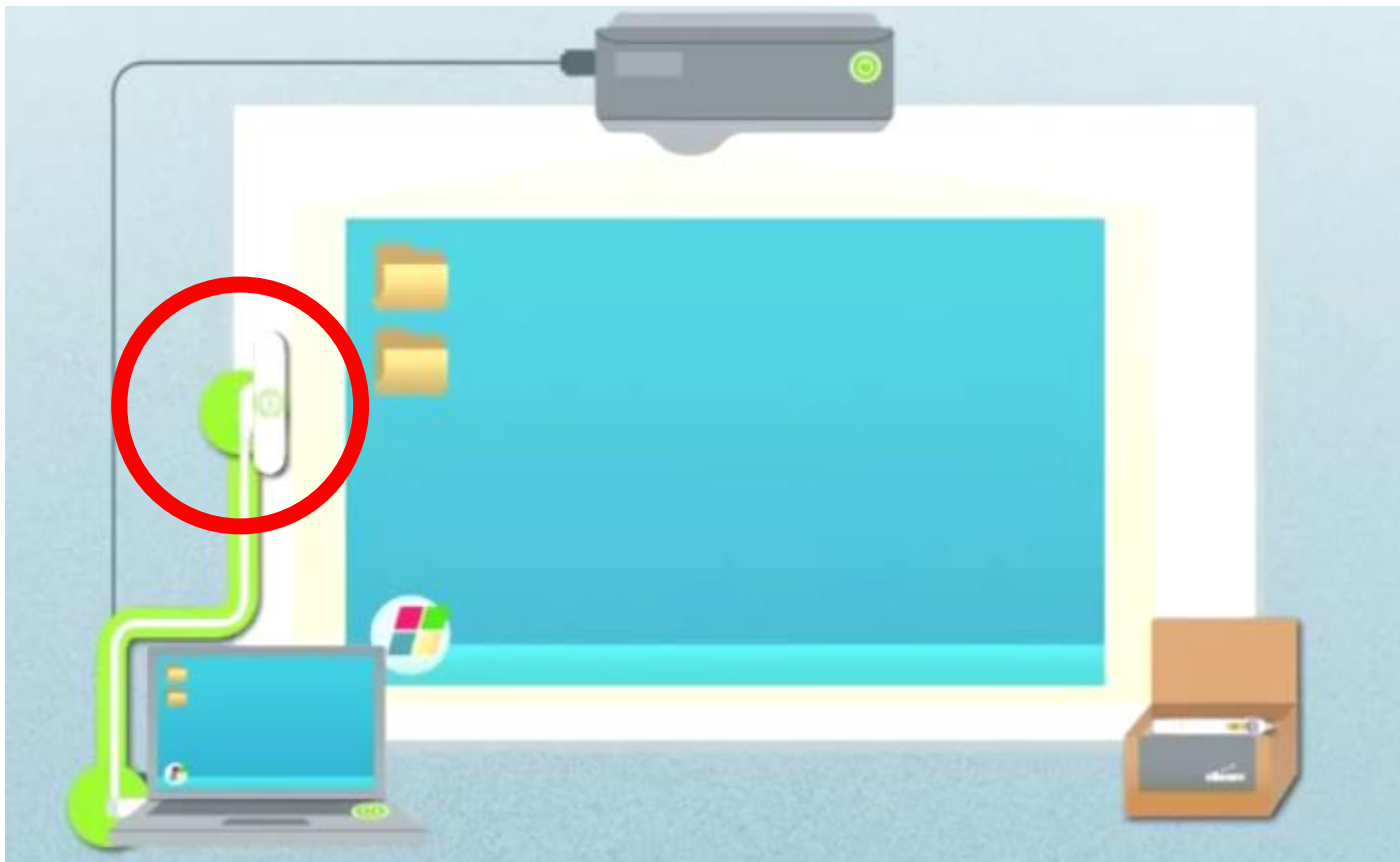# Neke raspoložive tehnologije pametnih ploča u RH (1)

Klasični IT Board; cijena veća od 5000 kn

Neke raspoložive tehnologije pametnih ploča u RH (2)

E-Beam, cijena oko 7000 kn

Pametna ploča u samogradnji (Optička tehnologija)

Low-Cost Multi-point Interactive Whiteboards Using the Wiimote

Since the Wiimote can track sources of infrared (IR) light, you can track pens that have an IR led in the tip. By pointing a wiimote at a projection screen or LCD display, you can create very low-cost interactive whiteboards or tablet displays. Since the Wiimote can track upto 4 points, up to 4 pens can be used. It also works great with rear-projected displays.

Software

The calibration and mouse cursor emulation software is available for you to download and try yourself. Note: My mouse emulation code isn't perfect. If any of you are programmers and can get it working with Alias Sketchbook, drop me a line.

1. Connect your wiimote to your PC via Bluetooth. There are a number of tutorials online on how to do this, possibly even for you specific software/hardware configuration. The Wiimote works with many (but not all) Bluetooth drivers. You can report/read about compatibility issues at WiimoteProject.com

2. Download the Wiimote Whiteboard software to the right. Please read the "READ ME.txt" file first! Make sure your wiimote is connected via Bluetooth, and then run the ".exe" in the main folder. NOTE: Good placement of the wiimote is key to good tracking. View the README for more info.

Multitouch: The multitouch demos are custom C# DirectX programs. You may download the sample program to the right, but this is provided for developers without support or documentation. The code is built on top of this Wiimote library. Unfortunately, multi-touch capable applications are currently extremely rare. Hopefully, that will change as more developers explore its potential.

Building pens: Here is a simple schematic of the light pen. The LEDs that I use are Vishay TSAL6400s running at 100mA, but lots of other

Low-Cost Multi-touch Whiteboard using the Wiimote

0:00 / 4:05

Downloads:
Windows (32-bit)
Wiimote Whiteboard* (original 12/19/07) - includes source
Wiimote Whiteboard v0.2* (updated 3/27/08) - includes source
Wiimote Whiteboard v0.3* (updated 8/20/08) - includes source

* there appear to be some issues with 64-bit machines, and BlueSoleil. Alternative Bluetooth software may work. Check the forum for more info.

Mac (Java)

Interaktivna ploča u samogradnji:
http://johnnylee.net/projects/wii/

Pametna ploča u samogradnji (Optička tehnologija) (2)

- Specifikacija:
- Wii kontroler za Nintendo konzolu (cca 200 kn)
- IC olovka (u samogradnji cca 100 kn)
- BlueTooth dongle (cca 50-100 kn)
- Za 32bit Windowse: Wiimote Whiteboard sw
- Za 64bit Windowse: Smoothboard 2 (30 USD) (BoonJin.com)

Pametna ploča u samogradnji (Optička tehnologija) (3)

- Mogućnost nabave kompleta u web trgovini, npr:

  Wiiteachers.com

  Cijena kompleta je cca 120 USD

Algoritam za računanje drugog korijena prema starim Babiloncima

- Algoritam je iterativan, svaka iteracija daje sve točniji rezultat

- Može se koristiti u Excelu ili u nekom od programskih jezika

$$P = \frac{P + \dfrac{X}{P}}{2}$$

Gdje je:
P (prijedlog)
X (broj čiji korijen tražimo)
Vidi primjer na narednom slajdu

Primjer

- Koliki je korijen iz x ako je x= 1000?
- Probam s nekim proizvoljnim brojem, npr: P=20
- Provjera: 20^2=400 (daleko od željenog 1000)
- Računam sljedeći prijedlog korištenjem formule:

$$P = \frac{20 + \dfrac{1000}{20}}{2} \implies 35$$

- Provjera: 35^2=1225 (još nije točno, **ponovi**)

Primjer, nasavak

$$P = \frac{35 + \dfrac{1000}{35}}{2} \implies 31.785$$

- Provjera: 31.7852=1010.33 (blizu, ali ponovi...)
- Ponovite ovaj algoritam uvršavanjem vrijednosti za P koji ste izračunali do željene točnosti...
- Riješenje u Excelu na sljedećem slajdu

Primjer: drugi korijen od 1000 izračunat u Excelu

x	p	provjera
1000	20	400.00000
	35	1225.00000
	31.7857	1010.33163
	31.6232	1000.02641
	31.6228	1000.00000

Vidimo da svaka iteracija daje sve točnije rješenje!