Pelvic floor Biofeedback Design

Client: Dr. Patrick McKenna, UW Urology Department

Advisor: Dr. Amit Nimunkar

Team: Sam Lines (Leader)

Michael Simonson (Communicator)

Shawn Patel (BWIG)

Andrew Vamos (BSAC&BPAG)

Date: 11/6/2014-11/14/2014

Problem Statement

Pelvic floor muscle biofeedback systems have been used to educate and train people how to correctly control the process of urination in children and elderly patients. As devices slowly fail or get outdated, a new device and interface system that can be used in conjecture with videogame like training programs is desired. With the completion of a basic EMG biofeedback system, our goal is to continue to improve the functionality of the software while simultaneously designing hardware with commercial standards in mind. This product will be designed and tested so that use in a hospital will be safe for both the hospital staff and the patients.

Last Week's Goals

- Upon our final review of the PCB, we will order it along with the parts needed to start version two of the EMG system.
- We will continue to work on the IRB proposal to be able to submit it as soon as possible.
- Along with the IRB proposal submission, work in tandem with Dr. McKenna to ensure everyone has the proper training for human subject testing

Summary of Team Role Accomplishments

- Leader (Sam): Finalized the PCB with Shawn
- Communicator (Michael): Continued IRB work
- BWIG (Shawn): Finalized the PCB with Sam
- BPAG And BSAC(Andrew): Began research into Arduino coding

Summary of Design Accomplishments

- After running into an unforeseen problem with the PCB, we have now completed the PCB, and are reviewing it
- Due to the delay in the PCB, we plan to order the parts and PCB today or tomorrow.
- Andrew made some good progress into the Arduino coding research, and we believe it we will be able to quickly finalize version one of the EMG pending no further set backs

Project Difficulties

- A last minute catch in the PCB made it so we had to push back the ordering of the PCB for a little over a week. Now that we have finished with the PCB, we will try to make up ground on neglected areas of the project
- Since we are a little behind again, we will have to work very diligently in the coming weeks to prevent costly mistakes. We hope to be testing our device before Thanksgiving break assuming the parts come in.

This Week's Goals

- After dealing with a PCB problem, we are ready to order that and the second parts list.
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Activities

Person(s)	Task	Time (hrs)	Week Total	Semester Total
Sam	PCB work Team meeting	2.5 2.5	5	33
Michael	IRB Team meeting	2.5 2.5	5	33
Shawn	PCB Work Team meeting	2.5 2.5	5	33
Andrew	Aduino Code Team meeting	2.5 2.5	5	33

Timetable

- Due to the large size of our timeline, I will attach the full excel spreadsheet

Expenses

- After buying the parts, the current expense of the project is $41.22. A picture of the total expenses incurred is posted below.

Index	Quantity	Image	Part Number	Description	Customer Reference	Available Quantity	Backorder Quantity	Unit Price	Extended Price
☒ 1	2		DCP010505DBP-ND	IC REG ISOLATED +/-5V 0.1A 7DIP		2 Immediate	0	8.69000	$17.38
☒ 2	8		RMCF0805FT51K0CT-ND	RES 51K OHM 1/8W 1% 0805		8 Immediate	0	0.10000	$0.80
☒ 3	8		P9.09KCCT-ND	RES 9.09K OHM 1/8W 1% 0805 SMD		8 Immediate	0	0.10000	$0.80
☒ 4	16		RMCF0805FT20K0CT-ND	RES 20K OHM 1/8W 1% 0805		16 Immediate	0	0.02900	$0.46
☒ 5	16		P180KCCT-ND	RES 180K OHM 1/8W 1% 0805 SMD		16 Immediate	0	0.10000	$1.60
☒ 6	8		490-8288-1-ND	CAP CER 4700PF 50V 1% NP0 0805		8 Immediate	0	0.43000	$3.44
☒ 7	8		490-8309-1-ND	CAP CER 0.043UF 50V 5% U2J 0805		8 Immediate	0	0.45000	$3.60
☒ 8	16		399-7342-1-ND	CAP CER 1UF 16V 5% X7R 0805		16 Immediate	0	0.28300	$4.53
☒ 9	8		311-43.0KCRCT-ND	RES 43K OHM 1/8W 1% 0805 SMD		8 Immediate	0	0.10000	$0.80
☒ 10	4		S7050-ND	CONN HEADER FMALE 17POS .1" GOLD		4 Immediate	0	1.35000	$5.40
☒ 11	4		CR0805-FX-6201ELFCT-ND	RES 6.2K OHM 1/8W 1% 0805 SMD		4 Immediate	0	0.10000	$0.40
☒ 12	56		P10.0KCCT-ND	RES 10K OHM 1/8W 1% 0805 SMD		56 Immediate	0	0.02880	$1.61
☒ 13	4		P68.0KCCT-ND	RES 68K OHM 1/8W 1% 0805 SMD		4 Immediate	0	0.10000	$0.40
								Subtotal	$41.22
								Shipping	Estimate
								Sales Tax	unknown