

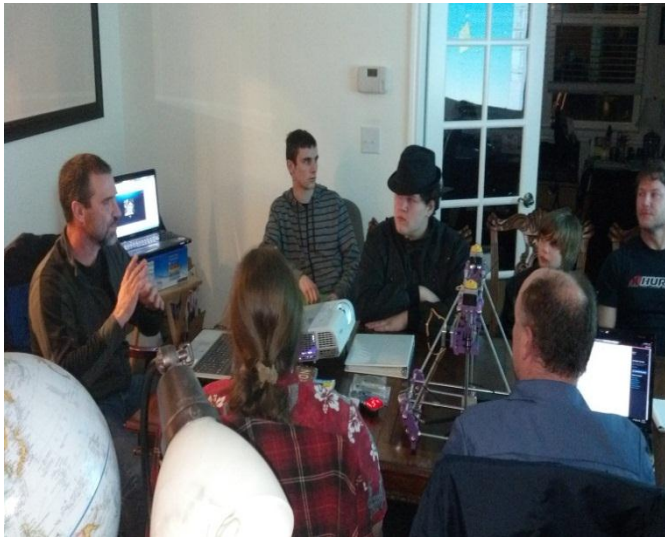


KITSAP Robotics & Electronics Enthusiast Group (KREEG)

KREEG Newsletter 12-11

Attendees			
Doyle Maleche	President	Mike Cambra	Forrest Carlson
Charlie Johnson	Vice President	Ian Cambra	Aaron Shaw
Wayne Cazier		Alex Jeffries	Dave Endrigo
Karl Kirchhofer		Andrew Jeffries	Seth Gorham
Jeff Quast		Tammy Jeffries	Don Jassek
Rich Peel		John Jeffries	

GREETINGS ALL!



Karl Kirchhofer leading the group.

Left to right: Karl (leading), Seth (Laptop-SKYPE), Forrest, Alex, Andrew, John, Mike, and Aaron.



Learning Solidworks™ CAD application

Karl holding Hank-Heron's metal body. Designed from Solidworks™ and welded to form the contours.

Left to right: Dave, Karl, Jeff

Next Meeting: 28 December 2012

Time: 630pm to 8pm

Place: Doyle's house. 16979 Clear Creek Rd. Poulsbo – 98370. Directly across the street from the Poulsbo Sportsman Club (Shooting Range).



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NEW MEMBERS!

Our newest members for this month includes:

Seth Gorham lives in Bainbridge Island and was able to SKYPE in the meeting. We will try and get a member to help with transportation to the next meeting. Seth brings programming and engineering experience to the group and great ideas. He just started using Arduino and wants to learn how to integrate Radio Frequency Identification (RFID) technology in his next project. I just so happens that Doyle has this experience, hardware and software inventory to share with Seth and others wanting to learn this technology. Welcome Seth!

John Jeffries and his son **Andrew. Tammy and Alex** were here as well. This is the entire **Jeffries family** at KREEG. What a great and talented family!

Don Jassek arrived with **Wayne Cazier** to see what all the KREEG fuss is about. Don is retired Navy and brings a wealth of experience and ideas. Great to have you Don!

MEETING:

On a sad note; Jerry Holaway has moved to Arizona to help care for his parents and sent me this email to share with the group “ *I wish things were different because I really enjoyed belonging in a group that was really fun and interesting to be in. Please take of yourselves and I hope this isn't one of those good bye emails but rather a see you later type emails.*” Jerry requested to be left on the mailing list and he may have the opportunity to join future meetings via Skype. He will be missed.

Karl Kirchofer presented an exceptional demonstration on the basics of SolidWorks™ 3D Design and CAD. He stepped through the fundamentals of 2 dimensional (2D) views and transformed the design into 3D to illustrate how you can lay out a template to make a mock-up model using paper or cardboard then work to sheet metal. One of Karl's project is Hank-Heron. A 5 foot electro-mechanical (robot) device to scare-off wild life from damaging his garden. See September's Newsletter for more details. Doyle has the entire SolidWorks™ library and tutorial books to check out.



Mike Cambra showed the group his 3D printer project. He demonstrated the basic



stepper axis motions using free open-source software.. His project is coming along well with many added improvements. Soon he can print 3D models created in SolidWorks™ or from a plethora of open-source 3D drawing programs available on the internet. Mike plans to build a bigger machine in the near future – machines building machines!!! (think *Terminator...*). Great job Mike! It's fun to watch your progress and allow everyone to experience the process.



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Aaron Shaw was in the Christmas spirit with the projects he built and demonstrated. He purchased two kits from Radio Shack and had fun soldering them together. A scrolling LED display from adafruit.com has some neat features and is easily programmed to display a scrolling message or animation.



A Light Emitting Diode (LED) Christmas tree soldering kit was a big hit with the younger crowd. Next year we could plan a soldering session to build few of these to hang on the big tree.




His last project also utilized LED display. He purchase some LED string lights from Wal Mart and arranged them around a wooden plaque from which he routed and added ornaments. What a great idea to express the Christmas spirit with a personal theme! Keep bringing the fun Aaron!!



NEXT MEETING:

Enthusiasts and hobbyist are always looking to save on their project costs from hardware to software. As a robotic or electronic hobbyist, we can find great bargains at places such as Good-Will, St. Vincent de Paul, swap meets, Rotary Club Auctions and sales, Craig's List, and eBay (especially great deals from China!).

An example of a great deal is the Voltage 'Buck' converter. It essentially takes DC voltages from 1.23vdc to 30Vdc at the input and reduces the voltage to any output you dial/adjust/desire. For example; suppose you have a robot or project that has Servos or LED or Arduino, and your main power supply is a giant motor cycle or car battery! You now can output VERY stable voltages well below your main supply voltage to meet your needs. Servos use 6.2 to 7.2 volts, Arduino can operate at 12vdc but having a giant battery to power your sensitive electronic project is like asking Mike Tyson to slap the mosquito off your forehead – you get the picture. 



I use a 'Buck' converter from China (eBay). You CAN'T build it for half the price at \$1.48 - \$2.00 per unit! If you need more amperage capability, check out the 8 amp versions. Using this 'Buck' concept, you can essentially design a power buss system that delivers multiple voltages to accommodate your project or robot. You can have; 3.3vdc, 5vdc, 6.8vdc, 9vdc, 7.2vdc, 12vdc, and 24vdc outputs all mounted on a board using one 12vdc motorcycle or car battery and 6 to 7 buck

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converters! This saves a ton of money instead of replacing a back of batteries, and reduces the amount of waste in landfills!. Ask Doyle for demonstration.

What about taking a 1.5vdc or 5vdc source and 'Boosting' it to 9vdc or 12vdc? YES, there is such a device and it is call a (wait for it...) – 'BOOST' converter. I does just that – Boosts your input voltages to the desired output voltage for your projects. Sounds too good to be true, right! You bet. Although this does work and performs well, you are limited by the amount of amperage it can deliver. If you need 9vdc or 12vdc to power a small device under 1 amp, then this is a good fit. Keep in mind that the power source will drain a little faster. A few good examples of this concept are Tasers, and camera flash. You can take a 9 volt battery and generate 50,000 to 1,000,000 (yes, million) volts from it using a boost converter or a few passive components from Radio Shack. I won't go into how to build them because, although it may sound fun, it sure isn't when that high-voltage is looking for a ground path and YOU look good! ZZZZAAAAPPPP – 1,000,000 volts at very low amperage. Rub the feeties of your pajamas on the carpet and touch a door knob. Multiply that times 10 and you have a bad-hair day.



We could go on forever with even more great shocking examples, but I digress. Playing with electronics is fun until electronics plays with you. Always know your ground paths, clearly mark your wires and be consistent with your color scheme – RED for POSITIVE, BLACK for NEGATIVE. Don't take short cuts or your project will short-out. STAY SAFE!

There is a plethora of Free-Ware and Open-Source software on the internet. Use caution when downloading! Some sites like to mis-direct your browser and you end up with the wrong software or worst – virus or Trojan. Arduino is open-source software that is public-domain. A nice way of saying FREE. Programmers like to ask for 'Donations' instead of charging for software, I hopes that you like what they have done.



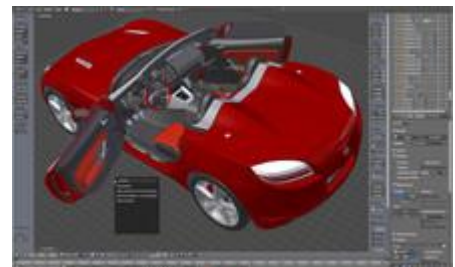
A fun graphic software is GIMP, from GIMP.org. If your are familiar with PhotoShop, or PrintShop Pro, this is the FREE version. Very imprssive with a lot of functions and utilities. The down side is that it takes a while to gain proficiency. There are lots of examples and tutorials on how to use GIMP so wait for rainy day to play with it.



Another great (FREE) 3D rendering software is BLENDER from blender.org. You can do a lot of 2D and 3D graphics to generate entire

Claymation movie. Again, this takes some reading and a lot of playing. There are more 3D rendering utilities and applications out there, but this one seems to be a little more popular.

Next meeting we hope to have **Alex Jeffries** demonstrate some techniques on how he uses BLENDER to render 3D helmet used in games.



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Doyle will demonstrate how to make 3D games using 3D GameMaker from (of all places), thegamecreators.com. You simply use a drag-and-drop method in choosing your play field, characters, weapons, obstacles, levels, and music to develop a deployable and shareable game or sell your game online!



With the holiday season upon us, I want to wish all of you a very safe and happy Christmas!

See you at the next meeting!

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ITEMS FOR SALE

In pursuit of funds for our web site, Doyle has the following items for sale:

RoboClaw 2x24 motor controller. Dual brushed motor controller up to 24 amps per channel! \$90

4 NEVER USED - Parallax HB-25 (25 amps each) motor controllers. \$200 for all!

Parallax price is \$55 each plus \$20 shipping.

<http://www.parallax.com/Store/Accessories/MotorServos/tabid/163/CategoryID/57/List/0/SortField/0/Level/a/ProductID/64/Default.aspx>

I'm just starting to consolidate items to sell for this venture. Let me know what you might need.

We have established a common date and time for all KREEG meetings. The date is now the LAST FRIDAY of EACH MONTH. See the foot note for directions. Don't hesitate to email if you have question.

Make it a goal to bring a friend to KREEG. We want to expand the knowledge base and skill sets. If they're breathing – they're members!

In closing, please let me know if I need to make corrections for misspelled names and I will fix them.

Until next time...

Best,

Doyle Maleche

Maleche1@comcast.net

President, Kitsap Robotics & Electronics Enthusiasts' Group (KREEG)

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