CNC Router Table A

Jessica Collins- Project Manager Uday Kadhum- Secretary Micael Ljungberg – Client Contact Jason Troxler- Budget Liaison Bader Alfadhli- Web Developer Sara Hamadah- Web Developer

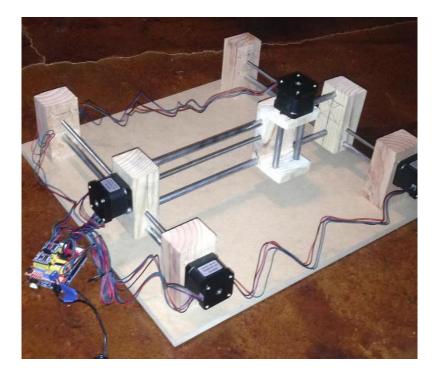
Project Description

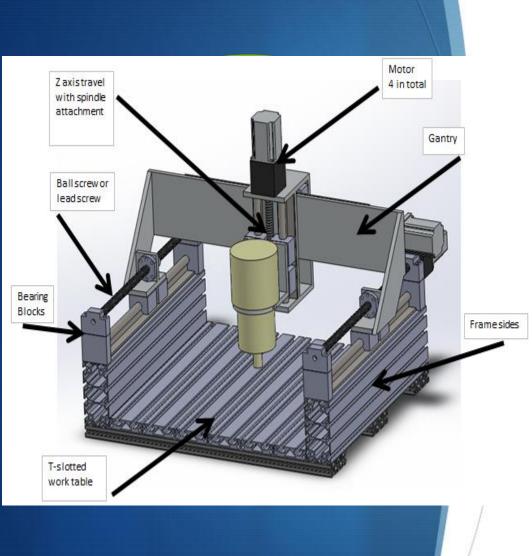
Multi-Use CNC Table

- Open source software
- ♦ 12x12x3 inches
- Uses standard 120V 60Hz
- Making aluminum and wooden parts

Prototype

- Testing:
 - Open Source software GRBL
 - Stepper Motor Control
- Taught Us:
 - Simultaneous X axis motor control
 - No Wood for Final Design





Design Description

Implementation

• Machine parts

- Assemble the machine
- Testing procedure

Design Requirements

CNC Router Team A	₩eighting		Engineering Requirement											
Customer Requirement	Initial Customer scoring	Weight out of 100%	Spindle power (W)	Tooling deflection (mm)	X Y Dimensions (mm)	Frame and Bearing deflection (mm)	Z Axis Travel (mm)	Stepper Motor Torque (N ⁽ cm)	Sheilding material thickness (mm)	G-Code Software	Controller	Set up time (min)	Weight (kg)	Power requirements (V)
1. Safety	25	16%	3	1	1	1	1	1	5	1	1	1	3	1
2. Cutting Ability (wood/ Al)	25		5	3	1	3	1	5	1	1	1	1	3	1
3. Cost	25	16%	5	5	3	5	3	3	1	1	5	1	3	1
4. Tolerance	20	13%	1	5	1	5	1	1	1	1	1	1	3	1
5. Open Source	10	6%	1	1	1	1	1	1	1	5	5	1	1	1
6. Multiple Usage	15	10%	1	1	1	1	1	1	1	1	3	5	1	1
7. Size	7	5%	1	1	5	1	5	1	1	1	1	1	5	1
8. Portable	3	2%	1	1	3	•	3	1	1	1	1	3	3	1
9. Typical house hold elec service	25	16%	3	1	1	-	1	1	1	1	1	1	1	5

Schedule

15152Make prototypes to check if the machine will be functional only considering where parts are located and that they do not interfere with other parts.Nov 8 - N3Choose a method to fasten parts together.Nov 15 - N4Create an engineering drawing with all the parts available and create the bill of materials.Nov 20 - N225Buy the parts seen in the bill of materials.Dec 19 - D266Conduct the inspection of these parts. The inspection will include checking if the correct parts arrived and if so, they are without defects.Jan 17 - Ja7Send back parts if they are either wrong or defectiveJan 21 - Ja8Machining of partsJan 25 - Ft9Assembly of the machine.Feb 23 - Ft10All the electrical wires should then be shielded and bundled together to get them out of the way of moving parts.Mar 1 - M11Testing proceduresMar 10 - N13Start cutting materialsMar 10 - N14Finish the user manual (continuously over the entire implementation phase)Mar 18 - M			
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4Create an engineering drawing with all the parts available and create the bill of materials.16225Buy the parts seen in the bill of materials.Dec 19 - 15Buy the parts seen in the bill of materials.Dec 19 - 16Conduct the inspection of these parts. The inspection will include checking if the correct parts arrived and if so, they are without defects.Jan 17 - Jan 17 - Jan 17 - Jan 17 - Jan 18 - Machining of parts7Send back parts if they are either wrong or defectiveJan 21 - Jan 25 - Fe9Assembly of the machine.Feb 23 - Fe9Assembly of the machine.Feb 23 - Fa10All the electrical wires should then be shielded and bundled together to get them out of the way of moving parts.Mar 1 - Ma 1011Testing proceduresMar 3 - Ma 1013Start cutting materialsMar 14 - Ma 1314Finish the user manual (continuously over the entire implementation phase)Mar 18 - Mar 18 -	2		Nov 8 – Nov 9
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	13	Start cutting materials	Mar 14 – Mar 17
31	14	Finish the user manual (continuously over the entire implementation phase)	Mar 18 –Mar 31
15Present the machineApr 1	15	Present the machine	Apr 1

Budget

- Projected Project Cost
 - Total Cost of \$1750
 - Discounts offered by Openbuilds.com and eBay sellers
 - Total projected cost for initial design \$1550
 - Altered design (smaller router/lead screws)
 - Total projected cost for altered design \$1340

