"Harry" the Tire Stacking Machine

Team 27

Yewon Lee,
Bipasha Goyal, and Yuqian Zhou

Purple: expected

Gray: actual

Project Start: 1/20/2019

Display Week: 1

#	TASK	ASSIGNED TO	PROGRESS	START	END	Duration
	Electromech					
#####	Brainstorme alternative solutions	All members		1/20/19	1/22/19	2
	Brainstorme alternative solutions	All members	100%	1/20/19	1/22/19	2
#####	Prototype alternative solutions	Yewon		1/20/19	1/26/19	6
	Prototype alternative solutions	Yewon	100%	1/20/19	1/26/19	6
#####	Test prototypes and converge to fina	All members		1/26/19	1/28/19	2
	Test prototypes and converge to fina	All members	100%	1/26/19	1/28/19	2
#####	Specify design specification	Yewon		1/28/19	1/30/19	2
	Specify design specification	Yewon	100%	1/28/19	1/30/19	2
#####	Complete detailed geometry, kinema	Yewon		1/28/19	1/30/19	2
	Complete detailed geometry, kinema	Yewon	100%	1/28/19	1/30/19	2
#####	Determine actuators and gears	Yewon, Bipasha		1/26/19	1/29/19	3
	Determine actuators and gears	Yewon, Bipasha	100%	1/26/19	1/29/19	3
#####	Determine wheels too accompany m	Yewon		1/29/19	1/31/19	2
	Determine wheels too accompany m	Yewon	100%	1/29/19	1/31/19	2
#####	Acquire materials (wood, wheels, act	All members		1/27/19	1/29/19	2
	Acquire materials (wood, wheels, act	All members	100%	1/27/19	1/29/19	2
#####	Measure out parts to cut in order to	Yewon		1/30/19	2/1/19	2
	Measure out parts to cut in order to	Yewon	100%	1/30/19	2/1/19	2
#####	Complete the major cuts	Yewon		2/1/19	2/1/19	
	Complete the major cuts	Yewon	100%	2/1/19	2/1/19	
#####	Assemble the main components of th	Yewon		2/1/19	2/4/19	3
	Assemble the main components of th	Yewon	100%	2/1/19	2/4/19	3
#####	Mount wheel and actuators	Yewon		2/4/19	2/5/19	1
	Mount wheel and actuators	Yewon	100%	2/4/19	2/5/19	1
#####	Acquire and mount caster wheels	Yewon		2/4/19	2/5/19	1
	Acquire and mount caster wheels	Yewon	100%	2/4/19	2/16/19	12
#####	Build mobile platform	Yewon		2/5/19	2/5/19	
	Build mobile platform	Yewon	100%	2/16/19	2/16/19	
#####	Build tubes, tire advancer for tire de	Yewon		2/5/19	2/15/19	10
	Build tubes, tire advancer for tire de	Yewon	100%	2/5/19	2/19/19	14
#####	Test functionality of extension mecha	All members		2/15/19	2/19/19	4
	Test functionality of extension mecha	All members	100%	2/16/19	2/17/19	1
#####	Calculate maximum extension, cut le	Yewon		2/15/19	2/20/19	5
	Calculate maximum extension, cut le	Yewon	100%	2/19/19	2/24/19	5
#####	Build holders for stepper motors and	Yewon		2/15/19	2/19/19	4
	Build holders for stepper motors and	Yewon	100%	2/19/19	2/23/19	4
#####	Test the hook geometry, strengthen a	Yewon		2/19/19	3/1/19	10
	Test the hook geometry, strengthen a	Yewon	100%	2/19/19	2/25/19	6
#####	Subsystem frabriction and functional	Yewon		3/1/19	3/1/19	
	Subsystem frabriction and functional	Yewon	100%	2/26/19	2/26/19	
	Circuits					
#####	Determine sensors	Bipasha, Yuqian		1/20/19	1/25/19	5

Milestone: complete major cutting of the frame

Milestone: Mobile platform building

Milestone: Electronmech subsystem building end

| Jan 21, 2019 | Jan 28, 2019 | Feb 4, 2019 | Feb 11, 2019 | Feb 18, 2019 | Feb 25, 2019 | Mar 4, 2019 | Mar 11, 2019 | Mar 18, 2019 | Mar 25, 2019 | Apr 1, 2019 | Apr 8, 2019 | Apr 15, 2019 |

#	TASK	ASSIGNED TO	PROGRESS	START	END	Duration
	Determine sensors	Bipasha, Yuqian	100%	1/20/19	1/25/19	5
#####	Purchase electrical components (sens	Bipasha, Yuqian		1/23/19	1/30/19	7
	Purchase electrical components (sens	Bipasha, Yuqian	100%	1/23/19	1/30/19	7
#####	Conceptualise circuits design	Bipasha		1/23/19	2/7/19	15
	Conceptualise circuits design	Bipasha	100%	1/23/19	2/15/19	23
#####	Test sensors to finalise decision	Bipasha, Yuqian		1/28/19	2/1/19	4
	Test sensors to finalise decision	Bipasha, Yuqian	100%	1/28/19	2/1/19	4
#####	Test actuators to finalise decision	Bipasha, Yewon		2/1/19	2/4/19	3
	Test actuators to finalise decision	Bipasha, Yewon	100%	2/1/19	2/4/19	3
#####	Create breadboard circuits for major	Bipasha		1/27/19	2/4/19	8
	Create breadboard circuits for major	Bipasha	100%	1/27/19	2/17/19	21
#####	Perform power analysis and select po	Bipasha		2/3/19	2/14/19	11
	Perform power analysis and select po	Bipasha	100%	2/3/19	3/5/19	30
#####	Noise and interference analysis	Bipasha		1/31/19	2/14/19	14
	Noise and interference analysis	Bipasha	100%	1/31/19	2/16/19	16
#####	Create extra circuits for EStop, LED in	Bipasha		2/5/19	2/12/19	7
	Create extra circuits for EStop, LED in	Bipasha	100%	3/5/19	3/6/19	1
#####	Solder circuits	Bipasha		2/8/19	2/22/19	14
	Solder circuits	Bipasha	100%	2/20/19	2/26/19	6
#####	Test functionality of soldered circuit	Bipasha		2/12/19	2/20/19	8
	Test functionality of soldered circuit	Bipasha	100%	2/26/19	3/7/19	9
#####	Subsystem frabriction and functional	Bipasha		2/22/19	2/22/19	
	Subsystem frabriction and functional	Bipasha	100%	3/7/19	3/7/19	
#####	Intergrate with microcontroller	Bipasha, Yuqian		2/20/19	3/11/19	19
	Intergrate with microcontroller	Bipasha, Yuqian	100%	2/20/19	3/15/19	23
	Microcontroller					
#####	Design UI interface	Yuqian		1/24/19	1/28/19	4
	Design UI interface	Yuqian	100%	1/24/19	1/28/19	4
#####	Develop codes for user interface	Yuqian		1/28/19	2/4/19	7
	Develop codes for user interface	Yuqian	100%	1/28/19	2/4/19	7
#####	Develop control algorithm for sensor	Yuqian		1/24/19	1/28/19	4
	Develop control algorithm for sensor	Yuqian	100%	1/24/19	1/28/19	4
#####	Develop control algorithm for actuato	Yuqian		2/4/19	2/18/19	14
	Develop control algorithm for actuato	Yuqian	100%	2/4/19	2/17/19	13
#####	I2C communcation between PIC and	Yuqian		2/18/19	2/22/19	4
	I2C communcation between PIC and	Yuqian	100%	2/18/19	2/25/19	7
#####	Intergrate algorithm of different com	Yuqian		2/18/19	2/26/19	8
	Intergrate algorithm of different com	Yuqian	100%	2/25/19	3/1/19	4
#####	Subsystem frabriction and functional	Yuqian		2/26/19	2/26/19	
	Subsystem frabriction and functional	Yuqian	100%	3/1/19	3/1/19	
#####	Tire counting algorithm	Yuqian		1/28/19	2/11/19	14
	Tire counting algorithm	Yuqian	100%	2/18/19	3/11/19	21
#####	Develop testing/debugging algorithm	Yuqian		2/18/19	3/4/19	14
	Develop testing/debugging algorithm	Yuqian	100%	3/7/19	3/15/19	8
	Team tasks					
#####	Design proposal	All members		1/23/19	1/30/19	7

Milestone: Cricuit subsystem building end

Milestone: Cricuit subsystem building end

Milestone: Microcontroller subsystem end

Milestone: Microcontroller subsystem end

Display Week: 1

#	TASK	ASSIGNED TO	PROGRESS	START	END	Duration
	Design proposal	All members	100%	1/23/19	1/30/19	7
#####	Design proposal submission	All members		1/30/19	1/30/19	
	Design proposal submission	All members	100%	1/30/19	1/30/19	
#####	Subsystem frabrication and functional	All members		1/30/19	2/26/19	27
	Subsystem frabrication and functional	All members	100%	1/30/19	3/7/19	36
#####	Subsystem functionality	All members		2/26/19	2/26/19	
	Subsystem functionality	All members	100%	3/7/19	3/7/19	
#####	Mount stepper motors, encoder, and	All members		2/26/19	3/11/19	13
	Mount stepper motors, encoder, and	All members	100%	2/20/19	3/11/19	19
#####	Circuit placement and wire connectic	All members		2/26/19	3/8/19	10
	Circuit placement and wire connectic	All members	100%	3/7/19	3/11/19	4
#####	System integration (1): physcial imple	All members		3/11/19	3/11/19	
	System integration (1): physcial imple	All members	100%	3/11/19	3/11/19	
#####	integrate detection system and mobi	All members		3/11/19	3/17/19	6
	integrate detection system and mobi	All members	100%	3/11/19	3/25/19	14
#####	integrate tire deployment system and	All members		3/17/19	3/20/19	3
	integrate tire deployment system, de	All members	100%	3/25/19	3/26/19	1
#####	Calibration with straight movement	All members		3/20/19	3/26/19	6
	Calibration with straight movement	All members	100%	3/15/19	3/25/19	10
#####	System integration (2): functionality	All members		3/26/19	3/26/19	
	System integration (2): functionality	All members	100%	3/26/19	3/26/19	
#####	Algorithm debugging and structural a	All members		3/26/19	3/30/19	4
	Algorithm debugging and structural a	All members	100%	3/26/19	3/29/19	3
#####	Calibration with encoder and distanc	All members		3/30/19	4/6/19	7
	Calibration with encoder and distanc	All members	100%	3/29/19	4/8/19	10
#####	Component replacement and backup	All members		3/30/19	4/8/19	9
	Component replacement and backup	All members	100%	3/30/19	4/8/19	9
#####	Public demostration preperation	All members		4/6/19	4/9/19	3
	Public demostration preperation	All members	100%	4/8/19	4/9/19	1
#####	Final report	All members		3/30/19	4/12/19	13
	Final report	All members	100%	3/30/19	4/12/19	13
#####	Public demostration	All members		4/9/19	4/9/19	
	Public demostration	All members	100%	4/9/19	4/9/19	
#####	End of project (final report submissio	All members		4/12/19	4/12/19	
	End of project (final report submissio	All members	100%	4/12/19	4/12/19	

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Gantt chart timeline markers:
- Milestone: Design proposal submission and design stage end
- Milestone: All subsystem frabrication end
- Milestone: Physical implementation
- Milestone: System functionality
- Milestone: Public Demostration
- Milestone: End of project

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