Document:	Semester Project Plan
Partner Name:	Richardson Animal Shelter
Project Name:	Kitten's Cradle
Current Revision:	1
Revision Date:	9/24/18
Originator(s)	Ayush Shah - Project Leader Christian Poblete - Project Partner Liaison Jessica Brattain - Financial Officer Andrew Bau - Project Webmaster Karl Issa - Document Manager
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1.0: Project Background and Introduction

The Richardson Animal Shelter is a facility run by the city of Richardson and allows open adoption of dogs, cats, and an assortment of other types of pets. The shelter also provides several services, including animal education, rabies control, and micro-chipping. The Richardson Animal Shelter prides itself in rescuing, protecting and relocating pets to new homes, and looks forward to acquainting their animals with their would-be owners.

The main problem the shelter is facing, in regard to its kitten and younger cats, is the sanitation and maintenance that comes with a typical cat tree, or cat condo. The shelter is unable to properly clean and reuse one of these play structures for longer than an average of 3 months, due to the porous nature of the materials typically used. At around the 3-month mark, the shelter is having to toss out the play structures and purchase new ones. This leads to an increased financial burden for the shelter, and a loss of a physical outlet for the high energy kittens to play on.

The main goal of the Kitten's Cradle project, is to create a permanent, and sanitizable structure for the kitten and young cats to play on.

Another problem the shelter is having is the visibility of the kittens in the visitation room for potential adopters and visitors. The lack of a raised platform made it too hard to see the kittens in the visitation room whenever visitors passed by. In the long term, we hope to provide a durable cat tree that will provide a nice place for the kittens to be displayed. Constraints for the project include: modularity, nonporous material, stability of the cat tree, physical capabilities of the kittens, and use of a material that does not retain odors.

2.0: Discussion of Requirements and Scope of Work

We are to design and build a cat tree, primarily for young kittens, for the Richardson Animal Shelter. The main requirements given to us by the shelter are:

1) The cat tree must be easy to disassemble for staff to clean.
2) The cat tree must be easy to clean and withstand the cleaning agent used at the shelter.
3) The cat tree must be stable enough for the kittens to play on safely.
4) The cat tree must be designed with the kitten's physical capabilities in mind.

This task had previously been completed by another group, however the final design did not meet the requirements of the shelter due to the increased difficulty in cleaning and maintenance, and its ultimate collapse. The previous design built by the group before us was flimsy and not structurally sound, it was hard to take apart and clean. Also, the kittens had a hard time climbing the structure due to the height of the levels, which required the previous team to add additional ramps.

Our plan is to completely scrap the last design for a new one. We are going to use the game "Tetris" as our inspiration. Tetris blocks are structurally sound and fit perfectly when stacked. The Tetris pieces will be coated in an epoxy resin, to make the wood used, nonporous with increased durability, strength, and resistant to chemical and mechanical ware. We also plan for these blocks to be easily pulled apart to allow for easy disassembly and cleaning.

We intend on having a completed design built and ready to be given to the shelter by the required date. Already we have a specific design with all our dimensions and estimated materials required, our final task will be to refine any small details and to start building the cat tree for the shelter.

3.0: Project Management

Team Meeting Times:

Fridays at 6:15 PM

Saturdays (occasionally, to visit the shelter)

Communication:

Group members will primarily use GroupMe as a means of communication, while communication with the project partner will be done using UTD emails.

Group Accountability/Decision Process:

Most decisions will be made by majority vote. Group members will be held accountable by their peers and the Project Manager, who will oversee their progress in their roles.

Documentation Process:

All files will be organized using the Edusource website so that every group member has access to the files at any point. The document manager will also have a copy of the files on an external device in case the Edusource website is unavailable.

4.0: Roles and Responsibilities

Ayush Shah

Responsibilities: Oversee team members responsibilities, organize meetings and set the agenda.

Technical Skills: Solidworks, Woodworking, Research Skills, 3D Design/Printing, Programming

Christian Poblete

Responsibilities: Edit team documents, communicate with project partner via email, communicate project partner needs to team members.

Technical Skills: Communications, Computer Aided Design (Autodesk Inventor, Solidworks), Microsoft Office Skills, Adobe Photoshop.

Karl Issa

Responsibilities: Manage all project documents for easy access by all group members, ensure all team members complete their requirements by the given deadlines.

Technical Skills: Responsible for creating all of the CAD models (using CREO) for the project design. This includes all of the individual parts as well as the final assembly. Other skills include woodworking, organization, planning, and programming in multiple languages.

Jessica Brattain

Responsibilities: Manage finances of the project, draw up the budget and make sure all materials are accounted for.

Technical Skills: Budgeting, Planning, Scheduling, Creativity, Computer Aided Design (Solidworks, SolidEdge, Adobe Suite), Development and Testing of Prototypes, Woodworking, Commercial Design, Large Scale Painting.

Andrew Bau

Responsibilities: Maintain the website and log weekly progresses made on the project. Takes pictures to document work.

Technical Skills: Web design and organization for the project website, with knowledge of Adobe Photoshop for editing pictures and images.

5.0   Cost and Schedule Estimates

5.1   Cost Estimate

Our budget total estimated for this semester is $400.27, compared to $188.55 from last semester's budget. The total remaining project budget after this semester will total to be $1,411.22.

Previous Semester							
Material	URL	Price Per Unit	Estimated Need	Units to Order	Total Cost	Semester Budget	Total Project Budget
Initial Budget						$500.00	$2,000.00
FRP Plastic Panel	------	$19.98	------	1	$19.98	$480.02	$1,980.02
2" Pipe	------	$25.29	------	1	$25.29	$454.73	$1,954.73
Plywood	------	$44.74	------	1	$44.74	$409.99	$1,909.99
1 1/2" Pipe	------	$8.34	------	1	$8.34	$401.65	$1,901.65
FRP Plastic Panel	------	$59.94	------	1	$59.94	$341.71	$1,841.71
Gorilla Glue	------	$14.91	------	1	$14.91	$326.80	$1,826.80
Flex Glue	------	$15.35	------	1	$15.35	$311.45	$1,811.45
				Remaining Balances:		$311.45	$1,811.45

Current Semester							
Material	URL	Price Per Unit	Estimated Need	Units to Order	Total Cost	Semester Budget	Total Project Budget
Initial Budget						$500.00	$1,811.45
Pine Sheets	-boards/boards/	$5.19	50 sq. ft.	15	$77.85	$422.15	$1,733.60
Heat Gun	pf_rd_r=BHHZN2	$29.99	1	1	$29.99	$392.16	$1,703.61
Epoxy	DP6KBSB/ref=sr	$56.97	100 sq. ft. coverage	3	$170.91	$221.25	$1,532.70
Brushes, Silicone	asher/dp/B01HD	$9.97	2 Packages	2	$19.94	$201.31	$1,512.76
Paint, Red	Purpose-Gloss-F	$4.98	30 sq. ft.	2	$9.96	$191.35	$1,502.80
Paint, Green	urpose-Gloss-Ju	$4.98	30 sq. ft.	2	$9.96	$181.39	$1,492.84
Paint, Cyan	urpose-Satin-B	$4.98	30 sq. ft.	2	$9.96	$171.43	$1,482.88
Hardware	------	------	Nails, locks	------	$50.00	$121.43	$1,432.88
Denatured Alcohol	dp/B001FOSX9U/r	12.8	1 For Emergency	1	$12.80	$108.63	$1,420.08
Mixing Cups	g/dp/B06Y3ZXS7	8.86	1 Package	1	$8.86	$99.77	$1,411.22
				Remaining Balances:		$99.77	$1,411.22

5.2   Schedule Estimate

Our project will start construction on October 8th, and is estimated to be completed by no later than November 6th. Construction is planned to span a maximum of 25 days, and any weeks past November 7th will be dedicated to fixing the design after receiving feedback from the Richardson Animal Shelter.

Gantt Chart Timeline

TASK TITLE	CURRENT STATUS	TARGET START DATE	TARGET DUE DATE	PROJECTED HOURS (to be split among 5 people)
Project Conception and Initiation				
Project Charter	DONE			
Research On Materials	DONE			
Design Development	DONE			
Prototype Development	IN PROGRESS	9/23/2018	10/1/2018	8 HOURS
Present Prototype to Project Partner	UPCOMING	9/27/2018	10/1/2018	3 HOURS
Workshop Training	UPCOMING	9/24/2018	10/8/2018	
Project Initiation and Execution				
Material Aquisition	UPCOMING	9/28/2018	10/11/2018	5 HOURS
Construction	UPCOMING	10/10/2018	10/28/2018	60 HOURS
Application of Epoxy (brush on 2-4 coats)	UPCOMING	10/12/2018	10/30/2018	15 HOURS
Touch Up	UPCOMING	10/29/2018	11/4/2018	15 HOURS
Project Delivery				
Construction Completion	UPCOMING	11/1/2018	11/6/2018	0 HOURS
Delivery	UPCOMING	11/1/2018	11/7/2018	3 HOURS
Trial Period/ Awaiting Feedback	TBD	11/7/2018	TBD	TBD
Updates/ Modifications	TBD	TBD	TBD	TBD

TASK TITLE	TARGET START DATE	TARGET DUE DATE	9/10 M	T	W	R	WKND	9/17 M	T	W	R	WKND	9/24 M	T	W	R	WKND	10/1 M	T	W	R	WKND
Project Conception and Initiation																						
Project Charter			■	■	■	■																
Research On Materials						■	■	■	■	■	■	■	■									
Design Development								■	■	■	■	■	■	■				■	■			
Prototype Development	9/23/2018	10/1/2018											■	■	■	■						
Present Prototype to Project Partner	9/27/2018	10/1/2018														■	■	■	■			
Workshop Training	9/24/2018	10/8/2018											■	■	■	■	■	■	■	■	■	■
Project Initiation and Execution																						
Material Aquisition	9/28/2018	10/11/2018																■	■	■	■	■
Construction	10/10/2018	10/28/2018																				
Application of Epoxy (brush on 2-4 coats)	10/12/2018	10/30/2018																				
Touch Up	10/29/2018	11/4/2018																				
Project Delivery																						
Construction Completion	11/1/2018	11/6/2018																				
Delivery	11/1/2018	11/7/2018																				
Trial Period/ Awaiting Feedback	11/7/2018	TBD																				
Updates/ Modifications	TBD	TBD																				

TASK TITLE	TARGET START DATE	TARGET DUE DATE	11/5 M	T	W	R	WKND	11/12 M	T	W	R	WKND	11/19 M	T	W	R	WKND	11/26 M	T	W	R	WKND
Project Conception and Initiation																						
Project Charter																						
Research On Materials																						
Design Development																						
Prototype Development	9/23/2018	10/1/2018																				
Present Prototype to Project Partner	9/27/2018	10/1/2018																				
Workshop Training	9/24/2018	10/8/2018																				
Project Initiation and Execution																						
Material Aquisition	9/28/2018	10/11/2018																				
Construction	10/10/2018	10/28/2018																				
Application of Epoxy (brush on 2-4 coats)	10/12/2018	10/30/2018																				
Touch Up	10/29/2018	11/4/2018																				
Project Delivery																						
Construction Completion	11/1/2018	11/6/2018	■	■																		
Delivery	11/1/2018	11/7/2018	■	■	■																	
Trial Period/ Awaiting Feedback	11/7/2018	TBD		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Updates/ Modifications	TBD	TBD		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

TASK TITLE	TARGET START DATE	TARGET DUE DATE	10/8					10/15					10/22					10/29				
			M	T	W	R	WKND	M	T	W	R	WKND	M	T	W	R	WKND	M	T	W	R	WKND
Project Conception and Initiation																						
Project Charter																						
Research On Materials																						
Design Development																						
Prototype Development	9/23/2018	10/1/2018																				
Present Prototype to Project Partner	9/27/2018	10/1/2018																				
Workshop Training	9/24/2018	10/8/2018																				
Project Initiation and Execution																						
Material Aquisition	9/28/2018	10/11/2018																				
Construction	10/10/2018	10/28/2018																				
Application of Epoxy (brush on 2-4 coats)	10/12/2018	10/30/2018																				
Touch Up	10/29/2018	11/4/2018																				
Project Delivery																						
Construction Completion	11/1/2018	11/6/2018																				
Delivery	11/1/2018	11/7/2018																				
Trial Period/ Awaiting Feedback	11/7/2018	TBD																				
Updates/ Modifications	TBD	TBD																				

TASK TITLE	TARGET START DATE	TARGET DUE DATE	12/3				
			M	T	W	R	WKND
Project Conception and Initiation							
Project Charter							
Research On Materials							
Design Development							
Prototype Development	9/23/2018	10/1/2018					
Present Prototype to Project Partner	9/27/2018	10/1/2018					
Workshop Training	9/24/2018	10/8/2018					
Project Initiation and Execution							
Material Aquisition	9/28/2018	10/11/2018					
Construction	10/10/2018	10/28/2018					
Application of Epoxy (brush on 2-4 coats)	10/12/2018	10/30/2018					
Touch Up	10/29/2018	11/4/2018					
Project Delivery							
Construction Completion	11/1/2018	11/6/2018					
Delivery	11/1/2018	11/7/2018					
Trial Period/ Awaiting Feedback	11/7/2018	TBD					
Updates/ Modifications	TBD	TBD					

6.0　　Acceptance Criteria

- All three modular cat tree units will be completed before our set deadline.

- The cat tree can be disassembled under two minutes.

- The cat tree can support up to 30 pounds.

- All surfaces of the cat tree units can be cleaned without leaving dirt behind.

- The cat tree will not wobble or lose stability during normal use.