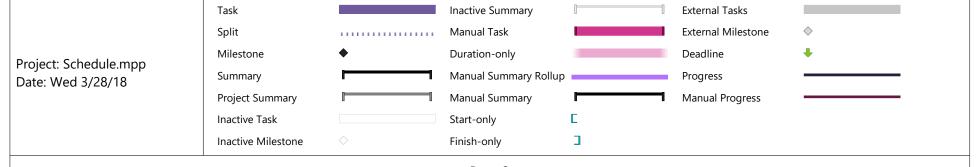
	0	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		-5	Project ACIS	162 days	Sun 12/17/17	Mon 5/28/18	
2	<b>V</b>	-5	Get Started	26.88 days	Sun 12/17/17	Fri 1/12/18	
3	<b>V</b>	-5	Create GitHub Repo	1 day	Sun 12/17/17	Sun 12/17/17	
4	<b>V</b>	-5	Create GitHub Wiki	1 day	Sun 12/17/17	Sun 12/17/17	3
5	<b>V</b>	-5	Create GitHub Tasks	1 day	Sun 12/17/17	Sun 12/17/17	4
6	~	-9	Meet With Adviser	0.88 days	Tue 12/19/17	Tue 12/19/17	
7	<b>~</b>	-5	Add Meeting Notes	1 day	Tue 12/19/17	Tue 12/19/17	
8	<b>~</b>	-5	Meet With Sponsor	2.88 days	Wed 1/10/18	Fri 1/12/18	
9	~	-9	Preparing Slides And Questions	2 days	Wed 1/10/18	Thu 1/11/18	
10	<b>~</b>	-5	Add Meeting Notes	1 day	Fri 1/12/18	Fri 1/12/18	9
11	<b>~</b>	-9	Plan	28.13 days	Fri 1/26/18	Fri 2/23/18	
12	<b>V</b>	-9	Requirements	6 days	Fri 1/26/18	Wed 1/31/18	
13	<b>V</b>	-9	Write Project Schedule Draft	1 day	Fri 1/26/18	Fri 1/26/18	
14	<b>~</b>	-9	Review Project Schedule Draft	1 day	Sat 1/27/18	Sat 1/27/18	13
15	<b>V</b>	-9	Revise Project Schedule Draft	1 day	Sun 1/28/18	Sun 1/28/18	14
16	<b>V</b>	-9	Review Revised Project Schedule	1 day	Mon 1/29/18	Mon 1/29/18	15
17	<b>~</b>	-9	Approve Project Schedule	1 day	Tue 1/30/18	Tue 1/30/18	16
18	<b>~</b>	-5	Submit Project Schedule	1 day	Wed 1/31/18	Wed 1/31/18	17
19	<b>~</b>	-9	Project Schedule	2 days	Sun 2/18/18	Tue 2/20/18	
20	<b>V</b>	-9	Write Project Schedule Draft	1 day	Sun 2/18/18	Sun 2/18/18	
21	<b>~</b>	-5	Review Project Schedule Draft	1 day	Sun 2/18/18	Mon 2/19/18	20
22	<b>~</b>	-9	Revise Project Schedule Draft	1 day	Mon 2/19/18	Mon 2/19/18	21
23	<b>V</b>	-9	Review Revised Project Schedule	1 day	Mon 2/19/18	Mon 2/19/18	22

Inactive Summary External Tasks Task Split Manual Task External Milestone  $\Diamond$ ..... Milestone Duration-only Deadline Project: Schedule.mpp Manual Summary Rollup Summary Progress Date: Wed 3/28/18 Manual Summary Manual Progress **Project Summary** Start-only Е Inactive Task Finish-only Inactive Milestone

)		Task	Task Name	Duration	Start	Finish	Predecessors
24	0	Mode	Approve Project Schedule	1 day	Mon 2/19/18	Tue 2/20/18	23
25	J	-5	Submit Project Schedule	1 day	Tue 2/20/18	Tue 2/20/18	24
26	<i>J</i>		Block Diagram	6.13 days	Sat 2/17/18	Fri 2/23/18	24
27	<i>J</i>	-5		•			
			Create High Level Block Diagram	1.13 days	Sat 2/17/18	Sat 2/17/18	27
28	<b>Y</b>		Create Component Level Block Diagram	1 day	Sat 2/17/18	Sun 2/18/18	27
29	<b>.</b>	-9	Create Motor Block Diagram	0.63 days	Sun 2/18/18	Sun 2/18/18	28
30	<b>Y</b>	-9	Create Sensor Sensor Block Diagram	1 day	Sun 2/18/18	Mon 2/19/18	29
31	~	-5	Create Processor Block Diagram	0.63 days	Mon 2/19/18	Mon 2/19/18	30
32	<b>~</b>	-5	Create Lights Block Diagram	1 day	Mon 2/19/18	Tue 2/20/18	31
33	<b>V</b>	-5	Create Software Block Diagram	0.63 days	Tue 2/20/18	Tue 2/20/18	32
34	<b>V</b>	-5	Review Block Diagrams	1 day	Tue 2/20/18	Wed 2/21/18	33
35	<b>V</b>	-5	Revise Block Diagrams	1.88 days	Wed 2/21/18	Wed 2/21/18	34
36	<b>V</b>	-5	Approve Block Diagrams	2 days	Wed 2/21/18	Thu 2/22/18	35
37	<b>V</b>	-5	Submit Block Diagrams	1.13 days	Thu 2/22/18	Fri 2/23/18	36
38		-9	Barcode Detection	32 days	Thu 2/1/18	Sun 3/4/18	
39	<b>V</b>	-5	Research Barcode Detection Libraries	10 days	Thu 2/1/18	Fri 2/9/18	
40	<b>V</b>	-5	Prototype OpenCV Barcode Detection	3.88 days	Fri 2/9/18	Sun 2/11/18	39
41	<b></b>	-5	Finalize OpenCV Barcode Detection	2 days	Sat 3/3/18	Sun 3/4/18	40
42		-5	Image Stitching	59 days	Sat 1/13/18	Mon 3/12/18	
43	<b>V</b>	-5	Research Methods To Use OpenCV For Image Stitching	21 days	Sat 1/13/18	Fri 2/2/18	
44	~	-	Prototype OpenCV Image Stitching	2 days	Sat 2/10/18	Sun 2/11/18	43
45	-	-9	Finalize OpenCV Image Stitching	3 days	Sat 3/10/18	Mon 3/12/18	44
46		-5	Defect Detection	91 days	Wed 1/3/18	Tue 4/3/18	

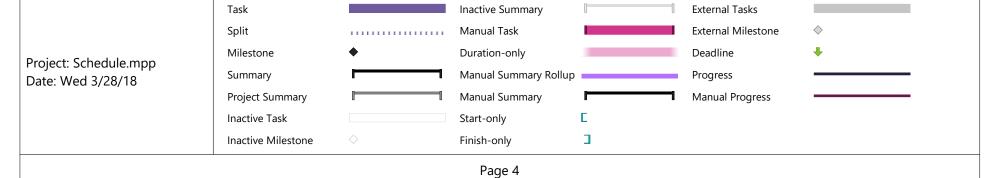


Page 2

)	0	Task Mode	Task Name	Duration	Start	Finish	Predecessors
47	<b>III</b>	-5	Research OpenCV Defect Detection	2 days	Wed 1/3/18	Thu 1/4/18	
48		-5	Prototype OpenCV Defect Detection	5 days	Fri 1/5/18	Tue 1/9/18	47
49	===	-5	Finalize OpenCV Defect Detection	3 days	Sun 4/1/18	Tue 4/3/18	48
50		-	Main Application	6 days	Thu 3/29/18	Wed 4/4/18	
51		-	Research What Control Should Main Application Have	2 days	Thu 3/29/18	Fri 3/30/18	
52		-	Design Main Application	6 days	Fri 3/30/18	Sun 4/1/18	51
53		-5	Design The Different components Of The Application	1 day	Sun 4/1/18	Sun 4/1/18	52
54		-5	Design Config File	1 day	Sun 4/1/18	Sun 4/1/18	53
55		-5	Design The Interface Between The Classes	1 day	Sun 4/1/18	Mon 4/2/18	54
56		-5	Prototype Main Application	5 days	Mon 4/2/18	Tue 4/3/18	55
57		-5	Finalize Main Application	2 days	Tue 4/3/18	Wed 4/4/18	56
58		-5	Magazine	18.75 days	Wed 3/28/18	Sun 4/15/18	
59	-	-5	Research Magazine Design	2 days	Wed 3/28/18	Thu 3/29/18	
60		-5	Design The Magazine	1 day	Thu 3/29/18	Fri 3/30/18	59
61		-5	Design Safety Locks	1 day	Fri 3/30/18	Sat 3/31/18	60
62		-5	Design CPU Holding Frame	1 day	Sat 3/31/18	Sat 3/31/18	61
63		-5	Design Magazine Movement	1 day	Sat 3/31/18	Sat 3/31/18	62
64		-5	Design Magazine Loading Mechanism	1 day	Sat 3/31/18	Sun 4/1/18	63
65		-5	Research Magazine Parts	2 days	Sun 4/1/18	Sun 4/1/18	64
66			Order Magazine Parts	1 day	Sun 4/1/18	Mon 4/2/18	65
67	-	-5	Prototype Magazine	5 days	Mon 4/9/18	Fri 4/13/18	66
68		-5	Finalize Magazine	2.75 days	Fri 4/13/18	Sun 4/15/18	67
69			Frame	88 days	Sat 1/27/18	Wed 4/25/18	

Task Inactive Summary External Tasks  $\Diamond$ Split Manual Task External Milestone ...... Milestone Duration-only Deadline Project: Schedule.mpp Manual Summary Rollup Summary Progress Date: Wed 3/28/18 Project Summary Manual Summary Manual Progress Start-only Е Inactive Task Finish-only Inactive Milestone

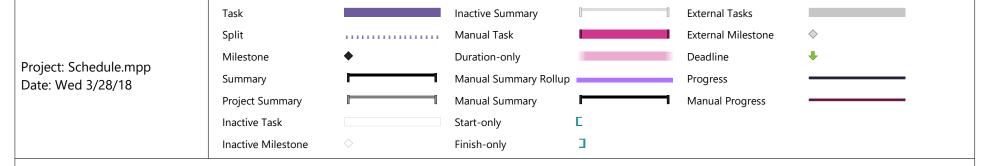
D	0	Task Mode	Task Name	Duration	Start	Finish	Predecessors
70	~	-9	Design The Frame	4 days	Sat 1/27/18	Sun 1/28/18	
71	<b>V</b>	-5	Research Frame Parts	1 day	Sun 1/28/18	Mon 1/29/18	70
72	~	-5	Order Frame Parts	2 days	Mon 1/29/18	Mon 1/29/18	71
73	<b>V</b>	-5	Prototype Frame	5 days	Mon 3/5/18	Wed 3/7/18	
74	<b>III</b>	-5	Finalize Frame Build	5 days	Mon 4/23/18	Wed 4/25/18	
75		-3	Lighting	11 days	Fri 4/6/18	Mon 4/16/18	
76	-	-9	Research Lighting	1 day	Fri 4/6/18	Fri 4/6/18	
77		-9	Design Lighting	2 days	Fri 4/6/18	Sat 4/7/18	76
78		-9	Order Lighting Parts	1 day	Sat 4/7/18	Sun 4/8/18	77
79		-9	Prototype Lighting Parts	2 days	Sat 4/14/18	Sun 4/15/18	
80		-5	Finalize Lighting	2 days	Sun 4/15/18	Mon 4/16/18	79
81		-9	Enclosure	9 days	Sun 4/1/18	Tue 4/10/18	
82	-	-9	Research Enclosure Material	1 day	Sun 4/1/18	Sun 4/1/18	
83		-5	Design Enclosure	3 days	Sun 4/1/18	Mon 4/2/18	82
84		-9	Order Enclosure Material	1 day	Sun 4/8/18	Sun 4/8/18	83
85	-	-9	Prototype Enclosure	2 days	Mon 4/9/18	Tue 4/10/18	84
86		-5	Finalize Enclosure	1 day	Tue 4/10/18	Tue 4/10/18	85
87		-9	Motor	104 days	Mon 1/1/18	Sat 4/14/18	
88	~	-5	Research Arduino Motor Control	5 days	Mon 1/1/18	Fri 1/5/18	
89	~	-9	Design Stepper Motor Placement	1 day	Sun 1/28/18	Sun 1/28/18	88
90	~	-5	Choose Motors	2 days	Mon 1/29/18	Tue 1/30/18	89
91	<b>V</b>		Order Motors	1 day	Tue 1/30/18	Tue 1/30/18	90
92	<b>✓</b>	-	Prototype Motor Drivers	5 days	Thu 4/5/18	Mon 4/9/18	91



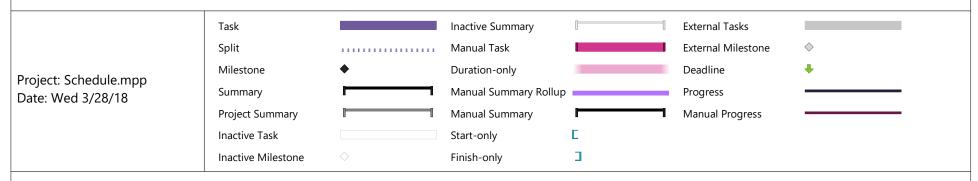
D	•	Task	Task Name	Duration	Start	Finish	Predecessors
93	<b>0</b>	Mode	Finalize Motor Driver	5 days	Tue 4/10/18	Sat 4/14/18	92
94		-	Image Capturing	9.88 days	Wed 3/28/18		32
95	-	-	Research Camera	1 day	Wed 3/28/18	Wed 3/28/18	
96		-	Order Camera	1 day	Wed 3/20/18 Wed 4/4/18	Wed 4/4/18	95
97		-	Finalize Image Capturing	2 days	Thu 4/5/18	Fri 4/6/18	96
98		-	Communication Between Arduino And Pc	2.88 days	Wed 4/25/18	Fri 4/27/18	30
99	-	-	Design The Protocol Between Main Application And Arduino	3 days	Wed 4/25/18	Thu 4/26/18	
100		-	Prototype Communication Between Arduino And Pc	2 days	Thu 4/26/18	Fri 4/27/18	99
101		-	Finalize Communication Between Pc And Arduino	2 days	Fri 4/27/18	Fri 4/27/18	100
102		-	Power Supply	18 days	Sat 4/7/18	Wed 4/25/18	100
103		-	Calculate Power Requirements Based On Parts	2 days	Sat 4/7/18	Sun 4/8/18	
104		-5	Research Power Supply	2 days	Sun 4/8/18	Mon 4/9/18	103
105	<b></b>	-5	Order Power Supply	1 day	Mon 4/16/18	Mon 4/16/18	104
106		-	Test Power Supply	2 days	Mon 4/23/18		105
107		-5	Finalize Power Supply	1 day	Tue 4/24/18	Wed 4/25/18	106
108			Safety Locks	12 days	Mon 4/23/18		100
100		-	Research Safety Locks	2 days		Tue 4/24/18	
110		-5	Order Safety Locks Parts	1 day	Wed 4/25/18	Wed 4/25/18	109
111			Prototype Safety Locks	1 day	Thu 5/3/18	Thu 5/3/18	110
112		-5	Finalize Safety Locks	1 day	Fri 5/4/18	Fri 5/4/18	111
113		-5	Sensors	5 days			111
114	<b>V</b>		Research Sensors		<b>Sun 3/18/18</b> Sun 3/18/18	<b>Thu 3/22/18</b> Mon 3/19/18	
114	<b>V</b>	-3		2 days		1 1	111
115	*		Order Sensors	1 day	Tue 3/20/18	Tue 3/20/18	114

Task Inactive Summary External Tasks  $\Diamond$ Split Manual Task External Milestone ...... Milestone Duration-only Deadline Project: Schedule.mpp Manual Summary Rollup Summary Progress Date: Wed 3/28/18 Project Summary Manual Summary Manual Progress Start-only Е Inactive Task Finish-only Inactive Milestone

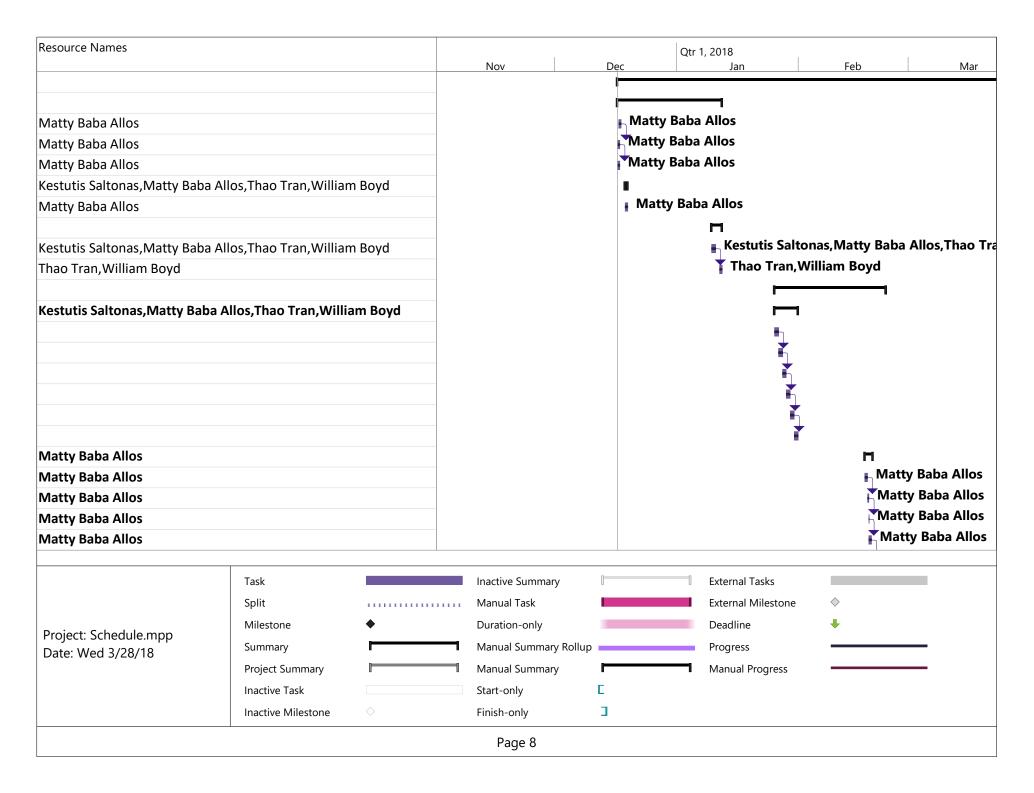
)	A	Task Mode	Task Name	Duration	Start	Finish	Predecessors
116	~	-3	Prototype Sensors Software	1 day	Wed 3/21/18	Wed 3/21/18	115
117		-9	Finalize Sensors	1 day	Thu 3/22/18	Thu 3/22/18	116
118	<b>V</b>	-9	First Term Project Assessment	2.25 days	Fri 3/23/18	Sun 3/25/18	
119	<b>V</b>	-9	Write First Term Project Assessment Draft	1.13 days	Fri 3/23/18	Fri 3/23/18	
120	<b>V</b>		Review First Term Project Assessment Draft	0.5 days	Fri 3/23/18	Sat 3/24/18	119
121	<b>V</b>	-5	Revise First Term Project Assessment Draft	0.25 days	Sat 3/24/18	Sat 3/24/18	120
122	<b>V</b>	-5	Review First Term Project Assessment Document	0.38 days	Sat 3/24/18	Sat 3/24/18	121
123	<b>V</b>	-5	Approve First Term Project Assessment Document	0.25 days	Sat 3/24/18	Sat 3/24/18	122
124	<b>V</b>	-9	Submit First Term Project Assessment Document	0.5 days	Sat 3/24/18	Sun 3/25/18	123
125		-9	Test	3 days	Mon 4/30/18	Thu 5/3/18	
126	-	-9	Unit Testing	2 days	Mon 4/30/18	Tue 5/1/18	
127		-9	UI Testing	2 days	Tue 5/1/18	Tue 5/1/18	126
128		-9	Integration Testing	2 days	Tue 5/1/18	Wed 5/2/18	127
129		-9	System Testing	2 days	Wed 5/2/18	Thu 5/3/18	128
130		-9	Product Documentation	5 days	Sun 5/6/18	Thu 5/10/18	
131	***	-9	Write Product Documentation Draft	1.13 days	Sun 5/6/18	Sun 5/6/18	
132		-9	Review Product Documentation Draft	2 days	Sun 5/6/18	Mon 5/7/18	131
133		-9	Revise Product Documentation Draft	2 days	Mon 5/7/18	Tue 5/8/18	132
134		-9	Review Product Documentation Schedule	2 days	Tue 5/8/18	Wed 5/9/18	133
135		-9	Approve Product Documentation	2 days	Wed 5/9/18	Thu 5/10/18	134
136		-9	Submit Product Documentation	0 days	Thu 5/10/18	Thu 5/10/18	135
137		-9	Project Report	10 days	Mon 5/14/18	Wed 5/23/18	
138	-	-5	Write Project Report Draft	3 days	Mon 5/14/18	Tue 5/15/18	

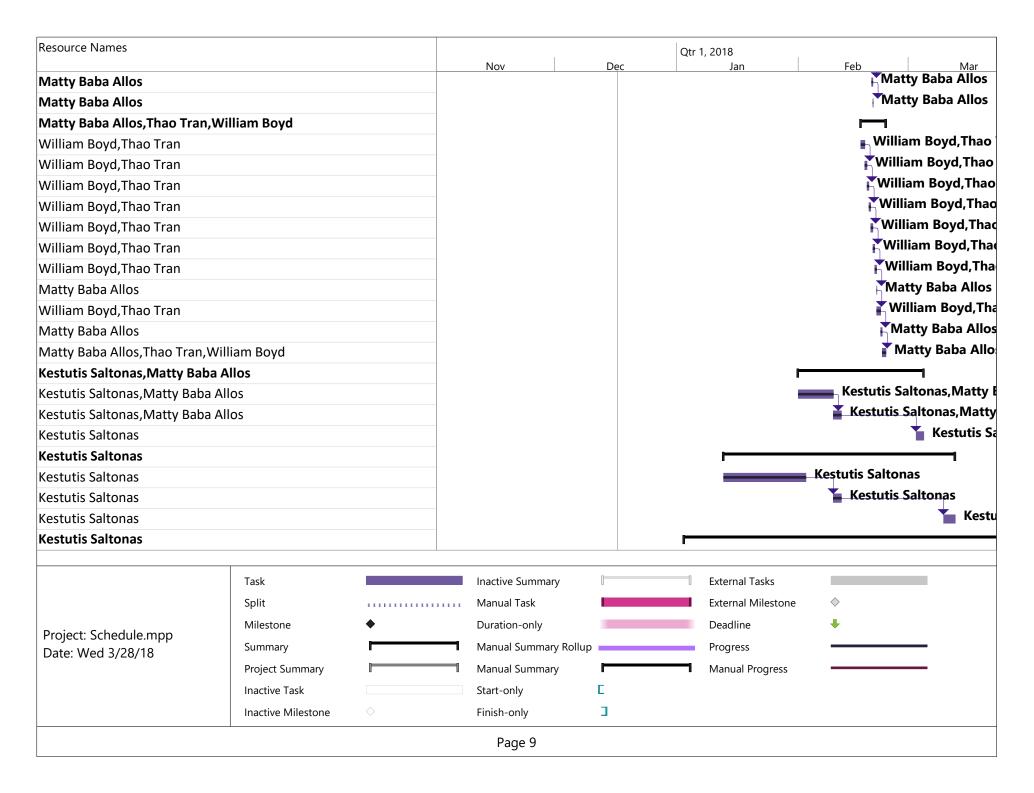


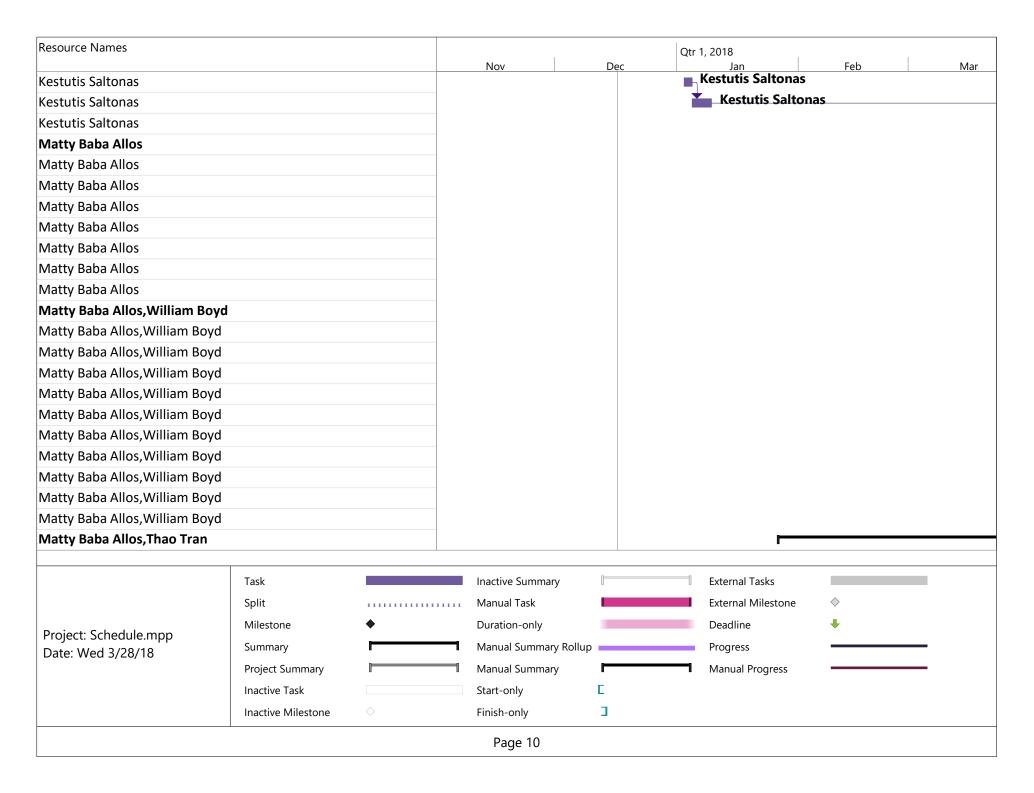
D	0	Task Mode	Task Name	Duration	Start	Finish	Predecessors
139		-5	Review Project Report Draft	3.88 days	Tue 5/15/18	Thu 5/17/18	138
140		-5	Revise Project Report Draft	3.88 days	Thu 5/17/18	Sat 5/19/18	139
141		-5	Review Project Report Document	3.88 days	Sat 5/19/18	Mon 5/21/18	140
142		-5	Approve Project Report Document	3.88 days	Mon 5/21/18	Wed 5/23/18	141
143		-5	Submit Project Report Document	0 days	Wed 5/23/18	Wed 5/23/18	142
144		-5	Final Project Assessment	13 days	Mon 5/14/18	Sat 5/26/18	
145	-	-5	Write Final Term Project Assessment Draft	8 days	Mon 5/14/18	Fri 5/18/18	
146		-5	Review Final Term Project Assessment Draft	3.88 days	Fri 5/18/18	Sun 5/20/18	145
147		-5	Revise Final Term Project Assessment Draft	3.88 days	Sun 5/20/18	Tue 5/22/18	146
148		-5	Review Final Term Project Assessment Document	3.88 days	Tue 5/22/18	Thu 5/24/18	147
149		-5	Approve Final Term Project Assessment Document	3.88 days	Thu 5/24/18	Sat 5/26/18	148
150		-5	Submit Final Term Project Assessment Document	0 days	Sat 5/26/18	Sat 5/26/18	149
151		-5	Project Poster	27 days	Tue 5/1/18	Mon 5/28/18	
152	-	-5	Design Project Poster	3 days	Tue 5/1/18	Wed 5/2/18	
153		-5	Do Project Poster	7 days	Wed 5/2/18	Sun 5/6/18	152
154		-9	Revise Project Poster	2 days	Sun 5/6/18	Mon 5/7/18	153
155		-5	Review Project Poster	1 day	Mon 5/7/18	Tue 5/8/18	154
156		-5	Approve Project Poster	0.63 days	Tue 5/8/18	Tue 5/8/18	155
157		-5	Submit Project Poster	0 days	Mon 5/28/18	Mon 5/28/18	156

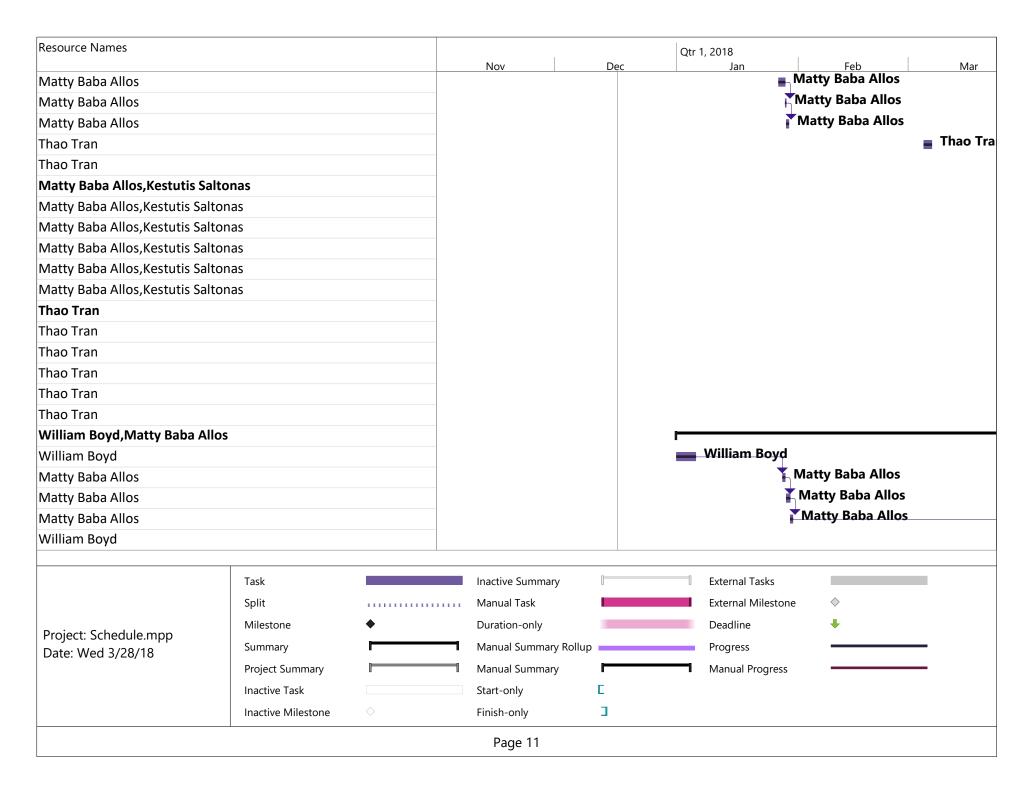


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Resource Names				_	Qtr	1, 2018	_		
William Boyd			Nov	Dec		Jan		Feb	Mar
Matty Baba Allos, Kestutis Sal	tonas								
Matty Baba Allos, Kestutis Salto									
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	<u> </u>		Page 12						

Resource Names			1		Qtr 1, 2018		1	
William Royd			Nov	Dec	Jan	Feb		Mar
William Boyd								
William Boyd Matty Baba Allos,Kestutis Sa	altonas Thao Tran Willi	am Royd						
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Matty Baba Allos, Kestutis Sa	altonas,Thao Tran,Willi	am Boyd						
Matty Baba Allos, Kestutis Sa	altonas,Thao Tran,Willi	am Boyd						
Matty Baba Allos, Kestutis Sa	ltonas,Thao Tran,Willia	n Boyd						
Matty Baba Allos, Kestutis Sa	altonas,Thao Tran,Willi	am Boyd						
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Matty Baba Allos, Kestutis Sa	altonas,Thao Tran,Willi	am Boyd						
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Matty Baba Allos, Kestutis Sa	altonas,Thao Tran,Willi	am Boyd						
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	Task		Inactive Summary		External Tasks	^		
	Split		Manual Task		External Milestone	•		
Project: Schedule.mpp	Milestone	• 	Duration-only		Deadline	•		
Date: Wed 3/28/18	Summary		Manual Summary Rollu	nb -	Progress			
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	Inactive Milestone	$\Diamond$	Finish-only	]				
			Page 13					

Resource Names					Qtr 1	I, 2018		
			Nov	Dec		Jan	Feb	Mar
Matty Baba Allos, Kestutis Salt								
Matty Baba Allos, Kestutis Salt								
Matty Baba Allos, Kestutis Salt		-						
Matty Baba Allos, Kestutis Salt								
Matty Baba Allos, Kestutis Salt		-						
Matty Baba Allos, Kestutis Salt		-						
Matty Baba Allos, Kestutis Salt								
Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
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Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
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Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
Matty Baba Allos, Kestutis Salt	onas,Thao Tran,Willia	am Boyd						
	Task		Inactive Summary			External Tasks		
	Split		Manual Task			External Milestone	$\Diamond$	
Project: Schedule.mpp	Milestone	<b>•</b>	Duration-only			Deadline	•	
Date: Wed 3/28/18	Summary		Manual Summary Roll	up		Progress		
2 3.3. 11 3 3 7 2 3 1 0	Project Summary		Manual Summary	1		Manual Progress		
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	Inactive Milestone		Finish-only	3				
			Page 14					

