Nozzle Flow Analyzer Project

Agile Tracking Sheet

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Table 1: User Story Summary

User Story ID	User Story	Completeness Criteria	Effort Estimate (hours)	Priority	Worked in Sprint (Estimated)
1	As a developer I want to be able to test my software.	All classes exist with all. attributes. All methods exist. but are not yet functional.	8	1	1
2	As a developer I want the software to properly use the proper isentropic equations based on the nozzle/tube type(nozzle/tube type referred to as node).	There are methods for determining pressure, area, Mach, temp, and their associated static, values, and they are iterative. Each nozzle type extends the flow node class	7	3	1
3	As a developer I want the software to use user input data on pressure, Mach and temp to determine the relationships throughout each flow section	There is a get user input method to collect data, which can be stored as doubles.	1	2	1
4	As a developer I want the software to determine if the conditions are met for a shock to form.	Within the methods for isentropic flow relations there is an check to see if the Mach and pressure relations reach the proper conditions	2	4	1
5	As a developer I want the software to use the proper normal shock relation equations if a shock is formed.	There is a method that is called if a shock is true that splits the node into two parts, isentropic before shock and isentropic after shock.	3	5	1
6	As a developer I wish to keep my user informed of any inaccuracies in the calculations	If Mach at the exit is greater than 5, user is informed that there is an inaccuracy	1	8	2
7	As a developer I want each of the selected nodes to be modular, so the ending flow properties of one node can become the initial flow properties of another.	There is a method that is called upon that if there is two nodes connected it just sets all the exit values equal to inlet values like: EX: Pe=Pi	1	7	2
8	As a developer I want the final node to simulate the exiting flow properties, one of seven options ranging from perfectly expanded flow to choked flow, etc.	The program has a method that goes through the 3 of the 7 exit conditions, and if it matches the 3 set exit conditions it displays one of those, and if is in between/outside, it displayed	6	6	2

		one of the exit conditions that can occur at a data range.			
9	As a developer I want the nodes and any present shocks to be displayed graphically	A GUI exits that displays the flow nodes, shocks and exit shocks/conditions.	6	12	3
10	As a developer I want the flow data to be exportable as a CSV,	An export data option is available for the user to save their data	2	9	2
11	As a User I want the user's node configuration to be savable, and reopenable.	An option for the user to save their data, and setup is present.	2	13	2
12	As a developer I want the display to show correctly the location of any generated shocks, and they be snapped to the walls of the node	When a shock exits, the GUI displays it in a manner that looks aesthetically pleasing, and accurate to its location. (EXCEPT FOR HEAT TUBES)	5	15	4
13	As a User I want the ability to graphically choose the order of nodes.	A GUI exits that the user can select flow nodes and snap them together in.	3	11	3
14	As a User I want to see what mathematical and thermodynamic assumptions were made In each piece.	The Program lists in a popup the assumptions used to	1	10	2
15	As a User I want to know if my inputs can lead to a lack of flow	If the inputs lead to an invalid flow it informs the user	3	14	4

Table 2: Sprint Work Summary

Sprint	Backlog	In Work This Sprint	Completed This Sprint
1	1-15	1-5	1-3,5
2	4,6-15	4,6-8,10,11,14	4,8
3	4,6-7,9-145	6-13	7,9,13
4	6,10,11,14	6,10,11,14,15	6,10,11,14,15

Table 3: Weekly Remaining Effort Estimate (Burn Down Chart)

	Start*	Mar 20	Mar 27	Apr 3	Apr 10	Apr 17	Apr 24	End
Planned	49	39	35	30	26	18	8	0
Actual		32	16	20	16	21	23	115
* Start date of Mar 13 is optional, as it is the beginning of Spring Break. You may treat Mar 20 as the start date.								