

Software	Feature Name	Difficulty
Mango	Two Decimal Truncation	Easy (Est. 1 file; 10 LOC)

Learning Goals:

- Perform concept location through an advanced change request
- Perform impact analysis and make technical decisions based on the analysis results
- Practice reverse engineering
- Practice writing test cases with full coverage
- Practice design for usability
- Document software design and analysis

Current Behavior

Mango has an interface called the watch list that allows a user to view the stored data of a set of sensors. Alternatively, each sensor can be viewed independently of one another with the “point details” interface. Both of these tools display the collected values with unnecessary precision.

The screenshot displays the Mango software interface. At the top, there is a watch list of sensors. Each sensor entry includes a name, a value, a timestamp, and a reliability status. Below the watch list, there is a detailed view of a specific sensor point, showing its value, time, and export ID. To the right of the detailed view, there is a history table showing a list of values, times, and annotations for the selected sensor point.

Sensor Name	Value	Timestamp	Reliability
GH - 1_Temp_Water	27.670000000000016	Aug 06 19:47	Reliable
GH - 1_Temp_RMHIGH	(n/a)		Reliable
GH - 1_Temp_RMLow	(n/a)		Reliable
GH - 1_Pump_ACT	(n/a)		Reliable
GH - 3_Temp_RM	23.400000000000016	Aug 06 19:47	Reliable
GH - 3_Light_windowINT	115.99999999999999	Aug 06 19:53	Reliable

Value	Time	Annotation
115.99999999999999	10:45:09	
115.99999999999999	10:44:09	
115.99999999999999	10:39:38	
115.99999999999999	10:38:38	
115.99999999999999	10:36:52	
115.99999999999999	10:35:52	
115.99999999999999	10:34:52	
115.99999999999999	10:33:52	
115.99999999999999	10:32:52	
115.99999999999999	10:31:52	

Expected Behavior

Mango should display all values with at most two decimal places of precision. These values should be truncated, **not** rounded. This change should be made anywhere that values are displayed.

Point value may not be reliable				
GH - 1_Light_ULPPF	0.0	10:50:33		
Point value may not be reliable				
GH - 2_LL_INT	(n/a)			
The point or its data source may be disabled.				
GH - 2_LL_PPF	(n/a)			
The point or its data source may be disabled.				
GH - 2_UL_INT	(n/a)			
The point or its data source may be disabled.				
GH - 2_UL_PPF	(n/a)			
The point or its data source may be disabled.				
GH - 3_Light_LLINT	0.0	10:50:32		
Point value may not be reliable				
GH - 3_Light_LLPPF	0.99	10:50:32		
Point value may not be reliable				
GH - 3_Light_ULPPF	0.0	10:50:32		
Point value may not be reliable				
GH - 3_Light_windowINT	115.99	10:50:33		
Point value may not be reliable				

3_Light_windowINT

Value 115.99
Time 10:50:33
Export ID (XID) DP_063526

Point value may not be reliable

Statistics (as of 2021/08/09 10:52:18) Time period: day(s)

Start: 2021/08/08 10:52
End: 2021/08/09 10:52
Minimum: 115.99999999999999 @ Aug 08 10:52
Maximum: 115.99999999999999 @ Aug 08 10:52
Average: 115.99999999999999
Sum: 2899.9999999999995
Log entries: 25

History (as of 2021/08/09 10:52:18)

Value	Time	Annotation
115.99	10:52:18	
115.99	10:51:18	
115.99	10:50:33	
115.99	10:49:33	
115.99	10:48:09	
115.99	10:47:09	
115.99	10:46:09	
115.99	10:45:09	
115.99	10:44:09	
115.99	10:39:38	