# Week 9 Section 3 Assignement Pamoja (9.3?)

## 9.3.1 Trace Table

| S | C | N | T | Output |
|---|---|---|---|---|
| 1 | 1 | 15 | 0.15 | none |
| 1 | 2 | 8 | 0.08 | none |
| 1 | 3 | 251 | 2.51 | none |
| 2 | 4 | 35 | 0.35 | none |
| 3 | 5 | 60 | 0.60 | none |
| 3 | 6 | 3 | 0.03 | none |
| 3 | 7 | 2 | 0.02 | none |
| 3 | 8 | 1516 | 15.16 | none |
| 4 | 9 | 19 | 0.19 | noen |
| 5 | 10 | 55 | 0.55 | none |
| 5 | 11 | | | 5 |

## 9.3.2 Trace Table

| Count | Number | Total | X | Average | Output Average |
|---|---|---|---|---|---|
| 1 | 15 | 15 | 1 | 15.0 | none |
| 2 | -2 | 15 | 1 | 15.0 | none |
| 3 | 0 | 15 | 1 | 15.0 | none |
| 4 | 8 | 23 | 2 | 11.5 | none |
| 5 | 0 | 23 | 2 | 11.5 | none |
| 6 | 21 | 44 | 3 | 14.7 | none |
| 7 | -8 | 44 | 3 | 14.7 | none |
| 8 | -12 | 44 | 3 | 14.7 | none |
| 9 | 1 | 45 | 4 | 11.2 | none |
| 10 | 25 | 70 | 5 | 14.0 | none |
| 11 | none | 70 | 5 | 14.0 | 14.0 |

## 9.3.3 Trace Table

| Counter | Hot | Cold | Serve | Temp | Error | Output |
|---|---|---|---|---|---|---|
| 0 | 0 | 0 | 1 | 75 | none | Serve |
| 1 | 0 | 0 | 2 | 78 | none | Serve |
| 2 | 0 | 0 | 3 | 84 | none | Serve |
| 3 | 1 | 0 | 3 | 87 | none | Too Hot |
| 4 | 2 | 0 | 3 | 91 | none | Too Hot |
| 5 | 2 | 0 | 4 | 80 | none | Serve |
| 6 | 2 | 0 | 5 | 75 | none | Serve |

| Counter | Hot | Cold | Serve | Temp | Error | Output |
|---|---|---|---|---|---|---|
| 7 | 2 | 0 | 6 | 70 | none | Serve |
| 8 | 2 | 0 | 7 | 65 | none | Serve |
| 9 | 2 | 1 | 7 | 62 | none | Too Cold |
| 10 | 2 | 1 | 7 | -1 | 30% | Error |

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# Question 1:

**"State how the final output from the algorithm could be improved."**

I believe that the final output from the algorithm could be improved by adding edge case error handling to 9.3.3 (problem 3). When the counter reaches 10, there is a large fall in the temp variable from 62 to -1, with an error being thrown. Furthermore, the only negative intiger being filtered is -1, which is syntactically correct, but within the context of the algorithim introduces more edge cases, especialy when data outside of the provided dataset is utilised. By handling those edge cases the final output of the algorithim will be greately improved.

# Question 2

**"Identify the process in the algorithm that is not required."**

One process that is not required is the {Is Temp = -1?} block in problem three. It checks whether the temperature is equal to -1, and if so, it throws an error even though the program can handle negative intigers like -1. -1 is an arbitrary limitation set within the algorithm, and functionality would be improved if it was to be removed. It serves no purpose appart from being the only breakpoint that leads to the error calculation logic block, which could instead be triggered when all of the temp variable points in the array have been cycled through.