1

Running Average

Question | Solution | Video | Discussion

You are asked to design a parameterized running average calculator which produces the average of the l

All the flops should be positive edge triggered with asynchronous resets (if any).

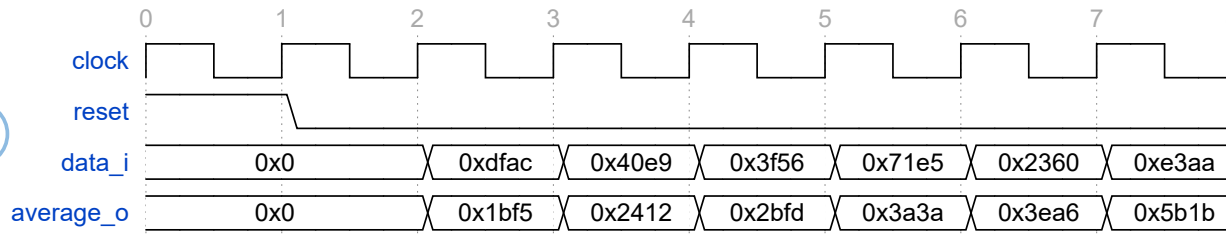
Interface Definition

```
N : Parameter which selects the number of samples to consider for calculating th
clk : Clock
reset : Active high reset
data_i[31:0]: The 32-bit input data
average_o[31:0]: The 32-bit output which gives the average of the last N samples
```

Interface Requirements

- The parameter N will always be a power of 2 and with the maximum value of 64
- The sum of the last N samples will never exceed the maximum value of a 32-bit number
- The calculated average should be rounded to the lower integer value
- The input data is valid on every cycle
- The module should produce the output on every cycle

Sample Simulation



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