

EHD PROJECT

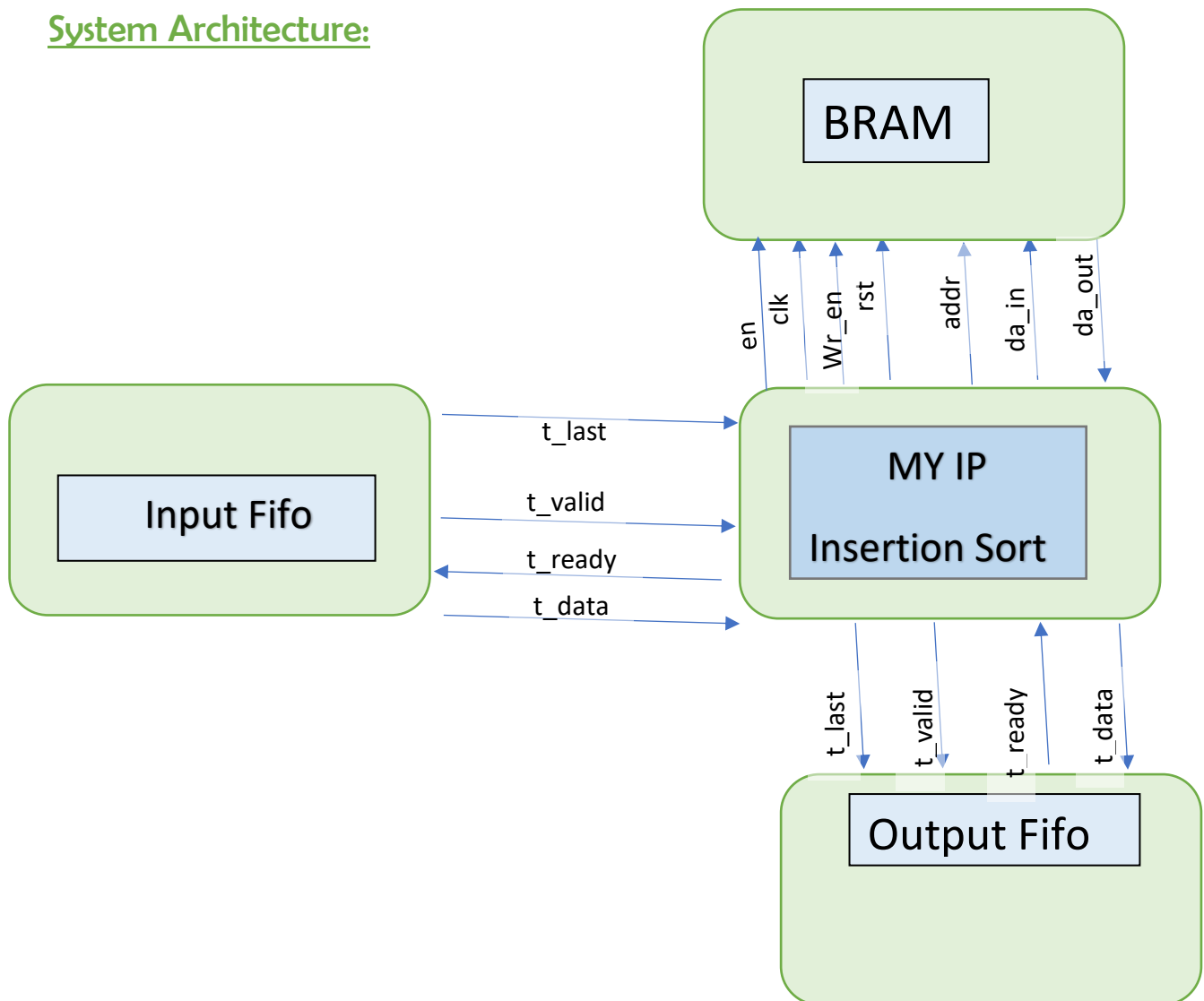
TOPIC : INSERTION SORT

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Algorithm Used: ('n' numbers to be sorted)

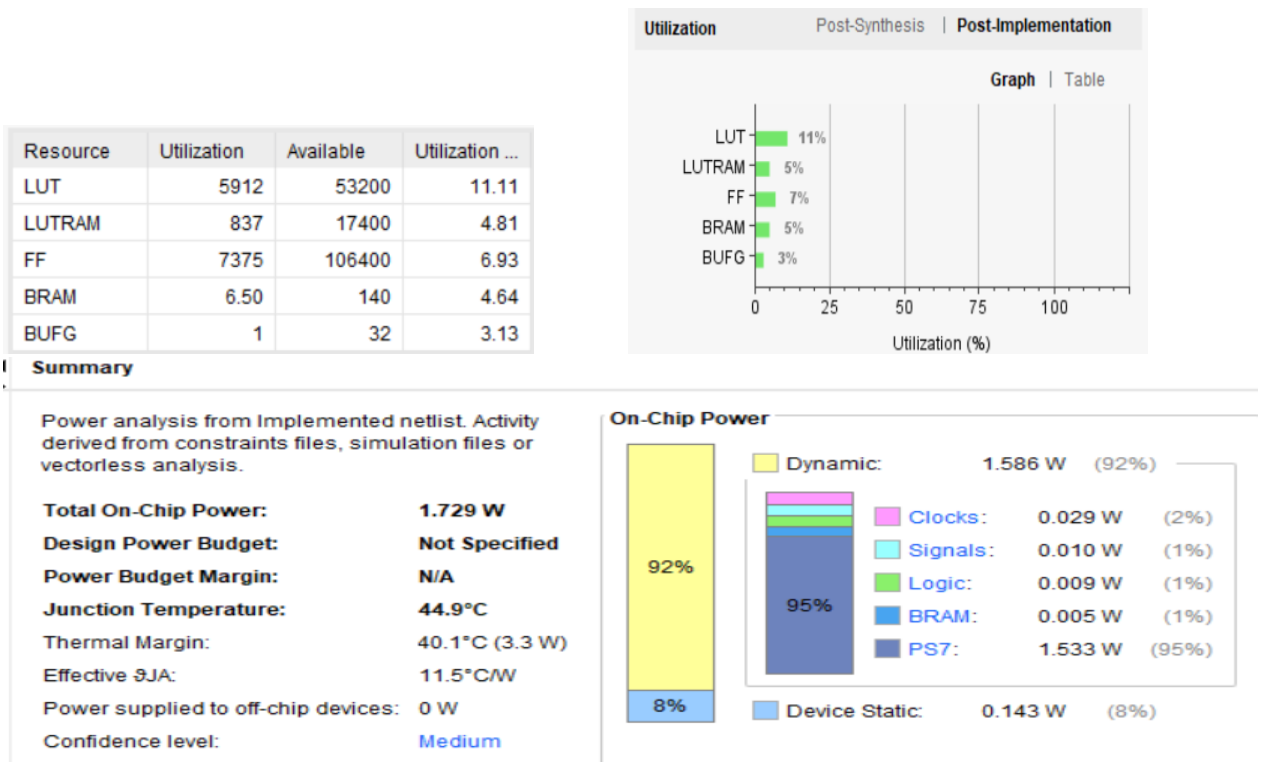
```
i = 1 : n //iterates over every value
temp = val [i] //storing corresponding i val in tmp
j = i-1 j >=0 and val[j]>temp //if value greater than temp
val[j+1]=val[j] val[j]=temp // swap the data
OUTPUT: Sorted array //Final Sorted Array
```

System Architecture:



- Initially send `t_ready` to I/p fifo (I am ready to accept data) collect data from fifo until `t_last` and store in BRAM by making write enable high.
- Our IP takes values from BRAM by making write enable low and do computation and puts value back in BRAM(`wr_e=high`).
- Finally make `t_valid` high and read the data from the BRAM and put in the O/P Fifo if it is ready until `t_last` signal is sent.

CLOCK:10 ns



Design Timing Summary

Setup	Hold	Pulse Width
Worst Negative Slack (WNS): 1.674 ns	Worst Hold Slack (WHS): 0.024 ns	Worst Pulse Width Slack (WPWS): 3.750 ns
Total Negative Slack (TNS): 0.000 ns	Total Hold Slack (THS): 0.000 ns	Total Pulse Width Negative Slack (TPWS): 0.000 ns
Number of Failing Endpoints: 0	Number of Failing Endpoints: 0	Number of Failing Endpoints: 0
Total Number of Endpoints: 26176	Total Number of Endpoints: 26176	Total Number of Endpoints: 8932

All user specified timing constraints are met.