DSD Practicals
Different Design Methodologies/Approaches

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Outline

Simple Approach

Advantages:

➕ Fast Prototyping

Disadvantages:

➖ Low Frequency

➖ High Utilization

➖ Low Throughput

		2	0	5	3	
	x	1	1	7	6	
	1	2	3	1	8	
	1	4	3	7	1	
	2	0	5	3		
+	2	0	5	3		
	2	4	1	4	3	2	8

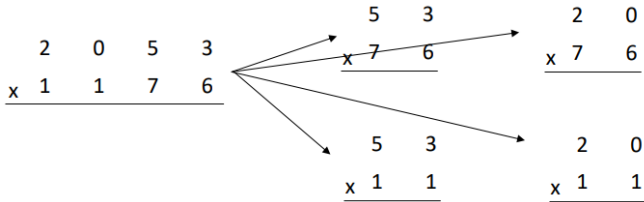For further information's see Github 07

Iterative Approach

Advantages:

➕ High Reusage

➕ Low Utilization

Disadvantages:

➖ High Latency

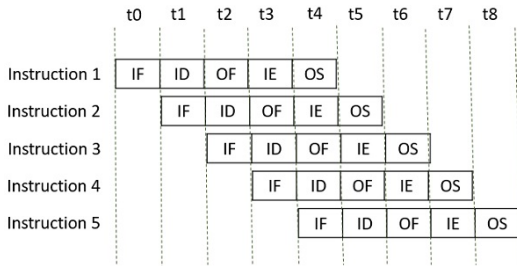➖ Low Throughput

For further information's see Github 08

Pipelined Approach

Advantages:

➕ High Frequency

➕ High Throughput

Disadvantages:

➖ High Utilization

➖ High Latency

	t0	t1	t2	t3	t4	t5	t6	t7	t8
Instruction 1	IF	ID	OF	IE	OS				
Instruction 2		IF	ID	OF	IE	OS			
Instruction 3			IF	ID	OF	IE	OS		
Instruction 4				IF	ID	OF	IE	OS	
Instruction 5					IF	ID	OF	IE	OS

Pipelining of 5 Instructions

For further information's see Github 09