

1. **Arbitrary Count Sequence:** Design a synchronous counter which follows sequence given below:
0, 2, 4, 6, 8, 0, 2,...

2. Counter composed of **T Flip-Flops** which takes X and Y selection inputs and performs following operations:

X	Y	Operation
0	0	Count
0	1	Shift Right
1	0	Shift Left
1	1	Parallel Load