**ABSTRACT**

The reversible logic circuits play a very important role in design of low power digital circuits of a future computer. This has led many researchers to take reversible logic very seriously in building important circuits related to advanced computing, low power C MOS design, optical information processing, DNA computing, bio information, Quantum computation and nanotechnology. Since the output of a sequential circuit depends not only on the present inputs but also on the past input conditions, the construction of sequential elements using reversible logic gates is quite complex than that of a combinational circuit . In this paper an approach to the realization of sequential circuit elements namely, latches and flip flops are

discussed. For this, authors use two new reversible logic gates called VB-1 and VB-2 gates along with the some of the basic reversible logic gates.

**TOOLS USED:**

ModelSim XE III 6.4b

Xilinx ISE 10.1