**National University of Computer & Emerging Sciences**

**Karachi Campus**



**Project Report**

**Digital Logic Design**

**Section: J (G-1)**

**STOP-WATCH**

**Group Members:**

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**Problem statement:**

Time management is really important, and people can't just count time on fingers. Time never stops for anyone and keeping your time managed can save you from a lot of problem like from the problems that may arise later in some project or something like that. In order to make sure that we don't spend extra time on one task, we needed something that can show us how much time have we spent since we started and hence, we decided to make a stop watch to solve this problem.

**Methodology:**

We used multiple 7490 and 7447 ICs to make a stop-watch. 7490 IC was used to generate BCD numbers and 7447 IC was used to convert BCD numbers to 7-segment displays. We used 2-V OR-Gate to control seconds and minutes to restrict it to 59. We used function generator to generate waves which worked as a clock for displaying the numbers on the 7-segment displays.

**Circuit Diagram:**



**Conclusion:**

After a lot of research and hard work we finally made a stopwatch implementing DLD practicalities.

**Future Work:**

In future, we will try to upgrade this stop watch to show time and also record time laps. Which will make the stop watch more useful and increase its efficiency.

**References:**

YouTube Link:

1. <https://www.youtube.com/watch?v=nKO6SDkZ_0A>

Google Link:

1. <https://www.electronicshub.org/decade-counterbcd-counter/#:~:text=It%20is%20used%20as%20divide,of%204%20bit%20binary%20numbers.>
2. <https://www.elprocus.com/bcd-to-seven-segment-display-decoder-theory/#:~:text=BCD%20Seven%20Segment%20Display%20Using%20IC%207447&text=A%20decoder%20is%20one%20kind,lines%20toward%202n%20output%20lines.&text=This%20IC7447%20gets%20the%20binary,the%20related%20seven%2Dsegment%20code.>