

Project title: Digital Clock with Alarm, Timer & Stopwatch.

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Project justification:

This project is basically a digital clock having some basic functionalities like

- Alarm
- Timer
- Stopwatch

This project is made on Tinkercad. According to Wikipedia, Tinkercad is a free, online 3D modeling program that runs in a web browser, known for its simplicity and ease of use. Since it became available in 2011 it has become a popular platform for creating models for 3D printing as well as an entry-level introduction to constructive solid geometry in schools.

Requirements:

- | | |
|-----------------------|-----|
| • Arduino uno r3 | x 1 |
| • Potentiometer (10k) | x 1 |
| • Buzzer | x 1 |
| • Pushbutton | x 4 |
| • Led | x 1 |
| • Resistor (10k) | x 6 |

Project Workflow:

Follow the processes listed below to operate the digital watch.

simulation time and real-time are different. So comparing would be useless.

Set Time:

pushbtn1 (Enter time setting)→pushbtn2 (continuous push to change hourstate)→pushbtn3 (goto set minute) →pushbtn2 (continuous push to change minutestate)→pushbtn3 (goto set second) →pushbtn2 (continuous push to change secondstate) →pushbtn4 (alternate AM-PM) →pushbtn1 (goto main screen)

Set Alarm:

pushbtn2 (Enter alarm setting)→pushbtn2 (continuous push to change hourstate)→pushbtn3 (goto set minute) →pushbtn2 (continuous push to change minutestate)→pushbtn3 (goto set second) →pushbtn2 (continuous push to change secondstate) →pushbtn4 (alternate AM-PM) →pushbtn1 (goto main screen)

[buzzer will be on for 3 sec at setted time]

Set Timer:

pushbtn3 (Enter timer)→pushbtn2 (continuous push to change minutestate)→pushbtn3 (goto set second) →pushbtn2 (continuous push to change secondstate) →pushbtn3 (goto set delay) →pushbtn2 (continuous push to change delay time) →pushbtn4 (start timer) →pushbtn4 (stop timer) [if you need or else led will be on for 3 sec in the end] →pushbtn1 (goto main screen)

Stopwatch:

pushbtn4 (Enter stopwatch) → pushbtn2 (start stopwatch) → pushbtn3 (stop stopwatch) → pushbtn4 (reset stopwatch) → pushbtn1 (goto main screen)