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| Photo displaying partial image of two pie charts on a canvas-textured page |
| PO3\_DGW  Customer System Requirements Specifications Document |
| |  |  |  | | --- | --- | --- | | Bassem Ezzat | 1/24/20 | Mohammed ElSayed | |

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| *Version* | *Author(s)* | *Date* | *Changes* |
| 0.0 | - Bassem Ezzat  - Mohammed Elsayed | January 24, 2020 | Creation of CYRS document |
| 0.1 | - Bassem Ezzat  - Mohammed Elsayed  - Mariam El-Shakafi | January 25, 2020 | Added further details to requirements based on SIQ answers |

# **Introduction**

Purpose

This document aims to clarify the CRS document and list a customer requirement specification to design a digital watch.

Document Abbreviation

|  |  |
| --- | --- |
| CYRS | Customer System Requirement Specifications |
| CRS | Customer Requirement Specifications |
| ERD | Entery relational digram |
| SIQ | Software interactive questionnaire |
| FUNC | Functional button |
| INC | Increment button |
| DEC | Decrement |

Intended audience and reading suggestions

This project is a prototype for a digital watch, and it is applicable to be a commercial product. This has been implemented under the guidance of ITI’s trainers.

Project Scope

The purpose of this project is to create modern stunning digital watch.

References

Not available yet

1. Overall Description

Product features

The major feature of the digital watch as listed below.

* Display time with 12 AM/PM format.
* Alarm to set according to user input.
* Stopwatch (Start, Stop).
* Three buttons to control the system:
  + MODE
  + FUNC1
  + FUNC2

Operation environment

Operating environments for the digital watch are houses, offices, shops, and hotels.

Design and Implementation constraints

* Software layer design
* Hardware components selection

1. System Features

Functional requirements

* + 1. FUNC\_PO3\_DGW\_CYRS\_01\_V01

Display Time Mode:

The software shall enter Display Time mode when current mode is Stopwatch mode and MODE button is pressed, or when system is powered-up.

The software shall display the time in HH:MM:SS AM/PM format.

* + 1. FUNC\_PO3\_DGW\_CYRS\_02\_V01

Adjust Time:

* To adjust the time (Minutes), press FUNC1 button once, so the minutes start blinking to indicate that it can be modified using FUNC2 button.
* To adjust the time (Hours), press FUNC1 button twice, so the hours start blinking to indicate that it can be modified using FUNC2 button.
* To adjust the time (AM/PM), press FUNC1 button a third time, so the format starts blinking to indicate that it can be modified using FUNC2 button.
* To apply adjustments, press FUNC1 button for a fourth time.
  + 1. FUNC\_PO3\_DGW\_CYRS\_03\_V01

Alarm Mode:

The software shall enter Alarm mode when current mode is Display Time mode and MODE button is pressed.

The software shall display the time in HH:MM:SS AM/PM format until Alarm time is reached.

* + 1. FUNC\_PO3\_DGW\_CYRS\_04\_V01

Set Alarm:

* To adjust alarm time (Minutes), press FUNC1 button once, so the minutes start blinking to indicate that it can be modified using FUNC2 button.
* To adjust alarm time (Hours), press FUNC1 button twice, so the hours start blinking to indicate that it can be modified using FUNC2 button.
* To adjust alarm time (AM/PM), press FUNC1 button a third time, so the format starts blinking to indicate that it can be modified using FUNC2 button.
* To set alarm, press FUNC1 button for a fourth time.
  + 1. FUNC\_PO3\_DGW\_CYRS\_05\_V01

Buzzer:

* The software shall trigger a buzzer with notification when alarm time is reached in Alarm mode.
* The software shall stop buzzer when FUNC2 button is pressed.
  + 1. FUNC\_PO3\_DGW\_CYRS\_06\_V01

Stopwatch Mode:

The software shall enter Stopwatch mode when current mode is Alarm mode and MODE button is pressed.

The software shall display 00:00:00.

* + 1. FUNC\_PO3\_DGW\_CYRS\_07\_V01

Start Counting:

* The software shall start counting when FUNC1 button is pressed in Stopwatch mode initial state.
  + 1. FUNC\_PO3\_DGW\_CYRS\_08\_V01

Stop Counting:

* The software shall stop counting when FUNC1 button is pressed in Stopwatch mode running state.
  + 1. FUNC\_PO3\_DGW\_CYRS\_09\_V01

Reset Counting:

* The software shall reset counter to 00:00:00 when FUNC2 button is pressed in Stopwatch mode.

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| **CYRS REQUIREMENT** | **CRS REQUIREMENT** |
| FUNC\_ PO3\_DGW\_CYRS\_01\_V01 | Display the time with 12 AM/PM format |
| FUNC\_ PO3\_DGW\_CYRS\_02\_V01 | User can adjust time using buttons |
| FUNC\_ PO3\_DGW\_CYRS\_04\_V01 | Alarm to be set as per the input |
| FUNC\_ PO3\_DGW\_CYRS\_05\_V01 | When alarm time is reached, a buzzer with notification is triggered |
| FUNC\_ PO3\_DGW\_CYRS\_07\_V01  FUNC\_ PO3\_DGW\_CYRS\_08\_V01  FUNC\_ PO3\_DGW\_CYRS\_09\_V01 | Stopwatch with “start, stop, and Reset” |
| FUNC\_ PO3\_DGW\_CYRS\_06\_V01 | Reset all digits once entering stopwatch mode |
| FUNC\_ PO3\_DGW\_CYRS\_01\_V01  FUNC\_ PO3\_DGW\_CYRS\_03\_V01  FUNC\_ PO3\_DGW\_CYRS\_06\_V01 | User can control digital watch modes using one button |

Hardware Requirements

* + 1. HW\_PO3\_DGW\_CYRS\_01\_V01

Display:

Time shall be displayed using LCD.

* + 1. HW\_PO3\_DGW\_CYRS\_02\_V01

Control:

The user shall control the digital watch using ONLY 3 buttons.

* + 1. HW\_PO3\_DGW\_CYRS\_03\_V01

Power source:

The system shall be powered using batteries.