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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 |

1. Introduction
   1. Purpose

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

* 1. 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 |

* 1. 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.

* 1. Project Scope

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

* 1. References

Not available yet

1. Overall Description
   1. 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
  1. Operation environment

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

* 1. Design and Implementation constraints
* Software layer design
* Hardware components selection

1. System Features
   1. 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 |

* 1. 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.