Project Plan

Introduction

Project Scope

Digital Watch is electronic product which has the mechanism to indicate the time by means of electronic structures such as the silicon chips. The accuracy of the digital watches is higher than the analog ones. The idea is to provide the user an accurate product with various features and modes which gives him different options for facilitating his life.

The project will consist of number of inputs that assisting the user to control the watch:

- Buttons for mode selection.
- Buttons inside each mode to control it.

The project will consist of number of functionalities including the following:

- Displaying the time with 12AM/PM format.
- Setting an Alarm as input and giving notification by buzzer.
- Stopwatch with (Start, Stop, and Reset).

Outputs include:

- Time Displaying.
- Buzzer alarm.

Management and Technical Constraints

Digital Watch has a drop-dead delivery date 6/5/2023.

Project Estimates

Project Resources

While a complete team would contain all of the following personnel, PA Software has four members. Each team member will be performing multiple jobs.

Required Staff:

- C programmer
- Embedded Software engineer
- Documentation/Librarian
- PCB designer
- Hardware Engineer
- Software Tester

Required Hardware:

- Microcontroller ATMEGA32
- LCD
- 3 Pushbuttons
- Buzzer
- Real Time Clock (RTC)
- Batteries 5V

Required Software:

- Microchip Studio
- Porteous

Project Budget

Project cost estimation w/o equipment:

The total estimated hours for the whole project are 30 hours. As the average cost for the member working hour is 30$/hour. So, the estimated budget for the project is 1000$.

Risk Management

Project Risks

Major risks we have determined for this software are as follows:

- Equipment failure
- Late delivery of software
- Technology will not meet expectations
- End users resist system
- Changes in requirements
- Deviation from software engineering standards
- Less reuse than planned
- Poor commenting of source code

Risk Table

Risks	Category	Probability	Impact
Equipment failure	TI	70%	1
Late delivery of software	BU	30%	1
Technology will not meet expectations.	TE	25%	1
End users resist system	BU	20%	1
Changes in requirements	PS	20%	2
Deviation from software engineering standards	PI	10%	3
Less reuse than planned	PS	60%	3
Poor commenting of source code	TI	20%	4

Project Schedule

Framework Activities

- Customer Communication
- Planning/Design
- Risk Analysis
- Programming
- Testing
- Customer Evaluation

Task Set

- Requirements specification
- Digital Watch construction
- Interfacing construction
- Testing

List of deliverables

Documentation

- System Requirements Specification
- Software Requirements Specification
- Design Document
- Project Plan
- Software Quality Assurance Plan
- Risk Mitigation, Monitoring, and Management Plan
- Software Configuration Management Plan
- Test Plan

Code

- Atmega32 Interfacing Code

Functional Decomposition

Interfacing Task Breakdown

- Mode1: LCD as clock; displaying Time in 12 AM/PM format.
- Mode2: LCD as stop watch controlled by 3 buttons.
- Mode3: LCD as alarm giving notification using the buzzer.

Simulation Task Break down

- Applying the previous modes on Proteus to check the functionality.

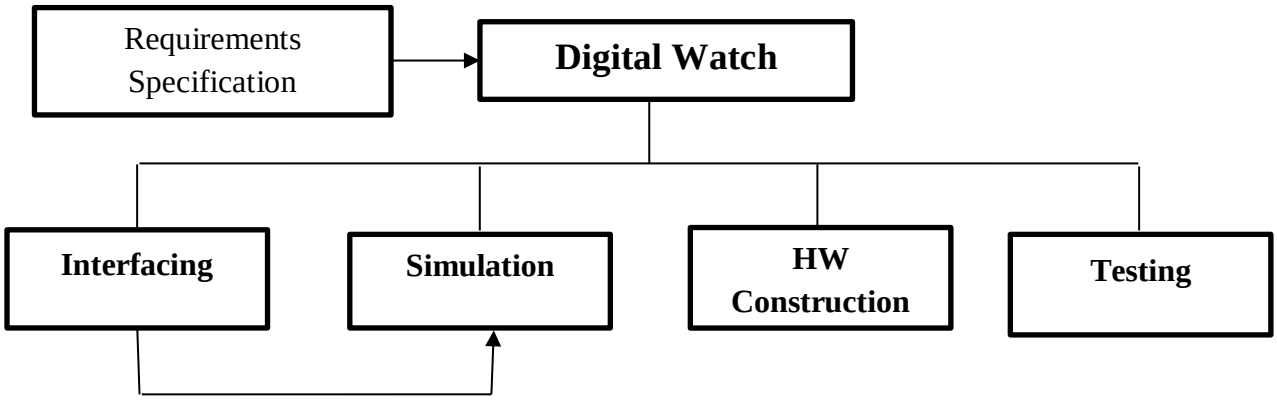
Hardware Construction Task Breakdown

- Hardware construction and connection between Items

Testing Task Breakdown

- In-house, white-box and black-box testing.

Task Network



Organization Staff

Team Structure:

Interfacing && Simulation Team.

- Rasha
- Saher
- Samira

Hardware Team

- Samuel
- Yousef

Testing Team

- Magraby
- Abdullah

Item No.	Task	Assigned To	Start Date	End Date	Status
Weak 1					
1.1	CRS (System Requirements)	Rasha	6-Feb	11-Feb	In Prograss
1.2	HIS(HW/SW Interface)	Saher	6-Feb	11-Feb	Completed
1.3	Project Planing	Samira	6-Feb	11-Feb	In Prograss
1.4	SIQ	Samuel	6-Feb	11-Feb	Completed
1.5	RTM(Traceability)	Yousef /Magraby/Abdullah	6-Feb	11-Feb	In Prograss
Weak 2					