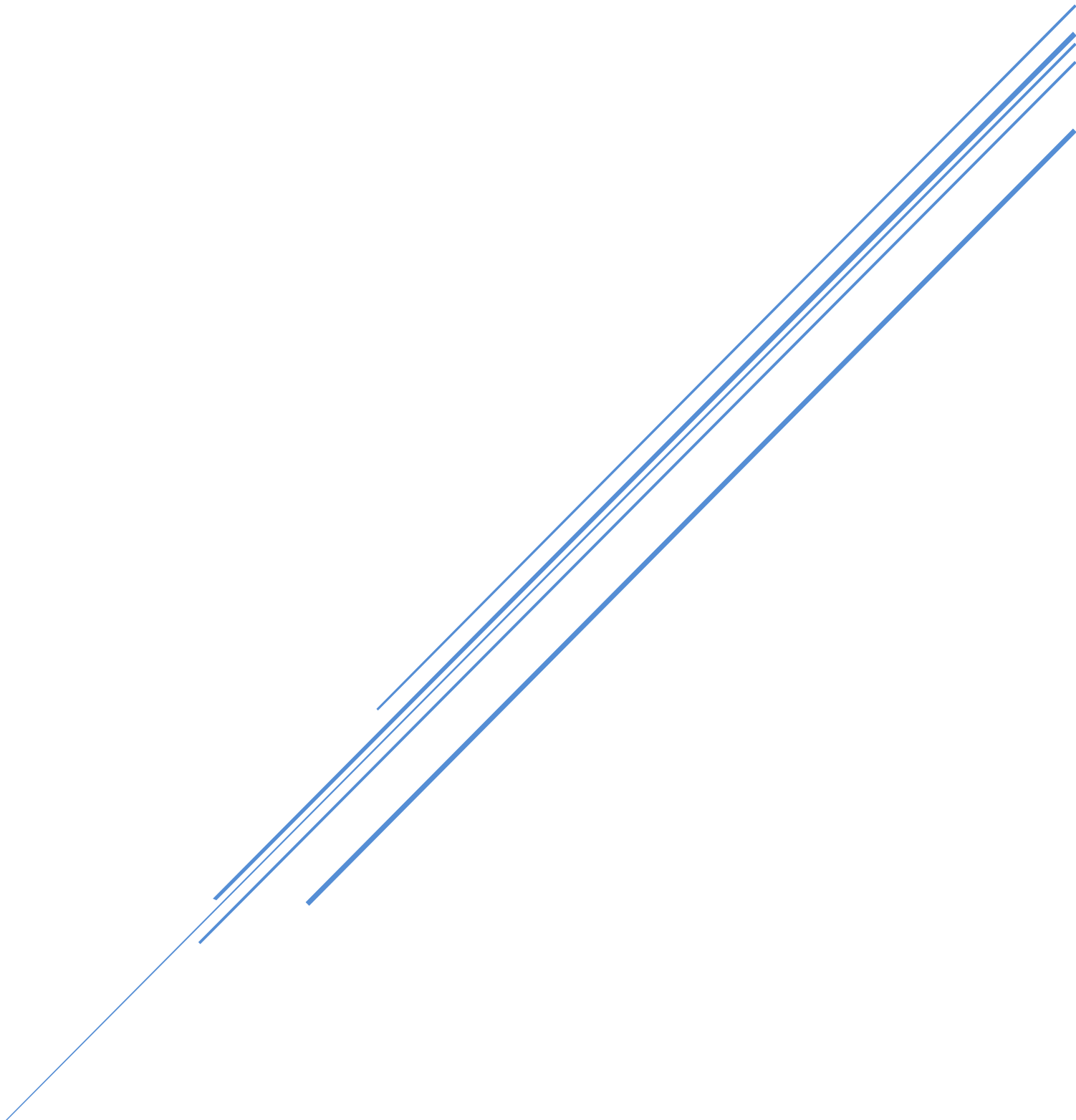


H.T.O.E ¹²⁰₈

A new way of assuring your health



Medical lab project by:

Name	ID
Mohamed Fawky	20201872
Amr Emad	20201856
Nour EL-Din	20201895

Supervised by:

Dr. Sayed Abdul Jaber

1. Introduction

A. Overview

This documentation is mainly about an online medical lab that has the same functionalities of the real-world medical lab plus its advantages. It takes laboratory data that are needed to test, examine, and analyze blood, body fluids, tissues and cells. The goal of this software is to take inputs or data from the user and turn them into knowledge that will be a report in pdf format. This documentation is used to help both stakeholders and developers to understand the requirements of the stakeholder, the developer, and even the system itself. This documentation will guide the users to enter the data correctly and use the software correctly; also, for developers to help them modify the software easily and without creating bugs or errors, and this will save more time and effort.

B. Purpose

This software is designed to make sure that users can know their information without moving or going to a medical lab. Instead of standing in a queue for a long time or waiting for your turn to test yourself, this software will save time and effort and paying will be handier and easier. The outlook of the software begins with a user entering his or her data. Then choosing a day to book a day to submit the samples. Then comes the online payment. After payment, determining day of the report receiving. The software is designed to be easy and user-friendly and can also be used by children. This document is not temporary at all, its updatable in case there is a new medical test.

C. Scope

This software is intended to book a day for taking the samples required from the users in order to test them, then comes the report day setting. And after the time period the user has defined, comes a report with a file extension of pdf that contains all the test outcomes.

D. Definitions & Acronyms

- HCT: is Hematocrit
- MCV: is the Mean Corpuscular Volume
- MCH: is the Mean Corpuscular Hemoglobin
- MCHC: is the Mean Corpuscular Hemoglobin Concentration
- GUI: Graphical user interface

- FBS: Fasting Blood Sugar
- RBS: Random Blood Sugar
- GTT: Glucose Tolerance Test
- KFT: Kidney Function Test
- RFT: Renal Function Test
- LFT: Liver Function Test
- U: Urea
- E: Electrolytes
- C: Creatinine
- CRP: C-Reactive Protein
- ASOT: Anti Streptolysin-O-Titer
- RH-F: Rheumatoid Factor
- Anti CCP: Anti-Cyclic Citrullinated
- B.G: Blood Group
- HCV: Hepatitis C Virus
- HBV: Hepatitis B Virus
- PCR: Polymerase Chains Reaction
- VDRL: Venereal Disease Research Lab Test
- HDL: High Density Lipoproteins
- GOT: Glutamic Oxaloacetic Transaminase
- GPT: Glutamyl Pyruvate Transaminase
- ALT: Alanine Aminotransferase
- GGT: Gamma Glutamyl Transferase
- ALP: Alkaline Phosphate
- CK: Creatinine Kinase
- CPK: Creatinine Phosphokinase
- LDH: Lactate Dehydrogenase

E. References

This documentation is based on requirements of:

1- Alfa Lab Egypt which located in 9 Houria Square- El Maadi- Cairo.

2-Al Manahel lab which located in 38 Abu Brek St- Sokar building- 1st floor- Al Basatein- New El Maadi- Cairo.

3-Reaya Lab which located in hamwi St- Beside the consumer association- 1st floor- Hadayek Helwan- Cairo

2. General requirements:

A. Product perspective

The goal of the product is to facilitate and ease the process of medical lab analysis by implementing a software for each department in the lab to allow it to be more productive and make the customer's/patient 's data accessible by him in anytime he wants

B. Product functions

The main functions of the product are to gain inputs from a customer and process these inputs to give outputs to help the manager, receptionist and the Analyst in their jobs in an online and offline way.

C. User characteristics

- Manager wants the data to be in graphs and readable.
- Analyst wants the data to be in tables and sections separated where the record of the analysis is corresponding to its value to avoid confusion.
- Receptionist wants an easy GUI to be easily access, edit or delete customer's forms and to be able to print and send the analysis paper to customers/patients.

D. General constraints

The product shall engage with small amount of data which will be given from the lab machines and the analyst and there must be a delay of 2 or 3 days for the samples to be analyzed.

The environment we are working in consists of three labs we took information from, The first lab is ALFA lab which have a powerful software,

The second one is Manahel lab which still new in the field and don't work on a software, And the third one is REAYA lab which contain a powerful software

All these labs helped us to create our environment and our powerful software.

E. Assumptions and dependencies

The product depends on the correctness of the data given by the lab machines, the program cannot change or check for errors done by any of the manager or analyst or the receptionist.

One of the assumptions is to change the style of the font and the size of the charts and tables depending on the liking of each department in the medical lab.

3. *Specific requirements:*

Specific Requirements consists of two categories:

1. Functional requirements
2. Non-Functional requirements

A. Functional requirements

There are a lot of functional requirements for this system which explains the interactions that the user controls.

For example:

- The user (The Receptionist) should insert the information of the customer (the patient) who wants to test any sample of his Name, Age, Phone number, Address, Type of analysis to be performed, etc.....
- Also the user should insert the data related to the employees (The doctors, their assistants and also the user himself) such as their attendance time, the tests that they had done and still doing, and should remark every patient with a code to prevent any defection and error that may happen in the results of the tests in order to ensure the safety of the patients.
- The doctors should receive the information of the patient from the receptionist to be able to understand the case of the patient and the type of test he wants to do, After the doctor finishes his shift he should make a report containing all the tests he did and send it directly to the receptionist to store these information until the time the patient receives the results.
- The patient is given the option to receive the results online if he could not come to the lab and receive the hard copy from there by sending it via WhatsApp or via Email or any other mean of communication.

B. Non-Functional requirements

There are a lot of non-functional requirements for this system which contains various processes.

For example:

- Availability: the system should be able to work 24/7 without any errors or defects.
- Every patient is remarked by a code that is chosen randomly by the system to prevent redundancy in the information.
- Security: the system should be well defended to make the information of the patients safe from being robbed.
- Maintainability: the system should be able to track and fix every error and every mistake by itself.
- Performance: the system should take very fast reactions due to the user's actions such as saving the data as soon as the user clicks the save button.

4. Appendices:

معامل الفا
LABORATORIES

شكراً لاختياركم معامل الفا

Name: الاسم الثلاثي
Date of birth: تاريخ الميلاد
Gender: ☐ Male ☐ Female نوع المريض ذكر ☐ أنثى
Address: العنوان
Tel: الموبايل
No of fasting hours: عدد ساعات الصيام
Referral Doctor: الطبيب المعالج
Diagnosis: التشخيص المبني للحالة

هل تأخذ علاج لـ؟ ضع علامة ✓

<input type="checkbox"/> الأمراض	<input type="checkbox"/> السيولة	<input type="checkbox"/> الغدة الدرقية	<input type="checkbox"/> لمرض السكر
<input type="checkbox"/> كورتيزون	<input type="checkbox"/> حديد	<input type="checkbox"/> فيتامينات (ب ١٢)	<input type="checkbox"/> مضاد حيوي
<input type="checkbox"/> أخرى.....	<input type="checkbox"/> فيتامين د	<input type="checkbox"/> انترفيرون	<input type="checkbox"/> بوتاسيوم

هل سبق نقل دم إليك ☐ متى:
هل تم حقنك بمادة مشعة في آخر ٤٨ ساعة ☐ نعم ☐ لا
هل سبق لسيادتك زيارة معامل الفا؟ ☐ نعم ☐ لا

خاص بالسيدات

هل يوجد حمل ☐ أول يوم في اخر دورة / / ٢٠٢٠
التحاليل المطلوبة (في حالة عدم وجود روسته)
رقم تليفون الشخص المسئول لابلأغه في حالة وجود نتيجة حرجية
إمضاء العميل
مكان الحفظ: لدى الفرع
مدة الحفظ: شهر
رقم الإصدار: ٤/١، التعديل: ٢٠١٥/ ٣/١ تاريخ الإصدار: ٢٠١٩/٨/٢١ صفحة ١/١ FRUW-16-01
Call Center 16191



Referred By:-

إ.د / عبد الحليم خطاب

Referred By:-

Req.NO 11095 Contract:-

individual name:

Req. Date:-

sex:-

Age:

Reporting Date :-

Liver Function Tests

Reference Range

Alk. phosphatase 90 - 270

174

Lab unit manager

Lab medical director

Prof. of. Dr. *Akbar*

5. Index:

1. <i>Page cover</i>	1
2. <i>Names and ID</i>	2
1. <i>Introduction</i>	3
a. <i>Overview</i>	3
b. <i>Purpose</i>	3
c. <i>Scope</i>	3
d. <i>Definitions & Acronyms</i>	4
e. <i>Resources</i>	5
2. <i>General Requirements</i>	5
a. <i>Product perspective</i>	5
b. <i>Product functions</i>	5
c. <i>User characteristics</i>	5
d. <i>General constraints</i>	5
e. <i>Assumptions and dependencies</i>	5
3. <i>Specific requirements</i>	6
a. <i>Functional requirements</i>	6
b. <i>Non-Functional requirements</i>	6
4. <i>Appendices</i>	7