Software Requirements Specification

for

TechMAG

Version 1.2 approved

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1. Introduction

1.1 Project Scope

TechMAG is an e-commerce web application. It was created with the aim of facilitating the purchase of electronic products, online, without the need for the customer to go to the showroom associated with the store.

The web application is addressed to the public that has access to the Internet and prefers to buy products online, saving time by ordering from TechMAG.

To facilitate the purchase of products from the TechMAG platform, PayPal payment has been integrated into the application.

1.2 Document Conventions

This Document was created based on the IEEE template for System Requirement Specification Documents. We used to write this document in Times New Roman font. For each chapter of this document that includes subchapters we used a font size equal to 18, bold and underline. The subchapters have a font size equal to 14 and bold. The description for each chapter or subchapter has a font size equal to 12.

1.3 Intended Audience and Reading Suggestions

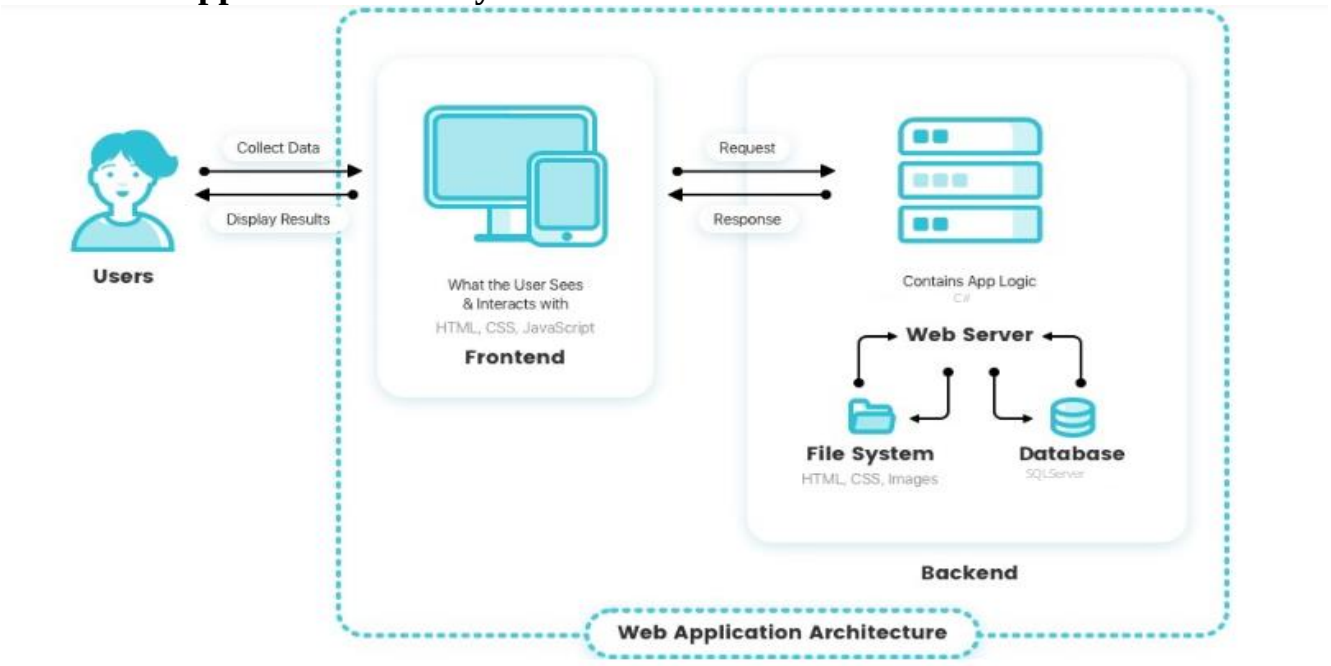
This document is intended for all groups of people who will have contact with thisapplication. Obviously, each person follows certain information related to this application.
Each person should read the general presentation of the project to find out what it supposes and what objectives have. The types of audience for this document are the following: users, developers, administrator, and documentation writer.

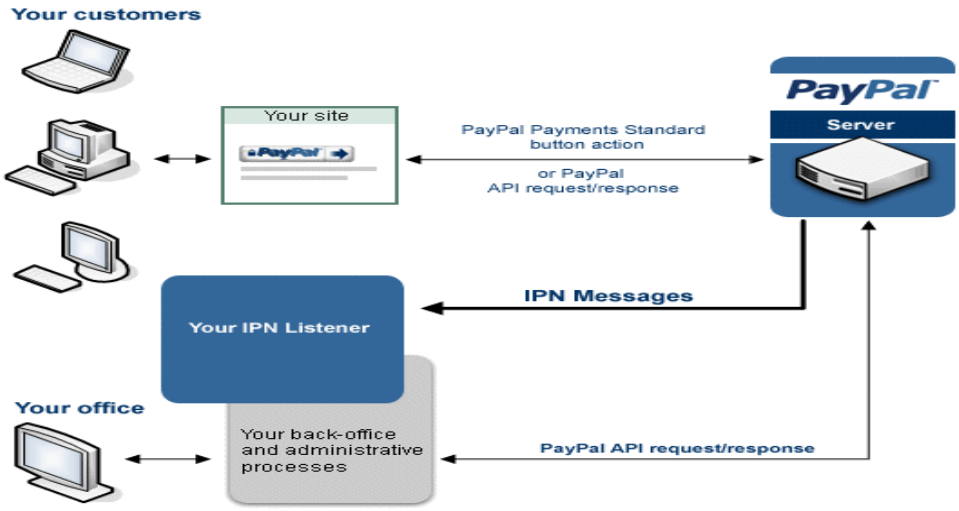
2. Overall Description

2.1 Product Perspective

TechMAG is a web application and is part of the standalone category, so it is not part of a larger system. It contains an easy-to-use and user-friendly interface, making it very easy to buy products through the application.

Web application and PayPal architecture:





2.2 Product Features

The application has the following functions:

1) Sign-up
2) Login and logout
3) Edit customer profile
4) Shopping cart configuration
5) Payment via PayPal
6) Add/edit/delete products and categories
7) Search bar for products
8) Sorting and filtering

2.3 User Classes and Characteristics

The application has 2 user classes:

- administrator
- customer

The administrator has the role of checking product stocks, adding new products, categories, discounts. The administrator can change the offers from the home page.

The customer can create an account, configure his own profile, add products to the shopping cart and complete the payment via PayPal.

2.4 Operating Environment

Each user that wants to use application must have any device that can be connected to the internet and support of web browser like: Windows 8, Windows 8.1, Windows 10, 64-bit Ubuntu 14.04+, Linux 24+, macOS Sierra 10.12, Android 9 or later.

2.5 Design and Implementation Constraints

As a first constraint of the TechMAG application, it is an internet connection to be used. So, the internet connection is crucial for accessing the application, and the user should benefit from a minimum 3G internet speed (3Mbps) or for a better experience to use the application, the speed of 4G (100Mbps) is required.

The TechMAG application is developed in C# and therefore requires at least a 64-bit operating system, such as Windows 10 64-bit with .NET Core SDK installed, Windows SQL Server.

	Front-end	Back-end
Programming languages	HTML5, CSS3, JavaScript ES 6+	C# V8.0
Frameworks	Bootstrap v4	.NET Core 6.0.10
Data Base	Microsoft SQL Server	

3. System Features

This section demonstrates the most important features of the TechMAG application.

3.1 Administrator functions

3.1.1 Description

The administrator is responsible for product inventory management. It can also add new products and create new categories.

The administrator has to login with an email and a password.

3.1.1 Functional Requirements

REQ-1: Change daily offer from home page
REQ-2: Add/edit/delete products
REQ-3: Add/edit/delete categories
REQ-4: View the full list of products
REQ-5: View the list of sells
REQ-6: Check stocks
REQ-7: View the order list

3.2 Customer functions

3.2.1 Description

The customer can view the list of products and categories on the website, but to configure his profile or add products to the shopping cart, he must be authenticated, and if he does not have an account, he can register.

3.2.2 Functional Requirements

REQ-1: Edit profile
REQ-2: Configure the shopping cart
REQ-3: View all products from a category
REQ-4: Search by products name
REQ-5: Sort by products price/alphabetic
REQ-6: Can view average student grades per project
REQ-7: Completing the payment via PayPal

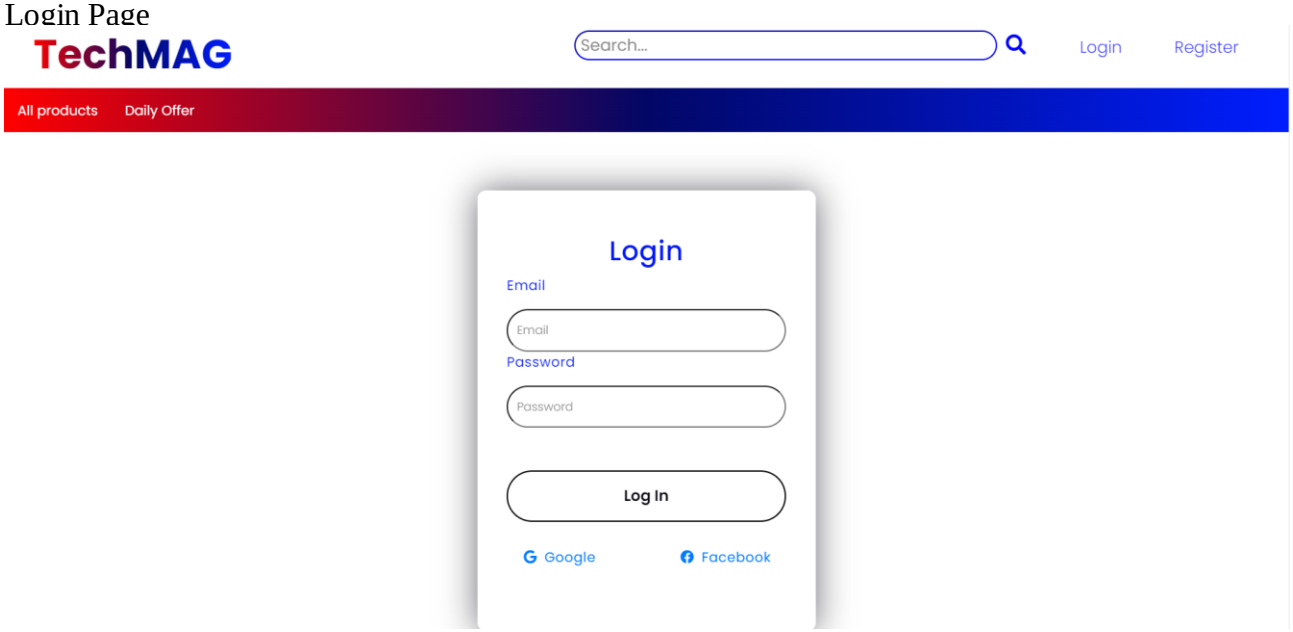
4. External Interface Requirements

4.1 User Interfaces

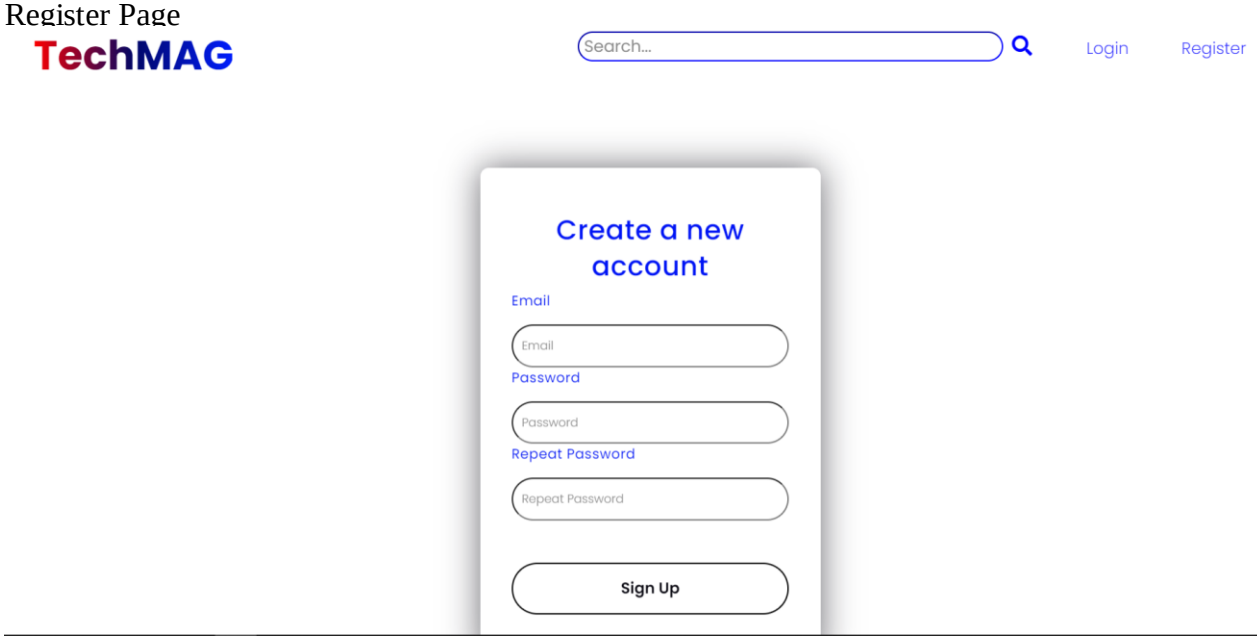
The user will need to enter the email and the password they have received from the administrator, or if he is the administrator, authenticate themselves with their data.

Home Page.

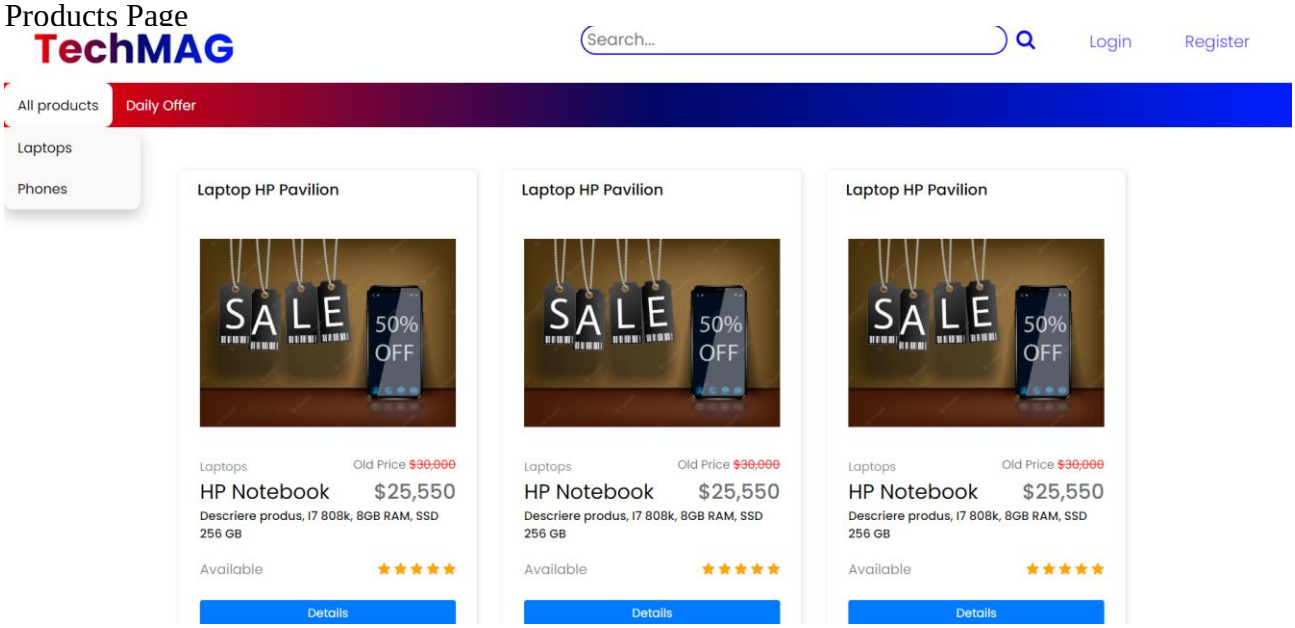
Login Page



Register Page



Products Page



4.2 Hardware Interfaces

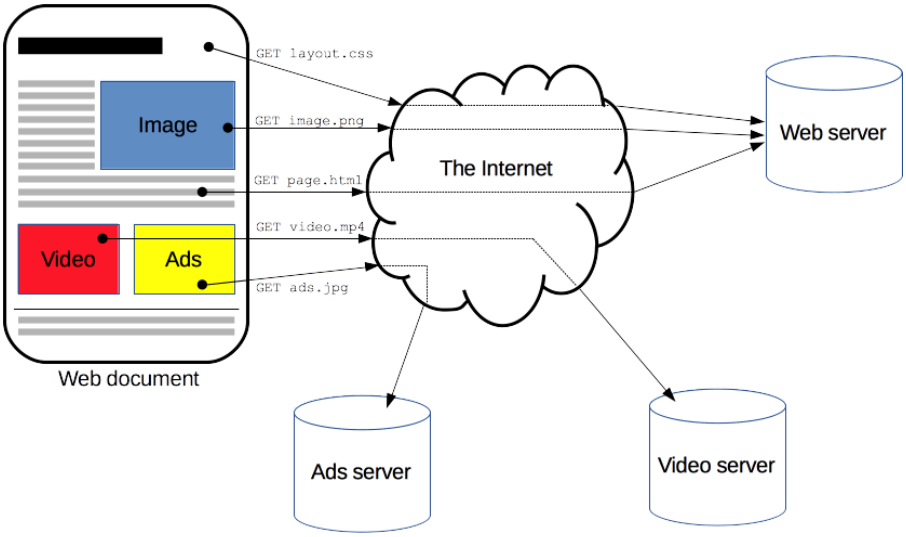
The system runs on a device with 8GB RAM, an I5 8260U processor with an internal memory of 256GB SSD, and it is based on a Windows 10 Pro 64 bit.

4.3 Software Interfaces

The web application API is designed in ASP.Net Core which connects to the Microsoft SQL Server. Entity Framework Core is used to achieve relational model of the database inside the application.

4.4 Communications Interfaces

HTTP is a protocol for fetching resources such as HTML documents. The request betweenclient and server are managed through HTTP communication protocol.



5. Other Nonfunctional Requirements

5.1 Performance Requirements

The application should load in less than 5 seconds after accessing it for the first time.

	WINDOWS REQUIREMENTS	MAC REQUIREMENTS	LINUX REQUIREMENTS
OPERATING SYSTEM	Windows 8 or higher	macOS Sierra 10.12 or higher	64-bit Ubuntu 14.04+ Debian 8+, openSUSE 13.3+ or Fedora Linux24+
PROCESSOR	Intel Pentium 4 or higher	Apple M1	Intel Pentium 4 or higher
MEMORY RAM	Minimum 4GB RAM, 8GB recommended		
SCREEN RESOLUTION	Minimum 1280x1024		
INTERNET	Required (minimum 3Mbps)		

CONNECTION	

5.2 Safety Requirements

Not applicable

5.3 Security Requirements

1. When storing the password in the database, it will be passed through a Hash function and will be encrypted for better security.
2. For good data security, the password will respect a regex pattern, more precisely "(?!.*)(?=.*\d)(?=.*[a-z])(?=.*[A-Z]). {8,}"which restricts the password to contain a number, an uppercase letter, lowercase letters, and the length of the password to be at least 8 characters.
3. User payment data will not be stored. They will have to be entered every time to make the payment.
4. The password will always be hidden when you log in to the site.

5.4 Software Quality Attributes

Code writing:
1. Braces are used together with if, else, for, do and while, even if they preceded an empty "body", ora single statement.
2. Each instruction is written on a line.
3. Each variable declaration contains only one variable. A statement like int a, b; is not used.
4. Only one space (line) is allowed between instructions to write an ordered code, organized inlogical sections.
5. The methods will be commented if the code becomes ambiguous.
6. All variables will be declared before their use.
7. The variables will have the date type so that there are no compilation errors.
8. Variable names longer than thirty-five characters will not be used.
9. All variables will have a name with a certain meaning, so the ambiguity is removed.