



Universidad Tecnológica de Tijuana

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Career: IT Multiplatform Software Development

Subject: Application Development

Work: Software Requirements Specification

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1. Introduction

This document contains a Software Requirements Specification (SRS) for an Industrial Maintenance Management system. The document has been structured based on the guidelines given by the IEEE 830 standard.

1.1 Purpose

The purpose of this document is to define the functional and non-functional specifications for the development of an Industrial Maintenance Management system, which will allow the management of different administrative aspects, which will be intended for the use of those responsible for carrying out the activities for which this system is made.

1.2 Project Scope

This requirement specification is aimed at the system user, to continue with the development of software to manage the maintenance of industrial equipment, allowing order and form to be given to the activities carried out by the end customer, which are mainly the management of the different administrative processes (equipment maintenance).

1.3 Personnel Involved

Name	Bojorquez Barraza Jesus Alejandro
Role	Documenter, Data analyst
Professional Category	TSU-DSM
Responsibility	Project documentation and processes.
Contact	0323105855@ut-tijuana.edu.mx

Name	Miramontes Gutiérrez Rodolfo Manuel
Role	Programmer, Designer
Professional Category	TSU-DSM
Responsibility	System programming and design
Contact	0323105953@ut-tijuana.edu.mx

Name	Ponce Zeferino Alann Eduardo
Role	Documenter, Designer
Professional Category	TSU-DSM
Responsibility	Project documentation and system design
Contact	0323106281@ut-tijuana.edu.mx

1.4 Definitions, acronyms and abbreviations

Name	Description
User	Person who will use the system to manage equipment maintenance.
SRS	Software Requirements Specification

1.5 References

Title	Reference
Standard IEEE 830 - 1998	IEEE

1.6 Summary

This document consists of multiple sections. The first section will introduce the project and provide a more general overview of the system's resource specifications. The second section will provide an overview of the product, where you will learn about the system, with the purpose of learning about the main functions it seeks to satisfy.

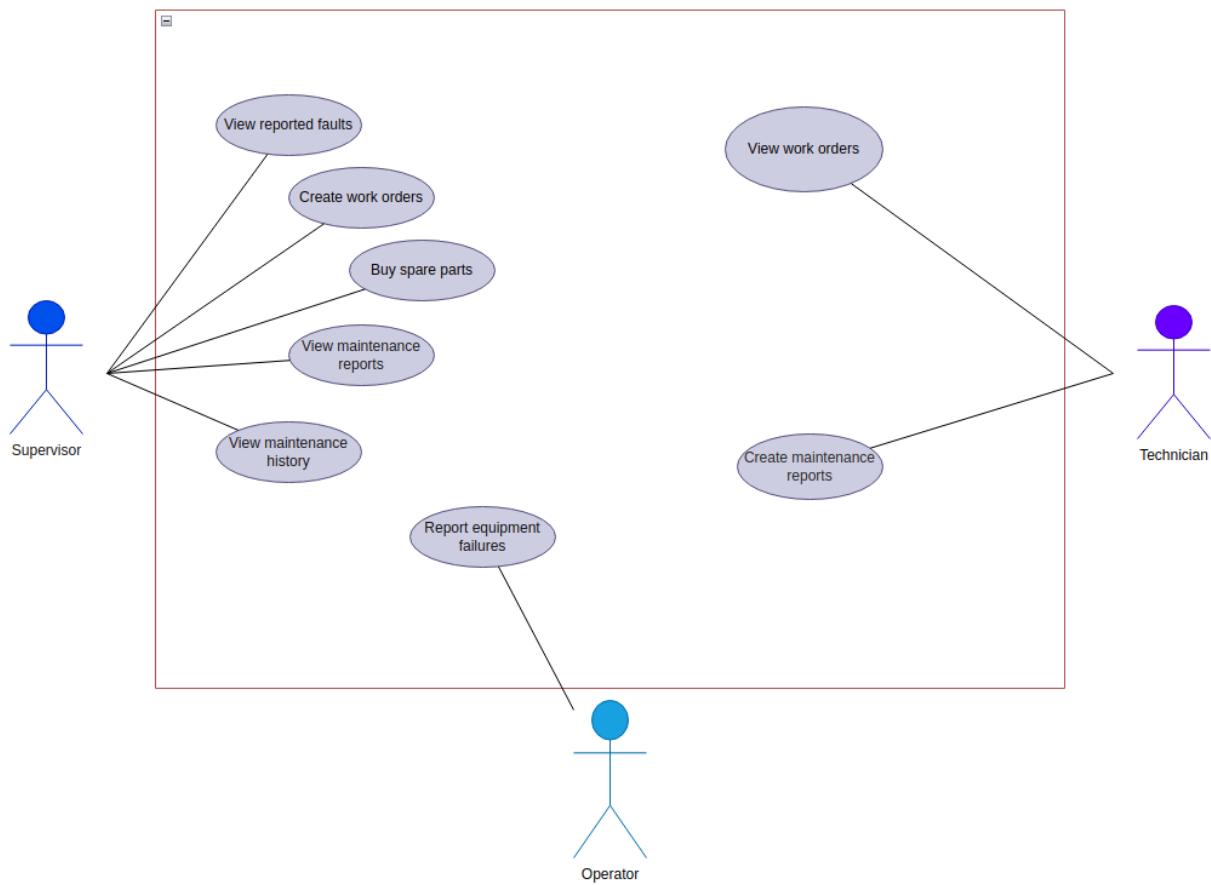
It will also contain a section where the specific and non-specific requirements of the system are defined in detail.

2. General Description

2.1 Product Perspective

An industrial equipment maintenance management system focuses on improving the performance of industrial equipment by planning and monitoring maintenance activities. This system integrates a database with information about each piece of equipment, including technical specifications and maintenance history, and allows the scheduling of preventive and corrective tasks. It includes tools for the correct assignment of maintenance as well as better management of the same. As well as the creation and monitoring of equipment maintenance activities. In addition, it facilitates the monitoring of equipment performance, generating alerts and notifications for the prevention or correction of defects or risks.

2.2 Use Case Diagram



2.3 User characteristics

User type	Programmer
Training	Worker
Activities	Programming, management and handling of the system.

User type	Client
Training	Owner
Activities	System control and management.

2.4 Restrictions

- Languages and technologies in use: HTML, CSS, PHP, SQL
- Web interface
- The server must be able to store the data requested by the client as well as the machines, and must also work efficiently when adding, deleting or modifying the stored information.

2.5 Assumptions and dependencies

- The equipment on which the system is run must be suitable for using 100% of its functionalities.

3. Specific Requirements

Functional Requirements

Requirement Identification:	FR 01
Requirement Name:	Machine management
Characteristics:	The system will allow recording and editing information on industrial equipment.
Requirement Description:	Allows the administrator to register new equipment, as well as update information about existing equipment.
Priority of the Requirement	High

Requirement identification:	FR 02
Requirement Name:	Maintenance Scheduling
Characteristics:	The system will allow preventive and corrective maintenance to be scheduled.
Requirement Description:	Users can schedule, view and modify dates for preventive or corrective maintenance.
Priority of the Requirement	High

Requirement identification:	RF 03
Requirement Name:	Maintenance Reports
Characteristics:	The system will generate detailed reports of maintenance activities.
Requirement Description:	Administrators will be able to generate and export reports with information such as date, equipment or type of maintenance.
Priority of the Requirement	High

Requirement identification:	FR 04
Requirement Name:	Machine status
Characteristics:	The system will display a panel with the status of the equipment.
Requirement Description:	Provides a view of the status of equipment, including those that require immediate maintenance.
Priority of the Requirement	High

Requirement identification:	FR 05
Requirement Name:	Maintenance notification
Characteristics:	The system will send automatic alerts to users before the scheduled maintenance date.
Requirement Description:	Users will receive notifications when the maintenance date for a device is approaching.
Priority of the Requirement	High

Requirement identification:	FR 06
Requirement Name:	Maintenance Schedule
Characteristics:	The system will include a calendar showing all assigned maintenance dates.
Requirement Description:	It will allow users to view and manage all scheduled maintenance dates for each piece of equipment in the system.
Priority of the Requirement	High

Requirement identification:	FR 07
Requirement Name:	Maintenance history log
Characteristics:	The system will allow you to store maintenance history
Requirement Description:	Allows the administrator to consult information related to maintenance already done, being able to see the date, what was done and who did it.
Priority of the Requirement	High

Requirement identification:	FR 08
Requirement Name:	Spare parts inventory management
Characteristics:	The system will allow inventory management.
Requirement Description:	Allows you to control the stock of spare parts, as well as the tools used
Priority of the Requirement	High

Requirement identification:	FR 09
Requirement Name:	Report generation
Characteristics:	The system will allow you to generate maintenance reports
Requirement Description:	Allows the technician to generate reports about maintenance, noting the failure, and new parts
Priority of the Requirement	High

Non-functional requirements

Requirement identification:	NFR 01
Requirement Name:	Security
Characteristics:	The system will guarantee the security of the information.
Requirement Description:	Guarantee the security of the information that circulates in the program, preventing possible intruders from accessing it.
Priority of the Requirement	High

Requirement identification:	NFR 02
Requirement Name:	Scalability
Characteristics:	The system will be scalable.
Requirement Description:	Have the possibility of increasing the size of the program, made to adapt to greater volumes of data and users.
Priority of the Requirement	Average

Requirement identification:	NFR 03
Requirement Name:	Portability
Characteristics:	The system will be portable.
Requirement Description:	That the program can run on different platforms.
Priority of the Requirement	Low

Requirement identification:	NFR 04
Requirement Name:	Efficiency
Characteristics:	The system will be efficient in its use.
Requirement Description:	The program should be efficient, avoiding slowness or unexpected closures that affect the user experience.
Priority of the Requirement	High

Requirement identification:	NFR 05
Requirement Name:	Reliability
Characteristics:	The system will be reliable.
Requirement Description:	The program should not be prone to errors, slowdowns, or sudden crashes, ensuring continuous operation.
Priority of the Requirement	High

Requirement identification:	NFR 06
Requirement Name:	Usability
Characteristics:	The system will be easy to use.
Requirement Description:	The program should be easy to use and understand, maintaining a simple interface so that both the administrator and the client can use it without difficulties.
Priority of the Requirement	High

3.1 Common requirements of interfaces

3.1.1 User interfaces

The user interface will consist of a window. The window will be displayed on the computer the user is using and will feature highly descriptive texts about what is happening in each section of the program, along with usage instructions so that the user can use the program without difficulties.

3.1.2 Hardware interfaces

It will be necessary to have computer equipment in perfect condition with the following characteristics:

- Network adapters
- 1.66GHz or higher processor
- Minimum memory of 256Mb
- Mouse
- Keyboard

3.1.3 Software interfaces

- Web application

3.1.4 Communication interfaces

The servers, users and computers will be able to communicate with each other through standard Internet protocols, in order to communicate between the database and the computing equipment.

3.2 Functional requirements

- Team management

Allows the administrator to register new computers, as well as update the information on existing equipment.

- Maintenance Schedule

The system will allow preventive and corrective maintenance to be scheduled, users can schedule, view and modify dates for preventive or corrective maintenance.

- Equipment inventory

The user will be able to consult the information related to the inventory of the rental of the rooms, such as the rooms themselves, equipment, services, etc.

- Maintenance Reports

Administrators will be able to generate and export reports with information such as date, equipment or maintenance type.

- Machine status

Provides a view of the status of computers, including computers that require immediate maintenance

- Maintenance notification

Users will receive notifications when the maintenance date for a piece of equipment is approaching and that technicians are prepared for maintenance

- Maintenance Schedule

It will allow users to view and manage all scheduled maintenance dates for each piece of equipment in the system.

- Maintenance history log

Allows the administrator to consult information related to maintenance already done, being able to see the date, what was done and who or who did it.

- Spare parts inventory management

It allows you to control the stock of spare parts, as well as the tools used for maintenance.

- Report generation

It allows the technician to generate reports about maintenance, noting the failure, and new parts that were needed.

3.3 Non-functional requirements

- Security

Guarantee the security of the information that circulates in the program, preventing possible intruders from accessing it.

- Scalability

Have the possibility of increasing the size of the program carried out.

- Portability

That the program can run on different platforms.

- Efficiency

That the program is efficient in its use, this is described in that the program does not become slow or prone to closures for the user.

- Reliability

That the program is not prone to errors, slowness and sudden closures.

- Usability

That the program is easy to use and understand, maintaining an interface with a simple design so that the administrator and the client can use the program without much difficulty.

Implementation of packages for easy choice of services oriented to the type of event.

4. Attachments

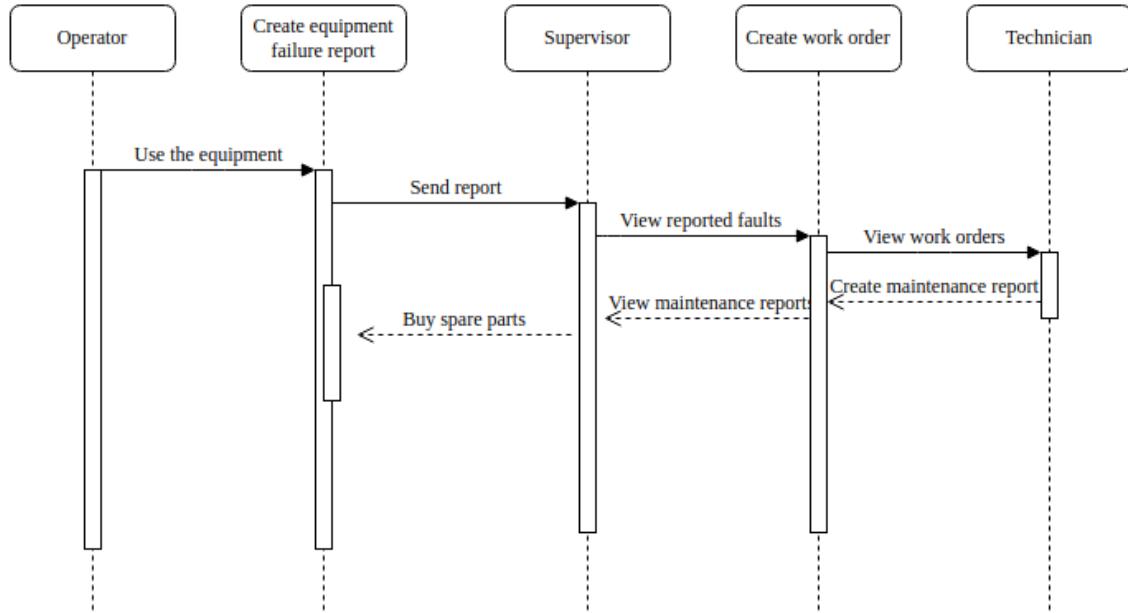
4.1 Use cases

Name	Report Equipment Failures
Author	Rodolfo Manuel Miramontes Gutierrez
Date	20/09/24
Description	The operator reports a failure detected in any equipment within the system.
Actors	Operator
Preconditions	The operator must be authenticated and have access to the failure reporting module.
Normal flow	<ul style="list-style-type: none">• The operator logs into the system.• Navigates to the failure reporting module.• Completes the form with the details of the failure.• Confirms the information and submits the report.• The system records the failure.
Alternative flow	<ul style="list-style-type: none">• If the details are insufficient, the system requests additional information.• The operator enters the missing details and resubmits the form.
Postconditions	The failure is registered in the system and available for review by supervisors and technicians.

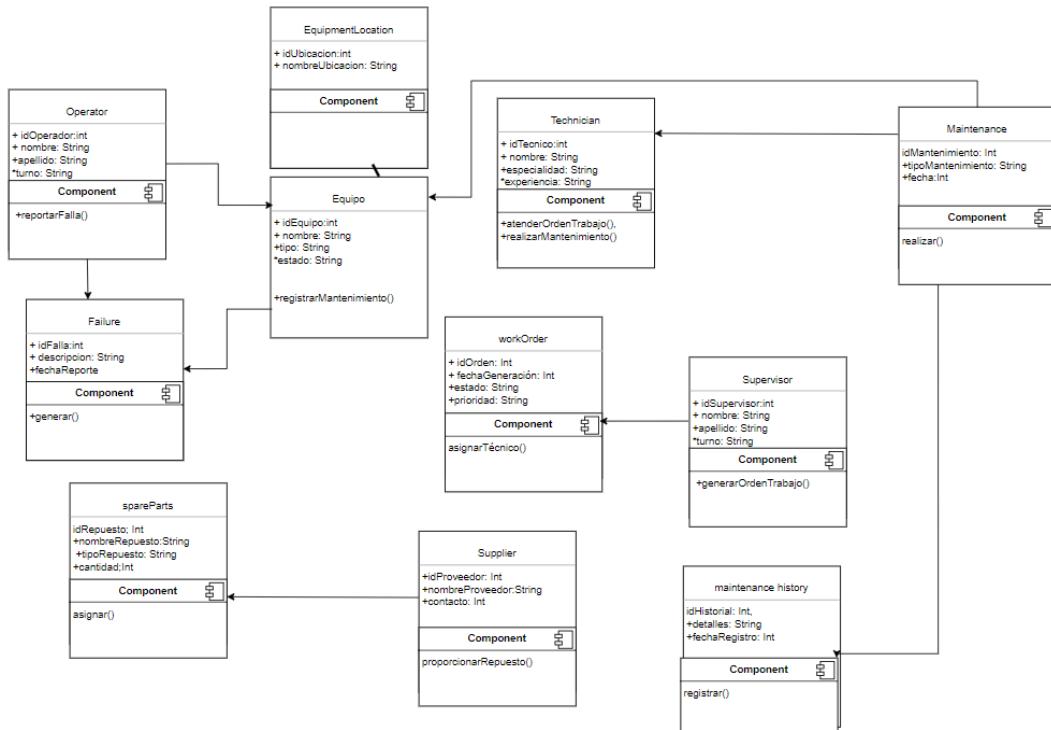
Name	View Reported Failures and Manage Maintenance
Author	Jesus Alejandro Bojorquez Barraza
Date	21/09/24
Description	The supervisor views reported failures, creates work orders, purchases spare parts, and reviews maintenance reports and histories.
Actors	Supervisor
Preconditions	The supervisor must be authenticated and have permissions to manage failures and maintenance.
Normal flow	<ul style="list-style-type: none"> Logs into the system and views reported failures. Selects a failure to create a work order. Assigns technicians and necessary resources for the work order. Purchases spare parts if needed. Accesses maintenance reports and histories.
Alternative flow	<ul style="list-style-type: none"> If a needed spare part is out of stock, the system offers the option to order it from external suppliers. If a work order cannot be assigned immediately, the system notifies the supervisor to reschedule or adjust resources.
Postconditions	Work orders are created and reports and histories are updated correctly.

Name	Manage Work Orders and Create Maintenance Reports
Author	Alann Eduardo Ponce Zeferino
Date	21/09/24
Description	The technician views assigned work orders, performs maintenance, and creates reports of the completed work.
Actors	Technician
Preconditions	The technician must be authenticated and have at least one work order assigned.
Normal flow	<ul style="list-style-type: none"> • The technician logs into the system and views assigned work orders. • Selects a work order and reviews the details. • Completes the maintenance according to the specifications of the work order. • After completion, accesses the report module and completes the maintenance report. • Submits the report for review and archiving.
Alternative flow	<ul style="list-style-type: none"> • If additional issues are found during maintenance, updates the work order and notifies the supervisor to adjust the planning.
Postconditions	The work order is updated with the maintenance report, and all relevant data is recorded in the system.

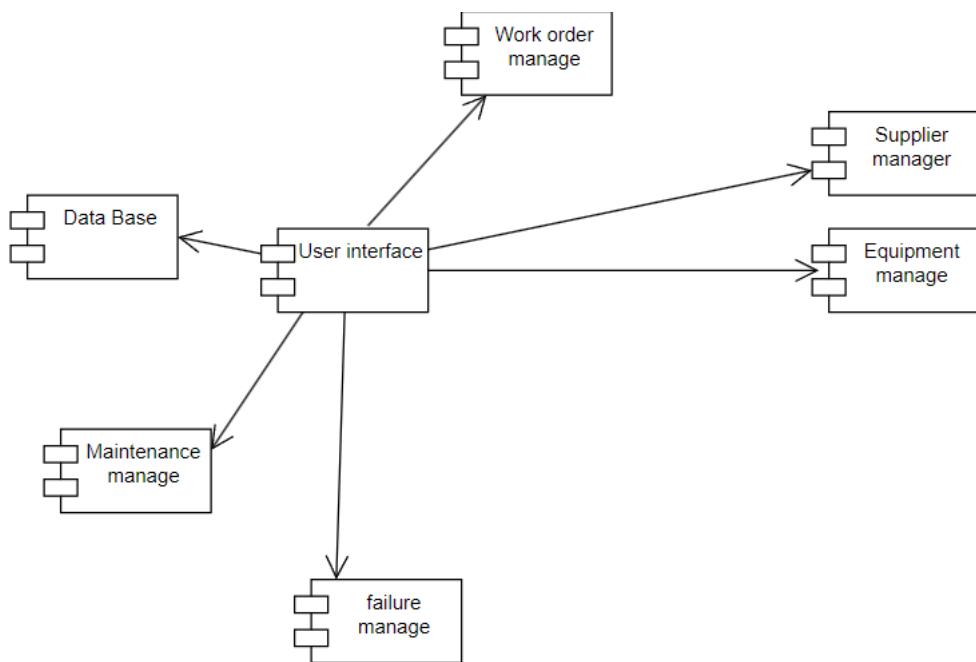
4.2 Sequence diagram



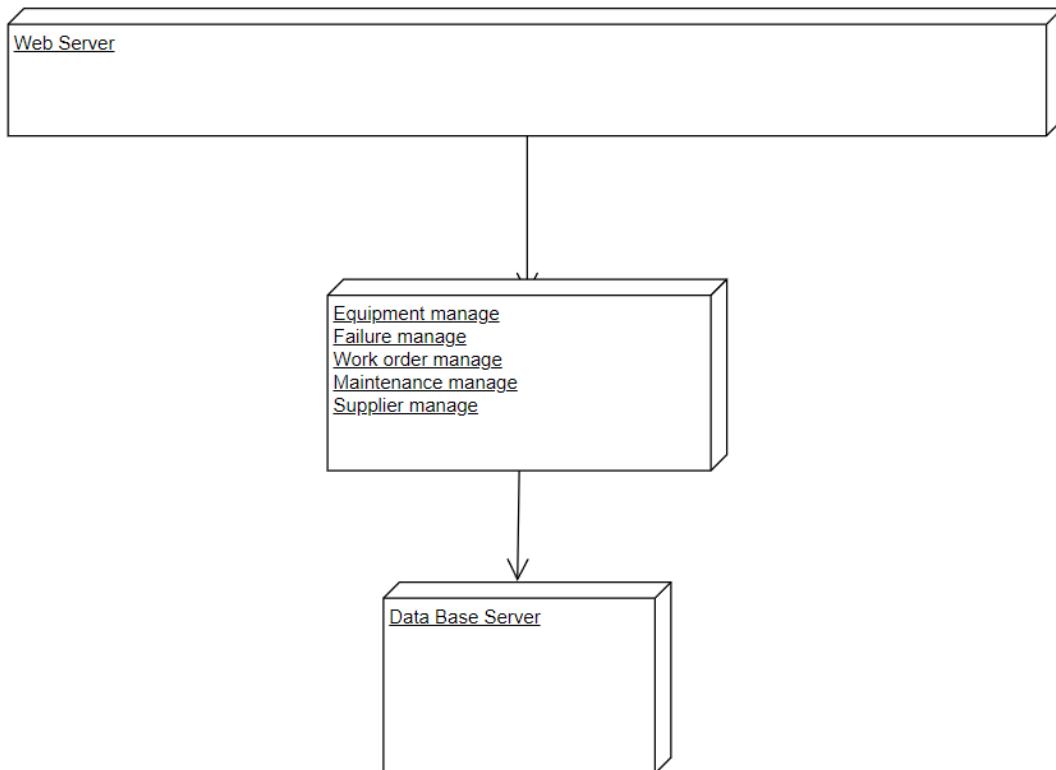
4.3 Class diagram



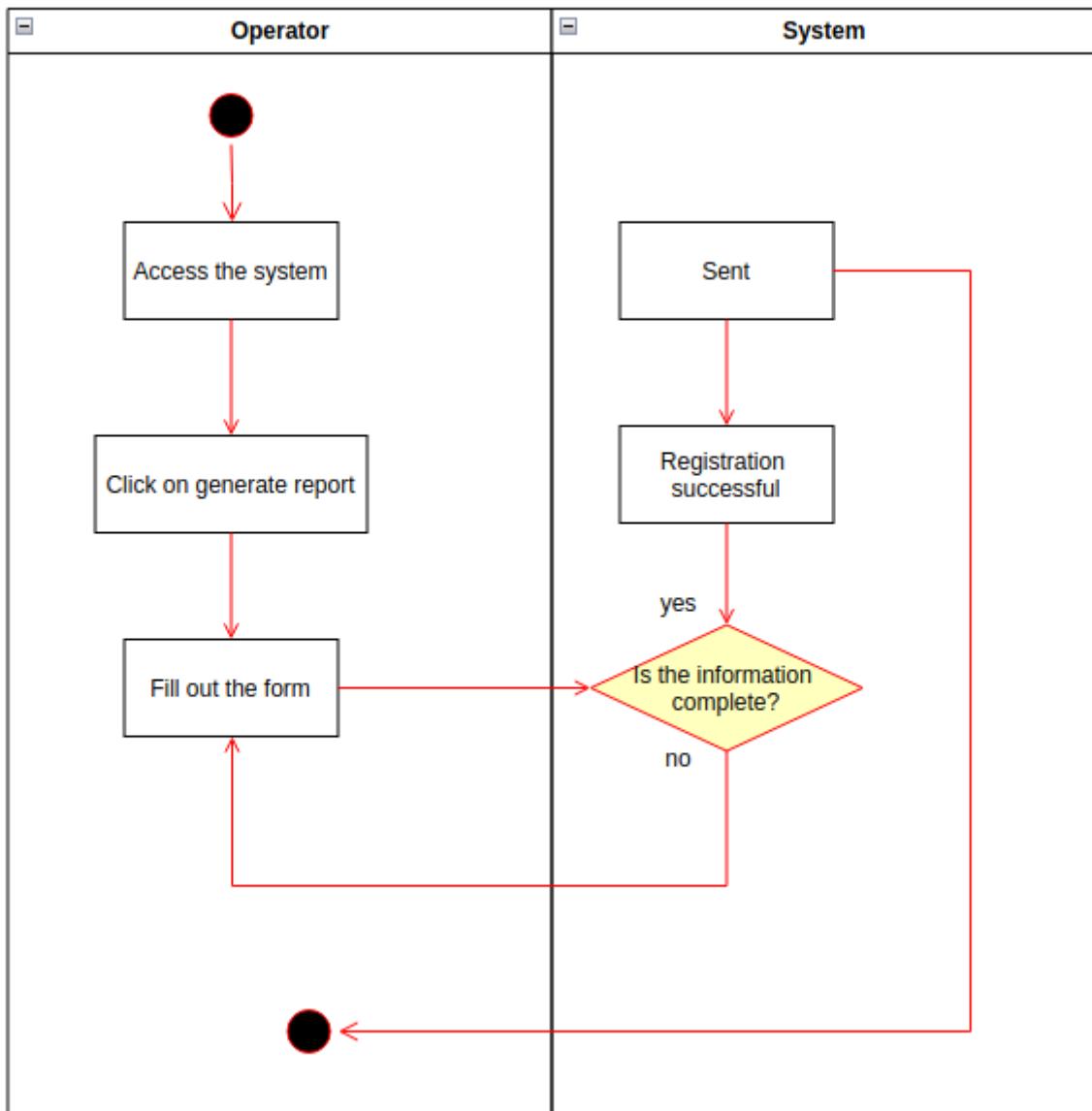
4.4 Component diagram

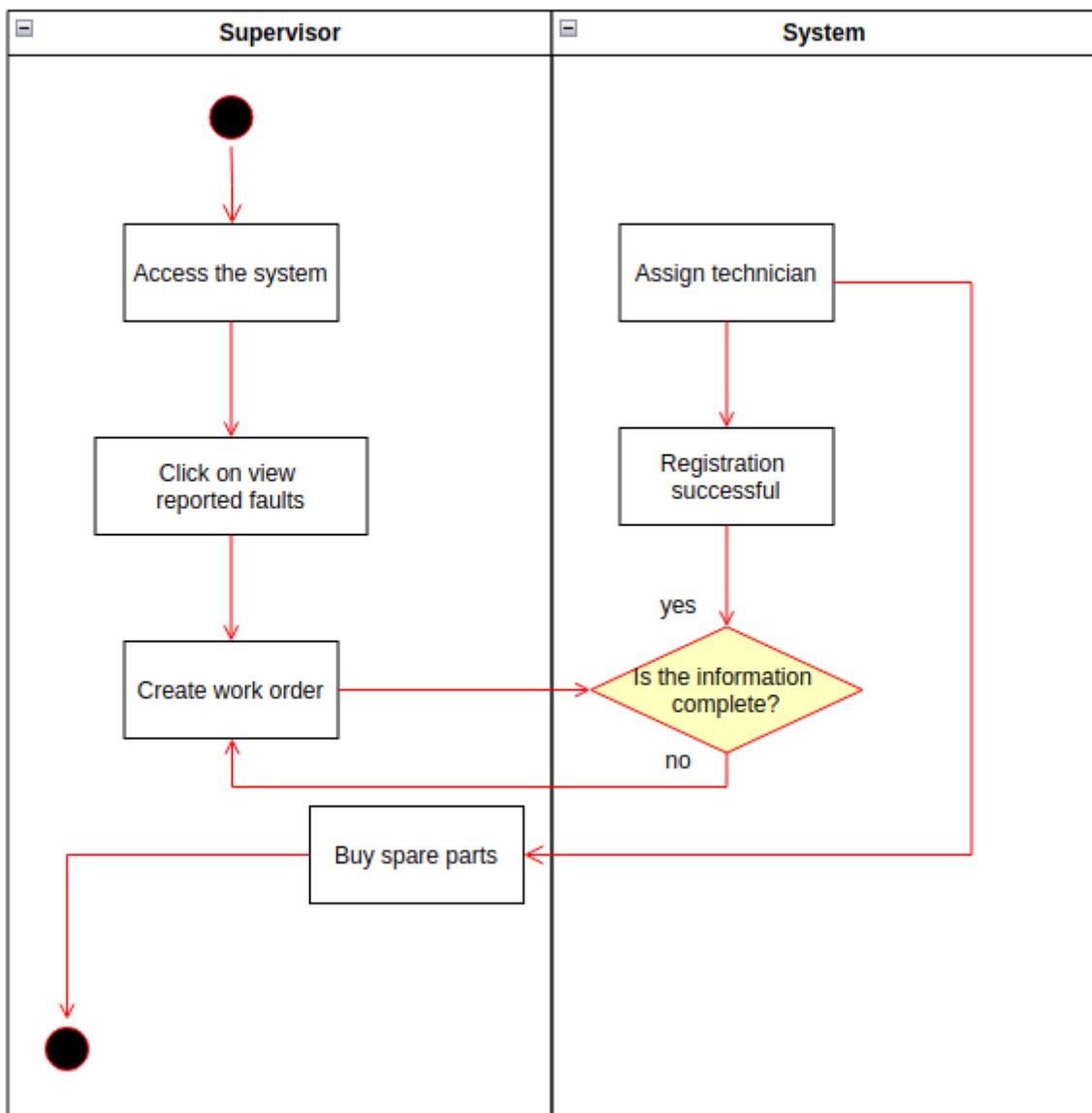


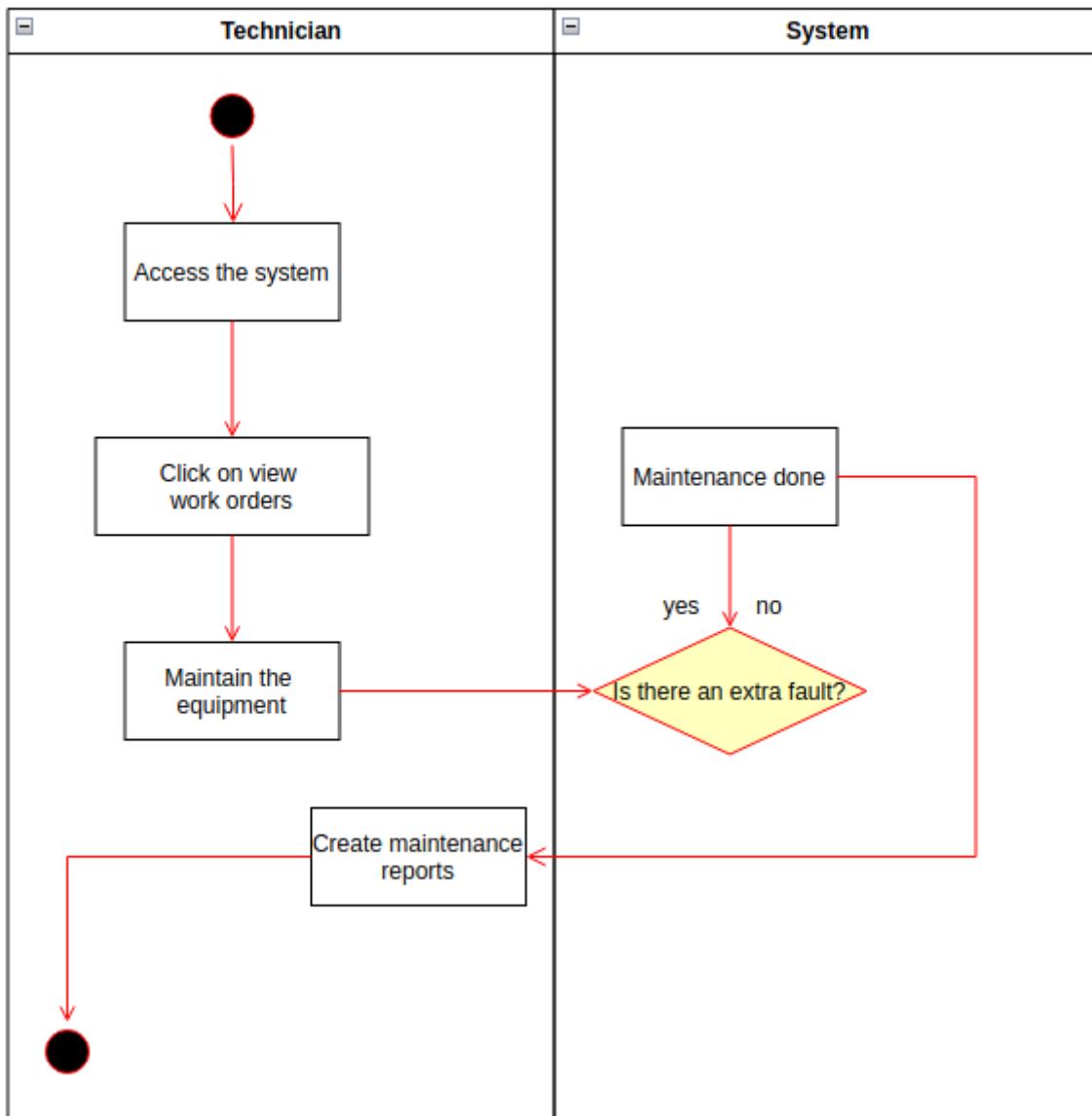
4.5 Deployment diagram



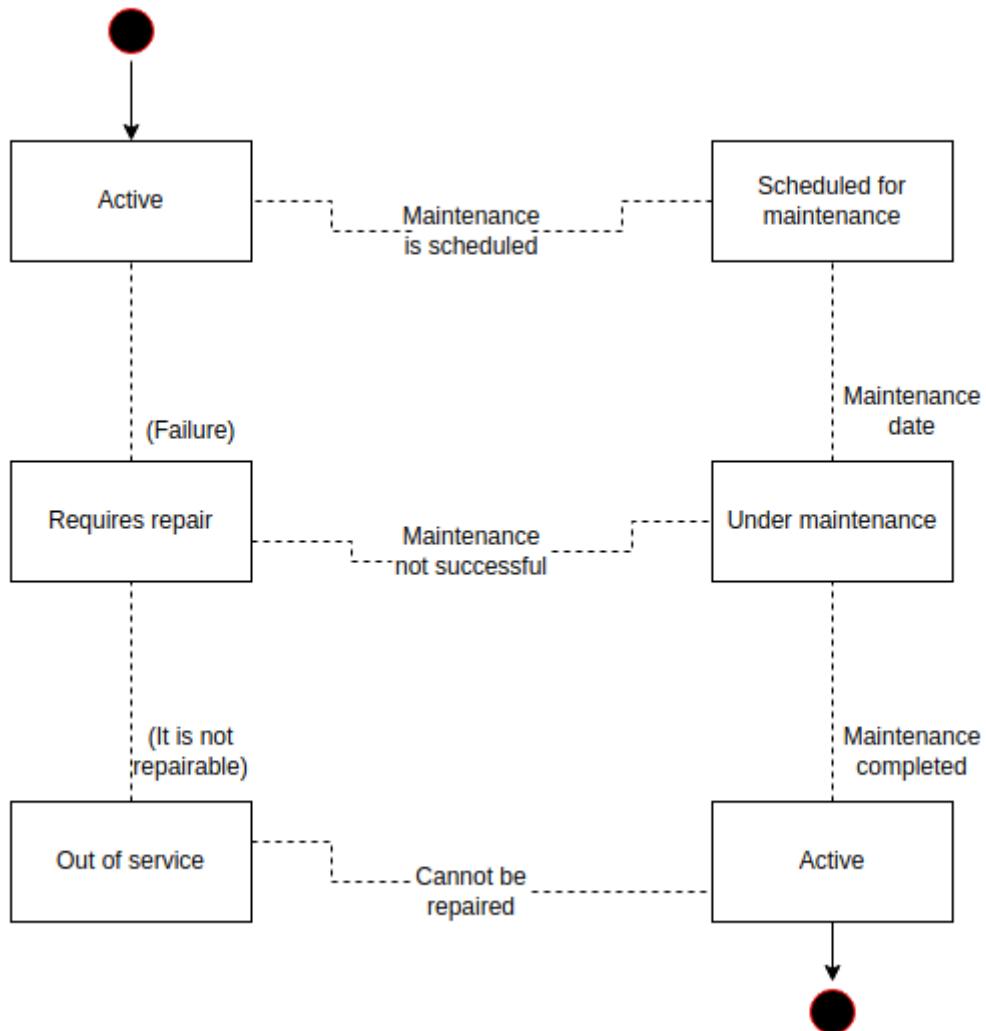
4.6 Activity diagram



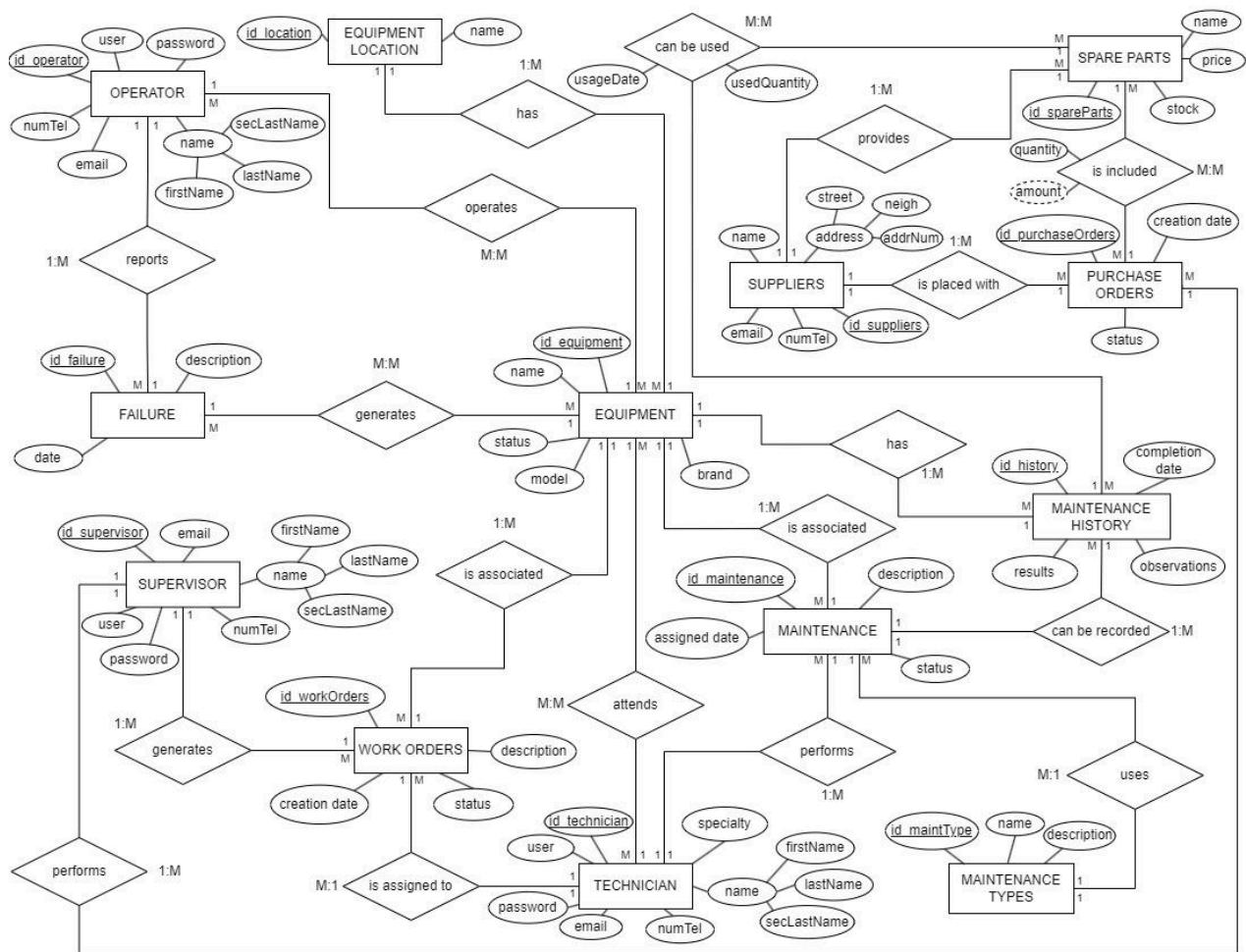




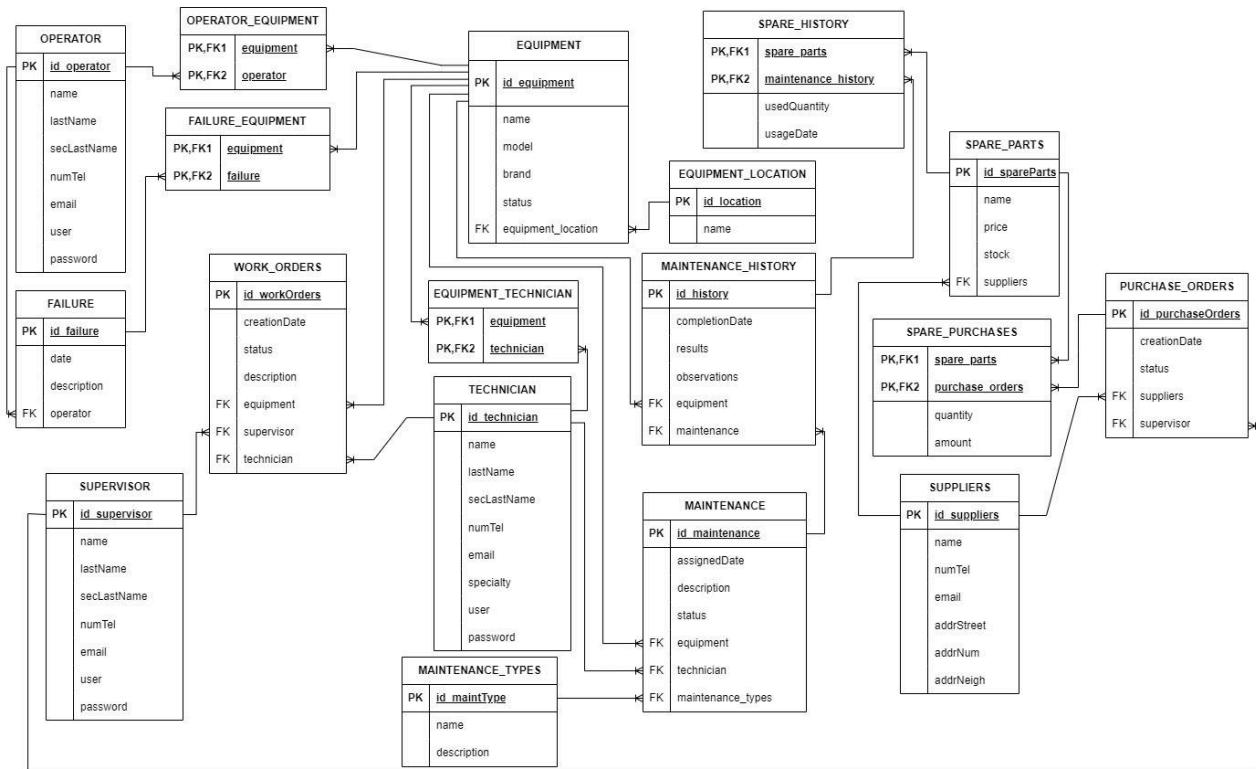
4.7 State diagram



4.8 Entity-Relationship Diagram



4.9 Relational model



5.0 Coding

Operator Register

This file contains an HTML form that allows users to register new operators in the system. Form fields include first name, last name, phone number, email, username, and password.

```
1 <?php
2     include 'includes/header.php';
3     require "../NewProject/includes/config/database.php";
4
5     $db = conectarDB();
6
7     if ($_SERVER['REQUEST_METHOD'] === 'POST') {
8         $name = $_POST['name'];
9         $lastName = $_POST['lastName'];
10        $secLastName = $_POST['secLastName'];
11        $numTel = $_POST['numTel'];
12        $email = $_POST['email'];
13        $user = $_POST['user'];
14        $password = $_POST['password'];
15
16        $sql = "INSERT INTO operator (name, lastName, secLastName, numTel, email, user, password) VALUES (?, ?, ?, ?, ?, ?, ?)";
17        $stmt = $conn->prepare($sql);
18
19        if ($stmt === false) {
20            die("Error en la preparación de la consulta: " . $conn->error);
21        }
22
23        $stmt->bind_param("sssssss", $name, $lastName, $secLastName, $numTel, $email, $user, $password);
24
25        if ($stmt->execute()) {
26            echo "Nuevo operador registrado exitosamente.";
27        } else {
28            echo "Error: " . $stmt->error;
29        }
30
31        // Cerrar conexión
32        $stmt->close();
33        $conn->close();
34    }
35 ?>
```

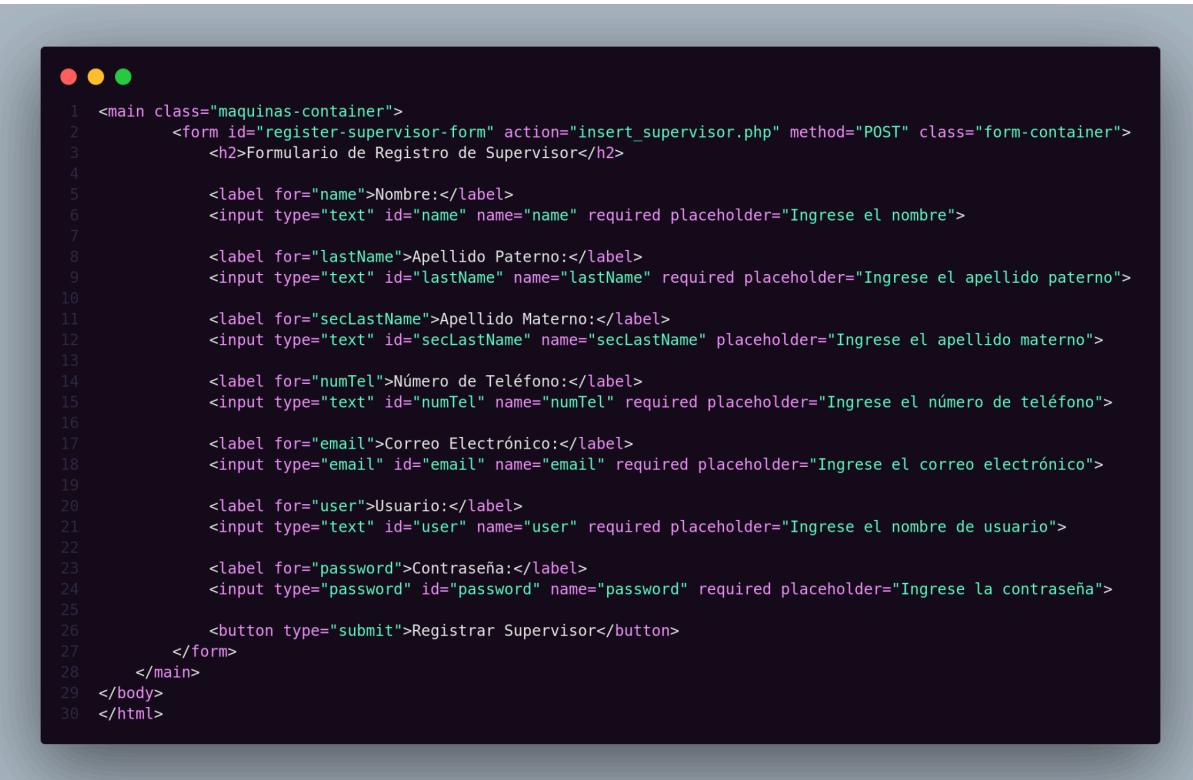
```
1 <main class="maquinas-container">
2     <form id="register-operator-form" action="UserOperador.php" method="POST" class="form-container">
3         <h2>Formulario de Registro de Operador</h2>
4
5         <label for="name">Nombre:</label>
6         <input type="text" id="name" name="name" required placeholder="Ingrese el nombre">
7
8         <label for="lastName">Apellido Paterno:</label>
9         <input type="text" id="lastName" name="lastName" required placeholder="Ingrese el apellido paterno">
10
11        <label for="secLastName">Apellido Materno:</label>
12        <input type="text" id="secLastName" name="secLastName" placeholder="Ingrese el apellido materno">
13
14        <label for="numTel">Número de Teléfono:</label>
15        <input type="text" id="numTel" name="numTel" required placeholder="Ingrese el número de teléfono">
16
17        <label for="email">Correo Electrónico:</label>
18        <input type="email" id="email" name="email" required placeholder="Ingrese el correo electrónico">
19
20        <label for="user">Usuario:</label>
21        <input type="text" id="user" name="user" required placeholder="Ingrese el nombre de usuario">
22
23        <label for="password">Contraseña:</label>
24        <input type="password" id="password" name="password" required placeholder="Ingrese la contraseña">
25
26        <button type="submit">Registrar Operador</button>
27    </form>
28  </main>
29 </body>
30 </html>
```

Supervisor Register

Similar to UserOperador.php, this file contains an HTML form for registering new supervisors. Includes fields for first name, last name, phone number, email, username, and password.



```
1 <?php
2     include 'includes/header.php';
3     require "../NewProject/includes/config/database.php";
4
5     $db = conectarDB();
6
7     if ($_SERVER['REQUEST_METHOD'] === 'POST') {
8         $name = $_POST['name'];
9         $lastName = $_POST['lastName'];
10        $secLastName = $_POST['secLastName'];
11        $numTel = $_POST['numTel'];
12        $email = $_POST['email'];
13        $user = $_POST['user'];
14        $password = $_POST['password'];
15
16        $sql = "INSERT INTO supervisor (name, lastName, secLastName, numTel, email, user, password) VALUES (?, ?, ?, ?, ?, ?, ?)";
17        $stmt = $conn->prepare($sql);
18        $stmt->bind_param("sssssss", $name, $lastName, $secLastName, $numTel, $email, $user, $password);
19
20        if ($stmt->execute()) {
21            echo "Nuevo supervisor registrado exitosamente.";
22        } else {
23            echo "Error: " . $stmt->error;
24        }
25
26        $stmt->close();
27        $conn->close();
28    }
29
30 ?>
```



```
1 <main class="maquinas-container">
2     <form id="register-supervisor-form" action="insert_supervisor.php" method="POST" class="form-container">
3         <h2>Formulario de Registro de Supervisor</h2>
4
5         <label for="name">Nombre:</label>
6         <input type="text" id="name" name="name" required placeholder="Ingrese el nombre">
7
8         <label for="lastName">Apellido Paterno:</label>
9         <input type="text" id="lastName" name="lastName" required placeholder="Ingrese el apellido paterno">
10
11        <label for="secLastName">Apellido Materno:</label>
12        <input type="text" id="secLastName" name="secLastName" placeholder="Ingrese el apellido materno">
13
14        <label for="numTel">Número de Teléfono:</label>
15        <input type="text" id="numTel" name="numTel" required placeholder="Ingrese el número de teléfono">
16
17        <label for="email">Correo Electrónico:</label>
18        <input type="email" id="email" name="email" required placeholder="Ingrese el correo electrónico">
19
20        <label for="user">Usuario:</label>
21        <input type="text" id="user" name="user" required placeholder="Ingrese el nombre de usuario">
22
23        <label for="password">Contraseña:</label>
24        <input type="password" id="password" name="password" required placeholder="Ingrese la contraseña">
25
26        <button type="submit">Registrar Supervisor</button>
27    </form>
28
29 </main>
30 </body>
31 </html>
```

Register technicians

This file is responsible for processing the data sent from UserTecnico.php.

Establishes a connection to the database and prepares an SQL query to insert a new technician into the technician table.

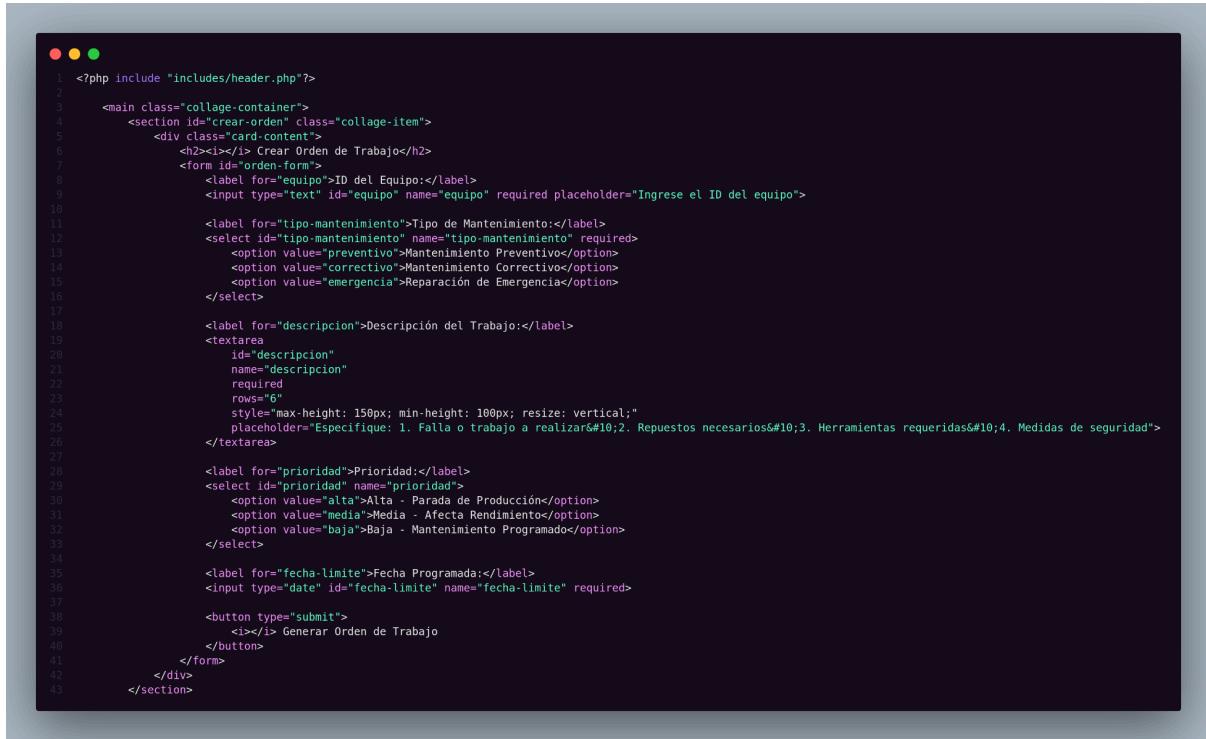
```
1 <?php
2     include 'includes/header.php';
3     require "../NewProject/includes/config/database.php";
4
5     $db = conectarDB();
6
7     if ($_SERVER['REQUEST_METHOD'] === 'POST') {
8         $name = $_POST['name'];
9         $lastName = $_POST['lastName'];
10        $secLastName = $_POST['secLastName'];
11        $numTel = $_POST['numTel'];
12        $email = $_POST['email'];
13        $user = $_POST['user'];
14        $password = $_POST['password'];
15        $specialty = $_POST['specialty'];
16
17        $sql = "INSERT INTO technician (name, lastName, secLastName, numTel, email, specialty, user, password) VALUES (?, ?, ?, ?, ?, ?, ?, ?)";
18        $stmt = $conn->prepare($sql);
19        $stmt->bind_param("ssssssss", $name, $lastName, $secLastName, $numTel, $email, $specialty, $user, $password);
20
21        if ($stmt->execute()) {
22            echo "Nuevo técnico registrado exitosamente.";
23        } else {
24            echo "Error: " . $stmt->error;
25        }
26
27        $stmt->close();
28        $conn->close();
29    }
30 ?>
```

```
1 <main class="maquinas-container">
2     <form id="register-tecnico-form" action="insert_tecnico.php" method="POST" class="form-container">
3         <h2>Formulario de Registro de Técnico</h2>
4
5         <label for="name">Nombre:</label>
6         <input type="text" id="name" name="name" required placeholder="Ingrese el nombre">
7
8         <label for="lastName">Apellido Paterno:</label>
9         <input type="text" id="lastName" name="lastName" required placeholder="Ingrese el apellido paterno">
10
11        <label for="secLastName">Apellido Materno:</label>
12        <input type="text" id="secLastName" name="secLastName" placeholder="Ingrese el apellido materno">
13
14        <label for="numTel">Número de Teléfono:</label>
15        <input type="text" id="numTel" name="numTel" required placeholder="Ingrese el número de teléfono">
16
17        <label for="email">Correo Electrónico:</label>
18        <input type="email" id="email" name="email" required placeholder="Ingrese el correo electrónico">
19
20        <label for="user">Usuario:</label>
21        <input type="text" id="user" name="user" required placeholder="Ingrese el nombre de usuario">
22
23        <label for="password">Contraseña:</label>
24        <input type="password" id="password" name="password" required placeholder="Ingrese la contraseña">
25
26        <label for="specialty">Especialidad:</label>
27        <input type="text" id="specialty" name="specialty" required placeholder="Ingrese la especialidad del técnico">
28
29        <button type="submit">Registrar Técnico</button>
30    </form>
31  </main>
32 </body>
33 </html>
```

Supervisor Home Page

This file is the main page for supervisor management. It may contain a list of registered supervisors, as well as links to forms for adding new supervisors. Provides an interface for users to interact with supervisor information, enabling data visualization and management.

This is only a small part of this .php, since its extension is a bit long for it to be seen correctly.



A screenshot of a code editor displaying a portion of a PHP file. The file contains HTML and PHP code for a form to create a work order. The code includes fields for equipment ID, maintenance type (preventive, corrective, emergency), description, priority (high, medium, low), and scheduled date. A placeholder in the description field provides instructions for specifying failure, parts, tools, and safety measures.

```
1 <?php include "includes/header.php"?>
2
3 <main class="collage-container">
4   <section id="crear-orden" class="collage-item">
5     <div class="card-content">
6       <h2><i></i> Crear Orden de Trabajo</h2>
7       <form id="orden-form">
8         <label for="equipo">ID del Equipo:</label>
9         <input type="text" id="equipo" name="equipo" required placeholder="Ingrese el ID del equipo">
10
11        <label for="tipo-mantenimiento">Tipo de Mantenimiento:</label>
12        <select id="tipo-mantenimiento" name="tipo-mantenimiento" required>
13          <option value="preventivo">Mantenimiento Preventivo</option>
14          <option value="correctivo">Mantenimiento Correctivo</option>
15          <option value="emergencia">Reparación de Emergencia</option>
16        </select>
17
18        <label for="descripcion">Descripción del Trabajo:</label>
19        <textarea
20          id="descripcion"
21          name="descripcion"
22          required
23          rows="6"
24          style="max-height: 150px; min-height: 100px; resize: vertical;">
25          placeholder="Especifique: 1. Falla o trabajo a realizar; 2. Repuestos necesarios; 3. Herramientas requeridas; 4. Medidas de seguridad">
26        </textarea>
27
28        <label for="prioridad">Prioridad:</label>
29        <select id="prioridad" name="prioridad">
30          <option value="alta">Alta - Parada de Producción</option>
31          <option value="media">Media - Afecta Rendimiento</option>
32          <option value="baja">Baja - Mantenimiento Programado</option>
33        </select>
34
35        <label for="fecha-limite">Fecha Programada:</label>
36        <input type="date" id="fecha-limite" name="fecha-limite" required>
37
38        <button type="submit">
39          <i></i> Generar Orden de Trabajo
40        </button>
41      </form>
42    </div>
43  </section>
```

Header and navigation bar

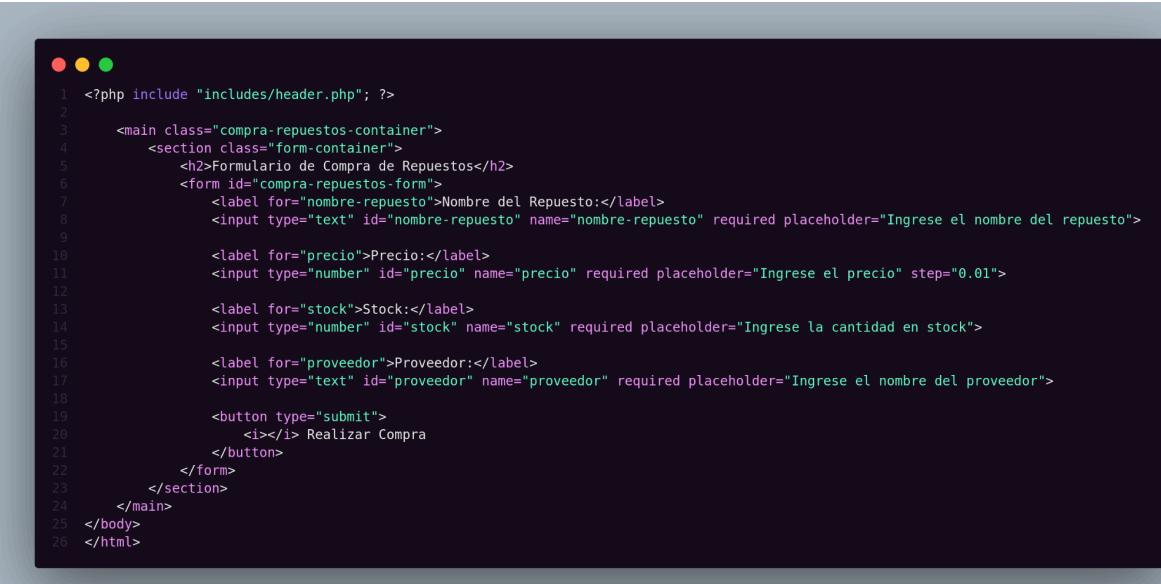
This file includes the common header for all pages, which can contain the page title and navigation links. Provides a consistent structure for site navigation, allowing users to return to the supervisors page or other sections of the system.



```
1 <!DOCTYPE html>
2 <html lang="es">
3
4 <head>
5   <meta charset="UTF-8">
6   <meta name="viewport" content="width=device-width, initial-scale=1.0">
7   <title>Sistema de Gestión de Mantenimiento</title>
8   <link rel="stylesheet" href="css/styles2.css">
9   <link rel="stylesheet" href="css/maquinas.css">
10 </head>
11
12 <body>
13   <header>
14     <nav>
15       <h1>Supervisor Page</h1>
16       <ul>
17         <li><a href="Reporte.php"><i class="fas fa-exclamation-triangle"></i>Ver Reportes de Fallas</a></li>
18         <li><a href="Repuesto.php"><i class="fas fa-file-alt"></i>Repuestos para Mantenimiento</a></li>
19         <li><a href="ReportarFalla.php"><i class="fas fa-tools"></i>Reportes de Mantenimiento</a></li>
20         <li><a href="Historial.php"><i class="fas fa-chart-line"></i>Historial de Mantenimiento</a></li>
21         <li><a href="Maquinas.php"><i class="fas fa-history"></i>Alta de Equipo Industrial</a></li>
22         <li><a href="UserOperador.php"><i class="fas fa-history"></i>Dar Alta a un Operador</a></li>
23         <li><a href="UserTecnico.php"><i class="fas fa-history"></i>Dar Alta a un Técnico</a></li>
24         <li><a href="UserSupervisor.php"><i class="fas fa-history"></i>Dar Alta a un Supervisor</a></li>
25       </ul>
26     </nav>
27   </header>
```

Spare parts

This file is generally used to manage spares in the system. It can include a form for adding new parts, as well as a list of existing parts. Allows users to register new parts, view available parts, and possibly edit or delete existing parts.



```
1 <?php include "includes/header.php"; ?>
2
3 <main class="compra-repuestos-container">
4   <section class="form-container">
5     <h2>Formulario de Compra de Repuestos</h2>
6     <form id="compra-repuestos-form">
7       <label for="nombre-reuesto">Nombre del Repuesto:</label>
8       <input type="text" id="nombre-reuesto" name="nombre-reuesto" required placeholder="Ingrese el nombre del repuesto">
9
10      <label for="precio">Precio:</label>
11      <input type="number" id="precio" name="precio" required placeholder="Ingrese el precio" step="0.01">
12
13      <label for="stock">Stock:</label>
14      <input type="number" id="stock" name="stock" required placeholder="Ingrese la cantidad en stock">
15
16      <label for="proveedor">Proveedor:</label>
17      <input type="text" id="proveedor" name="proveedor" required placeholder="Ingrese el nombre del proveedor">
18
19      <button type="submit">
20        <i></i> Realizar Compra
21      </button>
22    </form>
23  </section>
24 </main>
25 </body>
26 </html>
```

Failure reports

This file is used to generate and display reports related to equipment. Provides an interface for users to generate reports based on the data stored in the database.



```
1 <?php
2     include "includes/header.php"
3 ?>
4     <main class="reporte-container">
5         <section class="reportes-tabla">
6             <div class="tabla-header">
7                 <h2>Historial de Reportes</h2>
8                 <div class="filtros">
9                     <select class="filtro-severidad">
10                         <option value="">Todas las severidades</option>
11                         <option value="alta">Alta</option>
12                         <option value="media">Media</option>
13                         <option value="baja">Baja</option>
14                     </select>
15                 </div>
16             </div>
17
18             <div class="tabla-container">
19                 <table>
20                     <thead>
21                         <tr>
22                             <th>ID Reporte</th>
23                             <th>Fecha</th>
24                             <th>Equipo</th>
25                             <th>Reportado por</th>
26                             <th>Descripción</th>
27                             <th>Severidad</th>
28                             <th>Estado</th>
29                             <th>Acciones</th>
30                         </tr>
31                     </thead>
32                     <tbody>
33                         <tr>
34                             <td>#REP001</td>
35                             <td>2024-02-20</td>
36                             <td>Prensa Hidráulica #1</td>
37                             <td>Juan Pérez</td>
38                             <td>Fuga de aceite en sistema principal</td>
39                             <td><span class="severidad alta">Alta</span></td>
40                             <td><span class="estado pendiente">Pendiente</span></td>
41                             <td>
42                                 <button class="btn-accion generar">Generar Orden</button>
43                                 <button class="btn-accion eliminar">Eliminar</button>
44                             </td>
45                         </tr>
46                     </tbody>
47                 </table>
48             </div>
```

Maintenance reports

This file is used to report the details of maintenance carried out on machines or equipment by the technician. It usually includes a form where users can enter details about the maintenance performed.

```
● ● ●
1 <?php
2     include 'includes/header.php';
3 ?>
4     <h2>Formulario de Reporte de Falla</h2>
5     <form action="reportar_falla.php" method="post">
6         <label for="id_reporte">ID Reporte:</label>
7         <input type="text" id="id_reporte" name="id_reporte" required><br><br>
8
9         <label for="fecha">Fecha:</label>
10        <input type="date" id="fecha" name="fecha" required><br><br>
11
12        <label for="equipo">Equipo:</label>
13        <input type="text" id="equipo" name="equipo" required><br><br>
14
15        <label for="reportado_por">Reportado por:</label>
16        <input type="text" id="reportado_por" name="reportado_por" required><br><br>
17
18        <label for="descripcion">Descripción:</label>
19        <textarea id="descripcion" name="descripcion" required></textarea><br><br>
20
21        <label for="severidad">Severidad:</label>
22        <select id="severidad" name="severidad" required>
23            <option value="baja">Baja</option>
24            <option value="media">Media</option>
25            <option value="alta">Alta</option>
26        </select><br><br>
27
28        <label for="estado">Estado:</label>
29        <select id="estado" name="estado" required>
30            <option value="pendiente">Pendiente</option>
31            <option value="en_proceso">En proceso</option>
32            <option value="completado">Completado</option>
33        </select><br><br>
34
35        <label for="acciones">Acciones:</label>
36        <textarea id="acciones" name="acciones"></textarea><br><br>
37
38        <input type="submit" value="Enviar Reporte">
39    </form>
40 </body>
41 </html>
```

Registration of industrial equipment

This file is used to manage information about the machines in the system. May include a form to add new machines. This file interacts with the database to store and retrieve information about the machines.

```
1 <?php
2     include 'includes/header.php';
3
4     require "../NewProject/includes/config/database.php";
5     $db = conectarDB();
6
7     if ($_SERVER['REQUEST_METHOD'] === 'POST') {
8         $name = $_POST["name"];
9         $model = $_POST["model"];
10        $brand = $_POST["brand"];
11        $status = $_POST["status"];
12        $equipment_location = $_POST["equipment_location"];
13
14        $query = "INSERT INTO equipment (name, model, brand, status, equipment_location) VALUES (?, ?, ?, ?, ?)";
15
16        // Preparar la consulta
17        $stmt = $db->prepare($query);
18
19        if ($stmt === false) {
20            die("Error en la preparación de la consulta: " . $db->error);
21        }
22
23        $stmt->bind_param("sssss", $name, $model, $brand, $status, $equipment_location);
24
25        if ($stmt->execute()) {
26            echo "Nueva máquina registrada exitosamente.";
27        } else {
28            echo "Error al registrar máquina" . $stmt->error;
29        }
30
31        $stmt->close();
32        $db->close();
33    }
34 ?>
```

```
1 <main class="maquinas-container">
2     <form id="register-machine-form" action="insert_machine.php" method="POST" class="form-container">
3         <h2>Formulario de Registro</h2>
4
5         <label for="name">Nombre de la Máquina:</label>
6         <input type="text" id="machine-name" name="name" required placeholder="Ingrese el nombre de la máquina">
7
8         <label for="model">Modelo:</label>
9         <input type="text" id="machine-model" name="model" required placeholder="Ingrese el modelo de la máquina">
10
11        <label for="brand">Marca:</label>
12        <input type="text" id="machine-brand" name="brand" required placeholder="Ingrese la marca de la máquina">
13
14        <label for="status">Estado:</label>
15        <select id="machine-status" name="status" required>
16            <option value="Operativo">Operativo</option>
17            <option value="No Operativo">No Operativo</option>
18        </select>
19
20        <label for="equipment_location">Ubicación del Equipo:</label>
21        <input type="text" id="equipment-location" name="equipment_location" required placeholder="Ingrese la ubicación del equipo">
22
23        <button type="submit" id="submit-button">Registrar Máquina</button>
24
25     </form>
26
27 </body>
28 </html>
```

Maintenance history

This file is used to display the maintenance and repair history of the machines. Provides users with an overview of machines' maintenance history, helping to identify failure patterns

```
● ● ●
1  <?php
2      include 'includes/header.php';
3  ?>
4
5  <main>
6      <section id="historial-mantenimiento" class="supervisor-panel">
7          <h2>Historial de Mantenimiento</h2>
8          <table>
9              <thead>
10                 <tr>
11                     <th>ID Mantenimiento</th>
12                     <th>Fecha de Realización</th>
13                     <th>Resultados</th>
14                     <th>Observaciones</th>
15                     <th>Equipo</th>
16                     <th>Tipo de Mantenimiento</th>
17                 </tr>
18             </thead>
19             <tbody>
20                 <tr>
21                     <td>1</td>
22                     <td>2024-09-15</td>
23                     <td>Cambio de filtros</td>
24                     <td>Filtros en buen estado</td>
25                     <td>Equipo 1</td>
26                     <td>Mantenimiento correctivo</td>
27                 </tr>
28                 <tr>
29                     <td>2</td>
30                     <td>2024-08-20</td>
31                     <td>Revisión general</td>
32                     <td>Sin anomalías detectadas</td>
33                     <td>Equipo 2</td>
34                     <td>Mantenimiento preventivo </td>
35                 </tr>
36
37             </tbody>
38         </table>
39     </section>
40 </main>
41
42 </body>
43 </html>
```

Connection to the database

This file usually contains the database connection logic. It includes the credentials necessary to connect to the database and may contain functions to perform common operations.

```
● ● ●
1  <?php
2
3  function conectarDB(): mysqli{
4      $db = mysqli_connect("127.0.0.1", "root", "", "industrial_maintenance", 3306);
5
6      if($db){
7          echo "Conexion exitosa";
8      } else{
9          echo "Conexion fallida";
10     }
11     return $db;
12 }
13
14 ?>
```