**Overview:**

**Project name:**

Electro-Fix

**Introduction to the application:**

Today’s everything around us is an electronic device, we use electronic devices in everything like to save food we use fridge, to cook food we use gas stove, to clean clothes we use washing machine, if we want to boil water we use water kettle, in summer we use air conditioner, laptops, mobile phones and TVs, so everything around us is an electronic device need maintenance from time to time and need to repair if it broken, So

Electro-fix is a Web application that aims to bridge the gap between users want a technician to repair their electronic devices such as (Gas stove, TVs, Fridges ...) and trusted, qualified and skilled technicians who can provide reliable and efficient services to users.

With Electro-fix, users can easily post repair requests for their malfunctioning electronic devices and then application connect these requests with technicians who have experiences and qualified to fix them.

Our application will provide a community of users want a technician to repair their electronic devices and Trusted, Qualified and Skilled technicians are ready for users’ requests.

**Problem statement:**

Today’s everything around us is an electronic device and these devices need maintenance from time to time and need to repair if it broken, and there are many technicians in this field but user will take a long time to search about technician qualified and has an experience and in the same time user need this qualified technician to be trusted to can user request this technician, so users facing a problems in searching process that takes long time about finding technician if user need technician immediately in fast problem and in finding technician qualified and has an experience and in find this qualified technician but to be trusted.

**Project objectives:**

1. Making User-Friendly Web Application that can users use it easily and help them.
2. Create a community that contains all technicians and all users need technicians to less time that user consume in searching process to find suitable technician.
3. Creating rating and review process in application to can each user give a rate and feedback about technician to help another user will request or accept this technician to know everything about him (Qualified, Experience, Trusted), to decide to request or accept him or not.
4. Creating rating and review process in application to can each technician give a rate and feedback about users to help another technician will request or accept this user to know everything about him (attitude, treatment, agreement), to decide to request or accept him or not.
5. Each user and technician must have an account and profile that contain all information about them, and in technician profile, technician must give an information about his history in repairing and maintenance and his specific experience and must tell which electronic device he specializes in it.
6. Enable users to easily post detailed repair requests, including device information, issues faced, and supporting media such as images or videos to user ensure that technician that will request know everything about device and he has ability to fix it.
7. Enable users and technicians chatting through application to schedule appointments and payments with each other for device inspections or repairs to an easy communication between them.
8. Our objective also to make this application reliable and stable not contain fake accounts or contain users such as (technician or users) will Annoys another real users and technician so we will delete these accounts from our application.

**System Users:**

1. **Users:** Users who have an electronic device that want to make a maintenance to it or repair it.
2. **Technicians:** People qualified and have experience in repair an electronic device.
3. **Administrators**

**System Requirements:**

**Functional requirements:**

1. Enable user to register and manage profile.
2. Enable user to log in.
3. Enable user to post a repair request.
4. Enable users to search about specific technicians based on location or rating.
5. Enable user to request specific technician.
6. Enable user to Rate and give feedback about technician.
7. Enable technician to register and manage profile.
8. Enable technician to log in.
9. Enable technicians to search about post request based on different location and user rating.
10. Enable technician request a post user posted about repair.
11. Enable technician accept user request.
12. Enable technician rate and give feedback about user.
13. User and technician can edit in their profiles.
14. User or technician can start chatting with each other after request and accept done between each other.
15. Enable user to remove his account from application.
16. Enable technician to remove his account from application.

**Non-Functional requirements:**

1. **Usability:**

* User should easily make a post for his request.
* User should easily make a request and accept process on his own without contact us.
* User should easily navigate between interfaces and knows how application work.

1. **Security:**

* Only the system data administrator control access permissions to users and technicians.
* The website must be resilient to any kind of attacks, including DDoS attack.
* Systems may require users to create accounts to access applications that store information and display profiles.

1. **Availability:**

* The system shall have downtime at most 4 hours/month maintenance and updates.
* The system should be designed to continue functioning, with minimal or no service interruption, even in the presence of hardware or software failures.
* Implement load balancing mechanisms to distribute incoming traffic evenly across multiple servers, preventing overloads and ensuring consistent.

1. **Reliability and Scalability:**

* Tracking the time between critical failures
* Data stored in the system should be protected from corruption, loss, or unauthorized access.
* Perform load testing to ensure the system can handle 150% of expected peak load without performance degradation.

1. **Performance:**

* The system should respond to user actions, such as loading pages or processing requests, within 2 seconds on average.
* The system should authenticate users and load their profiles in less than 1 second.
* The platform should support minimum of 500 simultaneous users, with a minimum request’s throughput of 100 requests per second during peak usage.
* Searches for technicians or repair requests should return results within 1 second.