

# Software Design Description

## AI CUSTOMER SUPPORT SYSTEM

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# 1 Introduction

## 1.1 Purpose

Purpose of this Software Design Document (SDD) is to specify the technical and software requirements of our AI Customer Support Project. For our project, the target audience is E-Commerce based companies.

## 1.2 Scope

This document explains the details of AI Customer Support. AI Customer Support is a system where artificial intelligence answers the questions asked in the support system of internet-based companies. Companies will be able to implement and use this system to their website without writing code.

Artificial intelligence in our system is a system that trains itself by learning the questions asked and the answers given to the questions and in time it starts to give more accurate results. This process continues to train itself until it finds the most accurate answer.

## 1.3 Glossary

<b><u>Term</u></b>	<b><u>Definitions</u></b>
CRM	*Customer Relationship Management * CRM is a technology that allow you to manage your company's relationship and interactions between customers.
AI	* Artificial Intelligence
Machine Learning	* Machine learning is an application of that provides systems the ability to automatically learn and improve from experience without being explicitly programmed.
Dataset	* Set of data that is grouped under titles.
Text Analysis	* Efficient way to turn words into a well dataset.

## 1.4 Overview of Document

The remainder of the document includes design-related information, Requirements Traceability, User Interface, Input Devices Subsystem, Data Model and Storage, and Data Storage.

## 1.5 Motivation

We're a senior in computer engineering. Because of our interest in artificial intelligence and the web sector, we decided to do such a project. In addition, we see that the current position of the web sector in the developing world economy is rising rapidly. Lastly, we can show that Ali Express Company sold 21 billion dollars in the first 6 hours on 11.11.2019<sup>[1]</sup>. So, we have decided that it is necessary to have support systems that respond automatically in a sector where such high sales figures are achieved.

## 2 Design Overview

### 2.1 Description of Problem

Nowadays, the use of the Internet has become widespread and most large companies provide their support systems online over the internet. In this sense, we are developing smart support software that they can use without writing code. In addition, users will be answered directly by bots, not people. We will provide this with ai.

### 2.2 Technologies Used

Our AI Customer Support system is designed to suit all platforms. In this sense, it is possible to use from mobile, tablets and computers. However, browser and internet connection is required for the devices to be used.

It is recommended that the people who will install our system have domain name and hosting. Because our system is a web-based and online system.

### 2.3 Architecture Design of AI Customer Support System

#### 2.3.1 Profile Page

**Summary :** Users can change or update their information from their profile (password, username, etc ..). They can also track how many questions they have entered into our system.

**Actor :** Users

**Precondition:** User must login.

**Basic Sequence:**

1. User must register if she or he does not have an account.
2. User must login to the system by entering his or her username and password.
3. User can update his or her personal information by selecting "Edit" button from profile page.
4. User must enter new information about himself or herself after clicking "Edit" button and click "Save" button.

**Exception :** If database is not installed , database connection can be failed.

### 2.3.2 Question Page

**Summary :** Users can see question , answer and also comments. In addition users can comment on any question.

**Actor :** Users

**Precondition:** None.

**Basic Sequence:**

1. User does not need to login or register for displaying the question page.
2. User must login to the system to comment on questions.
3. User can click any tag for displaying related questions with that tag.

**Exception :** If database is not installed , database connection can be failed.

### 2.3.3 Home Page

**Summary :** Users can login, register, search for all questions and apply filter on questions. Also user can go to install page with “install Now” button and go to ask question page with “Ask a Question” button if user is logged in.

**Actor :** Users

**Precondition:** None.

**Basic Sequence:**

1. User does not need to login or register for displaying the home page.
2. User can see question list.
3. User can login or register.

**Exception :** If database is not installed , database connection can be failed.

### 2.3.4 Ask Question Page

**Summary :** Users can ask a question and edit the question text.

**Actor :** Users

**Precondition:** User must login.

**Basic Sequence:**

1. User must login to the system by entering his or her username and password.
2. User must enter question title, description, tags and edit description with style button.
3. User can “Submit” the question.

**Exception :** If database is not installed , database connection can be failed.

## 2.3.5 Install Page

**Summary :** Admin must enter server name, username, password and database name. Also with the help of checkbox, admin can reset the database.

**Actor :** Admin

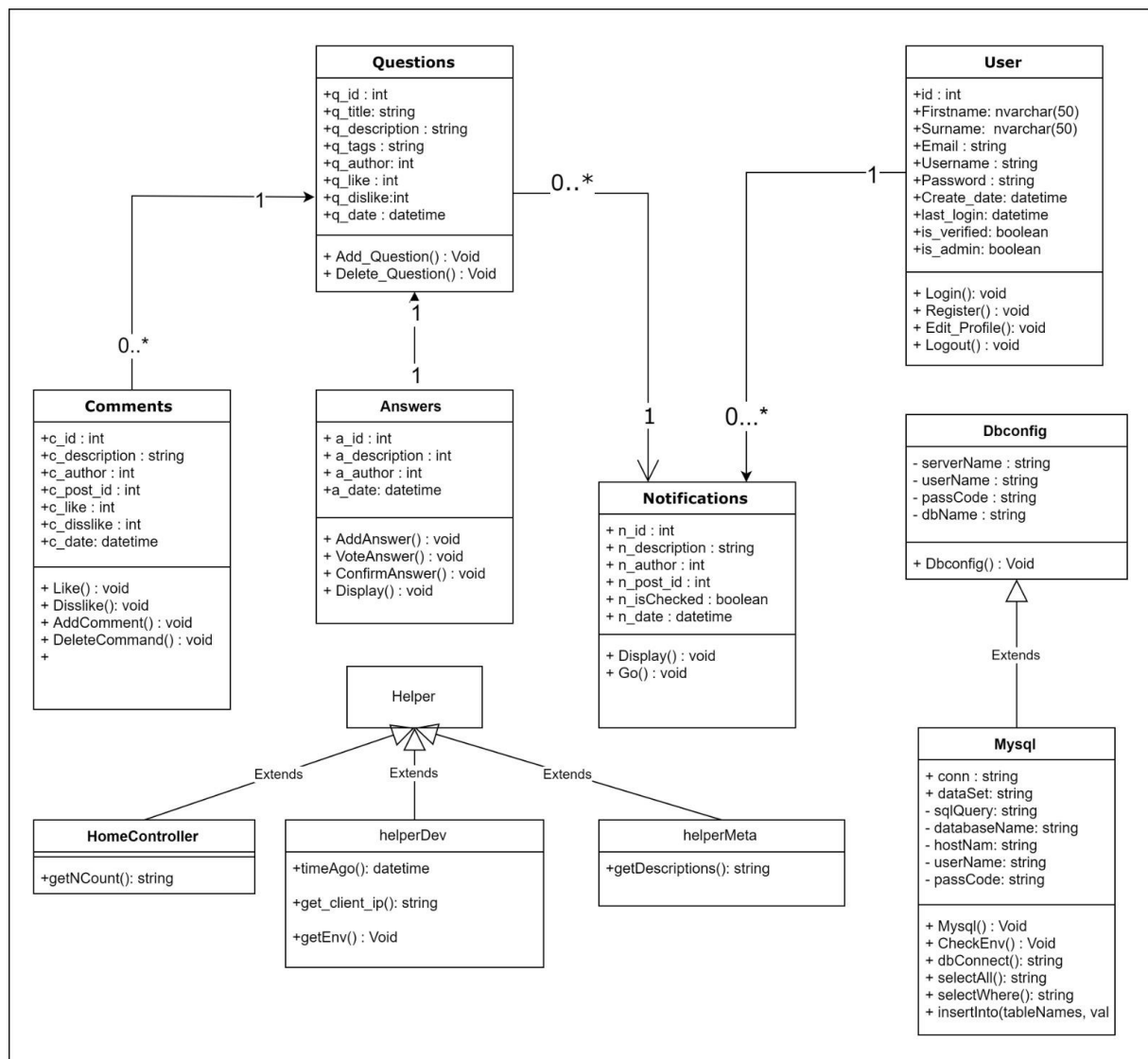
**Precondition:** Admin must config the config file.

**Basic Sequence:**

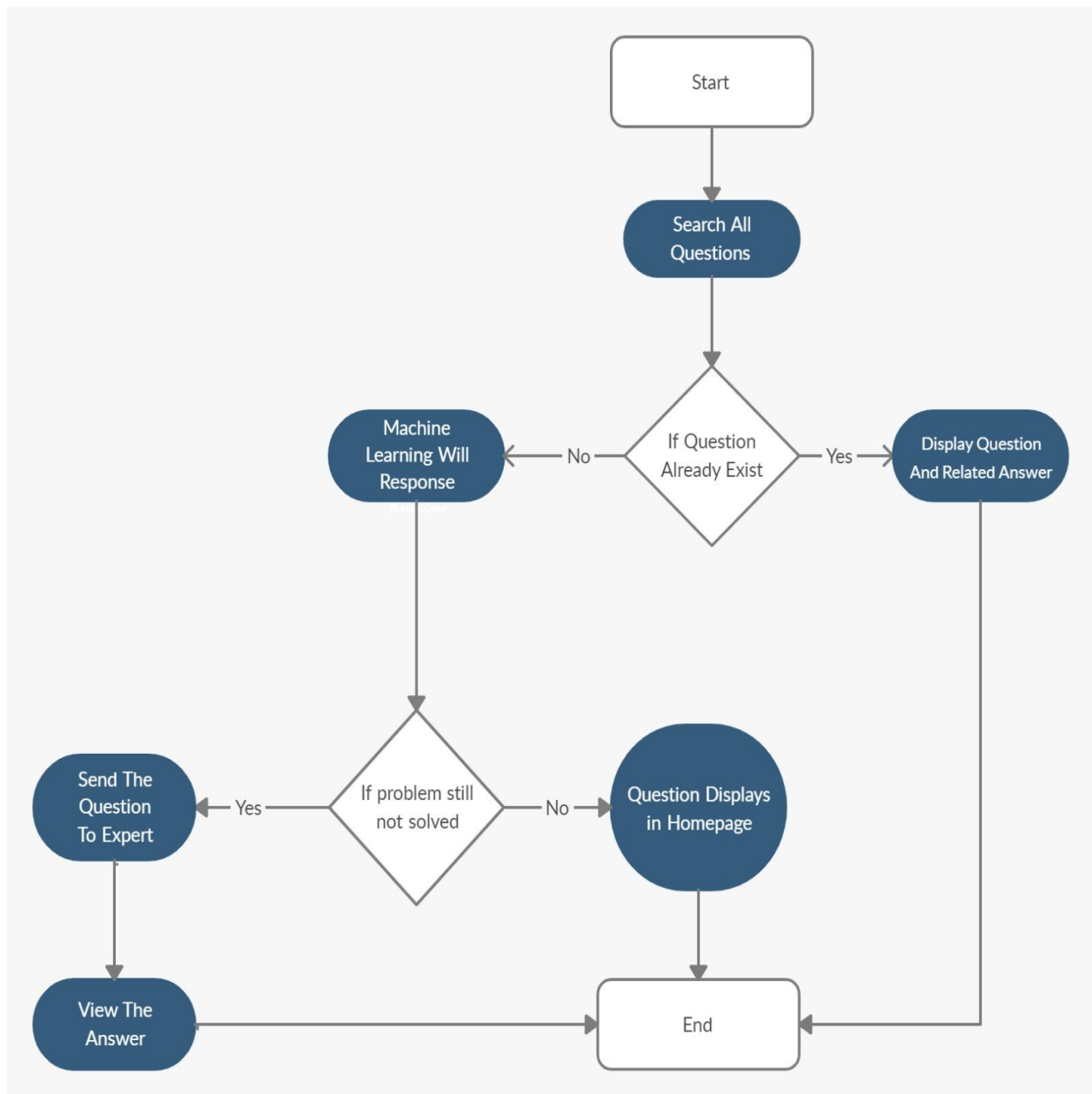
1. Admin must config the config file.
2. Admin must enter server name, username, password and database name.
3. Admin must click “Register” button.

**Exception :** None.

## 2.4 Class Diagram

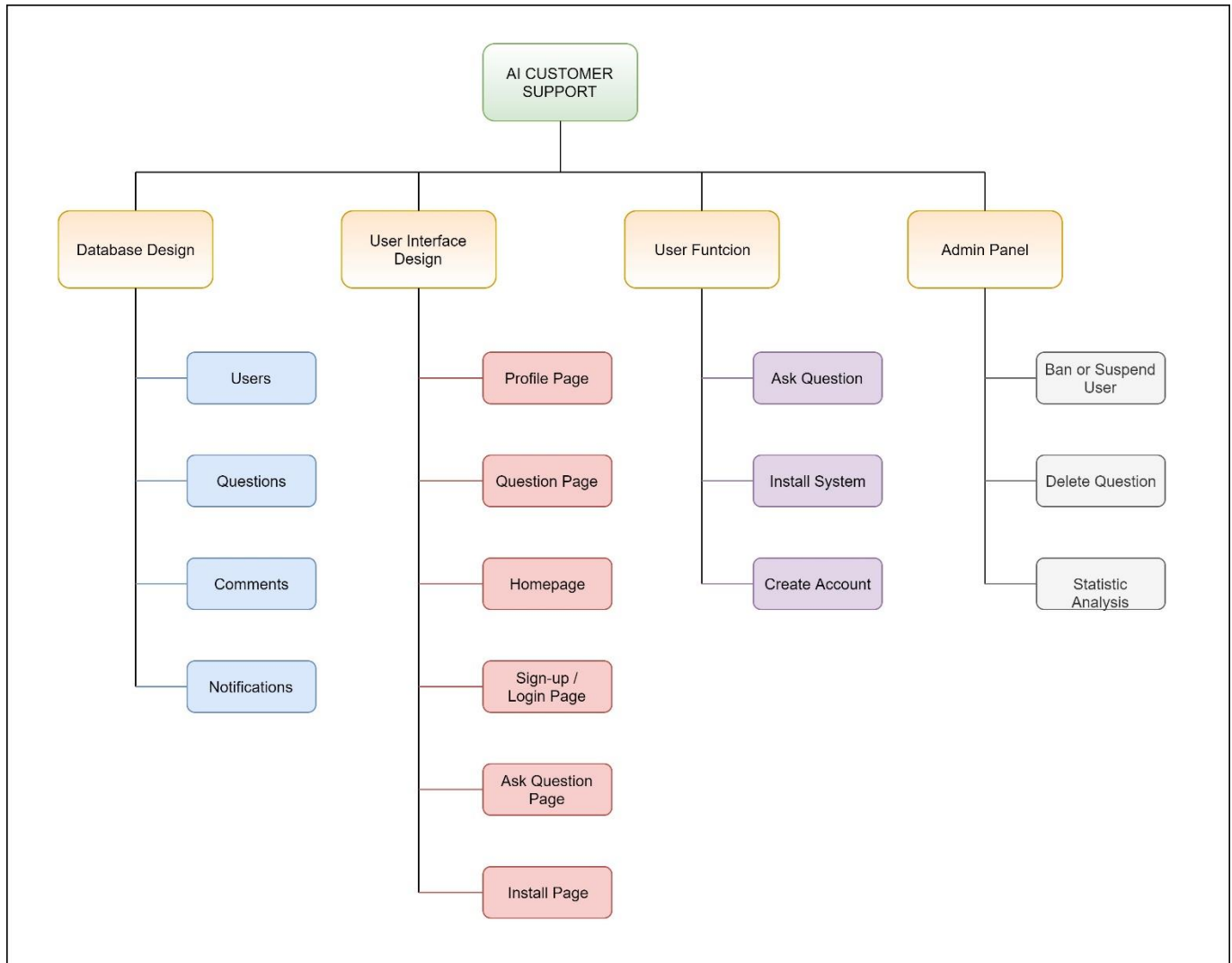


## 2.5 Activity Diagram



### 3. USE CASE REALIZATIONS

#### 3.1. AI Customer Support System



##### 3.1.1 UI Design

The User Interface (UI) design is made to explain the interactions between the user / authorized user and the system. The UI design has six sub-systems:

**Register Page :** Designed for users to register to the system using their personal information.

(First name, Last name, Username, Email Address, Password)

**Login Page :** Registered users, e-mail addresses and passwords are designed to log in to the system.

**Profile Page :** Designed for allow registered users to view and update their contact information.

**Home Page :** Designed for users to log in, register, search all questions, and filter the questions.

**Install Page :** Designed for users to use the system easily.

**Question Page :** Designed for users to see questions, answers and comments.

**Ask Question Page :** Designed for users to add question.

### 3.1.2 Database Design

Database Design has been made to ensure that the data required for the operation of the system is stored. Essential for database design: entities, tables and relationships. We will have four entities: Users, Questions, Comments and Notifications.

### 3.1.3 User Function Design

Users register to our system after, they will be able to install the customer support system we have prepared for their e-commerce sites. In addition, they will be able to ask any questions or questions they may have about our system on the question page. They will be able to see the questions asked by other users and the automatic answers given by the system we have installed.

### 3.1.4 Administrator Panel Design

This panel can be only available and accessible for administrators and experts. Administrator panel lets admins to edit a user or question or comment or anything else. Admins can delete questions, ban or suspend personal accounts. Also admins can analyze many statistics such as how many user using the system or type of questions asked by users.



## 3.2 User Interface

### 3.2.1. Register Page

The screenshot shows a web browser displaying the 'AI CUSTOMER SUPPORT' website. A modal window titled 'CREATE AN ACCOUNT' is centered on the screen. The form includes input fields for 'First Name', 'Last Name', 'User Name', 'Email address', 'Password', and 'Confirm Password'. Below the fields, there is a checkbox for 'Remember Me On This Computer' and a 'SIGN UP' button. A link for 'Already Have An Account' is at the bottom. The background shows a search bar, a list of 'Featured Articles', and a 'Ask a Question' section.

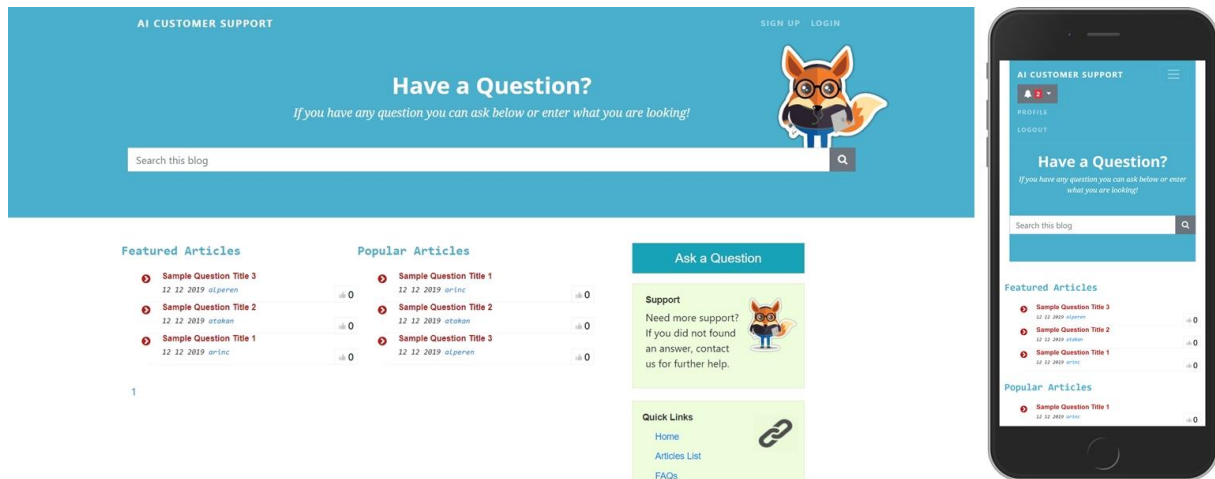
Register page is designed for non-registered users. Users must fill “First Name”, “Last Name”, “User Name”, “Email address”, “Password” and “Confirm Password” parts. Password and Confirm Password must match. Also registered users can click on “Already Have an Account” button and redirect to login page.

### 3.2.2 Login Page

The screenshot shows the 'AI CUSTOMER SUPPORT' website with a modal window titled 'LOGIN MY ACCOUNT!'. The form includes input fields for 'Email address' and 'Password', a checkbox for 'Remember Me On This Computer', and a 'LOGIN' button. Below the button are links for 'Forgot Your Password?' and 'Create A New Account'. To the right, a smartphone displays the same login form in a mobile app interface.

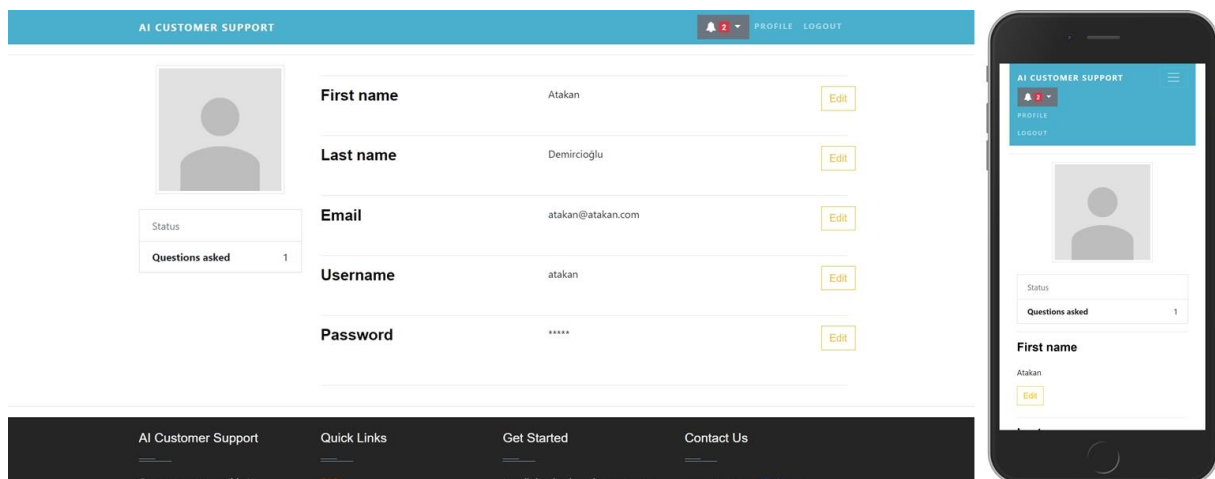
Users must fill the “Email address” and “Password” parts. If any of these informations are incorrect, an alert will show up. Also, if user check the “Remember Me On This Computer” checkbox, users will not need to login again anymore until they logout manually.

### 3.2.3 Homepage



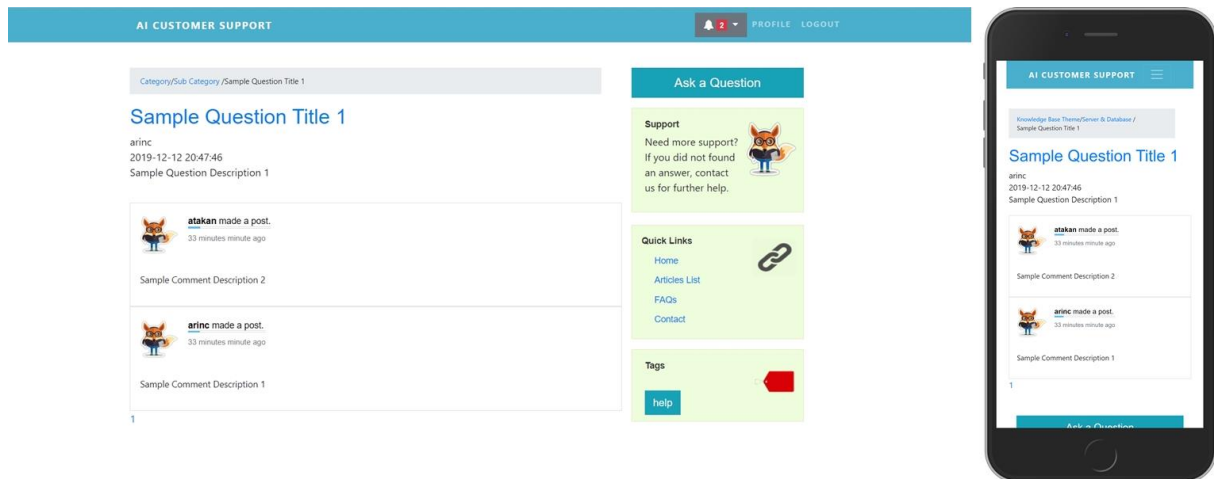
On homepage, any user (does not matter if they have account or not) can see featured and popular articles. With search bar, users can search questions by specific keywords across our systems. Also, registered users can ask question with “Ask a Question” button.

### 3.3.4 Profile Page



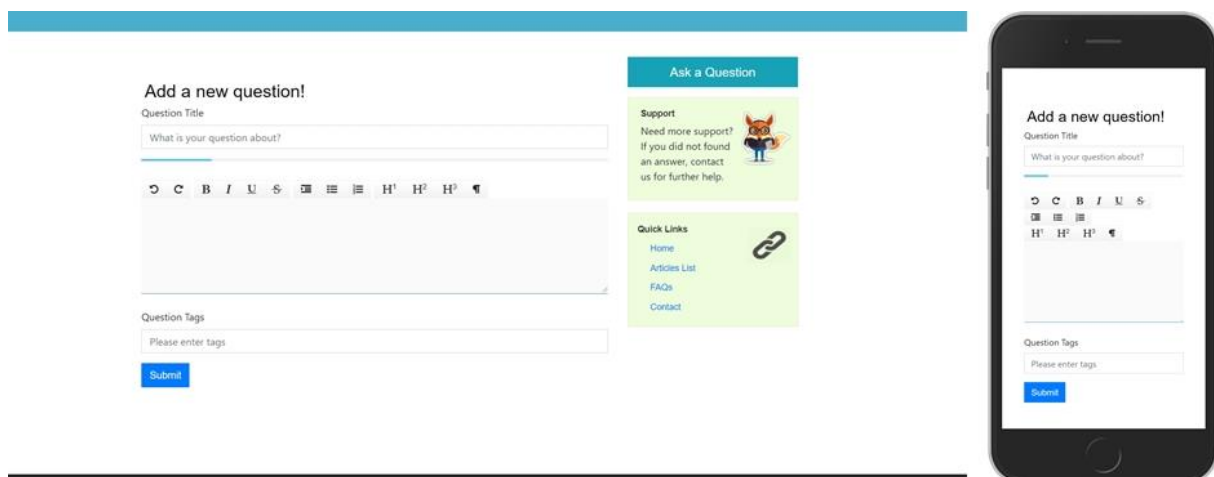
Users can see their personal informations such as First Name, Last Name, Email, Username and Password. Also with “Edit” button, users can edit the corresponding information. In addition, asked question count and profile page can be seen on left.

### 3.3.5 Question Page



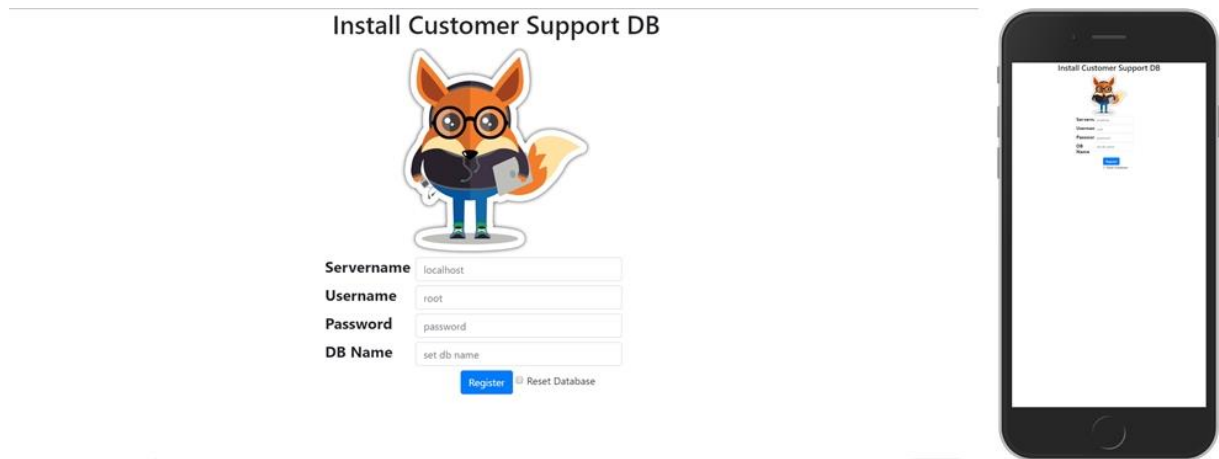
On Question Page, any user (does not matter if they have account or not) can see the related question and tags. Also they can comment on question if comments are allowed.

### 3.3.6 Ask Question Page



Registered users can ask question on this page. With the buttons, they can edit their question description. Users must fill the Question Title, Description, Tags and Submit.

### 3.3.7 Install Page



Install page is only available for administrator. With install page, owners must fill the “Servername”, “Username”, “Password”, “DB Name” and Register. With “Reset Database” checkbox, admins can reset database.

## 4. References

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