Survey Engine

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# **Introduction**

This project aims to design and implement a dynamic Survey Engine using C++ as the core programming language. The primary goal is to create a console-based system that allows administrators to define surveys with customizable questions and enables users to respond to them interactively. The system stores and organizes responses efficiently, providing a foundation for further data analysis and reporting.

The second phase expands the functionality into a web-based interface using HTML, CSS, JavaScript, PHP, and MySQL. This transition enables a user-friendly online experience, making surveys accessible through browsers while storing results in a structured database for easy retrieval and manipulation.

# **How to Run the Program**

The program can be run by opening the following file:

A close up of a word

AI-generated content may be incorrect.

# **Database**

A screenshot of a computer

AI-generated content may be incorrect.

## **User**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Key** | **Description** |
| UserID | int | PK | Unique ID for each user |
| Name | varchar | - | Username |
| Password | varchar | - | User’s account’s password |
| isAdmin | bool | - | Determine whether the user is admin or not |

## **Survey**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Key** | **Description** |
| SurveyID | int | PK | Unique ID for each survey |
| Title | varchar | - | Title of the survey |

## **Question**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Key** | **Description** |
| QuestionID | int | PK | Unique ID for each question |
| Text | varchar | - | Question’s text |
| isMultipleChoice | bool | - | Determine whether a question has multiple choices |
| SurveyID | int | FK | Unique ID for each survey |

## **Response**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Key** | **Description** |
| ResponseID | int | PK | Unique ID for each response |
| UserID | int | FK | Unique ID for each user |
| SurveyID | int | FK | Unique ID for each survey |

## **Answer**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Key** | **Description** |
| AnswerID | int | PK | Unique ID for each answer |
| Text | varchar | - | Answer’s text |
| QuestionID | int | FK | Unique ID for each question |
| ResponseID | int | FK | Unique ID for each response |

## **Choice**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Key** | **Description** |
| ChoiceID | int | PK | Unique ID for each choice |
| Text | varchar | - | Choice’s text |
| QuestionID | int | FK | Unique ID for each question |

# **Program Features**

## **RegEx Implementation**

The program uses regular expressions when a user signs up in the program:

* Username: ^[A-Za-z][A-Za-z0-9\_-]{5,19}$

Username must start with a letter and be 6–20 characters long. Allowed characters: letters, numbers, underscores (\_), and hyphens (-).

* Password: ^(?=.\*\d)(?=.\*[a-z])(?=.\*[A-Z])(?=.\*[@#$%]).{6,20}$

Password must be 6–20 characters and include at least one uppercase letter, one lowercase letter, one number, and one special character (@, #, $, or %).

## **Difference between Admin and Non-admin**

|  |  |
| --- | --- |
| **Admin** | **Non-admin** |
| Create survey | - |
| Take survey | |
| View survey submissions and responses | |

# **Flowchart**

A black and white diagram

AI-generated content may be incorrect.

A black background with white rectangles

AI-generated content may be incorrect.

A black background with white rectangles

AI-generated content may be incorrect.

A screenshot of a computer screen

AI-generated content may be incorrect.

# A screenshot of a computer AI-generated content may be incorrect.**Site Map**

# **Model, View, Control Framework**

This project utilizes the Model-View-Controller framework in two aspects of the program:

* To login the user
* To create a new survey

**Login**

A close-up of a sign

AI-generated content may be incorrect.

## **Create Survey**

A close-up of a computer screen

AI-generated content may be incorrect.

## **Proof of a working product**

<https://youtu.be/hYkXKIDIHFE>