

Software Requirements Specification

for

City Corporation Budget Transparency

Version 1.0

01/08/18

Table of Contents

Table of Contents	2
Revision History	3
1. Introduction	4
1.1 Purpose.....	4
1.2 Document Conventions.....	4
1.3 Intended Audience and Reading Suggestions	4
1.4 Product Scope	4
1.5 References.....	5
2. Overall Description	5
2.1 Product Perspective.....	5
2.2 Product Functions	5
2.3 User Classes and Characteristics	5
2.4 Operating Environment.....	6
2.5 Design and Implementation Constraints	6
2.6 User Documentation	6
2.7 Assumptions and Dependencies	6
3. External Interface Requirements	6
3.1 User Interfaces	6
3.2 Hardware Interfaces	6
3.3 Software Interfaces	7
3.4 Communications Interfaces	7
4. System Features	7
4.1 System Features for Admin	7
4.2 System Features for users	7
4.3 Use Cases Description.....	8
4.3.1 Access Budget Transparency Home page.....	8
4.3.2 Create New Admin Account.....	9-10
4.3.3 Create a post.....	10-11
4.3.4 Update a post.....	11-12
4.3.5 Delete a post.....	12-13
4.3.6 Set Contractor	13-14
4.3.7: Update Working Progress	14-15
4.3.8: Ask question and answer a question.....	15-16
5. Other Nonfunctional Requirements	16
5.1 Safety Requirements	16
5.2 Security Requirements	16
5.3 Software Quality Attributes	16

Revision History

Name	Date	Reason For Changes	Version
Use case	13.08.18	Modify use case	1.0
Use case update	04.9.18	Update Use Case	1.1
Use Case Update	02.10.18	Update Use Case	1.2

1. Introduction

1.1 Purpose

In the last two decades, international institutions, donors, academics are interested in budgetary transparency that promotes public access to information about budgets, government policies and financial activities of governments in order to make them accessible to citizens. Therefore, the purpose of our project is to make publicly accessible of a small portion of government activities such as the budget of a city corporation. It is one part of the Smart City System. The scope of the product is in Khulna city.

1.2 Document Conventions

This document uses the following conventions:

KCC	Khulna City Corporation
FAQ	Frequently asked question.
UC	Use Case

1.3 Intended Audience and Reading Suggestions

This project is a prototype for Budget transparency and it is restricted within Khulna City. This will be useful for KCC and as well as to the citizen, because they will be able to find all of the information about the budget that provides by Government for a specific field. This document is intended for KCC and users and citizens.

1.4 Product Scope

The main purpose of the budget transparency system is to reduce the corruption of a city corporation. With this project, people will be able to see the total amount of the budget and therefore, the corruption of this field will be reduced.

There are also some other objectives and goals and they are,

- Citizen will be able to contact with KCC easily.
- KCC will be able to update about the budget.
- KCC will be able to inform the citizen about the working progress of the specific field.

1.5 References

- Budgetary Transparency – an Improving Factor for Corruption Control and Economic Performance by Maria Violeta Cimpoeu^{a,*}, Valentin Cimpoeu^b.
- https://docs.google.com/spreadsheets/d/1KTn7hKx7eDI_5enyCP9r2Zx-v4rHbfzcvStapub1W9Q/edit#gid=660185579
- https://www.tutorialspoint.com/software_engineering/software_requirements.htm
- https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc

2. Overall Description

2.1 Product Perspective

This system will be free for all. It will be a web-based system that will support all type of operating systems. This system will provide a simple mechanism for users to share their complaint with authority to solve it. The following are the other features that will be included in this system:

- Cross-platform Support: Will Offer operating support for most of the known and commercial operating systems.
- User account: The system will need a account to make a comment using google API..
- Search: search will be simply local search engine based on keywords.
- Discussion Forum: System will provide users with a platform to discuss and KCC will be able to see this.
- FAQs section: Frequently asked section contain answer of the problem which citizen frequently faced.

2.2 Product Functions

The major features of the system as shown in below:

2.3 User Classes and Characteristics

Users of the system should be able to find all information about the budget. The system will support two types of user privileges, one is citizen and other is admin. Citizen or user will have the permission to access the Citizen functions and the admin will have the permission to access all type of functions.

The user should be able to do the following functions:

- See all budget information for the specific field.
- Able to contact with the KCC easily.
- Discuss the issues.
- See all development progress.

The admin shod have the following functionalities:

- Publish information about the budget.
- View all kind of issues asked by the user.

- Able to update the progress for the specific field.

2.4 Operating Environment

Operating environment for our system:

- Database
- Operating System: Windows 10
- Platform: .NET
- Software: Visual Studio 2017

2.5 Design and Implementation Constraints

This system will be provisioned to be built on the .NET framework which is highly flexible. The decision regarding which database will we use should be taken considering the fact that data being exchanged or stored is large, and the appropriate data management system will yield efficient performance. We will use SQL for queries/applications and Implement the database at least using a centralized database management system

2.6 User Documentation

The system is not completed yet. Therefore, user documentation is not available at that moment.

2.7 Assumptions and Dependencies

- Database server errors may occur.
- Lack of information on the budget.
- Working progress may not submit properly by admin.

3. External Interface Requirements

User Interfaces

As the front-end software interfaces we will use ASP.NET and for back-end software we will use SQL.

3.1 Hardware Interfaces

- Windows 10
- HTML, CSS supported browser.

3.2 Software Interfaces

The following software will be used for this system application:

Software will be used	Description
-----------------------	-------------

Operating System	We have chosen Windows operating system, because windows is more friendly than others.
Database	For storing data we have chosen SQL database.
ASP.NET	We have chosen ASP.NET framework.

3.3 Communications Interfaces

All types of web browser will support the project.

4. System Features

Our project is budget transparency. Here the city people can directly interact with the city corporation works. People can able to know the process of dividing the budget and how the corporation implements their work. There will be the proper details about the budget works and the corporation will update the progress the work. The people can review the works and able to give their decision.

4.1 System Features for admin

4.1.1 Description and Priority

Here the admin will be the city corporation workers. They will maintain the total services. They update everything about the budget system.

4.1.2 Stimulus/Response Sequences

Update the progress report and give the answer of the people comment.

4.1.3 Functional Requirements

They will update the budget progress. They can't delete the comment of the people.

4.2 System Features for users.

They can review the progress of work. They can share their ideas about the work.

4.3 Use cases description

4.3.1: Access Budget Transparency Home page.

UC_01	Use Case Name:	Access Budget Transparency Home page.
	Brief Description:	Total Description about budget of a city corporation.
	Priority	Essential
	Trigger	Alumni select the Budget Transparency link on the KCC home page.
	Precondition	N/A
	Basic Path	KCC web server sends the citizens to the Budget transparency server.
	Alternate Path	Directly insert web link.
	Post condition	Citizen is on KCC home page.
	Exception Path	If there is a connection failure, the Budget Transparency returns to the wait state.

4.3.2: Create New Admin Account

UC_02	Use Case Name:	Create New Admin Account
	Brief Description:	Admin Account can be created, but need to approve by main admin.
	Priority	Optional
	Trigger	User choose to Create New Admin Account.
	Precondition	User are connected to the internet and on Budget Transparency Home page
	Basic Path	<ol style="list-style-type: none">1. The City Corporation Server presents the user with a form of fields first name, middle name, last name, job position, email, password.2. Fill in the form and click Create Admin.3. City corporation sever checks to se if all required fields are not empty.4. If the required fields are not empty, the City corporation server creates a new Admin and waiting for approval of main account.5. If main admin approves then city corporation server creates a new entry on Admin table of the City corporation Budget Transparency Database.6. If any of the required fields are empty, the City Corporation server returns a message and returns the create new admin form.7. City Corporation Server returns the admin to Budget Transparency Home page.
	Alternate Path	N/A

	Post condition	New Admin is created in the Admin table of the Budget Transparency Database
	Exception Path	1. If the connection is terminated before the form is submitted, the fields are all cleared and the City Corporation Server is returned to the wait state.

4.3.3: Create a post

UC_03	Use Case Name:	Create a post
	Brief Description:	Admin can be able to create a post on a specific budget.
	Priority	Optional
	Trigger	Admin choose to Create a post.
	Precondition	User are on admin mode, connected to the internet and on the Budget Transparency Home page.
	Basic Path	<ol style="list-style-type: none"> 1. The City Corporation Server presents the admin with a form of fields section, budget, location, budget description, budget timeline. 2. Fill in the form and click Publish Post. 3. City corporation sever checks to if all required fields are not empty. 4. If the required fields are not empty, the City corporation server creates a new record on Post table of the budget Transparency Database.

		<ol style="list-style-type: none"> 5. If any of the required fields are empty, the City Corporation server returns a message and returns the create new post. 6. After Updated post successfully City Corporation server returns a success message. 7. City Corporation Server returns the admin to Budget Transparency Home page.
	Alternate Path	N/A
	Post condition	A record is created in the Post Table of the Budget Transparency Database.
	Exception Path	<ol style="list-style-type: none"> 1. If the connection is terminated before the form is submitted, the fields are all cleared and the City Corporation Server is returned to the wait state.

4.3.4: Update a post

UC_04	Use Case Name:	Update a post.
	Brief Description:	Admin can be able to edit a published post.
	Priority	Optional
	Trigger	Admin choose to update a post.
	Precondition	User are on admin mode, connected to the internet and on the Budget Transparency Home page.
	Basic Path	<ol style="list-style-type: none"> 1. The City Corporation Server presents the admin with a form with old Description. 2. Edit the form and click Update Post.

		<ol style="list-style-type: none"> 3. City corporation sever checks to if all required fields are not empty. 4. If the required fields are not empty, the City corporation server update the record on Post table of the budget Transparency Database. 5. If any of the required fields are empty, the City Corporation server returns a message and returns the Update post. 6. After Updated post successfully City Corporation server returns a success message. 7. City Corporation Server returns the admin to Budget Transparency Home page.
	Alternate Path	N/A
	Post condition	A record is created in the Post Table of the Budget Transparency Database.
	Exception Path	<ol style="list-style-type: none"> 8. If the connection is terminated before the form is submitted, the fields are all cleared and the City Corporation Server is returned to the wait state.

4.3.5: Delete a post

UC_05	Use Case Name:	Delete a post.
	Brief Description:	Admin can be able to delete a published post.
	Priority	Optional

	Trigger	Admin choose to delete a post.
	Precondition	User are on admin mode, connected to the internet and on the Budget Transparency Home page.
	Basic Path	<ol style="list-style-type: none"> 1. The City Corporation Server presents a message to admin for delete confirmation. 2. After Delete a post successfully City Corporation server returns a success message. 3. City Corporation Server returns the admin to Budget Transparency Home page.
	Alternate Path	N/A
	Post condition	A record is deleted from the Post Table of the Budget Transparency Database.
	Exception Path	<ol style="list-style-type: none"> 1. If the connection is terminated before the form is submitted, the City Corporation Server is returned to the wait state.

4.3.6: Set Contractor

UC_05	Use Case Name:	Set Contractor.
	Brief Description:	Admin can be able to set the contractor details for specific Budget.
	Priority	Optional
	Trigger	Admin choose to set new contractor .
	Precondition	User are on admin mode, connected to the internet and on the Budget Transparency Home page.

	Basic Path	<p>4. The City Corporation Server presents a form with fields first name, middle name, last name, email, contact no, address to admin for set contractor.</p> <p>5. After set a contractor successfully City Corporation server returns a success message.</p> <p>6. City Corporation Server returns the admin to Budget Transparency Home page.</p>
	Alternate Path	N/A
	Post condition	A record is added to the Contractor table of the Budget Transparency Database.
	Exception Path	<p>2. If the connection is terminated before the form is submitted, the City Corporation Server is returned to the wait state.</p>

4.3.7: Update working progress

UC_05	Use Case Name:	Update working progress.
	Brief Description:	Admin can be able to update working progress.
	Priority	Optional
	Trigger	Admin choose to update working progress .
	Precondition	User are on admin mode, connected to the internet and on the Budget Transparency Home page.
	Basic Path	<p>7. The City Corporation Server presents a form with fields.</p> <p>8. After publish working progress successfully City Corporation server returns a success message.</p>

		9. City Corporation Server returns the admin to Budget Transparency Home page.
	Alternate Path	N/A
	Post condition	A record is added to the working_progress table of the Budget Transparency Database.
	Exception Path	3. If the connection is terminated before the form is submitted, the City Corporation Server is returned to the wait state.

4.3.8: Ask question and answer a question.

UC_06	Use Case Name:	Ask Question and answer a question.
	Brief Description:	User will be able to ask a question.
	Priority	Optional
	Trigger	User choose to ask a question or reply.
	Precondition	Create a user using google API.
	Basic Path	<ol style="list-style-type: none"> 1. The City Corporation Server presents a form to user. 2. If all required filed is not empty, city corporation server create a entry on ask question Table

		<p>or comment table of budget Transparency database.</p> <p>3. City Corporation Server returns the user to Budget Transparency Home page.</p>
	Alternate Path	N/A
	Post condition	A record is inserted on the ask question or comment table of the Budget Transparency Database.
	Exception Path	If the connection is terminated before the form is submitted, the City Corporation Server is returned to the wait state.

5. Other Nonfunctional Requirements

5.1 Safety Requirements

City corporation should be conscious of updating budget.

5.2 Security Requirements

The security of the website should be higher as this will be used as our one of government website.

5.3 Software Quality Attributes

A good It related people needed to maintain the website. This follow a model so it is one kind of custom product as our need we can use it.

Detail Design

ER Diagram:

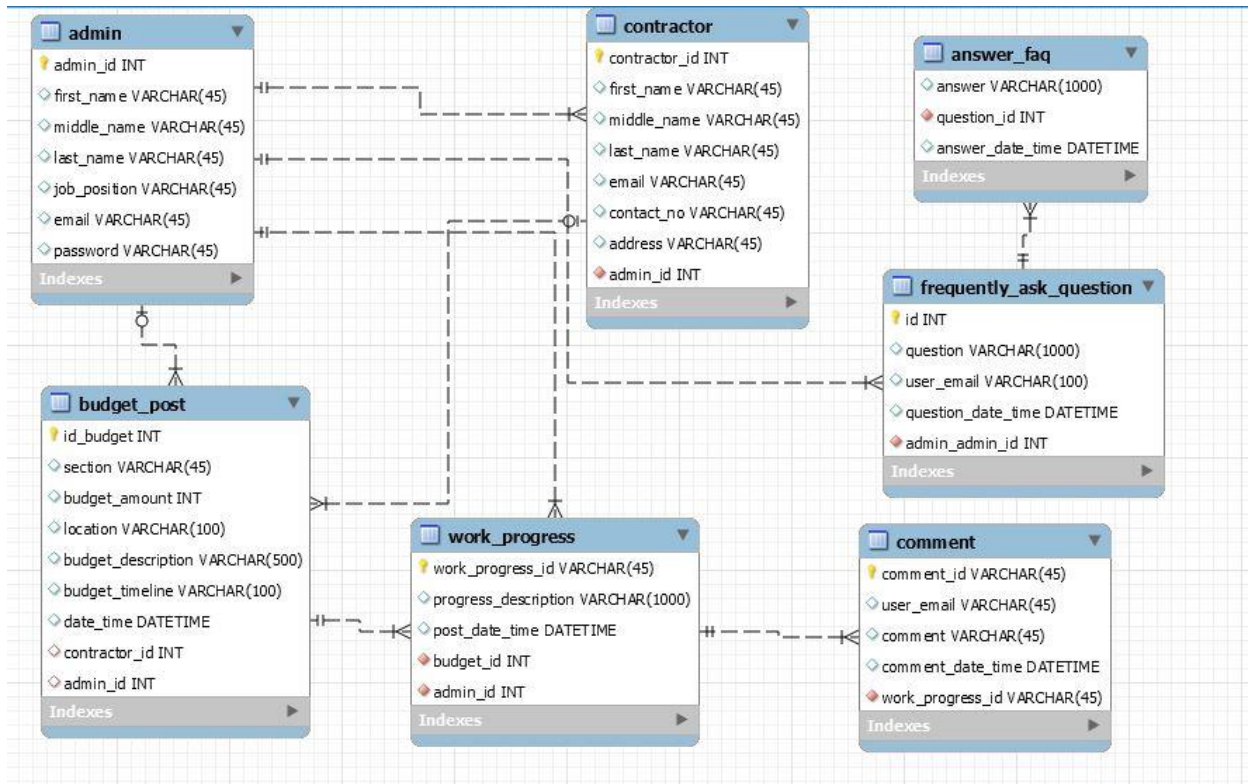


Fig: ER Diagram

Class Diagram

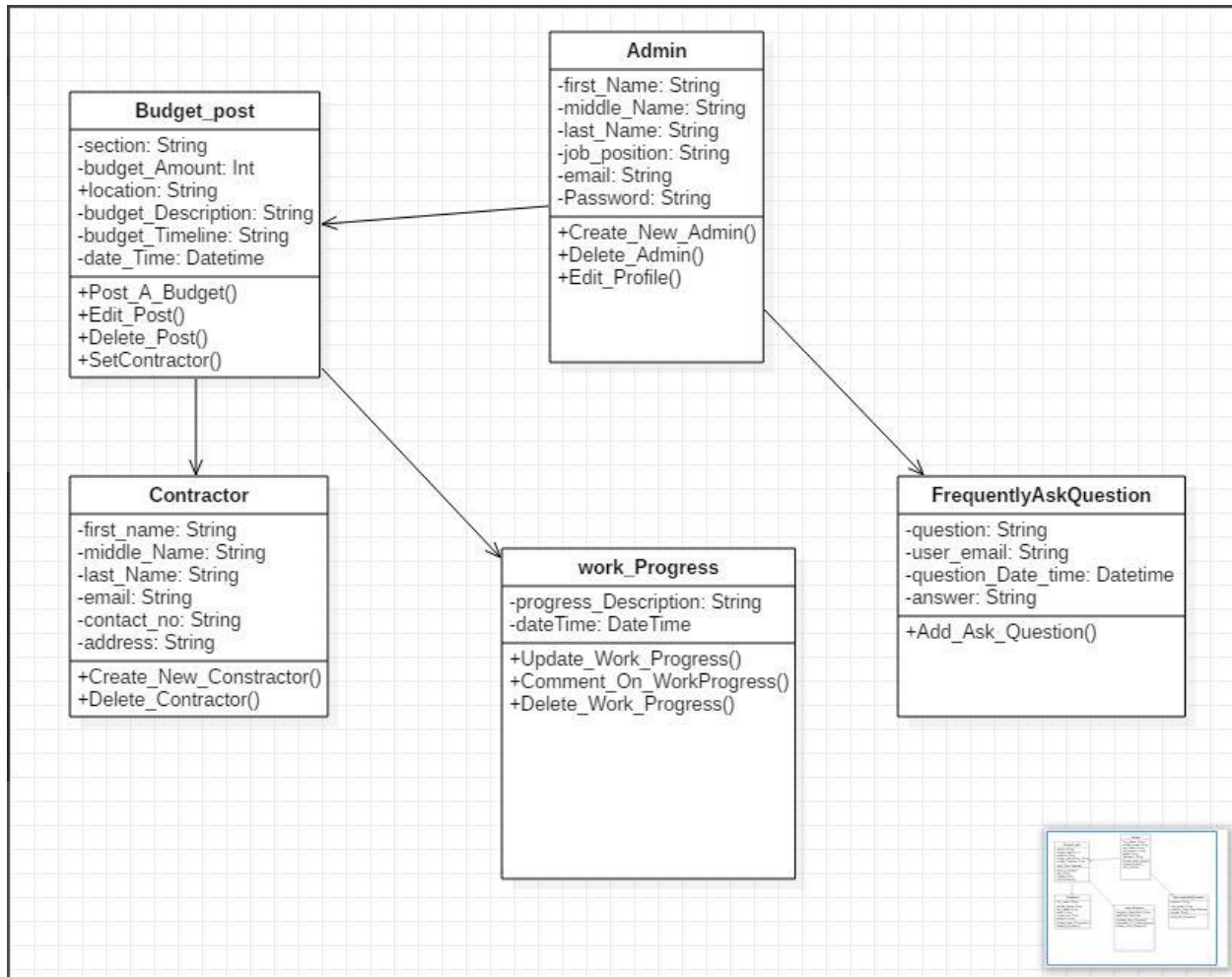


Fig: Class Diagram

Detail Class Diagram

Class Admin

boolean **Create_A_Post** (String first_name, String middle_name, String last_name, String job_position, String email)

boolean **Delete_Admin** (String admin_Id)

admin **View_Profile** (String admin_id)

boolean **Edit_Profile** (String id)

List<admin> **Get_Admin_list** ()

Class Budget_Post

Boolean **Post_A_Budget** (String section, String budget_Amount, String location, String budget_Description, String budget_Timeline, Datetime current_DateTime)

Budget_Post **View_Budget_Post**(String Post_Id)

boolean **Edit_Post** (String Post_Id)

boolean **Delete_Post** (String Post_id)

boolean **Set_Contractor** (String Post_Id)

List<Budget_Post> **Get_Budget_Post_List_By_Section** (String section)

Class Contractor

boolean **Create_New_Contractor** (String first_Name, String middle_Name, String Last_Name, String email, String contact_No, String address)

boolean **Delete_Contractor** (String contractor_Id)

List<Contractor> **Get_All_Contractor_List** ()

Contractor **View_Contractor_Profile** (String contractor_Id)

Class Work_Progress

boolean **Update_Work_Progress**(String budget_Id, String progress_Description, Datetime current_DatetTme)

List<Work_Progress> **Get_All_Work_Progress_List**(String budget_Post_Id)

boolean **Comment_On_Work_Progress** (String work_Progress_Id)

List<Comment> **Get_Comment_List**(String work_Progress_Id)

boolean **Delete_Work_Progress**(String work_Progress_Id)

Class Frequently_Ask_Question

boolean **Add_FAQ**(String question, String user_email, String Answer)

User Interface

Home Page:

CITY CORPORATION BUDGET TRANSPARENCY

Add Budget

View All Budget

FAQ

Admin Log in

Login with google account

About Us

Current Budget

Here user will see all current budget with scrool view

Current Budget Heading 01

Current Budget Heading 02

Current Budget Heading 03

Current Budget Heading 04

Current Budget Heading 05

Current Budget Heading 06

Current Budget Heading 07

Current Budget Heading 08

Current Budget Heading 09

Search Location Wise Budget

Enter Location

Search

Email Us the Issues

Issue Description

Enter Issue Description

Email

Your Email

Submit Issue

Latest News

Here user will see all news with scroll view

News heading with Link 01

News heading with Link 02

News heading with Link 03

News heading with Link 04

News heading with Link 05

News heading with Link 06

News heading with Link 07

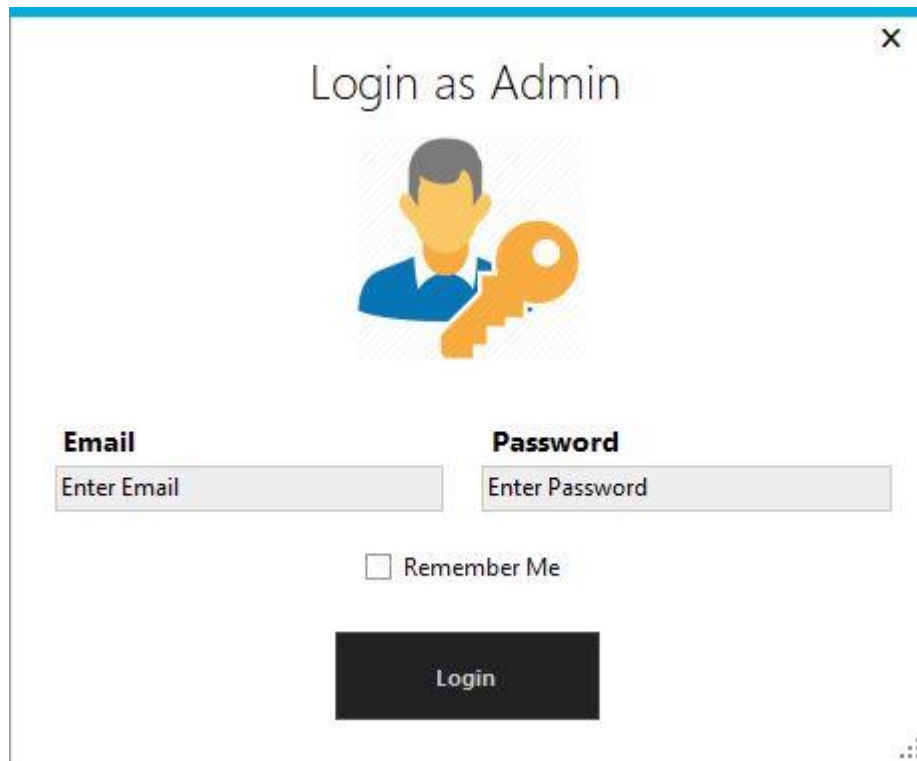
News heading with Link 08

News heading with Link 09

News heading with Link 10

Fig: Home Page

Admin Login Page:



The image shows a web browser window titled "Login as Admin". The window has a blue title bar with a close button (X) in the top right corner. The main content area is white and contains the following elements:

- A heading "Login as Admin" at the top center.
- An illustration of a person's head and shoulders in a blue suit, holding a large orange key.
- Two input fields: "Email" with a placeholder "Enter Email" and "Password" with a placeholder "Enter Password".
- A checkbox labeled "Remember Me" below the input fields.
- A black "Login" button at the bottom center.

The window also features a small "x" icon in the top right corner and a small "x" icon in the bottom right corner.

Fig: Admin Login Page

Add New Budget:

City Corporation Budget Transparency

Home

View All Budget

Add Contractor

FAQ

Admin Log in

Login with google account

About Us

Section:

Enter Section

Budget Amount:

Enter Budget Amount

Location:

Enter Location

Budget Timeline:

dd/mm/yyyy - dd/mm/yyyy

Set Contractor:

Select Catagory

Budget Description:

Enter Budget Description

Submit

Fig: Add New Budget

View All Budget:

City Corporation Budget Transparency

Home

Add Budget

FAQ

Admin Log in

Login with google account

About Us

All Budget Information

Here user will see all budget information with card view and Ascending with datetime

Select Catagory

Filter

Budget Title 01

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Date Time: dd/mm/yyyy hh:mm:ss am/pm

See More About This Budget

Budget Title 02

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Date Time: dd/mm/yyyy hh:mm:ss am/pm

See More About This Budget

Budget Title 03

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Date Time: dd/mm/yyyy hh:mm:ss am/pm

See More About This Budget

Budget Title 04

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Date Time: dd/mm/yyyy hh:mm:ss am/pm

See More About This Budget

Budget Title 05

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Date Time: dd/mm/yyyy hh:mm:ss am/pm

See More About This Budget

Budget Title 06

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Date Time: dd/mm/yyyy hh:mm:ss am/pm

See More About This Budget

Fig: View All Budget

24

Home

Add Budget

View All Budget

FAQ

Admin Log in

Login with google account

About Us

City Corporation Budget Transparency

Budget Full Information

Here user will see budget full information and working progress of the budget and user will be able to comment on specific progress

Budget Title

Date: dd/mm/yyyy Time: HH:MM:SS am/pm

Published By: Admin Name With link for view his Profile

Budget Amount: Total amount of budget

Budget Section: Section of the budget

Location: Here will be the Location

Budget Timeline: Working start date and probable end date

Contractor: Contractor Name With link for view his Profile

Description: Here will be the Description, Here will be the Description, Here will be the Description, Here will be the Description

Add Budget Progress

Work Progress

Here will be the work progress with card view with date wise descending order

Date: dd/mm/yyyy Time: HH:MM:SS am/pm

Budget Title: here will be the budget title

Progress Title: here will be the progress title

Published By: Admin Name With link for view...

Description: here will be the description

View Comments On this Progress

Date: dd/mm/yyyy Time: HH:MM:SS am/pm

Budget Title: here will be the budget title

Progress Title: here will be the progress title

Published By: Admin Name With link for view...

Description: here will be the description

View Comments On this Progress

Date: dd/mm/yyyy Time: HH:MM:SS am/pm

Budget Title: here will be the budget title

Progress Title: here will be the progress title

Published By: Admin Name With link for view...

Description: here will be the description

View Comments On this Progress

Fig: Full Information of A budget

Add Working Progress of A Budget:

City Corporation Budget Transparency

Home

View All Budget

FAQ

Admin Log in

Login with google account

About Us

Progress Description:

Prgrees Description Here

Submit

Fig: Add working progress of a budget

View and Comment On Working Progress:

City Corporation Budget Transparency

Home

View All Budget

FAQ

Admin Log in

Login with google account

About Us

Budget Work Progress

Budget Title: here will be the budget title

Date: dd/mm/yyyy Time: HH:MM:SS am/pm

Progress Title: here will be the progress title

Published By: Admin Name With link for vie...

Description: here will be the description here will be the description here will be the description

Comments By User

Users email: dd/mm/yyyy hh:mm:ss am/pm

Here will be the comment. Here will be the comment. Here will be the comment. Here will be the comment

Users email: dd/mm/yyyy hh:mm:ss am/pm

Here will be the comment. Here will be the comment. Here will be the comment. Here will be the comment

Users email: dd/mm/yyyy hh:mm:ss am/pm

Here will be the comment. Here will be the comment. Here will be the comment. Here will be the comment

Comment On this work progress

Write your comment here

Submit

Fig: View and comment on working progress

27

Create Contractor:

Add Contractor

First Name

Enter first name

Middle Name

Enter middle name

Last Name

Enter last name

Email

Enter email

Contact No

Enter contact no

Address


Enter address

Submit

Fig: Add or Create Contractor

View Contractor Profile:

Contractor Profile



Name: Contractor name


Email: Here will be admin's Email

Contact No: Here will be contact No

Address: Here will be the address

View Admin Profile:

Admin Profile



Name:

Admin name

Job Position:

Here will be admin's Job position

Email:

Here will be admin's Email

Add Frequently ask question and answer:

City Corporation Budget Transparency

Add Budget

View All Budget

FAQ

Admin Log in

Login with google account

About Us

Question

Enter your question here.

Answer

Answer Your Question Here

Submit

View FAQ List:

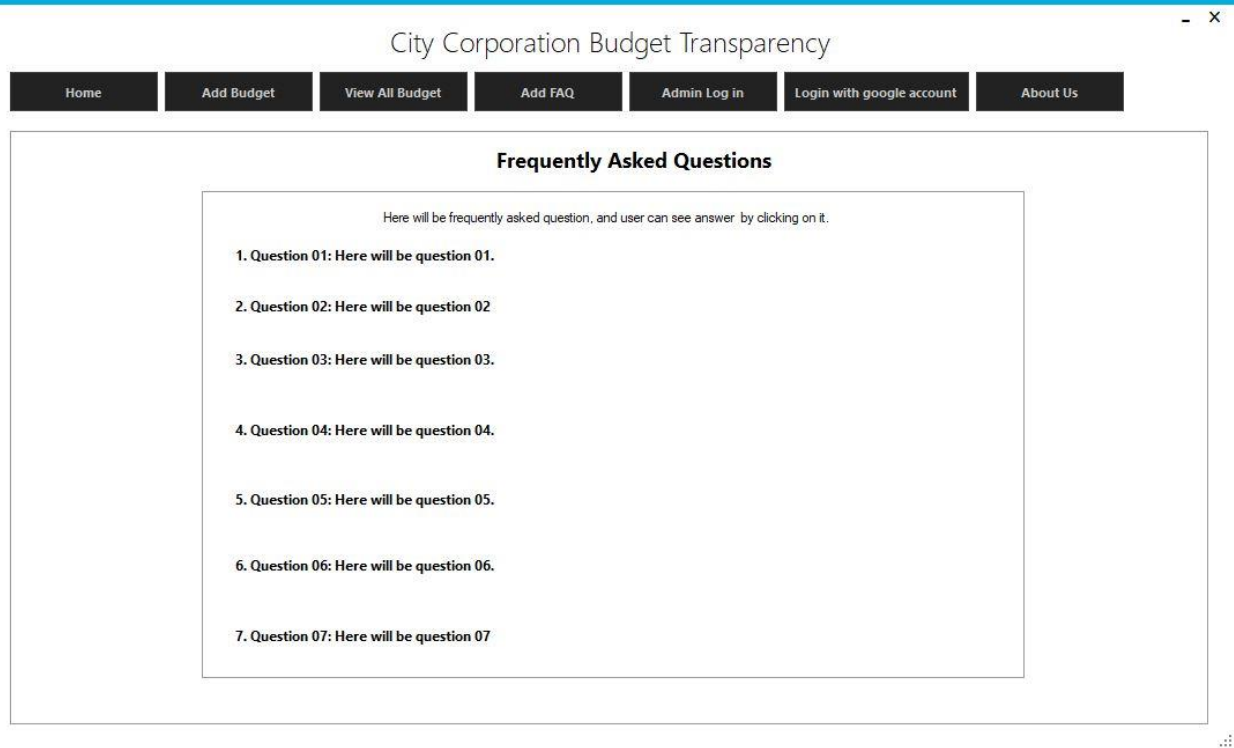


Fig: View FAQ list

View Answer of a specific FAQ:

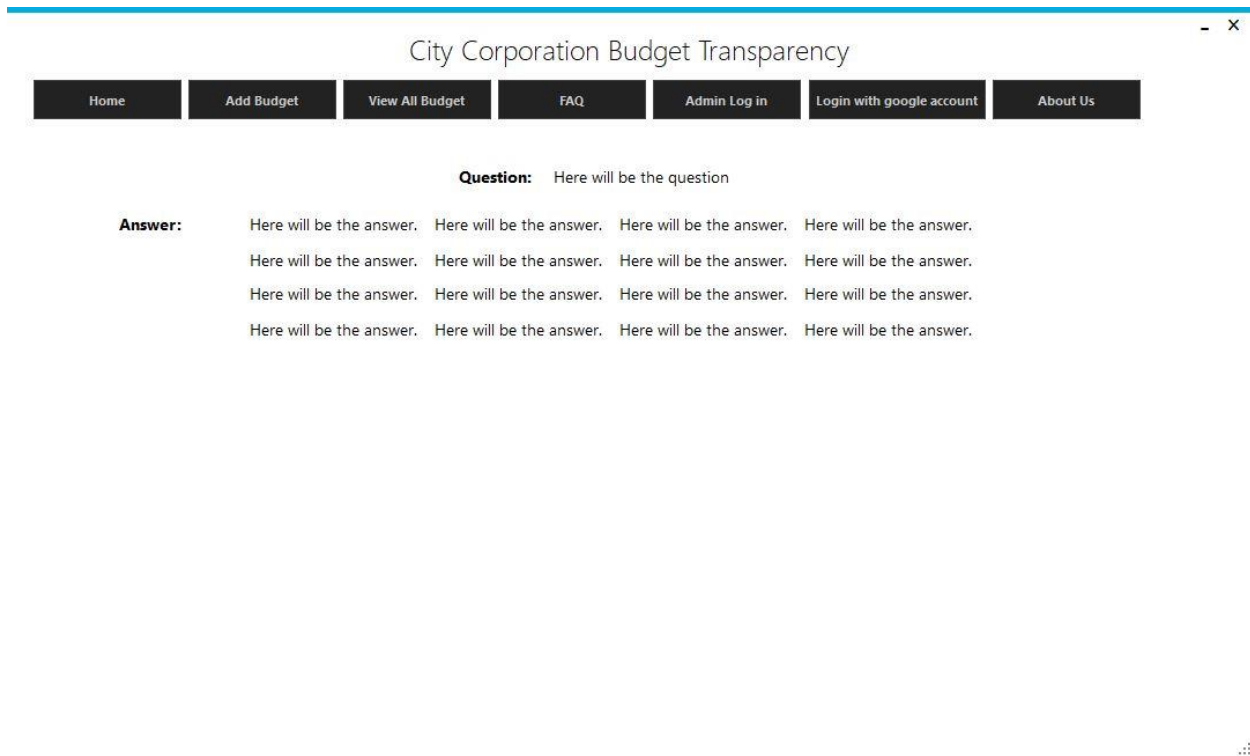


Fig: View answer of a FAQ

About Us Page:

