PROJECT PROBLEM STATEMENT
CTRL BUDGET(Expense Manager)

Congratulations! You have completed all the modules in this training.

Now, it's time for you to apply your knowledge to create a web application based on what you have learned in the training.

You need to build a simple expense manager web application that can be used by all for tracking their expenses accordingly.

The user can add the initial budget for the expenses and give it a title accordingly. Further user can add bills under the given budget and track her expenses accordingly.

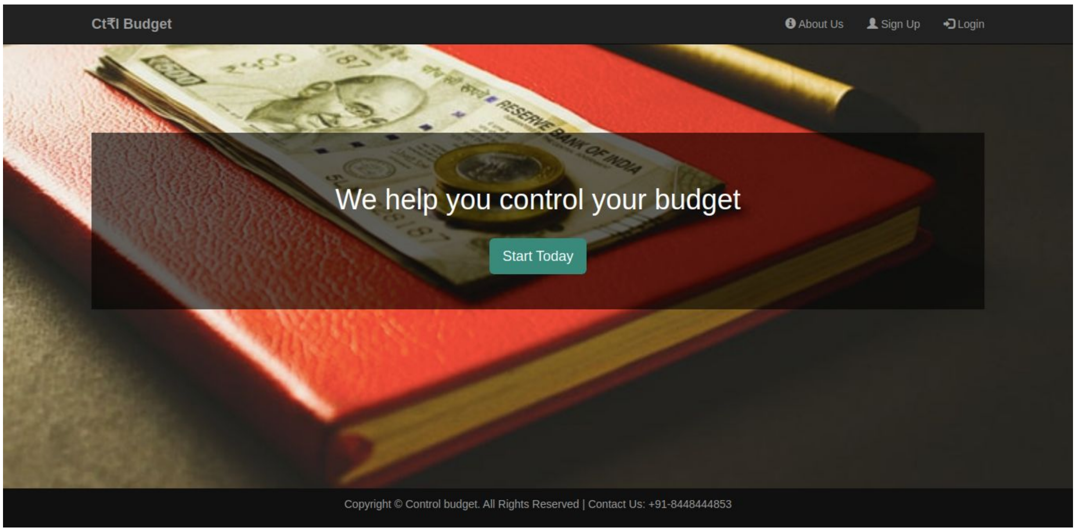
The following points describe completely the functionality of the website from the user's point of view. The website will contain the following pages:

1. Index Page
2. Sign up Page
3. Login Page
4. About Us Page
5. Home Page
6. Add New Plan Page
7. View Plan Page
8. Expense Distribution Page
9. Add New Expense Page
10. Change Password Page

*****Before you start, keep in mind the entire website would be mobile responsive.***

INDEX PAGE

The index page is usually the first page that a user sees on any website. When a user first visits the Ctrl Budget website, she will see the following page.



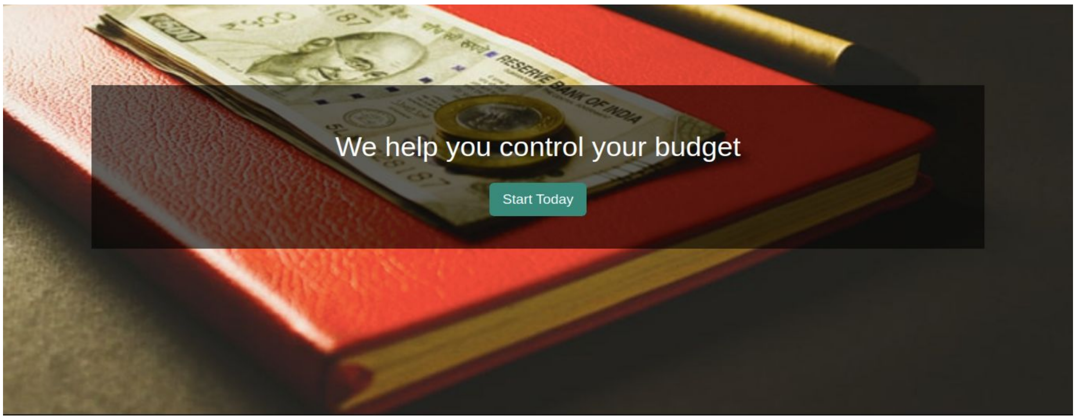
The page needs to be divided into three parts:

Navbar (fixed navbar at the top)

It is a collapsing navbar. It contains the following options:

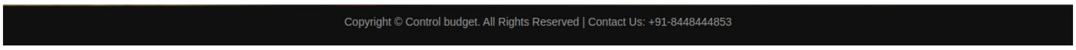
1. About Us
2. Sign Up
3. Login

Body



The body part consists of two parts. The upper part has a background image and a semi transparent box inside which we have a button (Start Today). When you click the button it redirects the visitor to the login page.

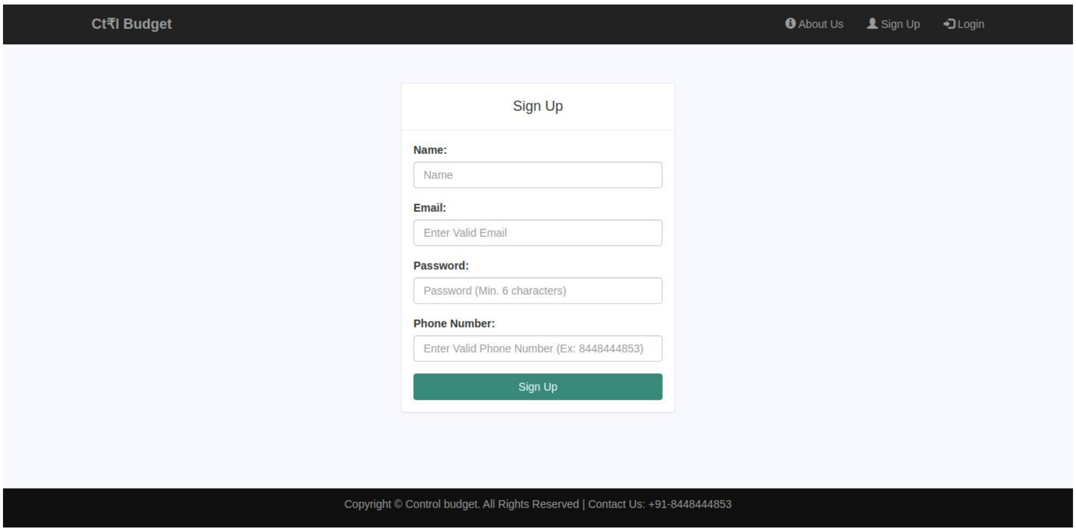
Footer



The footer contains text:
Copyright © Control Budget. All Rights Reserved|Contact Us: +91-8448444853.

SIGNUP PAGE

On the signup page, new users can register using the ‘Sign Up’ form and create accounts, while existing users can log in using the ‘Login’ page.



As you can see, the signup form has four fields i.e. ‘name’, ‘email’, ‘password’, ‘phone number’. What you cannot see is the backend or the functionality of the form, which comprises of form validation and form injection.

FORM VALIDATION

In order for the data (entered by any user) to be valid input, we have to force the data to obey certain rules.
We have listed the rules for this signup form as follows:

1. Each user on the website will be uniquely identified by his email id, so we must ensure that no two users have the same email ids.
2. We must ensure that the user enters a valid e-mail address and not just any string. (e.g. user@gmail.com)
3. We must ensure that a valid 10-digit mobile number is entered by the user.
4. We must ensure that the password contains a minimum of 6 characters. Also, the password stored in the DB should be encrypted. For this, we need to use an encryption technique that you have learned during the program.
5. We must ensure that the user submits the form only after she fills in all the fields.

If a user enters valid data, she is logged in and is taken to the Home page.

Using Form Validation, we check whether the user has entered the correct values. If the user enters an email which is invalid, she is shown a message that the email entered is invalid. Similarly, if the user enters an email address that has already been registered, a message is shown telling her that this email address is already registered. If the user enters a contact number which is not a valid 10-digit mobile number, a message is shown that the contact number is invalid. Also, if the password is less than 6 characters, it should display the corresponding error message. The user may enter any value in the remaining fields.

FORM INJECTION

When you allow a user to enter an input on your website, there is always the risk that a hacker may try to compromise your server or website. This can be done by entering a PHP code instead of just plain text in the input field of the form. Form injection is a basic security feature that makes it very difficult for hackers to do this. Using form injection, we identify whether a user is trying to pass a PHP code in the input field of a form. This is basic security against potential hackers.

How to show the message:

We are going to use the Javascript ***alert*** statement for showing user messages like Email Already Exists and redirect to pages using ***location.href***.

Alert: This is used to display a message on your screen and it accepts a parameter which is your message. You can use it in your .php file using echo statement like:

```
echo "<script>alert('Your Message Here')</script>";
```

Location.href: This can be used to redirect to any page. You can use it like:

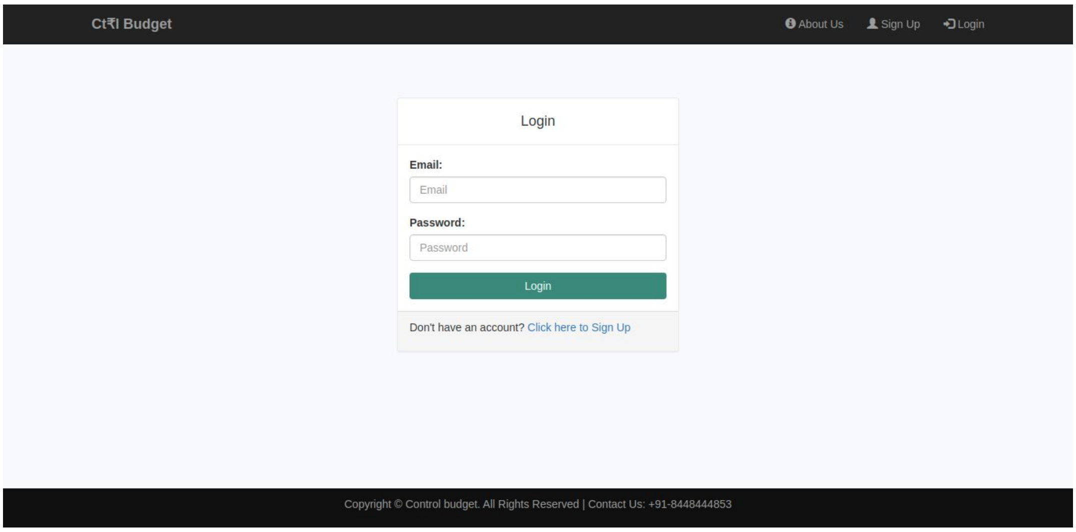
```
echo ("<script>location.href='signup.php'</script>");
```

signup.php is the page it is redirecting to.

LOGIN PAGE

In the login form, there are two fields, one is the email address and the other is a password. When the user enters her credentials, the website checks the database for the email and password. If both are found corresponding to the same user on the database, the user is logged in.

Again, we use form validation and form injection just as we did it in the signup form. If a user enters an email id that is not registered in the database, she is not allowed to login and an error message is displayed. If the email id is registered and the user enters a wrong password, an error message is shown indicating that the password entered is incorrect. If she enters the correct email address and password, she is logged in and is redirected to the Home page.

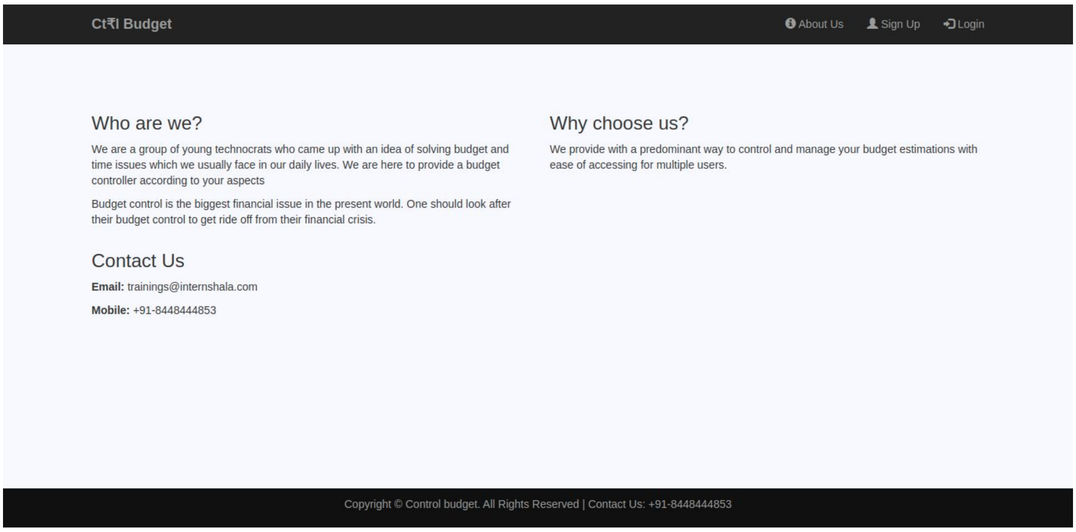


An additional safety feature being implemented in these forms is that the passwords entered by the users are encrypted. Therefore, even if the database is compromised by a hacker, she cannot determine the password. For this, we need to use an encryption technique that you have learned during the program.

Once the user's input is validated, the data entered by her is accepted and stored in a database (MySQLi is used for this purpose). The user is redirected to the home page, where she can create the plan.

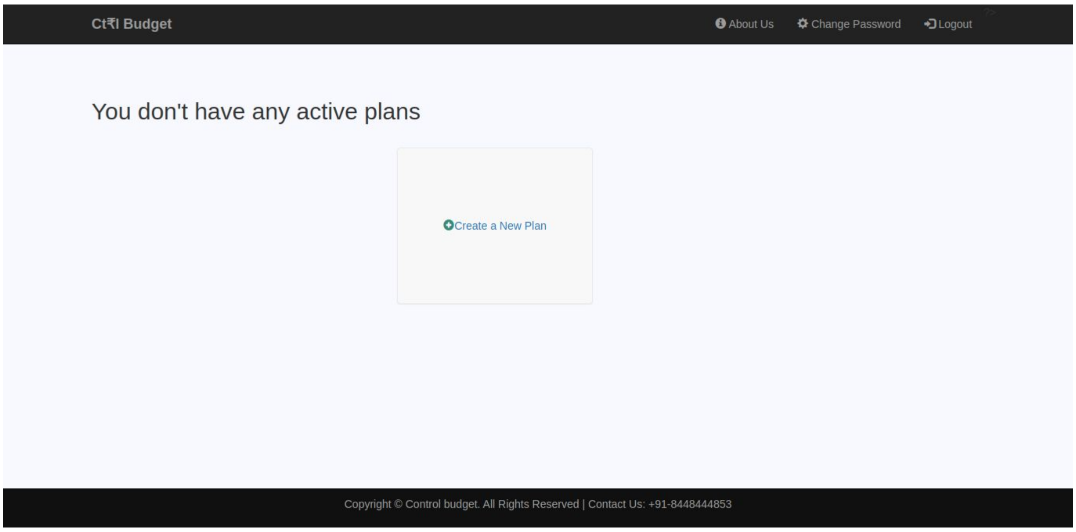
ABOUT US PAGE

The navbar and the footer remain the same. In the body section, one row needs to be created which will have a class container inside to make the row responsive and helps in the design of the web page. This row needs to be divided into 2 columns which will contain given content.



HOME PAGE

The Home page looks like this:



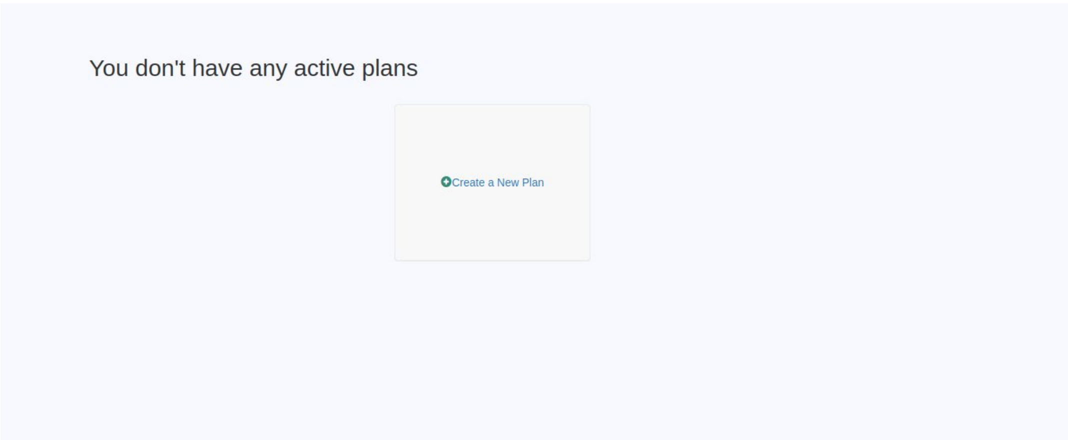
The Home page is divided into three sections:

1. Header with navigation links to About Us, Change Password and Log Out
2. Content
3. Footer

The concept of header and footer has already been explained above which you could refer to.

Content:

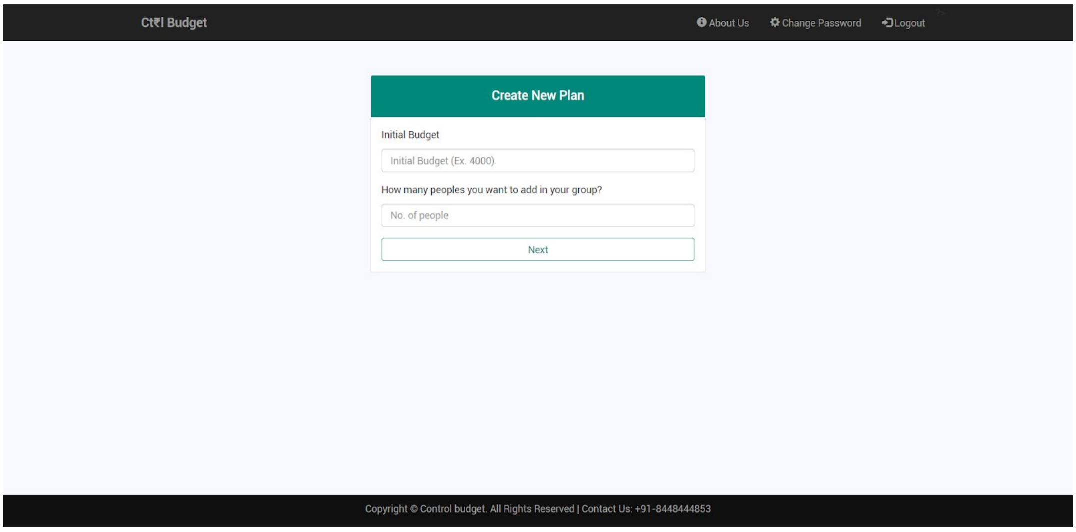
In the beginning, when there are no plans added it should show a panel like this:



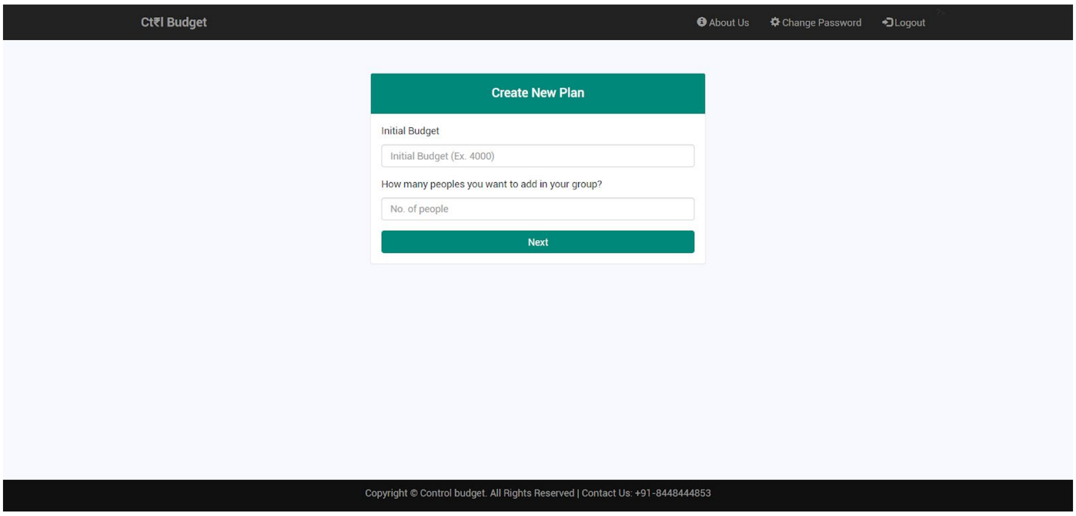
Clicking on this 'Create a New Plan' link will lead to the Create New Plan Page which will contain a form to add a new budget plan. In case we already have added Budget Plans then this page should show all the plans here.

CREATE NEW PLAN

This page is going to be a form to create a new plan and it will look like this:



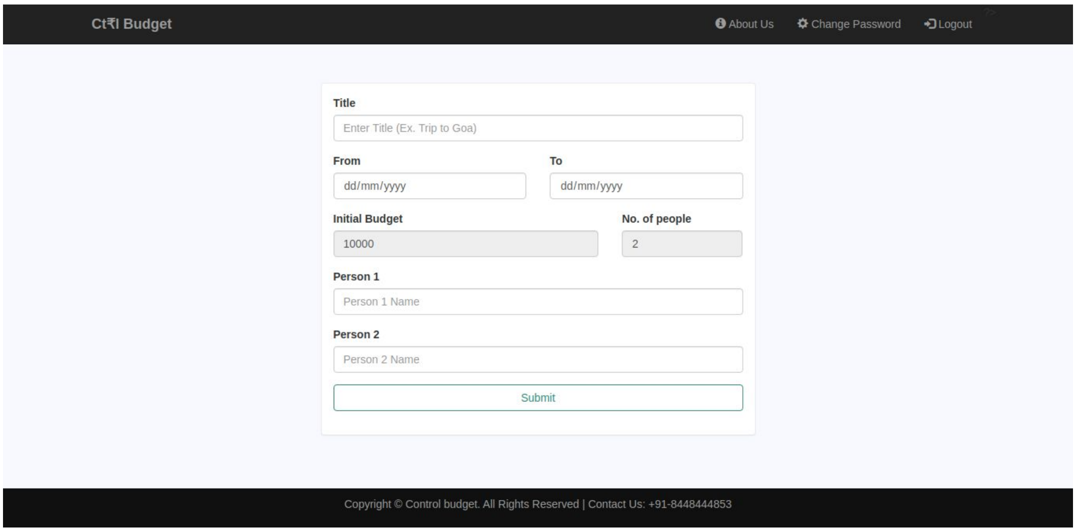
Create New Plan Page contains a form - given above. It will ask for two things, Initial Budget and People you want to add in this budget plan. Further, make sure that your form looks like this and when you hover over Next button it changes its color into this:



The next thing is we will click on Next but make sure through validation that the numbers entered are positive.

Clicking on Next leads to Plan Details Page.

PLAN DETAILS PAGE



This page will further ask for more detail about the Budget Plan like title, date and Initial Budget and No. of people are here from old form and here it will further ask the Name of those persons and a Submit button. Clicking on Submit should submit this form and create a budget plan in your database, the structure of the database is to be designed by you.

Date input fields:
You can create date input fields using type=”date” like:

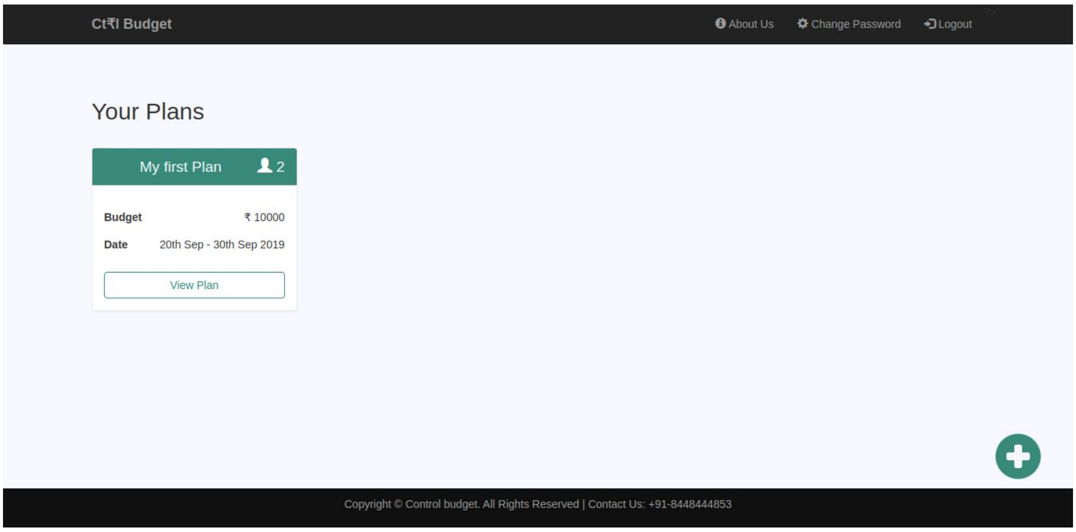
<input type="date" class="sample_class" name="sample_name">

And further add validations like:

<input type="date" min="2019-04-01" max="2019-04-20" required>

min: The earliest date to accept.
max: The latest date to accept.
Required: This field can not be empty.

Finally submitting the form should redirect to the home page with the new plan in there as a panel in the image given:

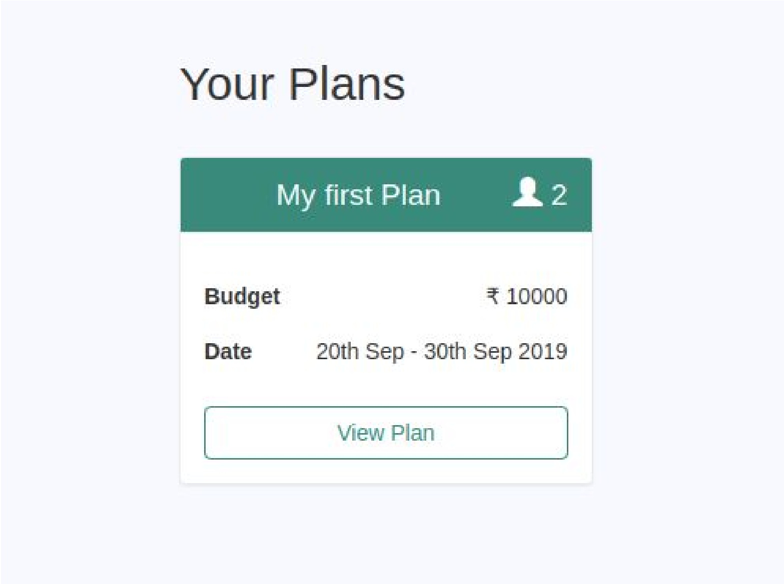


Now just see the frontend of the panel, we have the title along with a icon (glyphicon-user) and then a number to show the number of members in a plan with Budget and Date. After which we have a button “View Plan” which displays a new page consisting of further details.

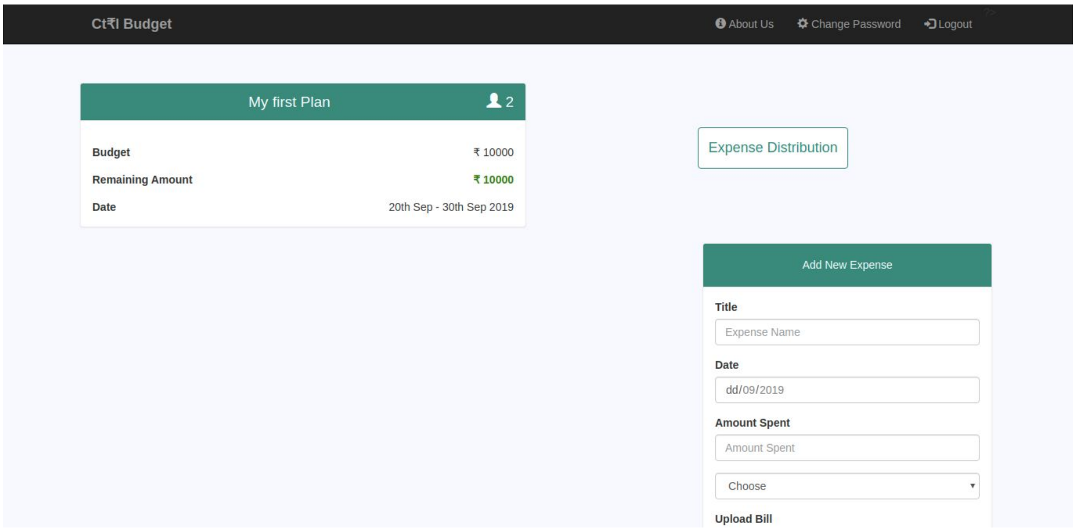
Further, in the lower right section, we have another icon that is going to be used to add further new plans, i.e. it will redirect to Add New Plan Page and icon used is glyphicon-plus-sign. That icon should be fixed in that part of the browser.

VIEW PLAN PAGE

In the home page, you can click on the View Plan button to visit the View Plan Page:



It will look like this:

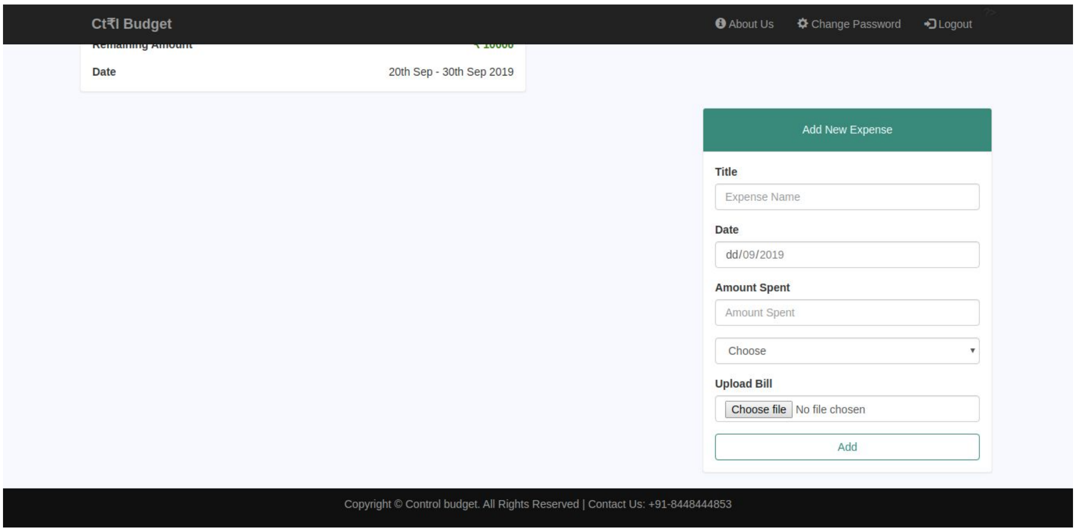


In the first panel, it shows a brief description of the Plan like Budget, Remaining Amount and Date. Next, we have a button which is called Expense Distribution, we will go into that in a moment. The next thing we have here is another panel called 'Add New Expense' which has a form to finally add your expense to this plan.

Remaining Amount = Budget - (All the Expenses)

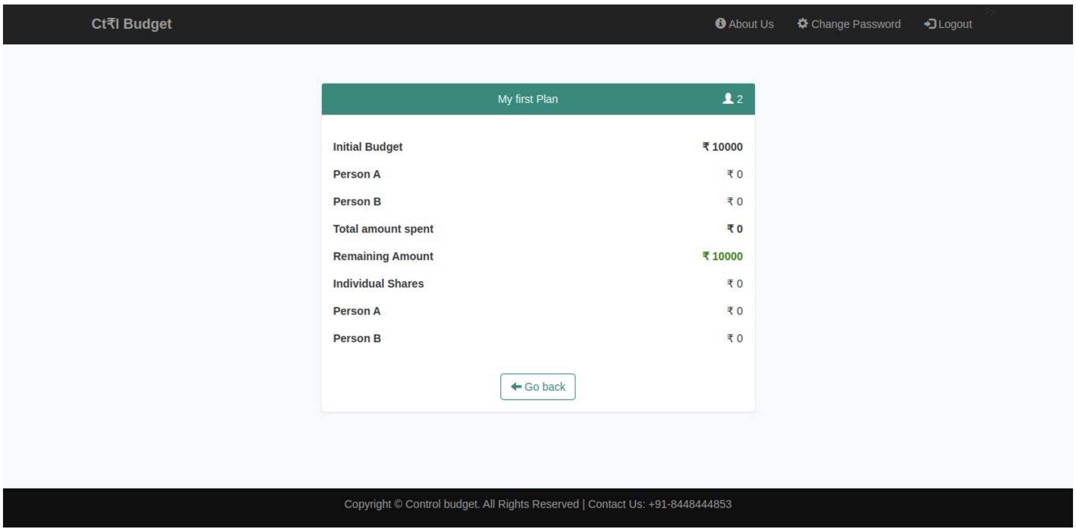
The frontend of this page should be as given in the image above. Remaining Amount should be in green if it is greater than 0 and red if it is smaller than 0 and black when 0.

The lower section of View Plan Page looks like the image given below and we will go to all these elements in a moment.



EXPENSE DISTRIBUTION PAGE

When you click on that button ‘Expense Distribution’ then you will see a page like given below. It is a panel with the title of the Budget plan with the number of people in a group on the right side. It has a body with a number of options as given below and finally a Go back button which takes back to the View Plan Page. (Icon for Go back button is glyphicon-arrow-left)



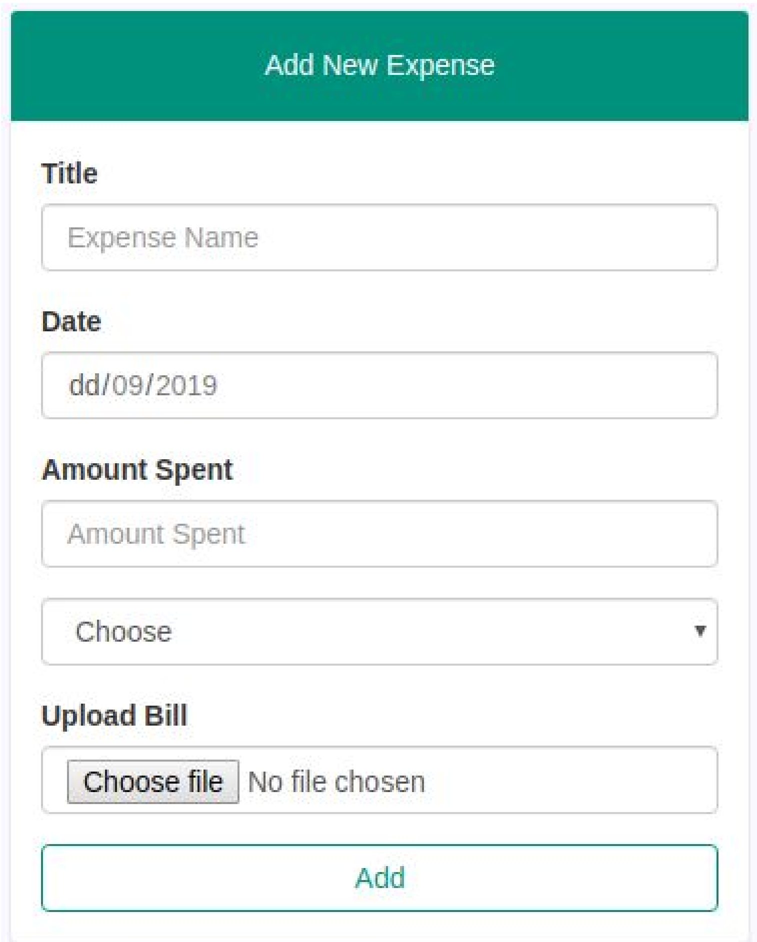
Everything given in the panel in the image above is explained below:

Initial Budget: The budget of the plan
Person A: Money spent by person A
Person B: Money spent by person B
Total amount spent: Total money spent by all the people
Remaining Amount: Initial Budget - Total amount spent
Individual Shares: Total amount spent / No. of people
Person A: Money spent by person A - Individual Shares
Person B: Money spent by person B - Individual Shares

Front-end: Make sure that the Remaining Amount is green in case it is greater than 0, red in case it is smaller than 0 and black in case of 0. For the individual shares also, the messages and colors displayed should appropriate e.g. if Person A has a negative Rs 50 share, the message displayed should be ‘Owes ₹ 50’ and if Person B has a positive Rs 100 share, the displayed message would become ‘Gets back ₹100’. If the individual share equals 0, then the displayed message should be “All Settled up”.

ADD NEW EXPENSE PAGE

In the View Plan Page, there is a form to Add New Expense in your budget and it looks like this:



The "Title" is the name of expense that you make and "Date" is the date when you made that expense and "Amount Spent" is the amount that you spent. Next, we have to choose who made the transaction and in a select menu, we will have all people who are a member of the current budget.

Validations: Make sure that the date lies between the dates of the budget plan and the amount spent is not negative. Further, make sure that at least one of the group members must be selected. Upload Bill feature can be an optional field. A user can either upload a bill receipt or leave it blank.

File Upload Functionality:

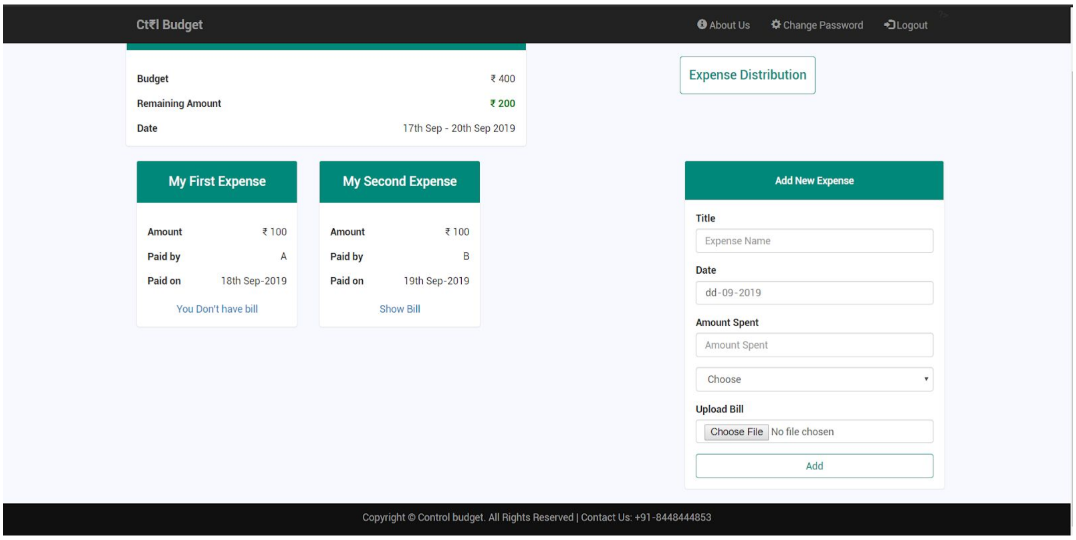
You can use type as file in the input field to make a file uploader as given below:

```
<input type="file" class="sample_class" name="sample_name">
```

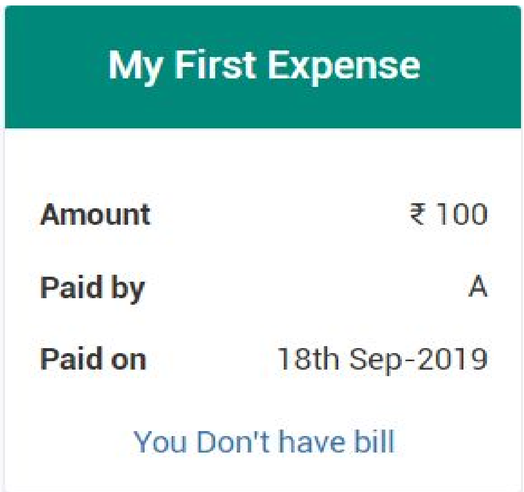
The code to upload file will be provided below to directly plug and play into your project in the file where you will submit your form request of Add Expense. In this sample code, the “name” attribute is “uploadedimage”.

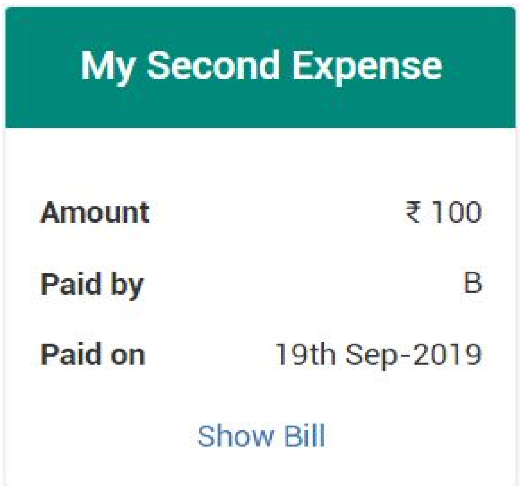
```
function GetImageExtension($imagetype){
            if(empty($imagetype)) return false;
            switch($imagetype){
                  case 'image/bmp': return '.bmp';
                  case 'image/gif': return '.gif';
                  case 'image/jpeg': return '.jpg';
                  case 'image/png': return '.png';
                  default: return false;
            }
      }
      if (!empty($_FILES["uploadedimage"]["name"])) {
            $file_name=$_FILES["uploadedimage"]["name"];
            $temp_name=$_FILES["uploadedimage"]["tmp_name"];
            $imgtype=$_FILES["uploadedimage"]["type"];
            $ext= GetImageExtension($imgtype);
            $imagename=date("d-m-Y")."-".time().$ext;
            $target_path = "img/".$imagename;
            if(move_uploaded_file($temp_name, $target_path)){
                  // Make a query to save data to your database.
            }
      }
```

Once you are done with the Add New Expense Form, make sure that after adding your Expenses your View Plan Page should look like this:



This image has Expenses first one with no bill and other with bill upload.

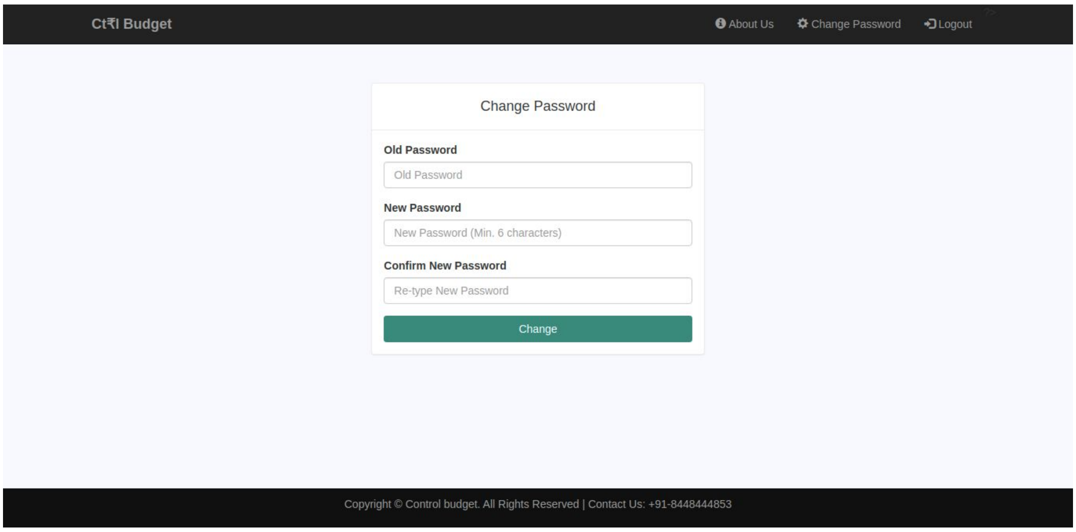




This is a closer look into the Expense card and you can see it has six parts:

1) **Title:** Expense name.
2) **Amount:** The money spent.
3) **Paid by:** Name of the person who paid.
4) **Paid on:** The date of the transaction.
5) **You don't have bill:** This is displayed if no bill was uploaded.
6) **Show Bill:** This button will show the bill on being clicked.

CHANGE PASSWORD PAGE



This page needs to contain only one row. The row will consist of one column containing a form.

Here, we again implement form validation. If the user enters different passwords in the fields 'New Password' and 'Retype New Password', a message is shown that the passwords don't match. If the user enters the incorrect 'Old Password', an error message is displayed indicating that you have entered the wrong password. If the user fills the three fields correctly, her password is updated and then she will be directed to the index page. The form should be protected from form injection to reduce security threats.

Click here to view the demo of the website: [Ctrl Budget Demo]

SUBMISSION:

Create a readme.txt file that states the steps required to run the project. Place all the created files and resources in a single folder and create its zip file (Please ensure this zipped folder also includes your database file(.sql)). Now, upload this zip file to the progress tracker.

Note: No resubmission is allowed.

EVALUATION:

Your project will be evaluated on three parameters:

1. **User Interface:** Make sure all the UI components are present which are there in the project and aligned correctly.

2. **Functionality:** Make sure all the components added are functional and the database is added properly at all the required places.

3. **Coding Conventions :** Make sure that the files and variables are properly named and placed. Further, the code should be properly formatted and appropriate comments are present, thus making the code modular and readable.

All the pages are evaluated on the basis of the above three parameters.

Let's get started! Have a great time creating.