

Khaznah

Personal Finance System for
teenagers and students



1. Introduction

Have you ever tried to save your money to buy something you want? Khazna App is going to help you with that. Khazna is a financial management system which gives users the opportunity to track their financial activities, manage income and expenses, and even dealing with difficult money management. Also, users can focus on their priorities by adding them to the “priority list”. Khazna is targeting people who has limited income especially students who face difficulty in managing their money.

1.1 Task Analysis

Task 1: Sign up

- Enter email
- Enter phone number
- Enter password
- Confirm password
- Enter OTP code sent to the user phone number

Task 2: Log in

- Enter email or phone number
- Enter password
- Enter OTP code sent to the user phone number

Task 3: Money saving goals

The user can set his/her goal (what he/she wants to buy + targeted amount of money + amount of money that will be added each month + duration number of months needed to collect the targeted amount of money), a virtual wallet will be created, and every month a notification will come to the user's phone that reminds the user to add money to the wallet. Also, there is a progress bar that shows the user the percentage of money collected; the user can transfer it to the bank to buy his goal.

- Specify the goal
- Specify the amount of money needed for the goal
- Specify the amount of money that will be added each month
- Specify the duration of the goal
- Virtual wallet is created
- Add money to the virtual wallet

Task 4: Track financial activities (monthly expenses)

The user can create a main category and subcategories under it to manage his/her income and expenses. For example, a user can create University as the main category, and Books, Transports, etc. as subcategories. Then, the user should insert the expenses for each subcategory. Then, the application will calculate the overall expenses for that main category.

- Create the main category
- Create the subcategory inside the main category
- Insert the expenses for each subcategory

Task 5: Creating a Priority List

The user can create priority list for things that suddenly occurs in the middle of the month. For example, a user who breaks his/her phone screen and needed to fix it as fast as possible, he/she puts this task in the priority list in order to keep it on mind. The application will remind the user about it by sending a notification “Don’t forget to fix your phone screen!”, user also can add a widget to his/her home screen containing this list.

- Create priority list by clicking (⊕)
- Add necessary thing to do/ buy
- Add the widget to home screen (optional)

2. Paper Prototype Using Balasmiq



Figure 1:Start interface

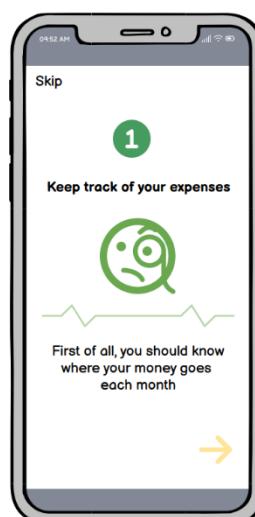


Figure 2:Intro interface 1



Figure 3:Intro interface 2



Figure 4:Intro interface 3



Figure 5:Main page



Figure 6: Sign up interface



Figure 7: Log in interface

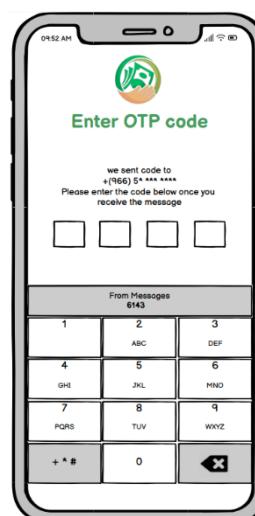


Figure 8: Phone OTP interface



Figure 9:Services interface

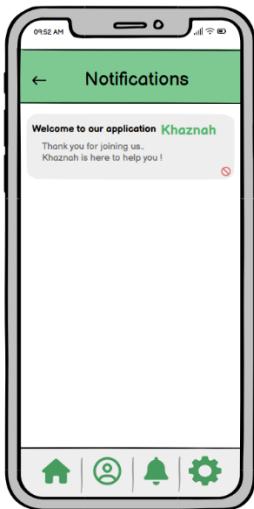


Figure 10: Notifications interface



Figure 11 :Categories interface (no category added)

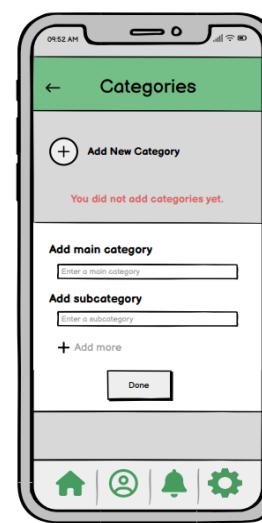


Figure 12:Categories interface 2

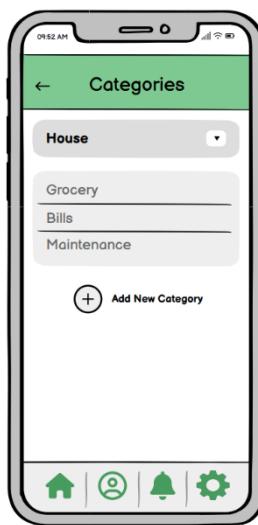


Figure 13: Categories interface (category added)



Figure 14:Reset password methods interface



Figure 15 :Reset password via email interface

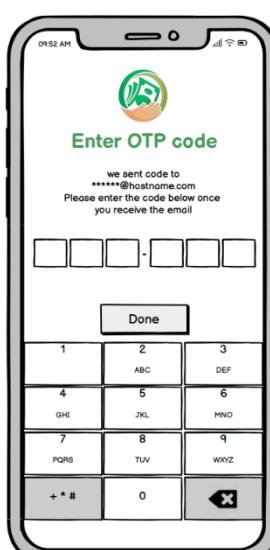


Figure 16 :Email OTP interface

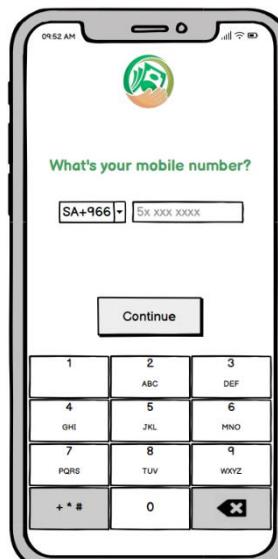


Figure 17 :Reset password via phone interface

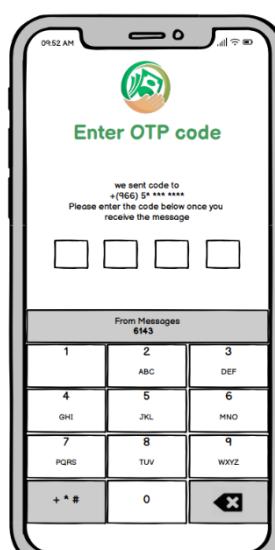


Figure 18:Phone OTP interface



Figure 19:Create new password interface



Figure 20:Priority list interface



Figure 21:Add priority interface



Figure 22:Goals interface



Figure 23:Set a new Goal interface

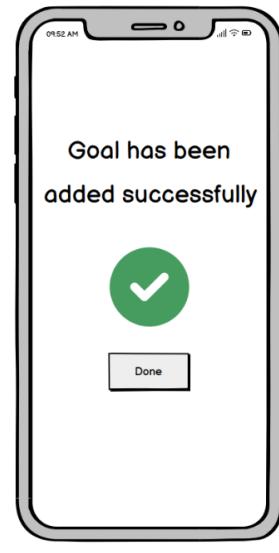


Figure 24:Feedback interface



Figure 25:Payment methods

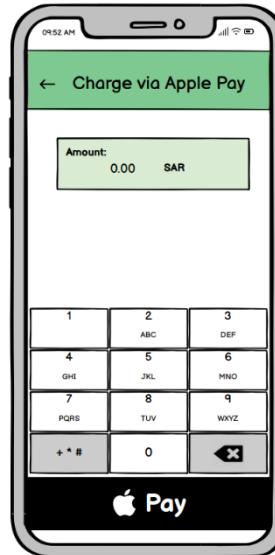


Figure 26:Charge card using Apple Pay

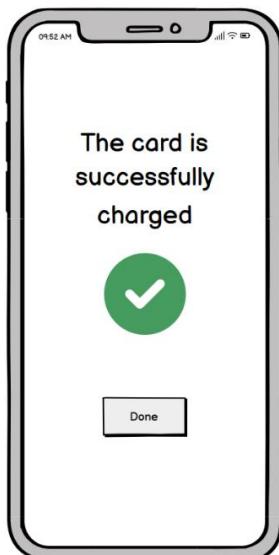


Figure 27:Feedback interface

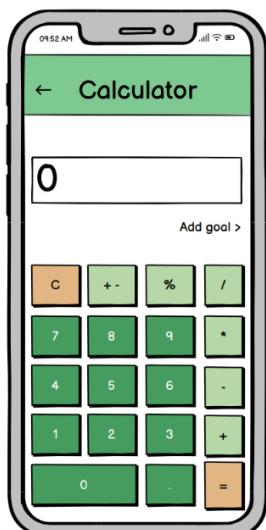


Figure 28:Calculator interface

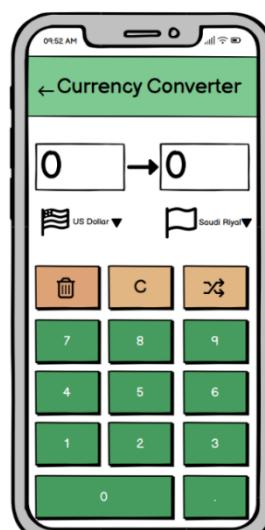


Figure 29: Currency converter interface

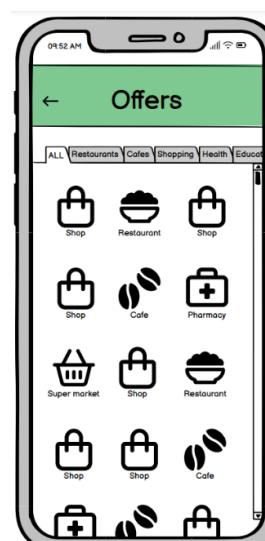


Figure 30:Offers interface

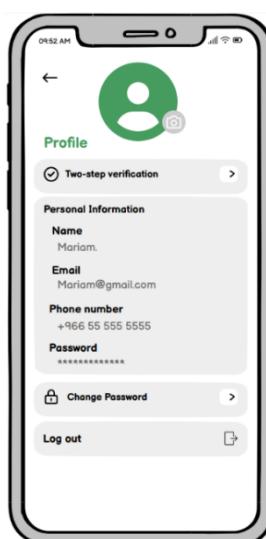


Figure 31:Profile interface



Figure 32:Settings interface

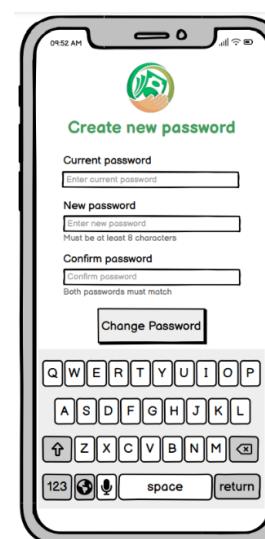


Figure 33:Change password interface

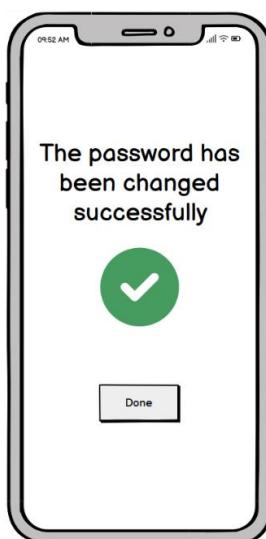


Figure 34:Feedback interface

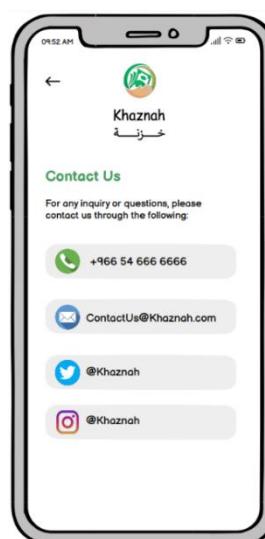


Figure 35:Contact us interface



Figure 36:About us interface

3. Software prototype (Axure)

3.1 Interfaces

Menu bar (visit) : a menu bar (appears in Home page, Log in, Sign up, All OTP pages, All reset password pages, About us page, Contact us page, Customer care form page) that includes links to the other pages of the site which are: (Home, About us, Services “disabled”, Contact Us), sign up and log in buttons, Hamburger menu that contain a link to (Home, Services “disabled”, About us, Profile “disabled”)



Figure 37:Visit menu bar and hamburger menu

Menu bar (logged): a menu bar (appears in all pages when the user is logged in) that includes links to the other pages of the site which are: (Home, About us, Services, Contact Us), settings icon that move us to the settings page, notifications icon that display notifications list, Log out button, Hamburger menu that contain a link to (Home, Services, About us, Profile), Services item in the Hamburger menu contain links to website services.



Figure 28:Logged menu bar and hamburger menu

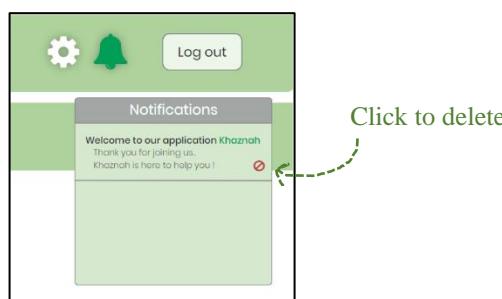


Figure 39:Notification list before deletion

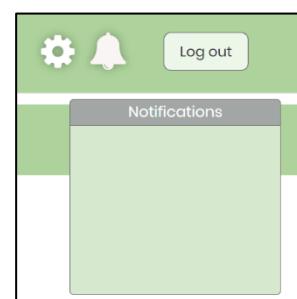


Figure 40:Notifications list after deletion

Footer: Footer is the area located at the bottom of every page on our website, it contains a copyright notice, link to social media and contact information.

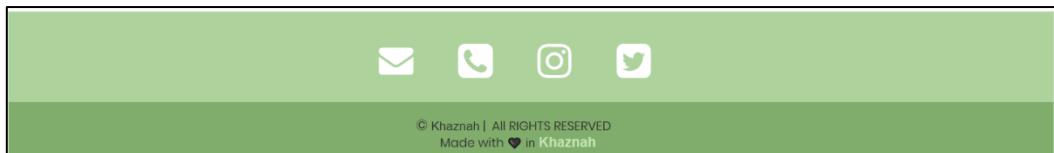


Figure 41:Footer

A screenshot of the Khaznah website's home page. The top navigation bar includes the logo, "Home", "About Us", "Services", "Contact Us", and user-specific links like "Welcome, Mariam". A sidebar on the left shows a menu icon and the user's name. The main content area has a large green circular graphic with "Welcome to" and the Khaznah logo. It features three numbered sections: 1. "Keep track of your expenses" (illustrated with a person sitting on coins), 2. "Financial Hemorrhage" (illustrated with money falling from a cup), and 3. "Build your financial life" (illustrated with a man watering a tree with coins). At the bottom, there's a video thumbnail for "What is Financial Planning?" with a "Start Now!" button.

Figure 42:Home page

Home page: A home page is the default and first page that the users see when they visit our website. It acts as an introduction and give users a brief information about our website. It has two versions; one contains a **visit menu bar** and the other one contains **logged menu bar** which described above. Both menus has the Home link selected.

Log in page

This interface will be shown if the user clicks the log in button on the top right of the page next to the sign up button in **visit menu bar**. Log in is used when user already has an account. Two fields are required to be filled which are the email address and password. In case of one or both fields are not filled, or invalid email format, or password is less than 8 character an error message in red will be displayed. There are also other options shown which are forget password? Link and sign up. When clicking Forget password, it will take the user to a different page and make him/her go through the process of resetting password weather through email or phone. And about the sign up link, this is used when the user does not have an account and has never signed up before. It will take the user to a different page that will require you to fill in different information to sign up as a new member.

Log in

Email Address

Password

[Forgot Password ?](#)

Login

Don't have account? [Sign up](#)

Welcome Back !



Figure43:Log in page

Log in

Email Address

enter your email address
enter a valid email address (username@hostname.com)

Password

enter your password
must consist of 8 characters at least

[Forgot Password ?](#)

Login

Don't have account? [Sign up](#)

Welcome Back !



Figure 44:Error handling in log in page

Sign up page

This page requires you to fill in different fields of information in order to be a new member. Some of this information include name, email address, phone number, password, and confirm password. In case one or more of those fields are not filled, an error message in red will show under each missing field to fill it with required info and correct format. However, if you are already a member and have signed up before, a log in option is found that will take you to the simple interface of adding your email and password in order to enter your account. It appears on top right of the page next to the log in button in *visit menu bar*.

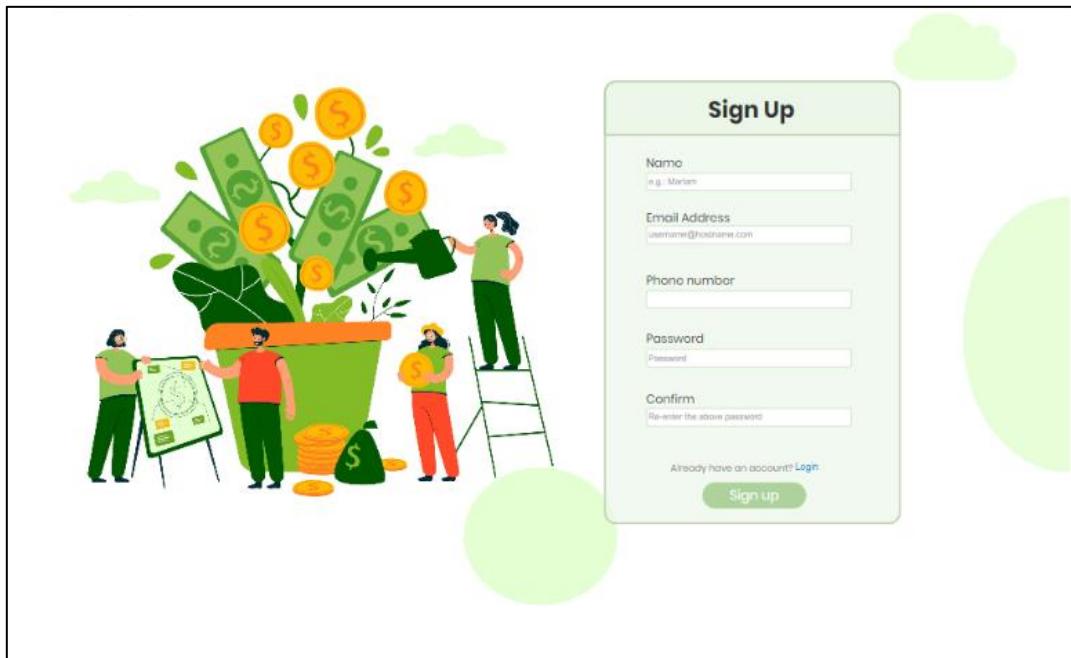


Figure 45:Sign up page

A screenshot of the same sign-up page as Figure 45, but with specific fields highlighted in red to show validation errors. The "Name" field contains "a" and has a red error message below it: "enter your name". The "Email Address" field contains "a" and has a red error message below it: "enter your email address" and "enter a valid email address (username@hostname.com)". The "Password" field contains a single dot and has a red error message below it: "enter your password" and "must consist of 8 characters at least". The "Confirm" field contains a single dot and has a red error message below it: "enter your password again" and "both passwords must match". The rest of the page remains the same, with the "Sign Up" button at the bottom.

Figure 46:Error handling in sign up page

Phone OTP page (login/sign up)

When logging in or signing up, a confirmation and verification is needed using OTP code. After filing your information, you will be taken to another page that says an OTP has been sent to your phone number that you must right down in the boxes below. So the user must check their phone messages to write down the code to continue logging in or signing up. However, if an OTP code was not received, a resend option is found to resend code to your phone number. Also, it includes *visit menu bar*.

AND

Phone OTP page (reset password)

When resetting password via phone, a part of the process needed it confirmation through using the OTP code in phone number. In case a code has not been sent, a resend option is found. Also, it includes *visit menu bar*.

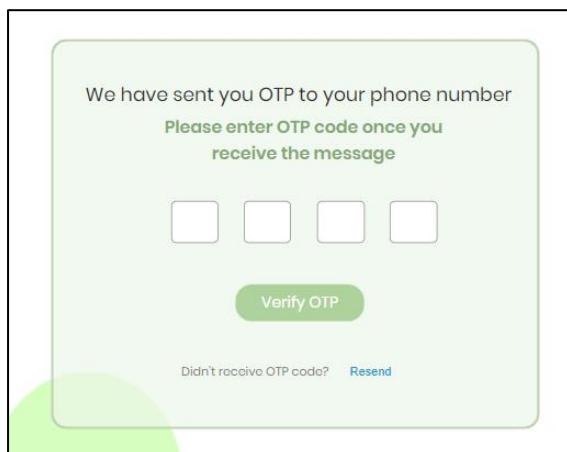


Figure 47:Phone number OTP code page

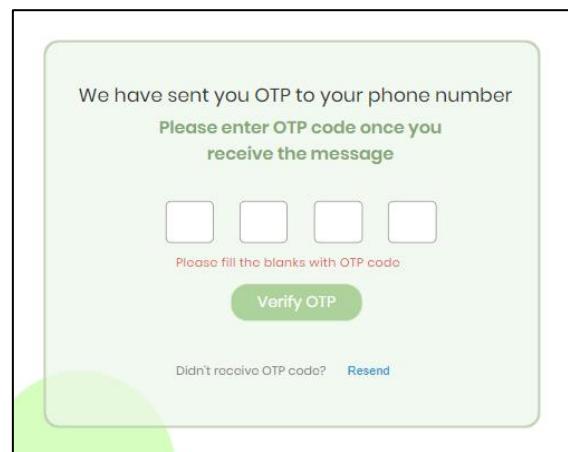


Figure 48:Error handling in phone number OTP page

Reset password methods page

This page will be shown in case the user is not able to log in and have forgotten the password and was trying to reset it. It gives two option in form of buttons according to the user's preference in resetting a password weather through phone number or email. And according to the option chosen, it will take the user to the page to complete the resetting password process. Also, it includes *visit menu bar*.

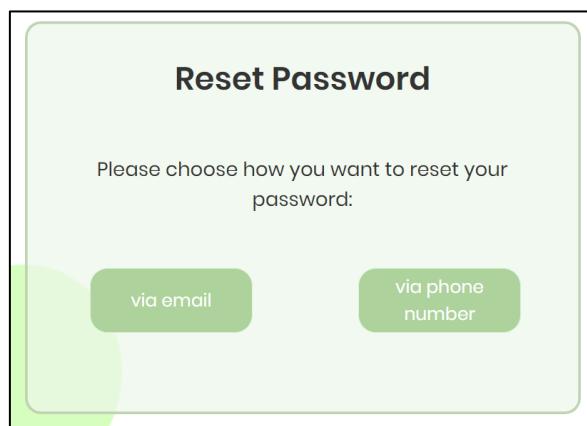
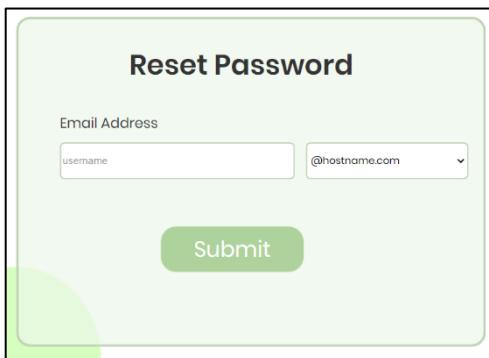


Figure 49:Reset password methods page

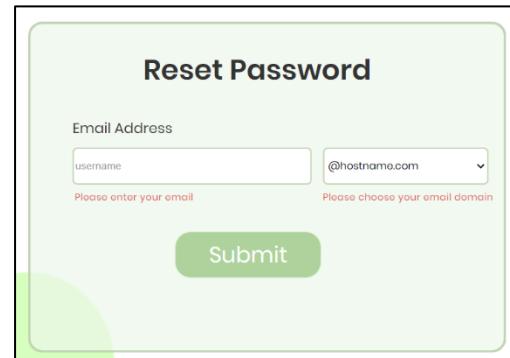
Reset password via email page

This page will appear to the users if they chose to reset password via email. The user will be asked to write their stored email address and choose host name then click submit button to continue the process. If those fields are not completed before clicking submit button, a message in red will appear saying please enter your email and choose email domain showing how mandatory it is. Also, it includes *visit menu bar*.



A screenshot of a 'Reset Password' page. The title 'Reset Password' is at the top. Below it is a form field labeled 'Email Address' with two input boxes: one for 'username' and one for '@hostname.com'. A green 'Submit' button is at the bottom.

Figure 50:Reset password via email page

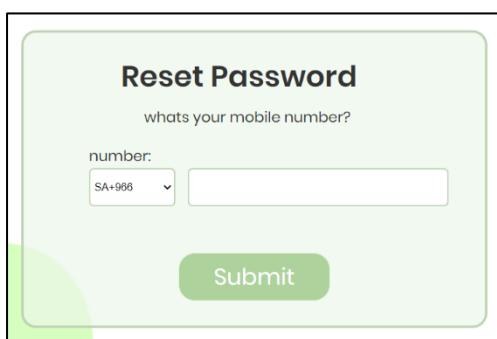


A screenshot of the same 'Reset Password' page as Figure 50, but with error messages. The 'username' field has a red border and the placeholder 'Please enter your email'. The '@hostname.com' dropdown has a red border and the placeholder 'Please choose your email domain'. The green 'Submit' button is at the bottom.

Figure 51:Error handling in reset password via email page

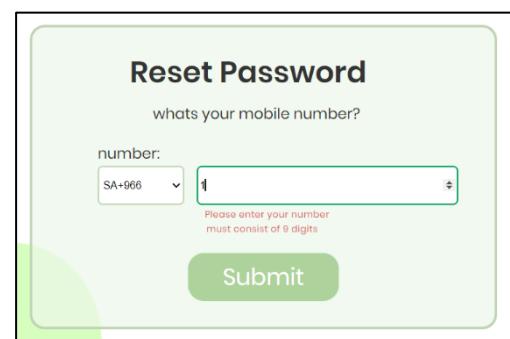
Reset password via phone

This page will appear to the users if they chose to reset password via phone. The users will be asked to write their phone number then click submit button to continue the process. If those fields are not completed before clicking submit button, or the phone number is written incorrectly, a message in red will appear saying please enter your phone number, and must consist of 9 digits. Also, it includes *visit menu bar*.



A screenshot of a 'Reset Password' page. The title 'Reset Password' is at the top. Below it is a form field labeled 'whats your mobile number?' with a dropdown 'number:' set to 'SA+966' and an input field. A green 'Submit' button is at the bottom.

Figure 52:Reset password via phone number page

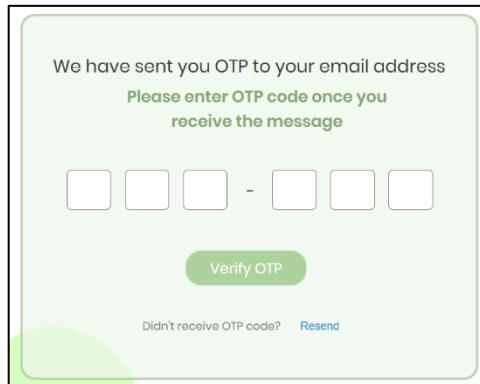


A screenshot of the same 'Reset Password' page as Figure 52, but with error messages. The 'number:' dropdown has a red border and the placeholder 'Please enter your number must consist of 9 digits'. The green 'Submit' button is at the bottom.

Figure 53:Error handling in reset password via phone page

Email OTP page

When resetting password via email, a part of the process needed it confirmation through using the OTP code sent to that email. In case a code has not been sent, a resend option is found. Also, it includes *visit menu bar*.



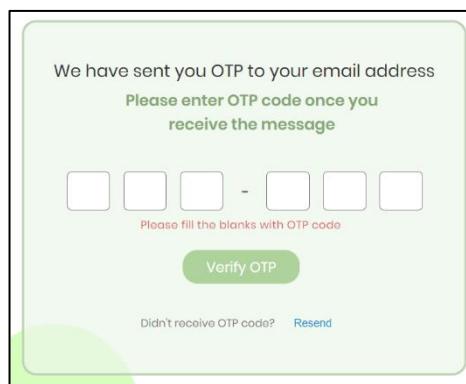
We have sent you OTP to your email address
Please enter OTP code once you receive the message

-

Verify OTP

Didn't receive OTP code? [Resend](#)

Figure 54:Email OTP code page



We have sent you OTP to your email address
Please enter OTP code once you receive the message

-

Please fill the blanks with OTP code

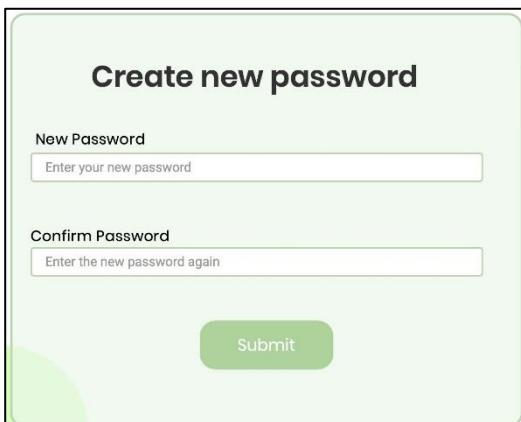
Verify OTP

Didn't receive OTP code? [Resend](#)

Figure 55:Error handling in email OTP code page

Reset forgotten password

This page is used when the user forgets the password and wants to create a new one to continue logging in to services. Two fields are given that need to be filled. If the user does not fill them properly or if the two passwords do not match, an error message will appear saying that the password needs to be 8 characters long at least and that they need to match. Also, it includes *visit menu bar*.



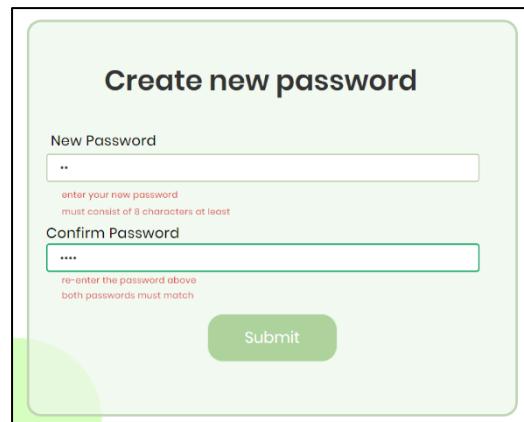
Create new password

New Password
 Enter your new password

Confirm Password
 Enter the new password again

Submit

Figure 56>Create new password page



Create new password

New Password
 ..
must consist of 8 characters at least

Confirm Password

re-enter the password above
both passwords must match

Submit

Figure 57>Error handling in create new password page

Change password page

This page is used when the user has logged in but prefers to create and change their password based on personal reasons. They need to fill in the three fields current password, new password and confirm password. Both new password and confirm password fields must match and the password must be at least 8 characters long. In case the user has not followed these rules, error messages will appear indicating what they missed. Also, it includes *logged menu bar*.

The screenshot shows a light green rectangular form titled "Change Password". It contains three input fields: "Current Password", "New Password", and "Confirm Password", each with a placeholder text ("Enter your current password", "Enter your new password", and "Enter the new password again" respectively). Below the input fields is a green rounded rectangle containing the word "Submit".

Figure 58:Change password page

The screenshot shows the same "Change Password" form as Figure 58, but with validation errors. The "Current Password" field is empty and has a red error message below it: "enter your current password must consist of 8 characters at least". The "New Password" and "Confirm Password" fields are also empty and have similar red error messages below them: "enter your new password must consist of 8 characters at least" and "re-enter the password above both passwords must match" respectively.

Figure 59:Error handling in change password page

Services page

The services page is found after clicking the services option in **logged menu bar**. Some of the services include goals, tracker, currencies convertor, calculator, priority list, and offers. These services are used after logging in to your account. Each service chosen will take you to another page to complete what you want precisely. Menu bar has the Services link selected.

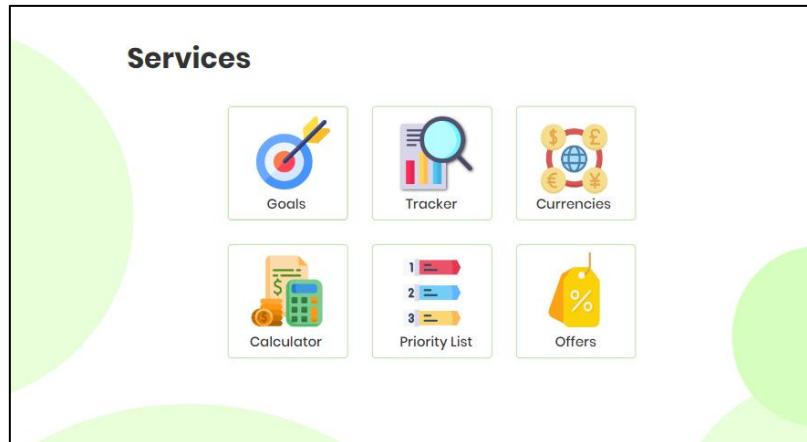


Figure 60:Services page

Settings page

Setting page allow the user to change the language (*English is selected*), view personal information and edit button, change password, and log out from his/her account. Also, it includes **logged menu bar** and the settings icon is selected.

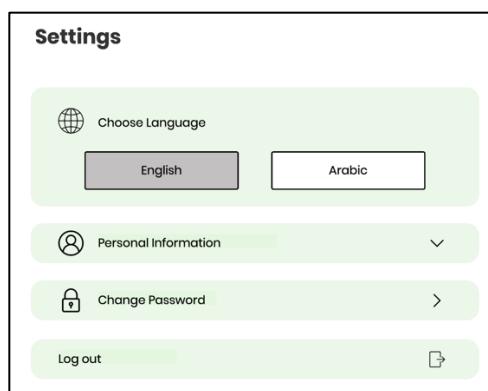


Figure 61:Settings page

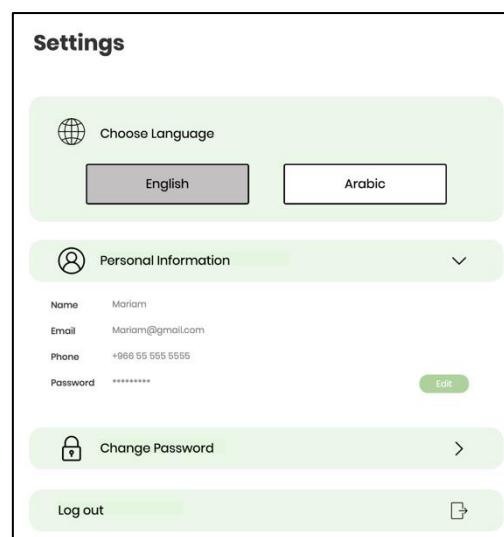


Figure 62:View personal information in settings

Profile page

In this page, all the information about the user will be found including profile picture, personal information that includes name, email and phone number and password “*disabled and masked*”. There is also an option to change your password which will take you to another page to create a new password while you’re logged in. Moreover, a log out button is provided to enable the user to log out from his/her account. Also, it includes **logged menu bar**.

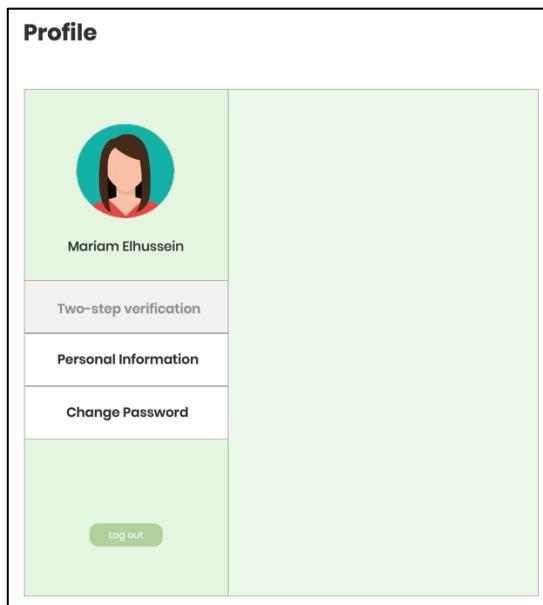


Figure 63:Profile page

The screenshot shows the 'Profile' page with the 'Personal Information' link selected. The page displays a form for editing personal information:

Name	Mariam
Email	Mariam@gmail.com
Phone number	0555555555
Password

At the bottom right are 'Cancel' and 'Save' buttons. At the bottom left is a green 'Log out' button.

Figure 64:View/Edit personal info in profile page

About us page

This page is found when clicking on About us link on **visit menu bar** or **logged menu bar** on top of the page. It will give an overview of what is Khaznah all about. Also, it has two versions; one contains a **visit menu bar** and the other one contains **logged menu bar** which described above. Both menu has the About us link selected.

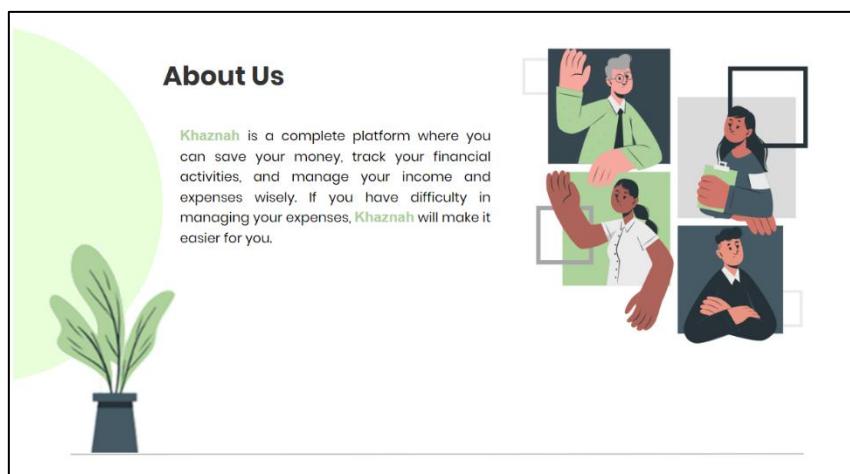


Figure 65:About us page

Contact us page

Contact us allows the user to reach us via communication channels (Phone number, Email, Twitter, Instagram) and Need help? Which directs the user to customer care form page. It has two versions; one contains a *visit menu bar* and the other one contains *logged menu bar* which described above. Each menu has the Contact us link selected.

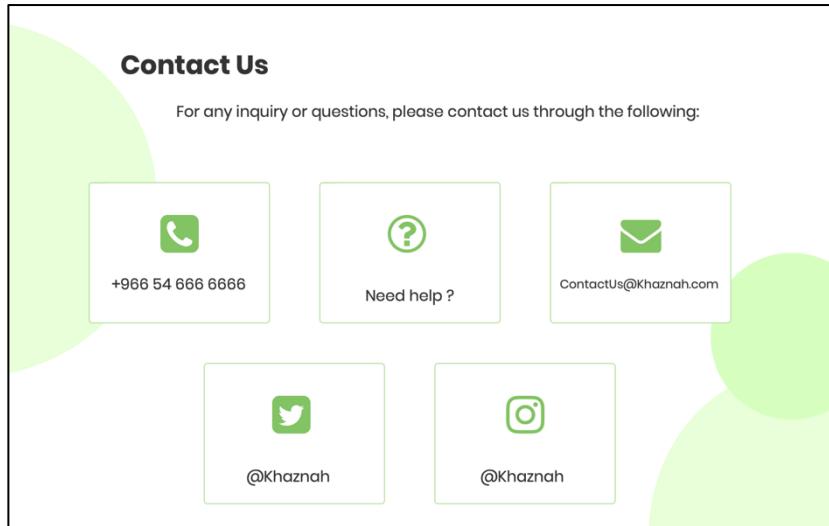


Figure 66: Contact us page

Customer care form page

This page provides a customer form that gives the user the chance to get more information about our website. Any visitor can fill out the form and submit it. It has two versions; one contains *a visit menu bar* and the other one contains *logged menu bar* which described above.

A screenshot of the 'Customer Care' page. The title 'Customer Care' is at the top. Below it is a sub-instruction: 'Got a question about Khaznah ? Have some suggestions or just want to say Hi ? Contact Us :)'. A large text input field is labeled 'Reach Us :) !'. It contains three input fields: 'Name' (placeholder 'enter your name'), 'Email Address' (placeholder 'username@hostname.com'), and 'What would you like to say?' (placeholder 'your question, query, suggestion?'). A 'Send' button is at the bottom.

Figure 67: Customer care form page

A screenshot of the 'Customer Care' page showing error handling. The title 'Customer Care' is at the top. Below it is a sub-instruction: 'Got a question about Khaznah ? Have some suggestions or just want to say Hi ? Contact Us :)'. A large text input field is labeled 'Reach Us :) !'. It contains three input fields with validation errors: 'Name' (placeholder 'enter your name', error message 'please enter your name'), 'Email Address' (placeholder 'username@hostname.com', error message 'please enter your email address'), and 'What would you like to say?' (placeholder 'your question, query, suggestion?', error message 'write anything you would like us to know :)'). A 'Send' button is at the bottom.

Figure 68: Error handling in customer care form page

Goals page

Goals page contains two buttons; set new goal button that directs the user to set new goal page, a calculator button that move the user to the calculator page. This page allows the user to view the previously setted goals and its virtual card. Goal name, total amount of money needed to accomplish the goal, a progress bar, and button to charge the card, all appears on the virtual card. Also, it includes **logged menu bar**.

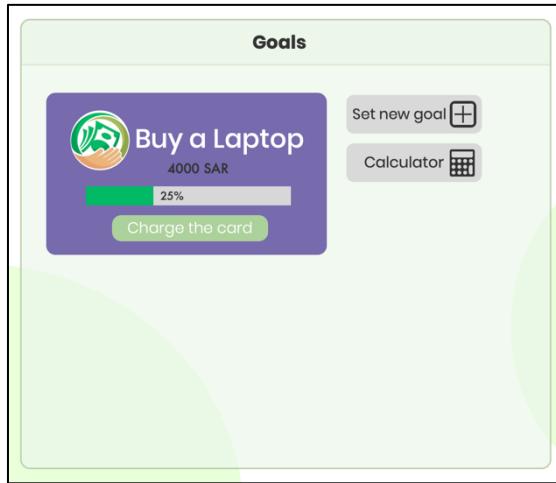


Figure 69:Goals page

Set new goal page

This page enables the user to add new goal to achieve. The user should enter goal name, total amount of money and the duration. Also, there are three buttons; Calculate button which calculate the money per month and will display it on an uneditable TextField, Done button which will show success pop-up message if the goal is not existed before, otherwise an error message will appear (*it is case insensitive*) and it should add the goal to the goals page, and Cancel button that will move the user back to goals page without adding the goal. In addition, it includes **logged menu bar**.

A screenshot of a mobile application interface titled "Set a new goal". It features a form with fields for "Goal Name" (with placeholder "e.g: buy a new headphones"), "Total amount of money" (with dropdown menu showing "SAR"), "Goal Duration" (with slider set to "1 Months"), and a "Calculate" button. Below these fields is a result field "Money per month" with a greyed-out placeholder. At the bottom are "Cancel" and "Done" buttons.

Figure 70:Set new goal page

A screenshot of a mobile application interface titled "Set a new goal". It shows the same form as Figure 70, but with an additional error message above the "Total amount of money" field: "enter the goal name to identify it :)" in red. The rest of the interface is identical to the previous figure.

Figure 71:Error handling in set new goal page

Charge virtual card page

This page allows the user to add money from his/her Mada or Visa card to the virtual card of a specific goal. It shows the needed amount of money per month in an uneditable TextField. Also, user should enter the name on the card, card number, CVV and choose card expiration date. There is Charge button used to charge the card and it will show a feedback message. In addition, it includes **logged menu bar**.

The screenshot shows the 'Charge Virtual Card' page. At the top, it says 'Required amount of money' with a field containing '400 SAR'. Below that is a 'Name on card' input field. Underneath is a 'Card Number' input field. To the left of the card number is a 'Exp. Date' input field with dropdown menus for 'MM' and 'YYYY'. To the right of the card number is a 'CVV' input field. A green 'Charge' button is located at the bottom center. At the very bottom, it says 'Payment Methods:' followed by icons for 'mada' and 'VISA'.

Figure 72:Charge virtual card page

The screenshot shows the same 'Charge Virtual Card' page but with validation errors. The 'Name on card' field is empty and has a red border. The 'Card Number' field contains '1' and has a red border. The 'Exp. Date' field has a red border. The 'CVV' field contains '2' and has a red border. All four error messages are identical: 'Please enter the [field name] [field name] must consist of [number] digits'. The 'Charge' button is still present at the bottom.

Figure 73:Error handling in charge virtual card page

Priority list page

It shows a list of all unexpected expenses, and a Add new button that directs the user to Add new priority page. Also, it includes **logged menu bar**.

-
- The screenshot shows the 'Priority List' page. At the top, it says 'Priority List' and has a green 'Add new' button. Below is a list of two items, each with a checked checkbox and a description: 'Fix my broken phone screen' and 'Buy a gift for my graduated friend'. The entire list is enclosed in a light gray box.

Figure 74:Priority list page

Add new priority page

This page enables the user to add new priority by typing priority name in TextField. There are two buttons; Cancel button that will move the user back to priority list page, Done button that will check if the entered priority exists or not (*it is case insensitive*), if it exists it will show an error message, otherwise it will show success message. Also, it includes **logged menu bar**.

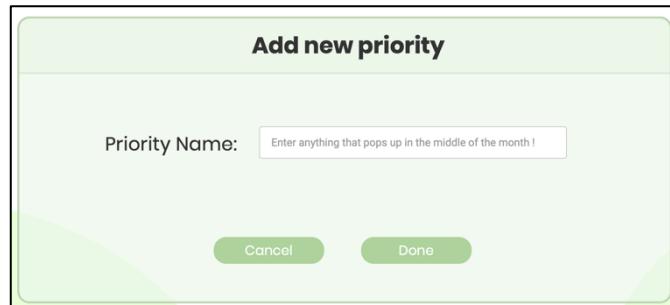


Figure 75: Add new priority page

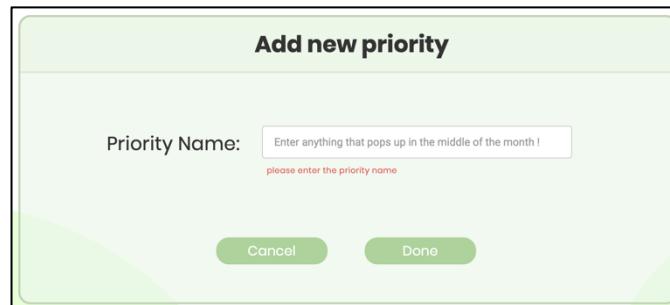


Figure 76: Error handling in add new priority page

Calculator page

It provides calculator that can be used when needed, and a link to set new goal page. Also, it includes **logged menu bar**.

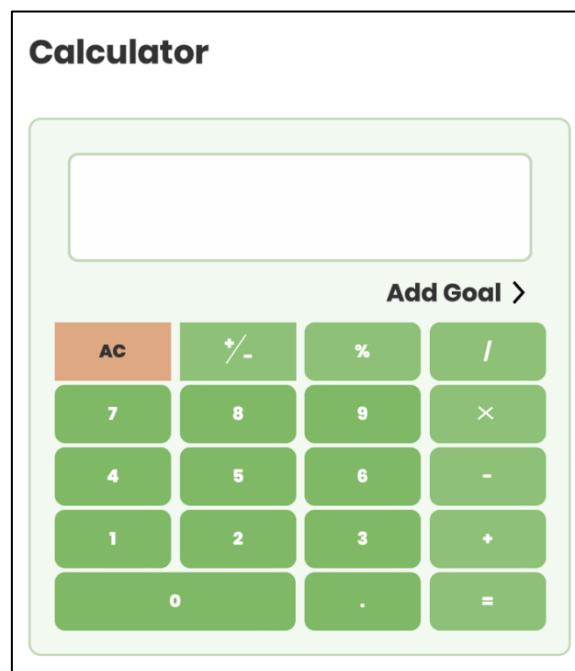


Figure 78: Calculator page

Offers page

As our website is about saving money, we added an offers page to help users to save more money. Also, it includes **logged menu bar**.

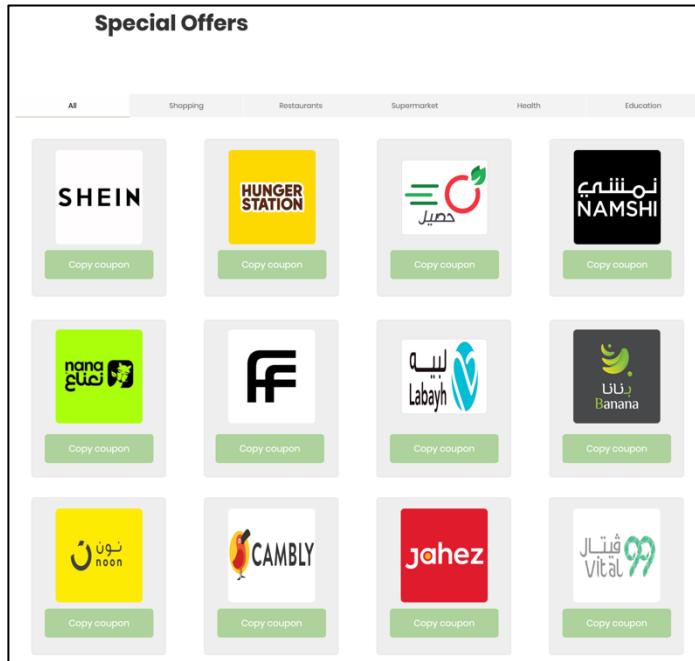


Figure 79:Offers page

Currency converter page

This page provides currency convertor that can be used when needed (can convert between Saudi riyals, US dollar and Euro). Also, it includes **logged menu bar**.

A screenshot of the 'Currency Converter' page. At the top, there's a header with the title 'Currency Converter'. Below the header is a large input field divided into two parts: the top part is labeled 'US Dollar' and the bottom part is labeled 'Saudi Riyal'. Both parts have dropdown arrows at their right ends. Below these input fields is a numeric keypad with green buttons for digits 0-9, a red button for a trash bin, and a green button with a double arrow icon. The entire form is set against a light green background.

Figure 80:Currency converter

Categories (Tracker) page

This page will display previously added categories and subcategories. Also, there is a section to add new main category and its subcategories and budget. In addition, it includes *logged menu bar*.

Track and Organize your Budget

House expenses ▾

Add new :

Choose category Add new

Choose subcategory Add new

Set Budget: ↕

Add

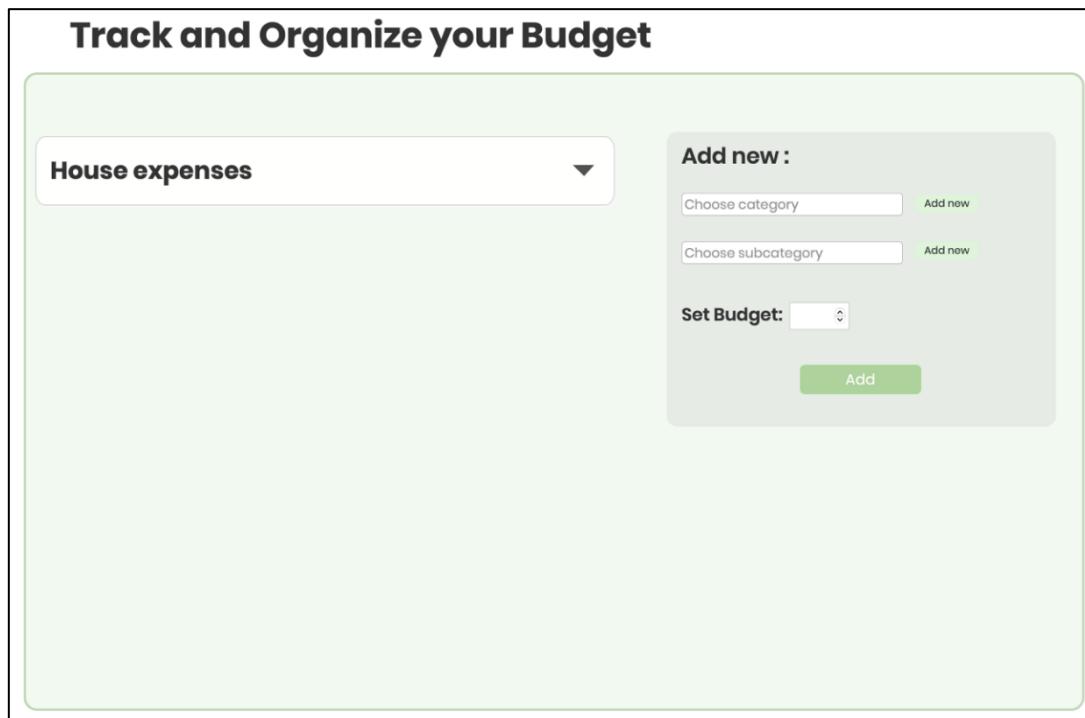


Figure 81:Categories (Tracker) page

Track and Organize your Budget

House expenses ▾

Add new :

please select a category

Choose category Add new

please select a subcategory

Choose subcategory Add new

Set Budget: ↕ ⓘ

please select a category and a subcategory

Add

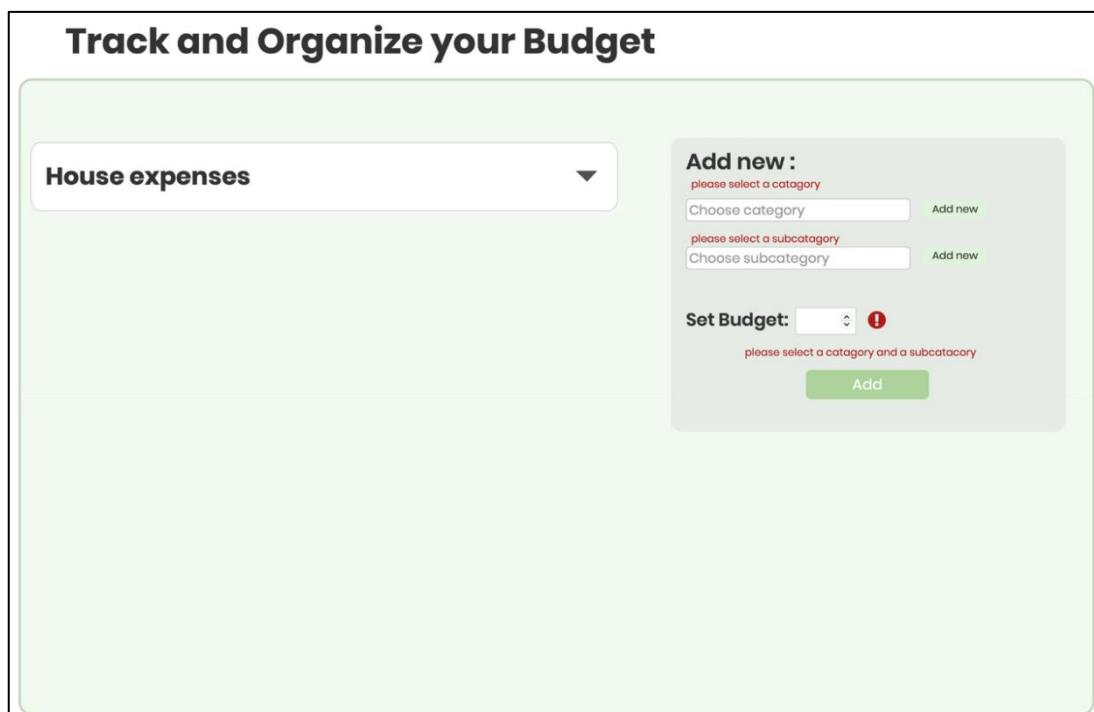


Figure 82:Error handling in categories (Tracker) page

4.2 Feedback pop-up messages

- Success pop-up messages

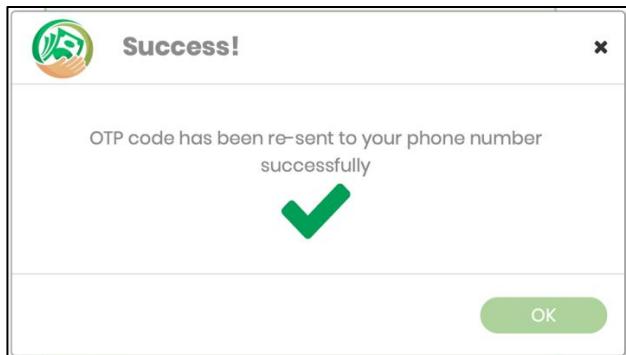


Figure 83: after clicking verify button in Phone OTP page

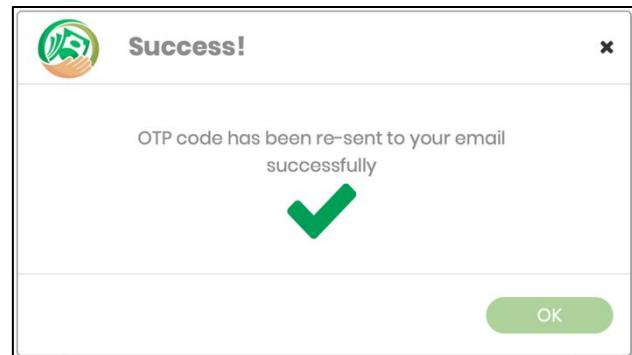


Figure 84: after clicking verify button in Email OTP page

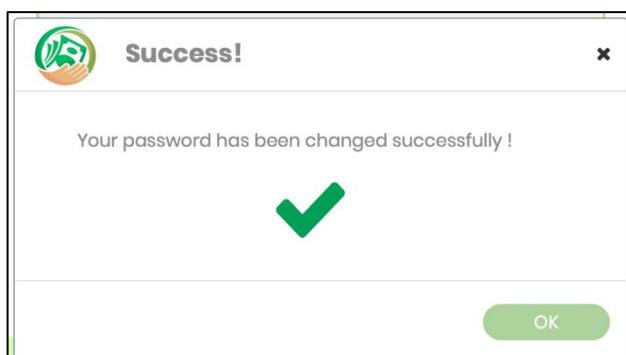


Figure 85: after clicking submit in Reset Password & Change Password pages

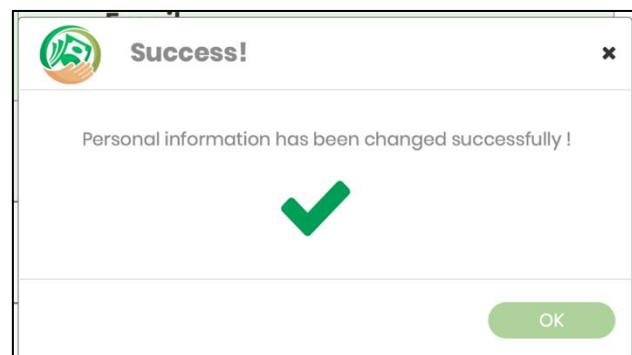


Figure 86: after clicking save button in Profile page

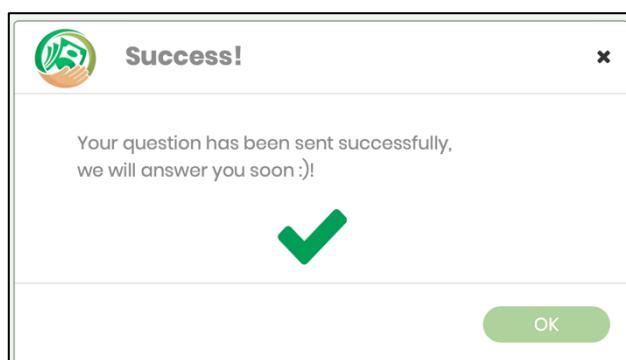


Figure 87: after clicking send button in Customer care form page

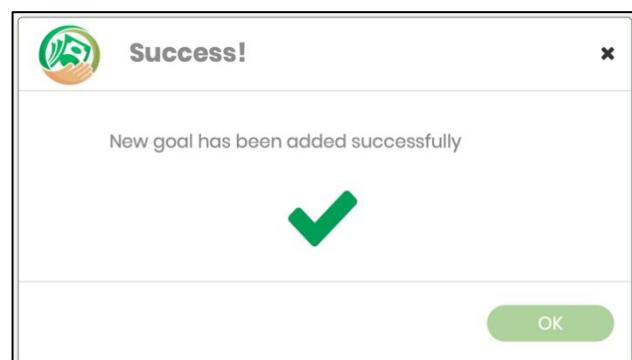


Figure 88: after clicking done button in Set new goal page

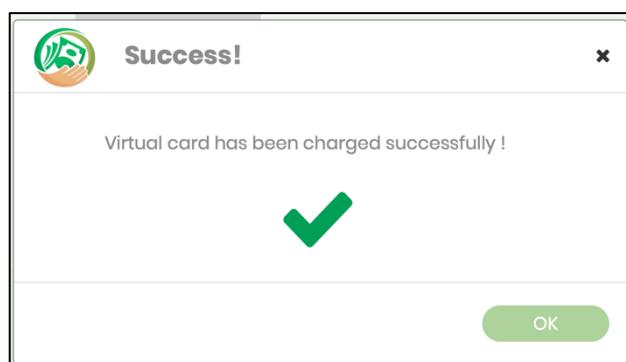


Figure 89: after clicking charge button in Charge virtual card page

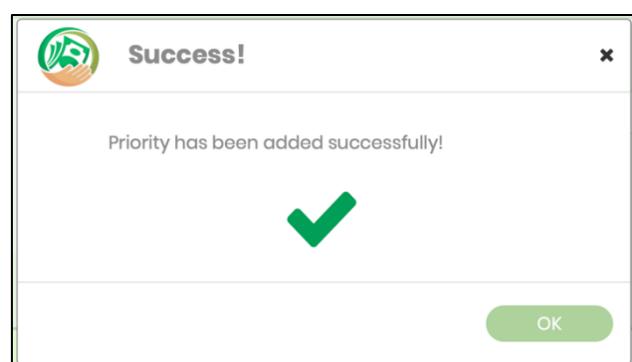


Figure 90: after clicking done button in Add new priority page

- Fail (error) pop-up messages

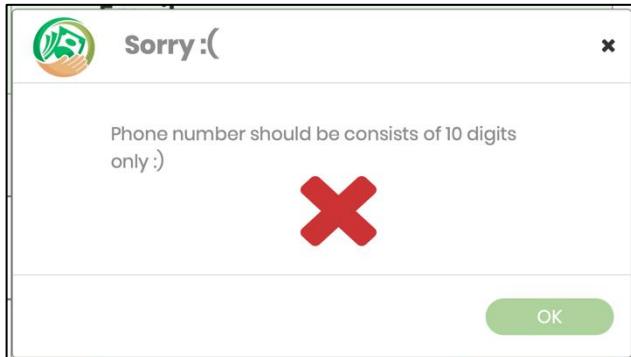


Figure 91: when entering invalid phone number in Profile page

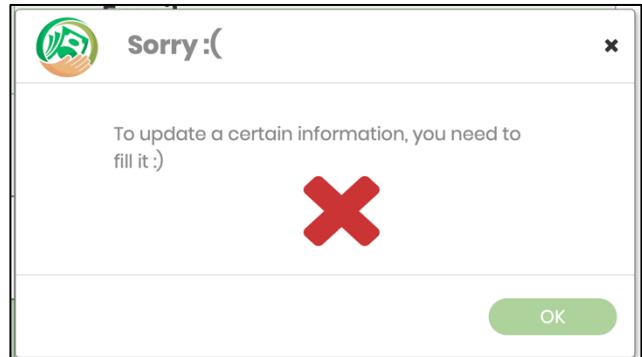


Figure 92: clicking done, without entering any information in Profile page

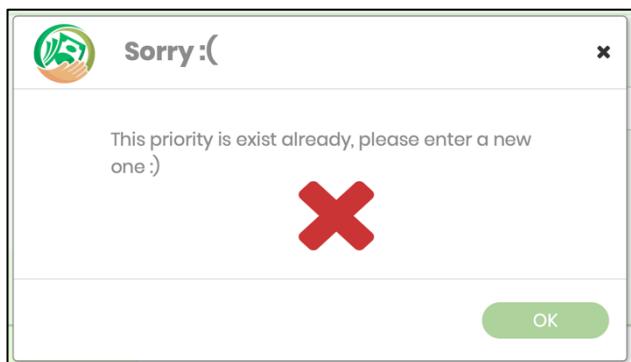


Figure 93: when entering a pre-existed priority in Add new priority page

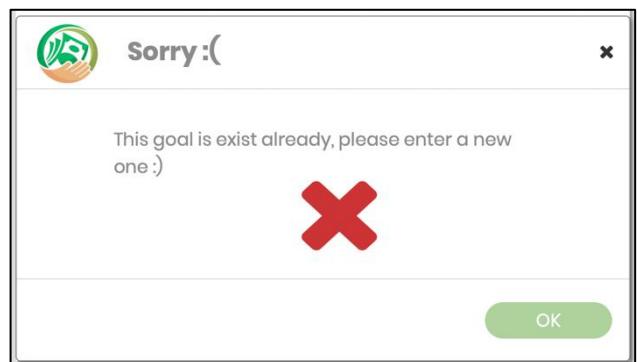


Figure 94: when entering a pre-existed goal in Set new goal page