

Case Study | Uhuru

Whatsapp Chat bot and web application development to avail various services like bill payment, recharge etc.

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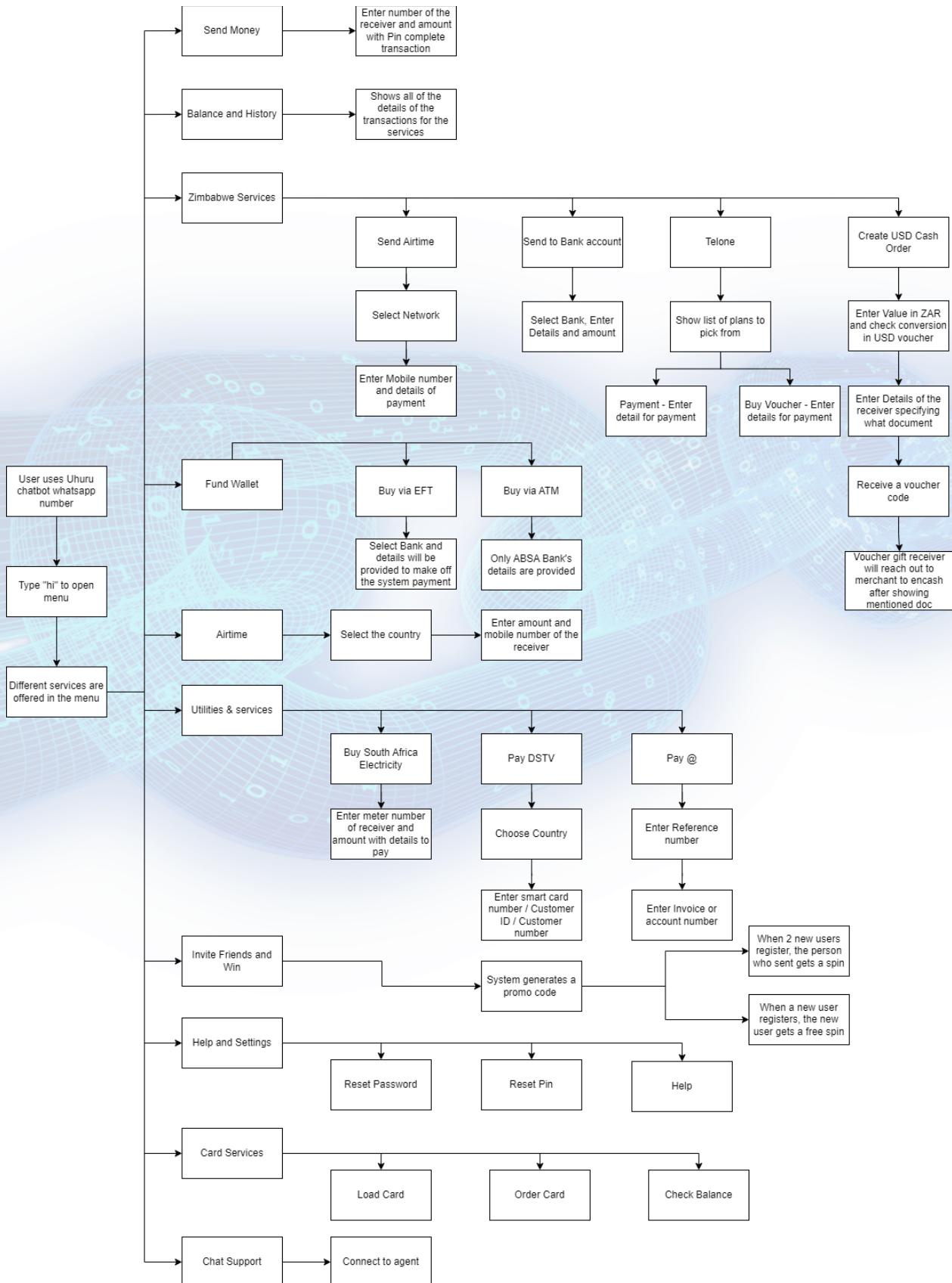
About the application

Uhuruwallet is primarily a WhatsApp-based digital wallet that enables people to perform transactions such as person to person, person to merchant, cash-in, cash-out, utility bill payments, airtime purchases, and Dstv payments amongst other functionality.

The mission is to develop innovative solutions that promote the concept of money without borders for individuals and businesses from Africa. Solutions that are simple to use, convenient, time efficient, cost effective and inclusive. And also to become an interoperable, peer-to-peer platform with a borderless currency, that empowers people and enterprises from Africa to transact from anywhere, anytime.



Whatsapp and Merchant's Web panel to avail services



Balance and History (Whatsapp chat bot & Merchant Panel)

Shows the history of the transactions that have been made against the services consumed on Uhuru application.

UHURU

Pank9aj

Balance and History

Send Tokens

Zimbabwe Services

Airtime

Utilities

Wallet Balance

NaN ZAR

S.No.	Transaction ID	Type	Amount Out	To	Status	Date and Time
1	1686298708282	Send Money	3000.5	263785022731	Success	09/06/2023 01:48:28
2	1686298184674	Send Money	3000.5	27817338886	Success	09/06/2023 01:39:44
3	1686226259925	dstv	2	2638698785684	Success	08/06/2023 05:40:59
4	1685962408466	Send Money	5000.5	27651569632	Success	05/06/2023 04:23:28

Send Money/Tokens (Whatsapp chat bot & Merchant Panel)

Users of this application will be able to send money or a token to another user via entering the receiver's mobile number. In whatsapp chat bot, the user will make the transaction by entering the pin, and the money will be deducted from the user's balance, but in the merchant panel, the user will not have to enter the pin each time to make the transaction.

UHURU

Pank9aj

Balance and History

Send Tokens

Zimbabwe Services

Airtime

Utilities

Send Tokens

Phone Number

+263 760782567

Amount

Next

Uhuru Live

Hi 19:19

Hi Bhuvan

Welcome to Uhuru Wallet

New Service: Send or Receive tokens and collect USD cash in Harare, Byo & Chinhoyi - Chat to our agents for more info.

SELECT ANY OF THESE OPTIONS:

1=> Send Money

2=> Balance and History

3=> Zimbabwe Services

4=> Fund Wallet

6=> Airtime

7=> Utilities & Services

8=> Invite Friends & Win

10=> Help & Settings

11=> Card Services

14=> Chat Support

19:19

1 19:19

To send tokens to another user enter:

*1*CellPhone*Amount*Pin#

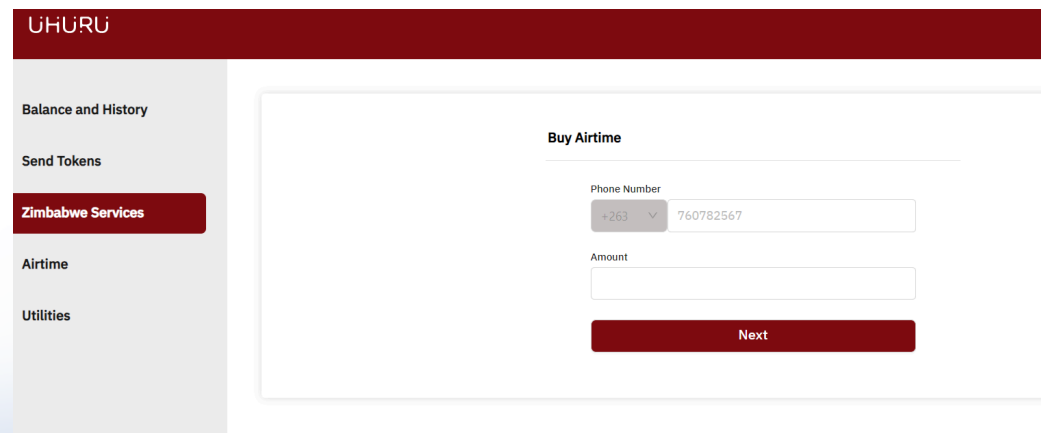
e.g. *1*27766779867*15.4*0000#

0.Home

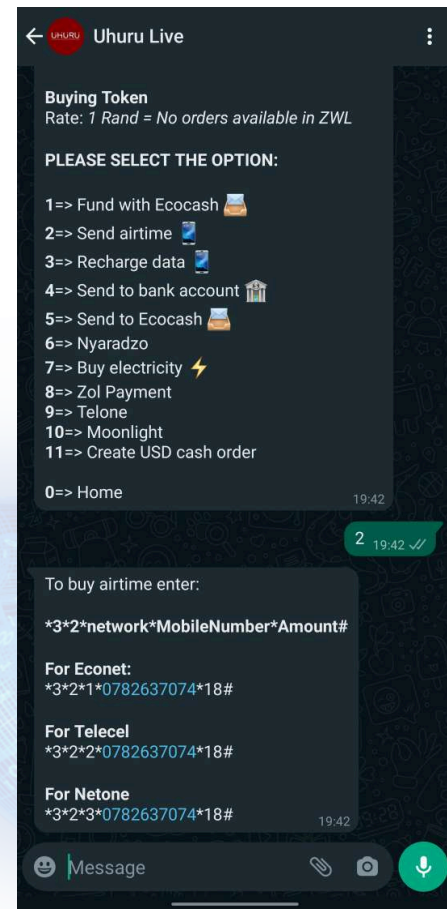
19:19

Zimbabwe Service – Send Airtime (Whatsapp chat bot & Merchant Panel)

Users of the application will be able to send airtime top up to any other user or even themselves simply by entering the phone number of the receiver and entering the airtime amount.



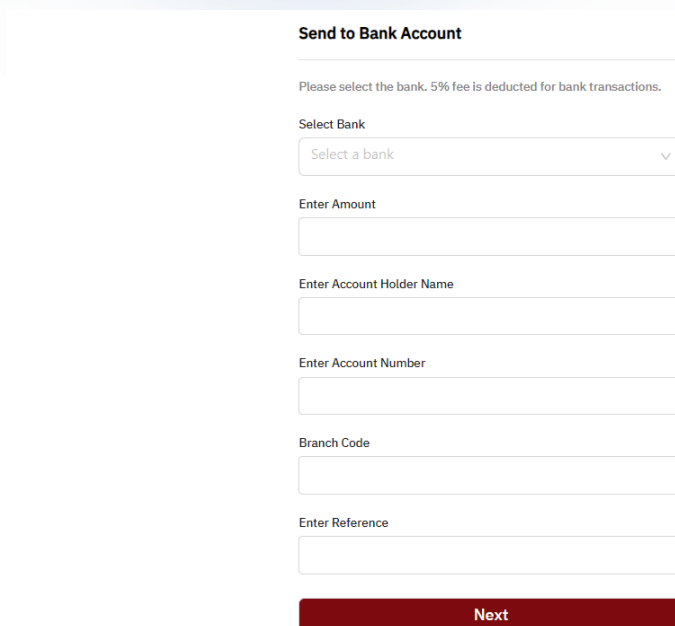
The screenshot shows the UHURU Merchant Panel interface. On the left is a sidebar with navigation options: Balance and History, Send Tokens, Zimbabwe Services (highlighted), Airtime, and Utilities. The main content area is titled 'Buy Airtime' and contains a form with the following fields: Phone Number (with a dropdown for country code '+263' and a text input for '760782567'), Amount (a text input), and a 'Next' button.



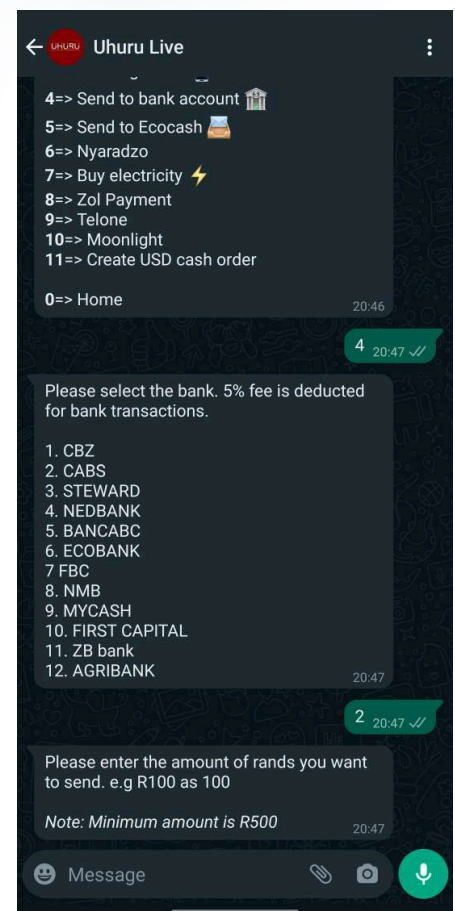
The screenshot shows the UHURU Live WhatsApp chat bot interface. The chat history includes a message from the bot with a list of options: 1=> Fund with Ecocash, 2=> Send airtime, 3=> Recharge data, 4=> Send to bank account, 5=> Send to Ecocash, 6=> Nyaradzo, 7=> Buy electricity, 8=> Zol Payment, 9=> Telone, 10=> Moonlight, 11=> Create USD cash order, and 0=> Home. A user has responded with '2'. The bot then sends a message asking for the amount to buy airtime and provides the format: *3*2*network*MobileNumber*Amount#. It also lists the network codes for Econet, Telecel, and Netone.

Zimbabwe Service – Send to Bank account (Whatsapp chat bot & Merchant Panel)

Users are given the option to send money directly in the bank account by entering details of the account. Note that a fee is also deducted for the services offered.



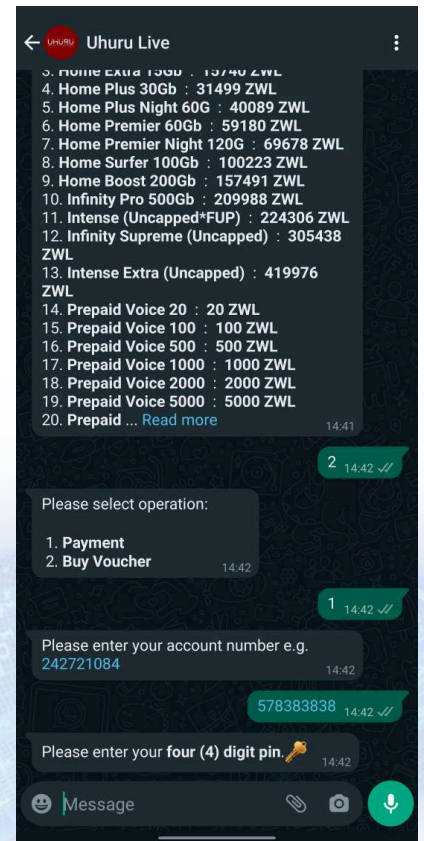
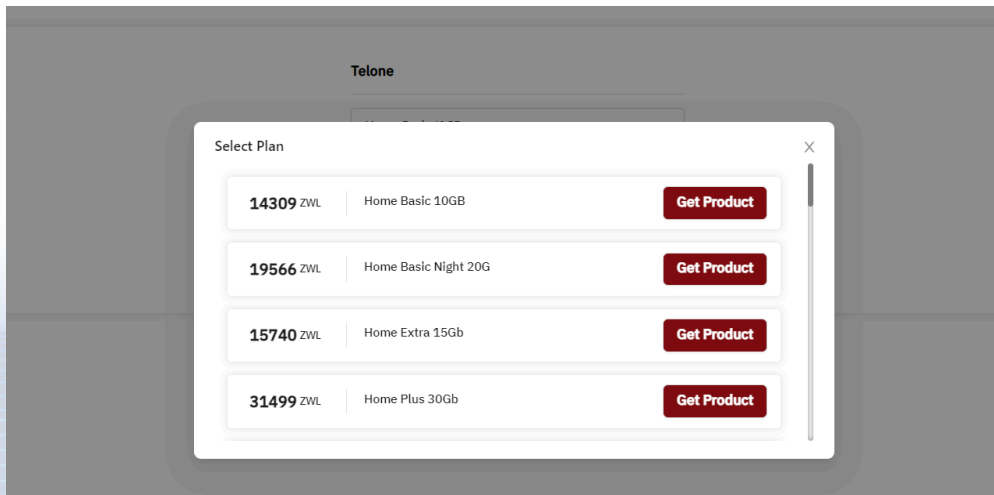
The screenshot shows the 'Send to Bank Account' form. It includes a note: 'Please select the bank. 5% fee is deducted for bank transactions.' The form has the following fields: Select Bank (a dropdown menu), Enter Amount (a text input), Enter Account Holder Name (a text input), Enter Account Number (a text input), Branch Code (a text input), and Enter Reference (a text input). A 'Next' button is at the bottom.



The screenshot shows the UHURU Live WhatsApp chat bot interface. The chat history includes a message from the bot with a list of options: 4=> Send to bank account, 5=> Send to Ecocash, 6=> Nyaradzo, 7=> Buy electricity, 8=> Zol Payment, 9=> Telone, 10=> Moonlight, 11=> Create USD cash order, and 0=> Home. A user has responded with '4'. The bot then sends a message asking for the amount to send and provides a list of bank options: 1. CBZ, 2. CABS, 3. STEWARD, 4. NEDBANK, 5. BANCABC, 6. ECOBANK, 7. FBC, 8. NMB, 9. MYCASH, 10. FIRST CAPITAL, 11. ZB bank, 12. AGRIBANK. A user has responded with '2'. The bot then sends a message asking for the amount of rands to send and provides a note: 'Note: Minimum amount is R500'.

Zimbabwe Service – TelOne (Whatsapp chat bot & Merchant Panel)

Another one of many services offered by Uhuru on both chat bot and merchant panel is to get a recharge of TelOne. The user will have to select a plan and then make a payment for it.



Zimbabwe Service – Create USD Cash order (Whatsapp chat bot & Merchant Panel)

How much you want to send?

You Pay Min: 360 ZAR Max: 9000 ZAR

They Receive

Price may vary slightly at time of order

Calculate

Through this service, user will be able to generate a cash voucher which can be redeemed by another person. In order to achieve this, the user will have to first enter the ZAR that the person would like to send and the system will automatically convert the value into USD after reducing the fee.

Now, the user will have to enter the details of the receiver, who is going to redeem the voucher. The details include what kind of document receiver will present at the time of

redemption and other relevant details. After confirming the details, system will generate the coupon which the user will share with the receiver.

Now, the receiver on the other hand may use this code and document (for verification purpose) to the merchant for redemption.

How much you want to send?

Enter receiver information as printed on the national ID/Passport ID/Driving Licence.

First Name(s)

Surname

Date of Birth

Select Gender

☐ Male ☐ Female ☐ Other

Select ID Type

☐ National ID ☐ Passport ID ☐ Driving License

Full Address

Mobile Number

Source of Income

Reason of Transfer

Next

Fund Wallet – Whatsapp chat bot

In order to pay for the services, user must fund his/her wallet. The conversion to fund one token is equivalent to one Rand. User is given an option to either user EFT or ATM, each has its own fee, which is displayed to the user.

1. EFT (5% fee)
 - If this option is selected then show further options to select the bank that merchant would like to make the transaction from.
 - Based on the selected bank, the system will show the details of that bank, like account number, Branch code, etc.)
2. ATM (10% fees for R 100 plus)
 - If this option is chosen then directly show the details of ABSA bank only, not of any other bank.

How many tokens do you want to buy? 1
token = R1 15:32

45 15:32 ✓

Do you want to buy via?

1. EFT (5% fees)
2. ATM (10% fees for R100 plus) 15:32

1 15:38 ✓

Please select the bank you wish to make an EFT to? 🏦

Important: Minimum amount is R110 & use the reference with **919873332280**.

1. ABSA Bank
2. Standard Bank
3. First National Bank
4. Nedbank
5. Tyme Bank
6. Capitec Bank 15:38

Message

Airtime (Whatsapp chat bot & Merchant Panel)



Users can send airtime to a mobile number across border also.

Below are the details:

1. Select country (South Africa, Zimbabwe, and Others)
2. If South Africa or Zimbabwe is selected then show the below options:
 - a. Econet
 - b. Telcel
 - c. Cell Netone
3. After selecting the above option, the user is required to enter the amount and cellphone number of the end person.
4. If Other is selected in country selection, then skip this step, and input the following:
 - a. Enter cell phone number of the customer
 - b. Shows option (radio button) about ZAR conversion eg. 1 ZAR = 1.40 ZAR
 - c. Make the transaction by entering pin.

Airtime

Please select a country!

☒ South Africa  ☐ Zimbabwe  ☐ Other

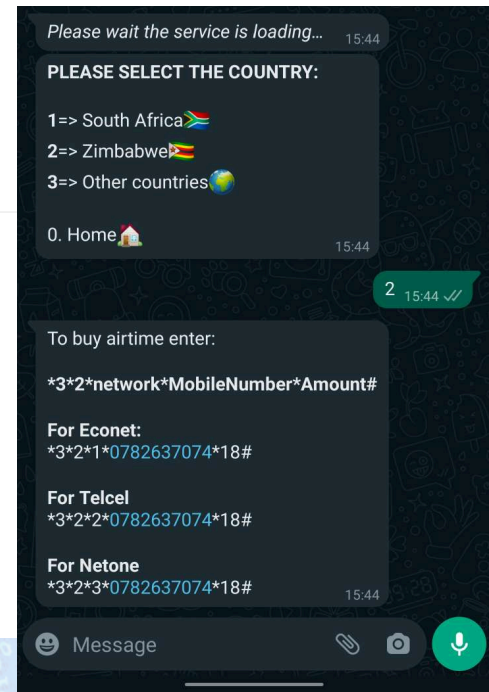
Select Network

Phone Number

+27 760782567

Amount

Next



Utility and Services - Buy South Africa Electricity (Whatsapp chat bot & Merchant Panel)

Users are given a service through which they can buy electricity.

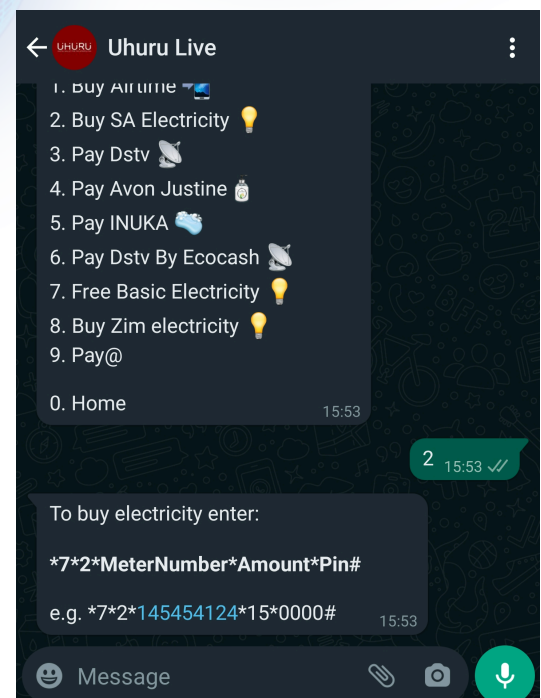
In order to do that, the user will have to enter the Meter number (of the end customer), amount and pin to finish the payment by wallet.

Buy South Africa Electricity

Enter Meter Number

Enter Amount

Next



Utility and Services – Pay DSTV (Whatsapp chat bot & Merchant Panel)

Users can pay for their DSTV via chat bot or web panel (used by merchants), simply by entering the following details:

1. Selecting country
2. Enter smart card number / Customer ID / Customer number

Pay DSTV

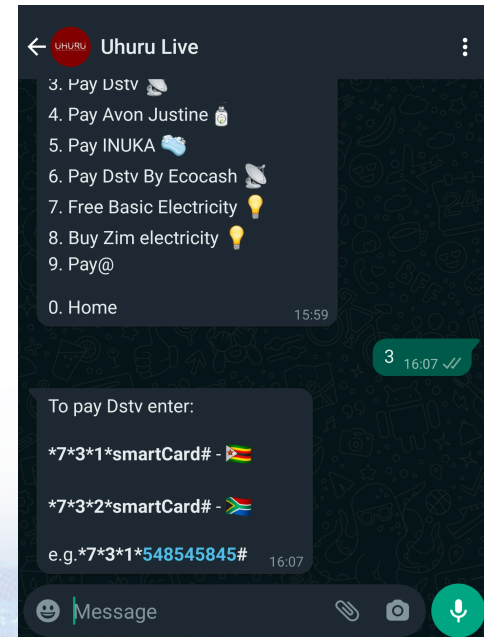
Select Country

Select Country

Enter Smartcard No. / Customer ID / Customer number

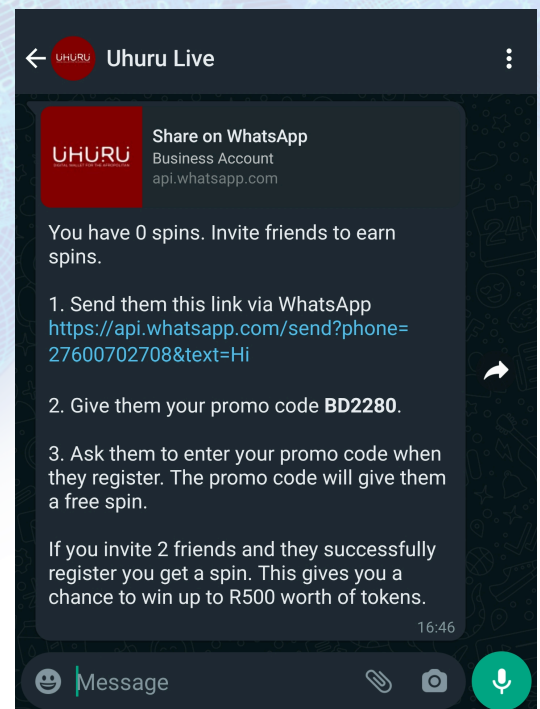
Enter Amount

Next



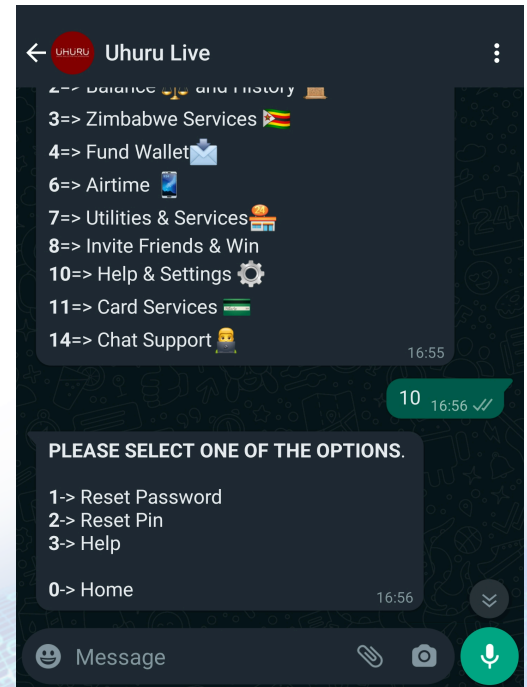
Invite Friends and win (Whatsapp chat bot)

System generates a shareable link for the chatbot along with a referral code. Users can share the link along with a referral code to another potential user of the chatbot. If two users registers on the chat bot with the referral code of the sender then the sender receives a spin and the new user gets a spin for the first time they register with the referral code.



Help and Setting (Whatsapp chat bot)

User can reset the password or change the pin through this option. The other option is to chat to an agent, see FAQs, send a feedback, or know more about Uhuru via this setting.



Tech stack used

We have utilized Twilio as whatsapp bot. For admin panel we have used Node.js for backend and Angular for front end development. In Merchant panel, we have used React for front end development.

Result

We successfully completed the project within the stipulated time frame and delivered value to our client with the following results:

1. Delivered a complete end to end chat bot with third party integration of Twilio which is robust enough to handle all services offered to the end user with the ability to chat to agents and more.
2. Delivered and completed merchant web application which gives the user ability to do more or less the same features of the whatsapp chat bot.
3. Delivered and completed admin panel through which the user can monitor the transactions of users who are availing the services provided.
4. The solution brought significant revenue growth to our client as a large number of users including merchants joined the network to use the services offered.
5. During the initial phase they were able to drive 5000+ user registrations and merchant enrolment.

About Oodles Blockchain

Oodles Blockchain is a blockchain development company that specializes in providing custom blockchain solutions for businesses. The company offers services such as blockchain development, smart contract development, decentralized application (DApp) development, cryptocurrency development, and blockchain consulting.

As a blockchain development company, Oodles Blockchain works with various blockchain platforms and technologies, including but not limited to Ethereum, Hyperledger, Corda, Stellar, and EOS. They cater to clients from diverse industries, including finance, healthcare, supply chain, logistics, and more.

Oodles Blockchain focuses on leveraging the potential of blockchain technology to help businesses streamline operations, enhance security, improve transparency, and facilitate efficient transactions. Their team of experienced blockchain developers, architects, and consultants work closely with clients to understand their specific requirements and deliver tailored solutions.

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