

BoC  
FINTECH  
HACKATHON  
5.0

# TID21 – Smart Queue

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MOSCOW  
STATE  
UNIVERSITY



University of Cyprus  
Department of Computer  
Science

# Problems

Have you waited outside a bank for your turn and then walked away  
**Disappointed?**

The **Length** of the Queue...

The time spent **Waiting** in **Line** ...

...



# Mission

Our mission is to modernize branch journeys, enhance **Customer Experience**, and enable clients to **Adapt** to new technologies and virtual business models opening up new opportunities for growth.

# Story 1: Grandma pays her utility bills



Grandma prefers to pay her bills at the bank



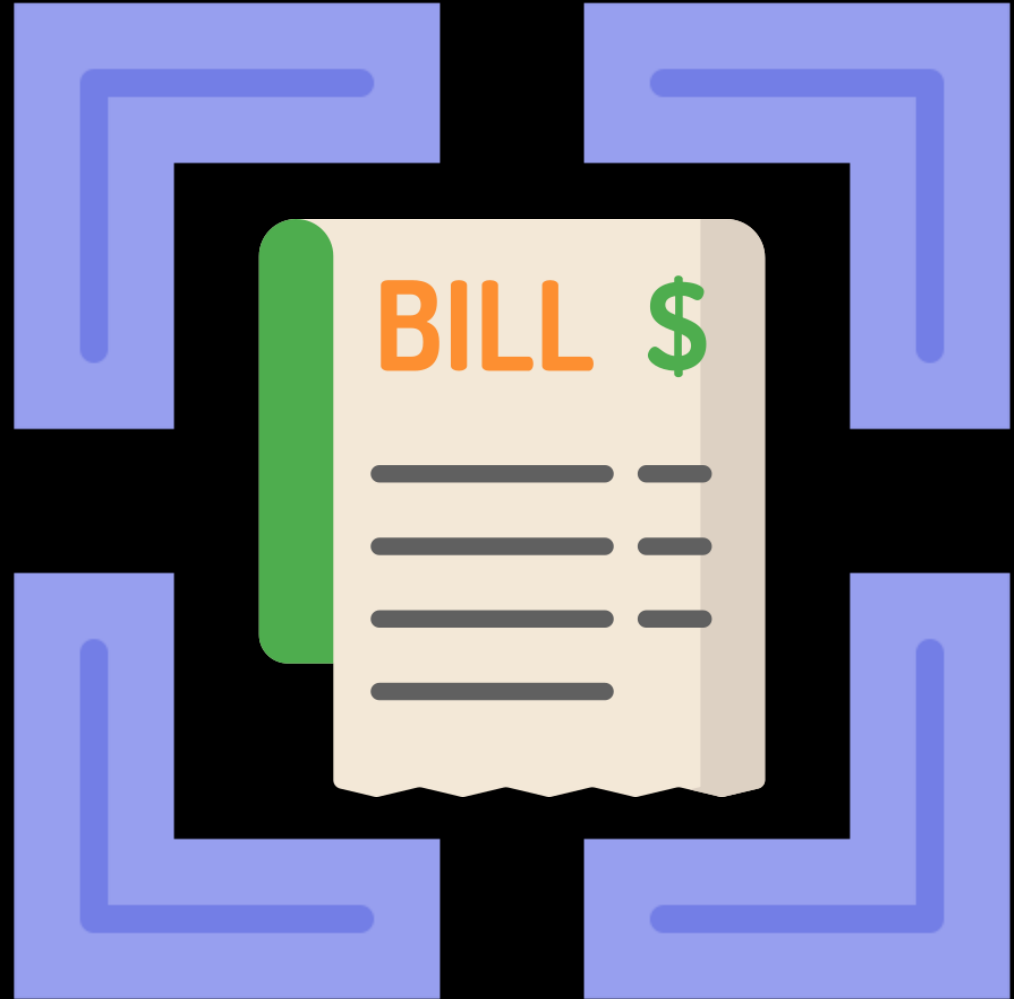
# And ... There's a queue of people in the bank



She saw a QR code on the wall...



# Describe her request in Natural Language



# OCR Server will Extract the payment Information

**Αρχή Ηλεκτρισμού Κύπρου**  
Electricity Authority of Cyprus  
www.eac.com.cy

Φύση Πίνα 15, 1085 Λευκωσία  
Ημερ. Παράδοσης για ΦΠΑ 08/10/2024  
Αρ. Μητρώου ΦΠΑ 900000220C  
ΑΦΤ 19101289G

Όνομα Πελάτη **ΛΕΩΝΙΔΟΥ ΙΣΑΑΚ ΓΕΩΡΓΙΑ**  
Αρ. Λογαριασμού **539 351 5410 3**  
Αρ. Μετρητή/τών **468973**  
Αρ. Υποστατικού **739 574 0232**  
Εγκ. Ισχύς/Ασφάλεια 40 AMP 1-Φ  
Διατήρηση/σας 01-Οικιακή

Κύκλος: 25 Δοσολογή: NIC45

ΕΝΔΕΙΞΕΙΣ ΜΕΤΡΗΤΗ (kWh)	Διατήρηση	Τελικό	Προηγούμενη	% kWh	Καταβλήσεις
01	42413	42096		317	
Σύνολο καταναλώσεως				317 kWh	
Αντιστοίχη περσινή καταναλώση				380 kWh	

**ΚΑΤΑΝΑΛΩΣΗ ΑΝΑ ΠΕΡΙΟΔΟ**  
Η μέση κατανάλωση κατανάλωση 10-10-2023 ήταν 325 kWh

ΑΝΤΙΣΤΟΙΧΗ ΠΕΡΣΙΝΗ ΠΕΡΙΟΔΟΣ

Βασική τιμή καυσίμων: €300/MT (Μετρητικό Τόκο)  
Τρέχουσα τιμή καυσίμων: €782,16/MT  
Αντιστοίχη τιμή καυσίμων (με βάση: €0,114339/kWh)  
Αντιστοίχη τιμή για οικιακή: €0,09632/kWh

**ΑΝΑΛΥΣΗ ΓΙΑ ΤΗΝ ΠΕΡΙΟΔΟ 07/08/2024 - 08/10/2024**

Χρεώσεις Διατήρησης 01	Αξία (€)
Παροχή Ηλεκτρικής Ενέργειας (317 kWh x €0,1035)	32,81
Χρήση Δικτύου (317 kWh x €0,0205)	6,50
Επιστροφές Υποστατικού (317 kWh x €0,0065)	2,06
Διαγράφη Μετρητικών Δεδομένων	0,08
Προμήθεια Ηλεκτρικής Ενέργειας	0,08
Σύνολο με Βασική Τιμή Καυσίμων	51,60
Αναπροσαρμογή Καυσίμων (317 kWh x €0,114339)	36,25
Υπογρ. Παράχ. Δημόσ. Υπογρ. (317 kWh x €0,00102)	0,32
Σύνολο πριν το ΦΠΑ (10%)	88,17
Τόκο ΑΠΕ & ΕΣΕ (317 kWh x €0,005)	1,59
Τόκος για εκπρόθεσμη εξόφληση	0,56
Σύνολο χρεώσεων περιόδου εντός ΦΠΑ	90,32
ΦΠΑ (10%)	10,75
Χαρμή Υπογραφίου Οικονομικών	-8,24
Σύνολο χρεώσεων περιόδου	92,83

**Ποσό πληρωμής**  
Πληρωτέο μέχρι: 31/10/2024  
€98,83

Αν εντοπίσετε μια κατάσταση που μπορεί να εξηγηθεί σε επικοινωνία, όπως δέντρα που μπλέκονται στα καλώδια, ενημερώστε την ΑΗΚ για άμεση ενέργεια μέσω των πιο κάτω καναλιών:  
• Ιστοσελίδα www.eac.com.cy  
• 1800 (επιλογή 3)  
• Εφαρμογή EAC Mobile App

**Αριθμός Λογαριασμού**  
539 351 5410 3  
Ψηφία Ελέγχου  
834  
Περίοδος Κατανάλωσης  
07/08/2024 - 08/10/2024

**Ποσό πληρωμής**  
€98,83  
Πληρωτέο μέχρι 31/10/2024

539 351 5410 3 834 88,83

Αρ. Λογαριασμού **539 351 5410**

Αρ. Μετρητή/τών **468973**

Αρ. Υποστατικού **739 574 0232**

Όνομα Πελάτη **ΓΕΩΡΓΙΑ**

**539 351 5410**

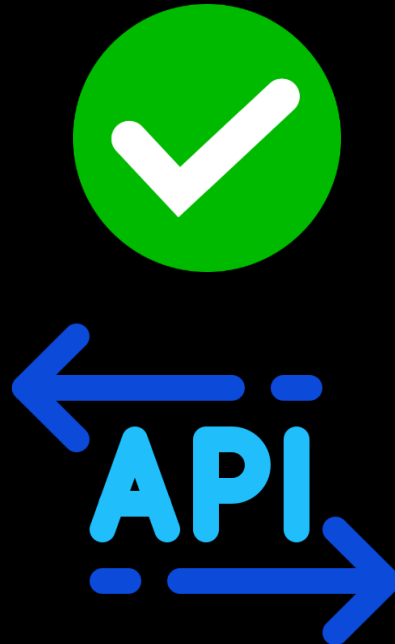
**Αρχή Ηλεκτρισμού Κύπρου**  
Electricity Authority of Cyprus

**Ποσό πληρωμής**  
Πληρωτέο μέχρι **31/10/2024**

**€98,83**



# Confirm the payment and she can go home



# Digital Receipt has sent to her email

https://sandbox.bankofcyprus.com/sandbox/payment

Bank of Cyprus

Authorize Utility Payment

From

CURRENT ANDREAS MICHAEL	Account Number 351012345671 EUR	Available 50000,00	Balance 50000,00	<a href="#">change</a>
----------------------------	------------------------------------	-----------------------	---------------------	------------------------

To Utilities

Authority/Organization  
EPIC

Payment Information

Execution Date 20/10/2024	Value Date 20/10/2024		
Bill Number 123456	Check Digit 8	Amount 30,00 EUR	Amount Check Digit 8

Disclaimer

1. Please be informed that the final execution date may differ from the selected execution date in cases where the transaction cannot be executed on that selected execution date due to technical, financial and/or other reasons.
2. Transfers submitted on business days before the applicable cut-off time will be considered to have been received by the Bank on that day. Transfers submitted after the applicable cut-off time or on non-business days will be considered to have been received on the following business day.
3. For Transfers with the same day value please contact your servicing branch for information regarding cut-off times applicable for each currency.
4. Transfers to Other Banks are allowed provided that these fall within the customers normal business. For compliance and legal reasons, for Transfers to Other Banks over EUR 50.000, it is mandatory to submit the relevant supporting documentation. Non submission of such documents, may result in a delay in execution or no execution.
5. For Transfers to Other Banks, depending on the currency and destination, different intermediary banks may be used. These banks, may deduct part of the transfer amount as commission, which Bank of Cyprus cannot estimate upfront.
6. For IBAN converter tool please click [here](#)





35%

Reduction in customer **waiting times**



30%

Reduction in **operational cost**



70%

**Transactions** moved to **Online Self Service**



23%

Increase in **customer satisfaction**

# Digital **Transformation** services for a wide range of industries



Bank



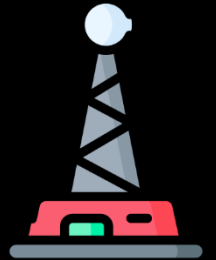
Retail



Government



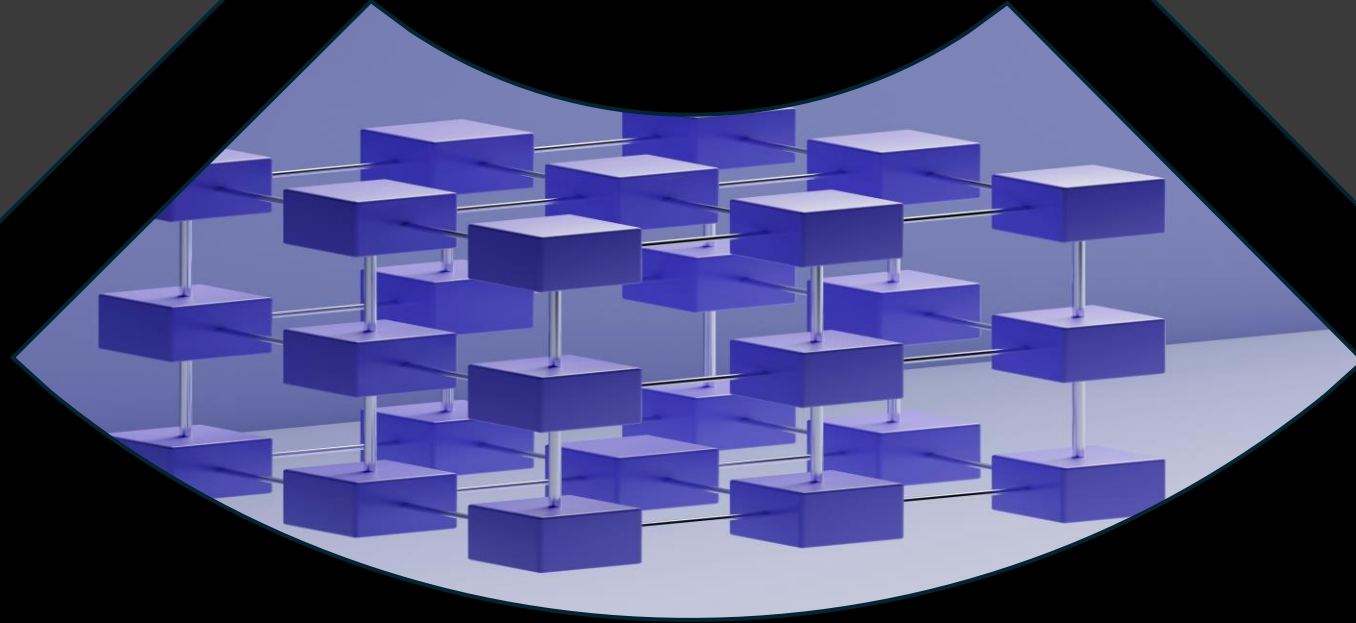
Health Care



Telecom

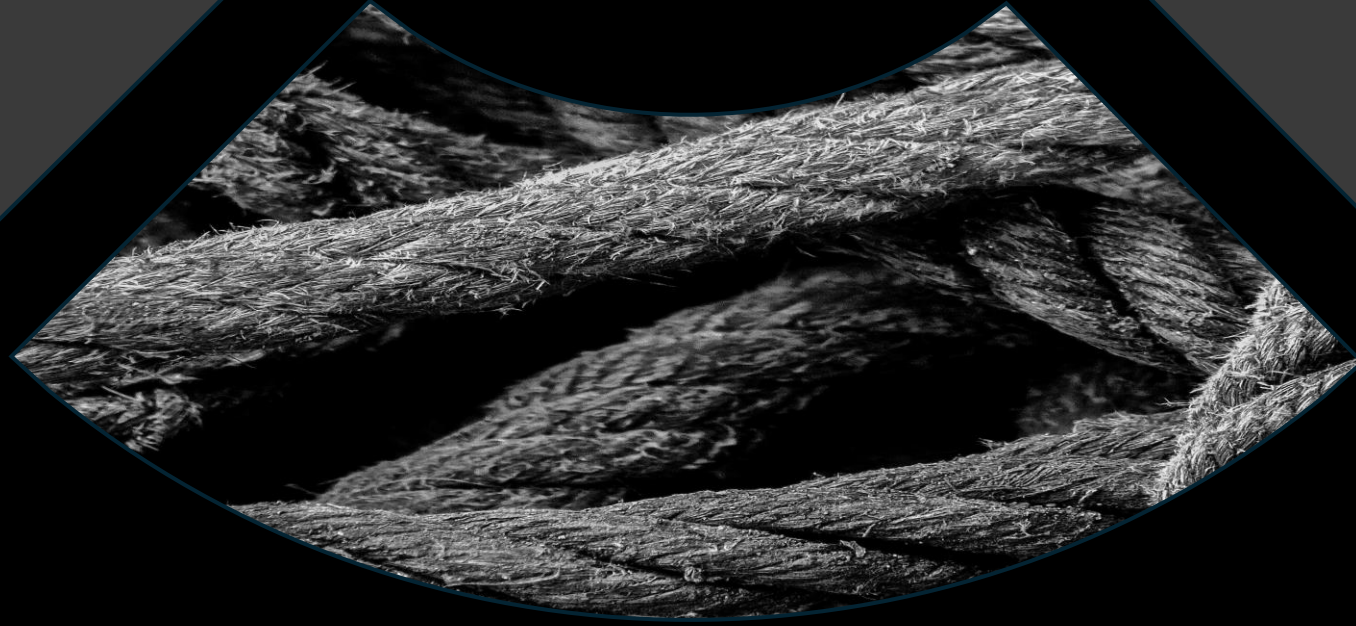


# Scalability



Can easily create new functionalities based on the existing code.

# Reliability



RAG model is used to answer the questions, so the answers are trustworthy, and the bank can control the quality of answers.

# Security



Open-Source LLM and CV models are running on the bank's own servers, so the data is private and secure.



# Cost-effective



The bank doesn't need to pay for the cloud services, because all the models are running on the bank's own servers.

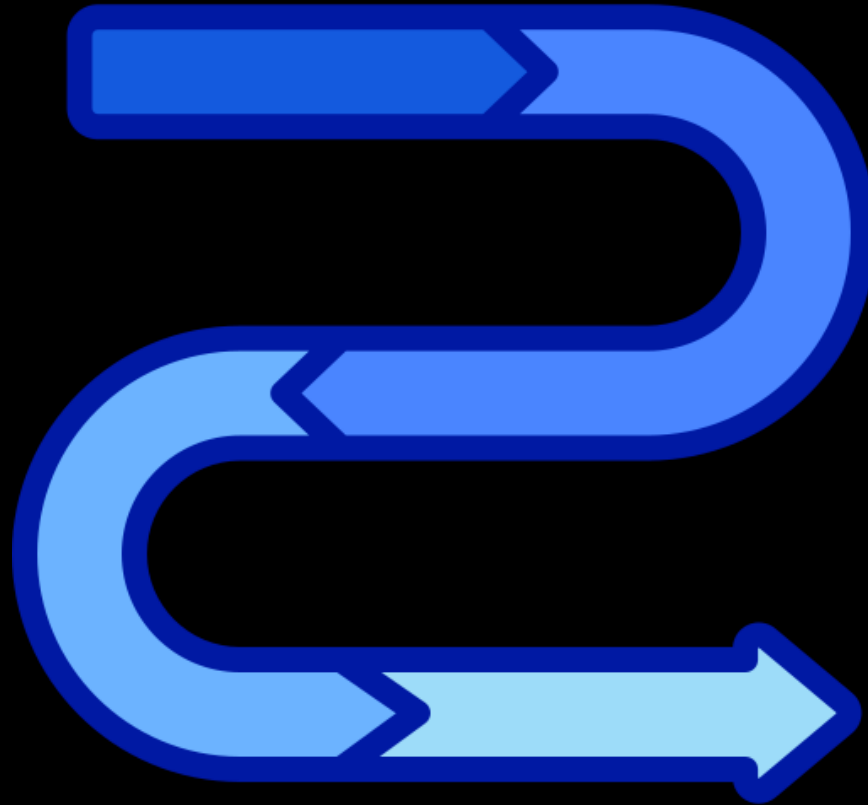


# Our Journey in BoC Hackathon 5.0



## Friday

kickoff meeting  
with  
suggestions  
from mentors



## Saturday

We started to  
implement our  
ideas with the  
help of mentors

## Sunday

Continue coding  
and prepare for  
the pitch

# References

[1] <https://www.wavetec.com/#customer-experience-solutions>

The image shows a screenshot of the Wavetec website, which is a leading provider of queue management and self-service kiosk solutions. The website features a blue header with the Wavetec logo and navigation links for Industries, Solutions, Company, Resources, and Contact Us. A prominent orange button labeled "BOOK A FREE DEMO" is visible. The main content area is titled "Digital Banking Solutions" and describes how Wavetec's omnichannel customer experience solutions can streamline the customer journey in bank branches. Below this, there are two main service categories: "Queue Management" and "Self Service Kiosks". The Queue Management section highlights the benefits of QMS, such as improving process optimization, reducing wait times, and streamlining the queuing experience. It also lists various industries where QMS is used, including retail, banks, healthcare, government, and education. The Self Service Kiosks section shows a kiosk interface with options like "Open a new account", "Meet with a teller", "Service an existing account", and "Other". A QR code is displayed for customers to scan and enter in the queue. The website also features a "What is a Queue Management System?" section, which explains that QMS are designed to manage customer flow by improving process optimization and wait time reduction. A list of benefits includes Long Queues, Inefficient Waiting, and Poor Customer Experience. The footer of the website displays logos for various partner banks, including Banque Atlantique, HBL, Bank Alfalah, Banorte, Equity, HSBC, BBVA, and Interbank.

Calculates the ROI of investing in our queuing and self-service solutions [Learn More](#)

**WAVETEC** INDUSTRIES SOLUTIONS COMPANY RESOURCES CONTACT US [BOOK A FREE DEMO](#) English

Home > Industries > Banking

## Digital Banking Solutions

**Facilitate an Omnichannel Customer Experience with a Digital Branch Transformation**

Streamline your customer journey with Wavetec bank branch management solutions and offer a superior branch banking customer experience solutions for all.

[Queue Management](#) [Self Service Kiosks](#)

**What is a Queue Management System?**

Queue Management Systems (QMS) are designed to manage customer flow by improving process optimization and wait time reduction, streamlining the queuing experience. By integrating QMS technologies such as ticket dispensers, kiosks, call forwarding, and an automated scheduling system, customers will have a more relaxed waiting experience.

Unlocking efficiency with Queue Management Systems (QMS) enhances customer experience across industries like retail, banks, healthcare, government, and education, ensuring seamless customer service.

- + Long Queues
- + Inefficient Waiting
- + Poor Customer Experience

**Hub service**  
Now serving  
People in waiting: 5  
Ticket number  
**A10**  
Non cash payment  
Wait time: 5

Scan QR Code to enter in queue

WhatsApp Solution

**BANQUE ATLANTIQUE** **HBL HABIB BANK** **Bank Alfalah** **BANORTE**  
**EQUITY** **HSBC** **BBVA** **Interbank**

# Meme for Today

History:

You: Hi. I want to open bank account  
Server: This is not request for the bill  
payment. Please wait your order in the  
queue.

Send a message:



**Not hotdog**