Addressing Inconsistencies In Romanization Towards An Integrated Program For The Unified Arabic System For The Romanization Of Names

Hilal Rashid Al-Rajhi
Senior Officer 2/ Data Management
Sultanate Of Oman,
Ministry Of Defense
National Survey And Geospatial Information Authority.

Outline

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- Introduction
- Current Situation
- New Solution
- Challenges
- Demo
- Summary

Introduction

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The Variation In Romanization Systems For Arabic Geographical Names Has Caused Inconsistencies And Communication Issues In Geospatial Fields.

This Project Proposes An Integrated Program Based On The Un-endorsed Unified Arabic Romanization System. The Program Uses Linguistic Algorithms To Ensure Accurate, Standardized Transliteration And Features A User-friendly Interface For Direct Typing Or Excel-based Input.

Current Situation

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- Manual
- One Name At A Time
- Used In One Department By Specific Employees
- Depends On Employee Experience
- Vulnerable To Human Mistakes
- Time Consuming

New Solution

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What’s Mubðn مُبينْ Mubīn

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Mubðn

Is A Windows Forms Application That Is Used To Romanize Arabic Language Names Based On The Unified Arabic System Rules

What Mubðn مُبينْ Mubīn can do?

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- Automate Romanization
- Romanizes Thousands Of Names Instantly
- Independent To Employee’s Knowledge
- Adhere To Unified Arabic System Rules
- Keep Pace To Sultanate Of Oman 2040 Vision
- Support Government Addressing System Project
- Designed To Be Utilized To Romanize Global Languages Other Than Arabic
- Editable Romanization Dictionary And Reserved Words

Challenges

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- Inconsistencies Of Current Names Dataset
- Romanization Systems Knowledge
- Technical Issues With The Font
- Creating Romanization Dictionary Rules Manually
- Compatible Coding Algorithm
- Project Developed By One Developer Only
- Adhering Result According To Arabic Language Grammar

DEMO

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Arabic Language Romanization

Romanization | Excel | Dictionary | Reserved | التعريب

الإسم

الرومنة

Name	Token	Found	Reserved	Len	Trans	Result

☐ Detailed Logs

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الإسم

مُستَشفى وادي الحَيملي

الرومنة

W ā dī Al H̲aymlī Hospital

Name	Token	Found	Reserved	Len	Trans	Result
مُستَشفى	مُستَشفى	☑	☑	22		Hospital
وادي	وا	☑	☐	2	w ā	w ā
دي	دي	☑	☐	2	dī	w ā dī
الحَيملي	الحَ	☑	☐	4	al h̲a	w ā dī al h̲a
يملي	ي	☑	☐	1	y	w ā dī al h̲ay
ملي	م	☑	☐	1	m	w ā dī al h̲aym
لي	لي	☑	☐	2	lī	w ā dī al h̲aymlī

☐ Detailed Logs

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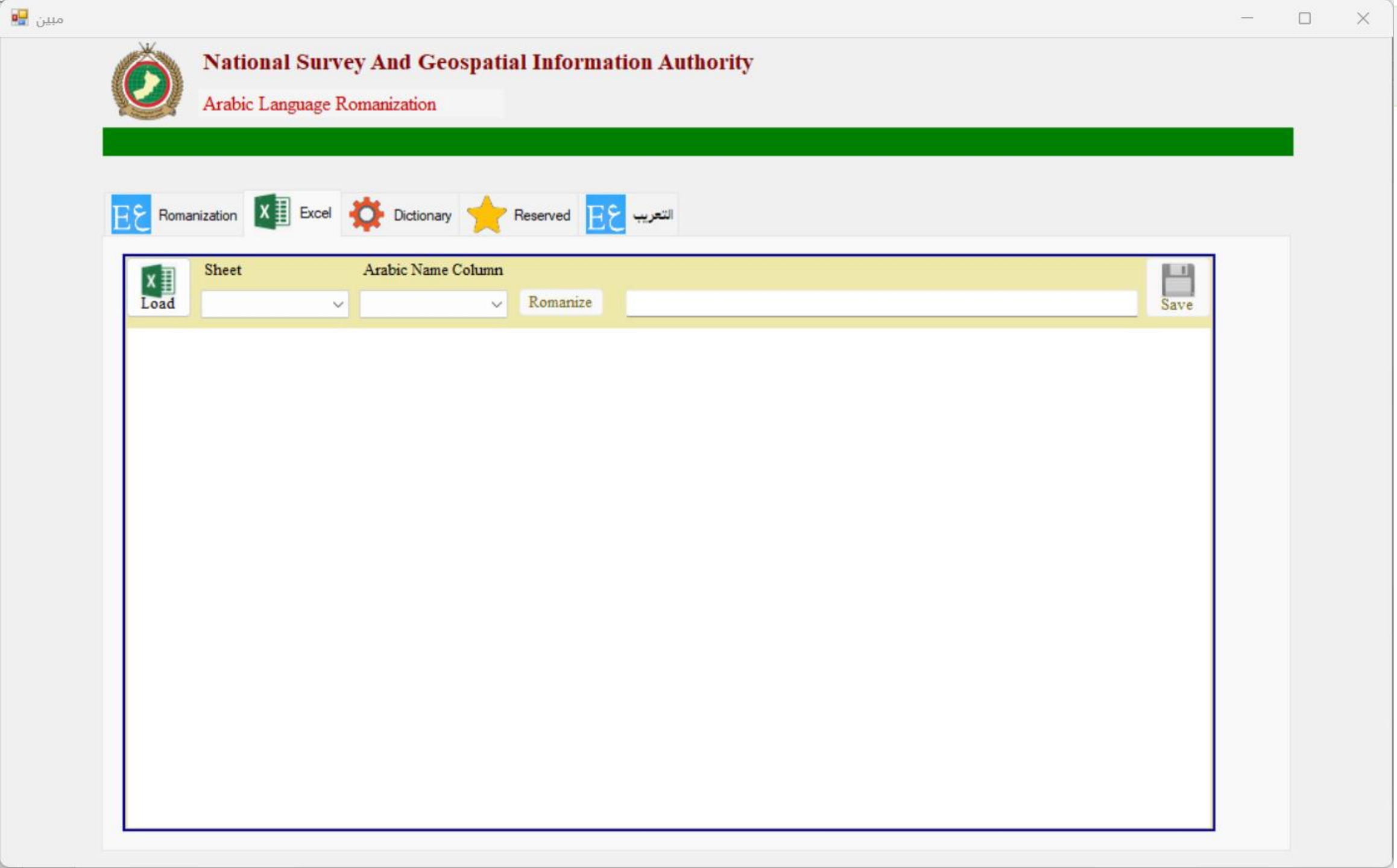
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Romanize
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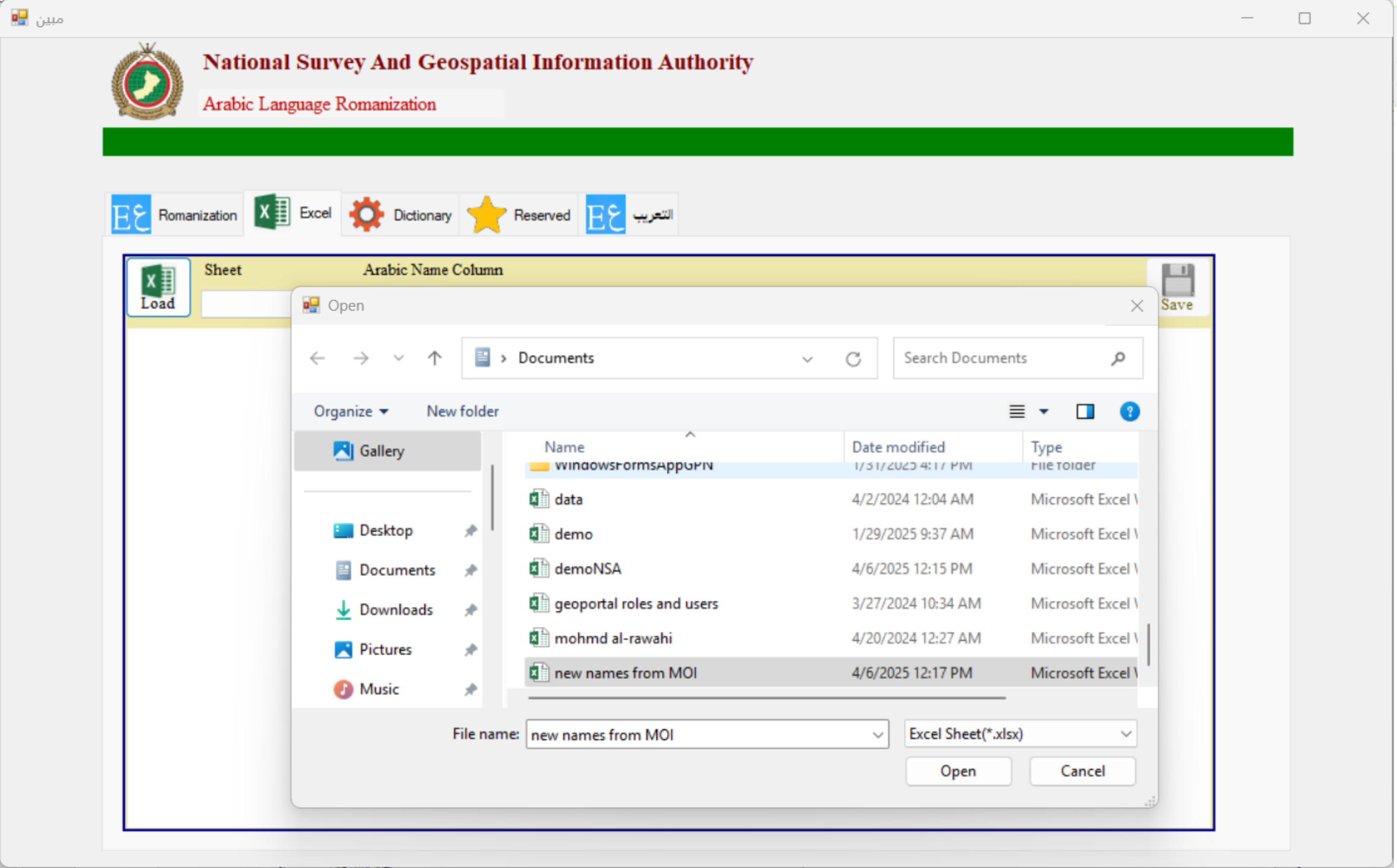
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Arabic Language Romanization

Romanization | Excel | Dictionary | Reserved | التعريب

Load | Sheet: 'New Names$' | Arabic Name Column: | Romanize | C:\Users\NSA2\Documents\romanization.xlsx | Save

	ARABIC NAMES	Romanization
▶	حِلَة العُوَيْنَات الغَرْب	
	حِلَة العَيْن	
	حِلَة الغَافِيَة	
	حِلَة الغَبَّة الصَّغِيْرَة	
	حِلَة الغَبَّة الكَبِيْرَة	
	حِلَة الغِدَيْرَة	
	حِلَة الغَرِيْفَة	
	حِلَة الغَرِيْفَة	
	حِلَة الغَوْج	
	حِلَة الفَاغِرَة	
	حِلَة الفَتْح	
	حِلَة الفَتْح	
	حِلَة الفِرِيْج الجَدِيْد	
	حِلَة الفِلِيْج	
	حِلَة القَابِل	
	حِلَة القَاضِي	
	حِلَة القَبَائِل	

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Romanization | Excel | Dictionary | Reserved | التعريب

Load | Sheet: 'New Names$' | Arabic Name Column: ARABIC NAMES | Romanize | C:\Users\NSA2\Documents\romanization.xlsx | Save

	ARABIC NAMES	Romanization
▶	حِلَة العُوَيْنَات الغَرْب	
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	حِلَة الغَافِيَة	
	حِلَة الغَبَّة الصَّغِيْرَة	
	حِلَة الغَبَّة الكَبِيْرَة	
	حِلَة الغِدَيْرَة	
	حِلَة الغَرِيْفَة	
	حِلَة الغَرِيْفَة	
	حِلَة الغَوْج	
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	حِلَة الفَتْح	
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	حِلَة الفِلِيْج	
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Romanization | Excel | Dictionary | Reserved | التعريب

Load | Sheet: 'New Names$' | Arabic Name Column: ARABIC NAMES | Romanize | C:\Users\NSA2\Documents\romanization.xlsx | Save

	ARABIC NAMES	Romanization
▶	حِلَة العُوَيْنَات الغَرْب	Hillat Al ʻŪaynāt Al Gharb
	حِلَة العَيْن	Hillat Al ʻAyn
	حِلَة الغَافِيَة	Hillat Al Ghāfyah
	حِلَة الغُبَّة الصَّغِيْرَة	Hillat Al Ghubbah Aṣ Ṣaghīrah
	حِلَة الغُبَّة الكَبِيْرَة	Hillat Al Ghubbah Al Kabīrah
	حِلَة الغِدَيْرَة	Hillat Al Ghidayrah
	حِلَة الغِرَيْفَة	Hillat Al Ghirayfah
	حِلَة الغِرَيْفَة	Hillat Al Ghirayfah
	حِلَة الغَوْج	Hillat Al Ghawaj
	حِلَة الفَاغِرَة	Hillat Al Fāghrh
	حِلَة الفَتْح	Hillat Al Fath
	حِلَة الفَتْح	Hillat Al Fath
	حِلَة الفِرِيْج الجَدِيْد	Hillat Al Firīj Al J
	حِلَة الفِلِيْج	Hillat Al Filayj
	حِلَة القَابِل	Hillat Al Qābil
	حِلَة القَاضِي	Hillat Al Qādī
	حِلَة القَبَائِل	Hillat Al Qabāʻil

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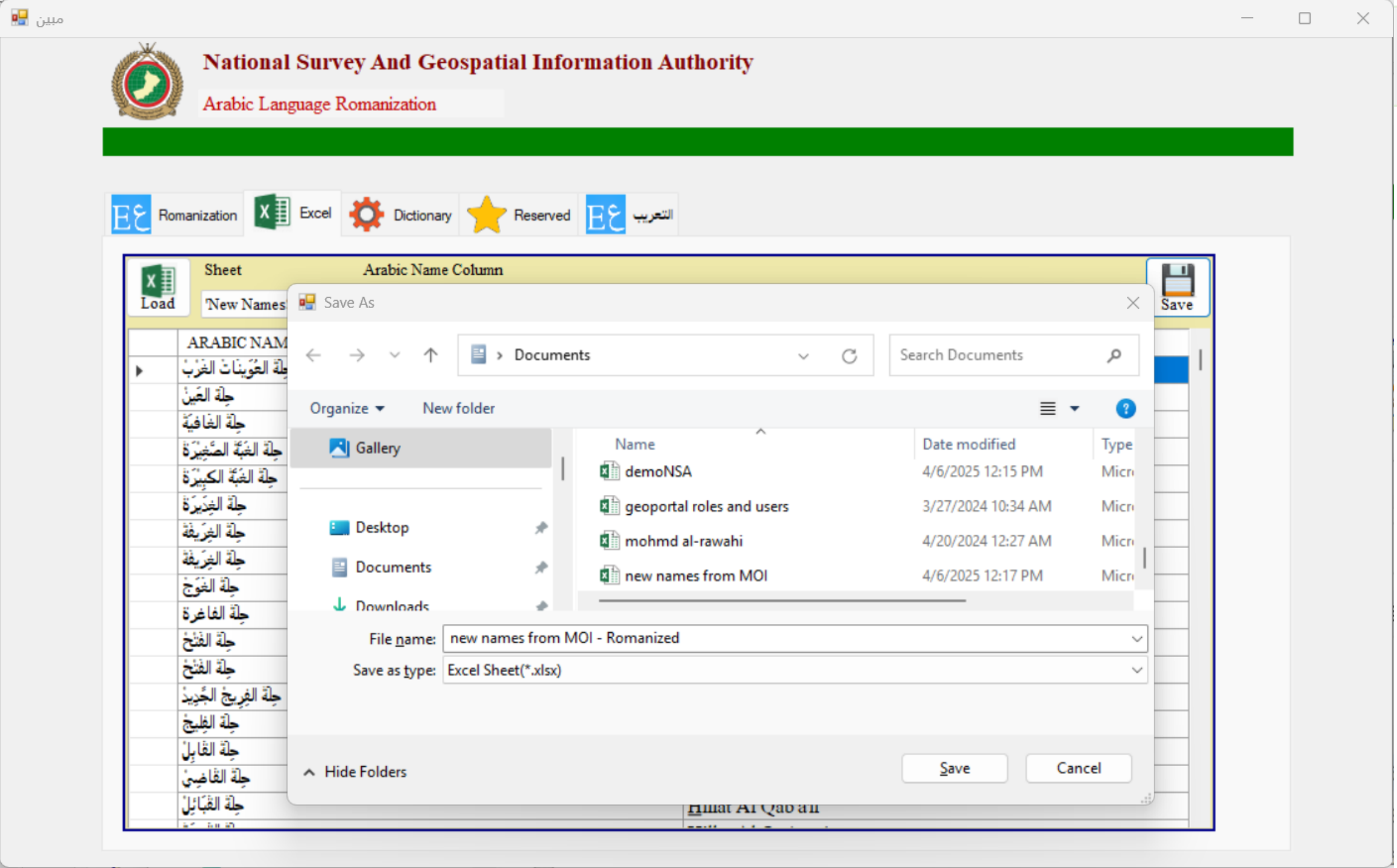
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3/27/2024 10:34 AM
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Load

Sheet: 'New Names$'

Arabic Name Column: ARABIC NAMES

Romanize

Saving: C:\Users\NSA2\Documents\new names from MOI - Romanized.xlsx

Save

ARABIC NAMES	Romanization
حِلَة العُوَيْنَات الغَرْب	Hillat Al ʻŪaynāt Al Gharb
حِلَة العَيْن	Hillat Al ʻAyn
حِلَة الغَافِيَة	Hillat Al Ghāfyah
حِلَة الغُبَّة الصَّغِيْرَة	Hillat Al Ghubbah Aṣ Ṣaghīrah
حِلَة الغُبَّة الكَبِيْرَة	Hillat Al Ghubbah Al Kabīrah
حِلَة الغِدَيْرَة	Hillat Al Ghidayrah
حِلَة الغِرَيْفَة	Hillat Al Ghirayfah
حِلَة الغِرَيْفَة	Hillat Al Ghirayfah
حِلَة الغَوَج	Hillat Al Ghawaj
حِلَة الفَاغِرَة	Hillat Al Fāghrh
حِلَة الفَتْح	Hillat Al Fath
حِلَة الفَتْح	Hillat Al Fath
حِلَة الفِرِيج الجَدِيْد	Hillat Al Firīj Al J
حِلَة الفِلِيج	Hillat Al Filayj
حِلَة القَابِل	Hillat Al Qābil
حِلَة القَاضِي	Hillat Al Qādī
حِلَة القَبَائِل	Hillat Al Qabāʻil

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New | Sort | View | Details

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- Music
- Videos
- ورقة العمل
- visa

Name	Date modified	Type	Size
new names from MOI - Romanized	4/13/2025 1:38 PM	Microsoft Excel W...	115 KB
United Nations Group of Experts on	4/10/2025 11:07 PM	Microsoft Word D...	52 KB
AA00EIWQVF	4/8/2025 1:07 PM	Text Document	1 KB
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demoNSA	4/6/2025 12:15 PM	Microsoft Excel W...	115 KB
الخيملي ولايَة الرُّستاق	2/10/2025 2:12 PM	Microsoft Word D...	12 KB
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GEGN.2_2025_summary-template (2) Ro...	1/29/2025 8:09 AM	Microsoft Word D...	52 KB
GEGN.2_2025_summary-template (2) Ro...	1/23/2025 11:21 PM	Adobe Acrobat D...	574 KB
Default	1/10/2025 10:47 AM	Remote Desktop C...	3 KB
List Docker images	12/6/2024 8:22 AM	Microsoft Word D...	13 KB

79 items | 1 item selected 114 KB

حِلَة القَاضِي	Hillat Al Q ā ḍī
حِلَة القَبَائِل	Hillat Al Qab āʾil

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new names from MOI - Romanized - Excel

	A	B	C
1	ARABIC NAMES		Romanization
2	حِلَّةُ العُوَيْنَاتُ الغَرْبْ		Hillat Al ʻŪaynāt Al Gharb
3	حِلَّة العَيْنْ		Hillat Al ʻAyn
4	حِلَّةُ الغَافِيَةْ		Hillat Al Ghāfyah
5	حِلَّةُ الغُبَّةْ الصَّغِيْرَةْ		Hillat Al Ghubbah Aṣ Ṣaghīrah
6	حِلَّةُ الغُبَّةْ الكَبِيْرَةْ		Hillat Al Ghubbah Al Kabīrah
7	حِلَّةُ الغِدَيْرَةْ		Hillat Al Ghidayrah
8	حِلَّةُ الغِرَيْفَةْ		Hillat Al Ghirayfah
9	حِلَّةُ الغِرَيْفَةْ		Hillat Al Ghirayfah
10	حِلَّةُ الغَوَجْ		Hillat Al Ghawaj
11	حِلَّةُ الفاغرة		Hillat Al Fāghrh
12	حِلَّةُ الفَتْحْ		Hillat Al Fath
13	حِلَّةُ الفَتْحْ		Hillat Al Fath
14	حِلَّةُ الفِرِيجْ الجَّدِيدْ		Hillat Al Firīj Al J
15	حِلَّة الفِلَيجْ		Hillat Al Filayj
16	حِلَّةُ القَابِلْ		Hillat Al Qābil

Sheet1

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80 items 1 item selected

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Romanization | Excel | Dictionary | Reserved | التعريب

Dictionary
Builder

Update | Capitalize | Cancel

Tocken	Tocken2	Trans	TRANS	x
صِوَاء		siw ā’	Siw ā’	x
طَيَّاء		tay ā’		x
طِوَاء		tiw ā’		x
طُوَاء		tuw ā’		x
طَوَاء		taw ā’		x
ضِيَّاء		diy ā’		x
ضُيَّاء		duy ā’		x
ضَيَّاء		day ā’		x
ضِوَاء		diw ā’		x
ضُوَاء		duw ā’		x
ضَوَاء		daw ā’		x
صِيَّاء		siy ā’		x
صاء		s ā’		x
صَيَّاء		say ā’		x

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Ā	Ū	Ī	H	S	D	T	Dh	Dh	Kh	‘	gh	’
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صِوَاء

siw ā’

Replace

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Romanization | Excel | Dictionary | Reserved | التعريب

Dictionary

Builder

Generate | Filter: جديد | لام شمسية

Prefix	Token	Suffix	Result	New	x
	أ			☐	x
	ا			☐	x
	إ			☐	x
	ء			☐	x
	ب			☐	x
	ت			☐	x
	ث			☐	x
	ج			☐	x
	ح			☐	x
	خ			☐	x
	د			☐	x
	ذ			☐	x
	ر			☐	x
	ز			☐	x
	س			☐	x
	ش			☐	x

Move To Dictionary

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Dictionary

Builder

Generate

Filter: جديد لام شمسية

Prefix	Token	Suffix	Result	New	x
	أ	وَيَ		☐	x
	ا			☐	x
	إ			☐	x
	ء			☐	x
	ب			☐	x
	ت			☐	x
	ت			☐	x
	ج			☐	x
	ح			☐	x
	خ			☐	x
	د			☐	x
	ذ			☐	x
	ر			☐	x
	ز			☐	x
	س			☐	x
	ش			☐	x

Move To Dictionary

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Dictionary

Builder

Generate | Filter: جديد | لام شمسية

Prefix	Token	Suffix	Result	New	x
	أ	وَيَ	أوَيَ	✓	x
	ا	وَيَ	اوَيَ	✓	x
	إ	وَيَ	إوَيَ	✓	x
	ء	وَيَ	ءوَيَ	✓	x
	ب	وَيَ	بوَيَ	✓	x
	ت	وَيَ	توَيَ	✓	x
	ث	وَيَ	ثوَيَ	✓	x
	ج	وَيَ	جوَيَ	✓	x
	ح	وَيَ	حوَيَ	✓	x
	خ	وَيَ	خوَيَ	✓	x
	د	وَيَ	دوَيَ	✓	x
	ذ	وَيَ	ذوَيَ	✓	x
	ر	وَيَ	روَيَ	✓	x
	ز	وَيَ	زوَيَ	✓	x
	س	وَيَ	سوَيَ	✓	x
	ش	وَيَ	شوَيَ	✓	x

Move To Dictionary

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Arabic Language Romanization

Romanization | Excel | Dictionary | Reserved | التعريب

Dictionary | Builder

Update | Capitalize | Cancel

Tocken	Tocken2	Trans	TRANS	x
صوَيَ				X
ضوَيَ				X
طوَيَ				X
ظوَيَ				X
عوَيَ				X
غوَيَ				X
فوَيَ				X
قوَيَ				X
كوَيَ				X
لوَيَ				X
موَيَ				X
نوَيَ				X
هوَيَ				X
ووَيَ				X

ā	ū	ī	h	s	d	t	dh	dh	kh	‘	gh	’
Ā	Ū	Ī	H	S	D	T	Dh	Dh	Kh	‘	gh	’
			ح	ص	ض	ط	ظ	ذ	خ	ع	غ	ء

يوَيَ

Replace

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Search Name - Save

Word	Word2	Capitalize	Translate	Translation	locate	Remarks
هَيمَاءْ	هيماء	☑	☐	HAYMĀ'		
مَدْحَاءْ	مدحاء	☑	☐	MADHĀ'		
سَمَدْ الشَّأْنْ	سمد الشأن	☑	☐	SAMAD ASH SHAN		
ضَلْكُوتْ	ضلكوت	☑	☐	DALKŪT		
دَبَا	دبا	☐	☐	DABĀ		
مُسْتَشْفَى	مستشفى	☐	☑	Hospital		
سَمَائِلْ	سمائل	☑	☐	SAMĀIL		
سِنَاوْ	سناو	☑	☐	SINĀW		
صور	صور	☑	☐	SŪR		
صُحار	صحار	☑	☐	SUHĀR	ولاية	
بَوشَر	بوشر	☐	☐	BAWSHAR		
ظُفار	ظفار	☑	☐	DHUFĀR	ولاية	
عَبدُالله	عبدالله	☐	☐	'Abdullah		
مُحافَظَة	محافظة	☑	☑	Governorate		
طَرِيق	طريق	☐	☑	Road		

Ā	ā	ـَا
Ū	ū	ـُو
Ī	ī	ـِي
H	h	ح
S	s	ص
D	d	ض
T	t	ط
Dh	dh	ظ
Dh	dh	ذ
Kh	kh	خ
'	'	ع
gh	gh	غ
'	'	ء
'A	'a	عَ
A'	a'	ءَ

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Search Name الرُّستاق الرستاق Save

Word	Word2	Capitalize	Translate	Translation	locate	Remarks
الرُّستَاقُ	الرستاق	☑	☐	AR RUSTĀQ		ولاية
		☐	☐			

Ā	ā	ـَا
Ū	ū	ـُو
Ī	ī	ـِي
H	h	ح
S	s	ص
D	d	ض
T	t	ط
Dh	dh	ظ
Dh	dh	ذ
Kh	kh	خ
‘	‘	ع
gh	gh	غ
’	’	ء
‘A	‘a	عَ
A’	a’	ءَ

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الرومنة

الإسم

Name	Token	Found	Reserved	Len	Trans	Result

☐ Detailed Logs

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Romanization | Excel | Dictionary | Reserved | التعريب

الرومنة

W ā dī Al Haymlī

الإسم

وادي الحَيْمْلي

Name	Token	Found	Reserved	Len	Trans	Result
W ā dī Al Haymlī	W ā	☑	☐	2	وا	وا
dī Al Haymlī	dī	☑	☐	2	دي	وادي
Al Haymlī	Al Haymlī	☑	☐	10		وادي
Al Haymlī	Al Ha	☑	☐	5	الحَ	وادي الحَ
ymlī	y	☑	☐	1	يْ	وادي الحَيْ
mlī	m	☑	☐	1	مْ	وادي الحَيْمْ
lī	lī	☑	☐	2	لي	وادي الحَيْمْلي

☐ Detailed Logs

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Summary

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- **Why This Project?**
  - Addressing The Inconsistencies In Romanization Applications
  - Overcoming Human Mistakes By Automating And Adhering To Unified Arabic System Rules
  - Speedup Romanization Process
  - Keep Pace To Sultanate Of Oman 2040 Vision
- **Challenges**
  - Not Having A Fully Trusted Romanized Names Dataset
  - Have To Learn Romanization Systems
  - Filling Romanization Dictionary Manually
  - Adhering To Arabic Language Syntax And Grammar
- **Maintenance**
  - Will Keep Maintaining The Application And Use Advanced Data Science Techniques To Update Romanization Dictionary
  - Get Support From This UNGEGN

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THE END

Thank you for listening

Questions