System Logo

Ancient Egyptian Linguistics Management System(AELMS)

Business Requirement Specification
Version 1.0
January 10, 2024

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1. Business Requirements

1.1 Overview/Executive Summary

This document is prepared for Renkemet Linguistics, who requests an IT system, Ancient Egyptian Language Management System **AELMS**, with the capacity to store, present and manage a dictionary-like cross-reference of ancient Egyptians words and definitions, their associated modernized speech sounds, and sample sentences. The system will also store, present and manage digitized primary sources (Steles, Rock-Inscriptions, Papyri, Lintels, Scarabs, Busts, e.t.c) serving as a pool for sample sentences and historically proven evidence for words and ideologies used within the system.

1.2 Needs/Problem Statement

Currently available systems for searching Egyptian words are either excessively broad and esoteric (Wiktionary and Egyptological sites) or limited/logocentric (Egyptian language apps). And no digitized linguistic system provides a one-stop-shop for glyphs, words and definitions linking fully translated classical materials, which is required to have the full historical and use context necessary to deeply understand and appreciate the language.

Wiktionary requires a language enthusiast to have a baseline egyptological understanding to successfully search an ancient Egyptian word. For example, a search for the word "**mdw-nṯr**" on Wiktionary returns an entry element for conventional anglicization as "**medu-netjer**" requiring the searcher to first understand the latinized alphabets for Egyptian hieroglyphs like "**ṯ**" to search successfully. Not considering that most keyboards does not ordinarily have a key for "**ṯ**", a search for the conventional anglicization of "**medu-netjer**" does not link back to "**mdw-nṯr**." Moreover, the sample sentences used to support a word entry, when used, are often composed of picture of hieroglyphs rather than copy-effective glyphs and provide no link to a complete version of the referenced classical material thereby limiting full comprehension and application.

The current proliferation of interests in the proper understanding of ancient Egyptian literature and history, highly overshadowed by current esoteric nature of egyptology, demands a proper disruption in the field. This will allow the general population to research the subject from a more humanistic and neutral position rather than from a pedestal of science and high academics presently applicable.

In other words, AELMS will support users in the accessible, **exploration**, **gamification**, **searching, collecting or bookmarking**, **viewing**, **hearing**, **inspecting**, **sharing**, **critiquing** and **updating** of ancient Egyptian linguistic elements (hieroglyphs, words, and classics) and related appendices with multilingual localization and in default language of English.

1.3 Business Goals/Key Objectives

The goal of the AELMS is to provide a one-stop-shop or linguistic full-service for ancient Egyptian linguistics and related primary sources, allowing end users to carry out the following functions; which are all aimed at **increasing user-engagement, user-conversion-rate and user-retention by 2.5% monthly within the first year of system launch**:

1. Present a regularly **updated and growing dictionary or lexicon of ancient Egyptian words** (20-50 additional words/month) in latinized form with corresponding hieroglyphs, definition, conventional anglicization, word type, modernized speech-sounds and audio pronunciations, gender, part of speech, and derived words. Some words are presented with one or more **sample sentences** drawn as excerpts (from **classics** or **primary source artifacts**) to support words usage and linking to full interpretation of the referenced primary source artifact (1-2/month) without the need to necessarily hunt externally for supporting sources thereby **increasing system usage time and research or study effectiveness**.
2. Present **ancient Egyptian hieroglyphs** to **facilitate usage and understanding** of the hieroglyphs within words.
3. Collect **user feedbacks as critiques** on words and classics to increase **linguistic integrity** and promote **user trust and engagements**.
4. Collect user preferred words and **bookmarks** to facilitate personal research and **research continuity**.
5. **Explore and search** ancient Egyptian words by using standard keyboard with an option to insert special letters (**ā ḥ ḫ ẖ š ṯ ḏ**) using on-screen keypad while typing **search terms** relating to latinized Egyptian letters or simply by typing search terms by conventional anglicization to facilitate **ease of search** and research. Words should also be searchable by querying with a string in a specified local language (e.g English).
6. View **glossaries or registers of words** and **appendices** providing historical, cultural and geographic context to further facilitate **linguistic understanding** and primary **source integrity**.
7. Complete **quizzes** and play simple **word/glyph/artifact games** for a fun-filled/alternative engagement separate from direct learning
8. Create and manage **user-groups** by user-group administrator to facilitate **user-clusters** and opportunity for **external customers/stakeholders** providing linguistic educational services.
9. Switch **definition language** from English default to Yoruba, Spanish, French, Mandarin Chinese, Hindi, and e.t.c to facilitate **global applicability**.
10. Provide **in-app notifications** on newly added and updated words and classics.
11. Provide chatbot interaction with customer to help with support.
12. Charge or bill a **paying or subscribed customer** for application usage.

1.4 Success Metrics

1.4.1 User Metrics

A Final-Value or target value of **100,000 registered or daily active users (DAUs)** from an Initial-Value of 10 registered or DAUs at the end of year 1 after system's launch with a monthly growth rate of 115.4%. Operating on a **10% conversion rate from registered to paying users** resulting in **10,000 paying users** at the end of year 1. And **2.5% conversion rate from visitor to newly acquired registered user**.

FV = Final_Value = 100,000
IV = Initial_Value = 10
r = growth-rate or cumulative-monthly-growth-rate (CGMR)

$FV = IV \times (1+r)^n$
$r = (FV / IV)^{1/n} - 1 = (100{,}000 / 10)^{1/12} - 1$

$r = 1.154$ or 115.4%

Summary of Monthly Growth (**115.4% CMGR**):

End of Month	Formular (FV =)	Total Registered Users (FV)	Previous Registered Users (IV)	Registered Users Acquired (FV - IV: 2.5% of Visitors)	Visitors	Paying Registered User (10% of FV)
1	$10 \times (1 + 1.154)^1$	22	10	12	480	2
2	$10 \times (1 + 1.154)^2$	46	22	24	960	4
3	$10 \times (1 + 1.154)^3$	100	46	54	2,160	10
4	$10 \times (1 + 1.154)^4$	215	100	115	4,600	21
5	$10 \times (1 + 1.154)^5$	463	215	248	9,920	46
6	$10 \times (1 + 1.154)^6$	1,000	463	537	21,480	100
7	$10 \times (1 + 1.154)^7$	2,154	1,000	1,154	46,160	215
8	$10 \times (1 + 1.154)^8$	4,631	2,154	2,477	99,080	463
9	$10 \times (1 + 1.154)^9$	10,000	4,631	5,369	214,760	1,000
10	$10 \times (1 + 1.154)^{10}$	21,540	10,000	11,540	461,600	2,154
11	$10 \times (1 + 1.154)^{11}$	46,310	21,540	24,770	990,800	4,631
12	$10 \times (1 + 1.154)^{12}$	**100,000**	46,310	53,690	**2,147,600**	**10,000**

1.4.2 Resource Metrics

1. **60 new words added monthly** within the first year of system launch, resulting in 720 additional words. New words used in new classics with be prioritized over other new words.
2. **2 new classics added monthly** within the first year of system launch, resulting in 600 additional classics.
3. **2.5% increase in words-interaction-margin(WIM)** every month within the first year of system launch. Calculate using the summation of all **word-total-interactions(WTI)** for each word used to derive **all-words-previous-interactions(AWPI)** and **all-words-current-interactions(AWCI)**:

   3.1. **WIM% = (AWCI - AWPI) / 100**
4. **2.5% increase in classics-interaction-margin(CIM)** every month within the first year of system deployment. Calculate using the summation of all **classic-total-interactions(CTI)** for each classic/classic-line used to derive **all-classics-previous-interactions(ACPI)** and **all-classics-current-interactions(ACCI)**:

   4.1. **CIM% = (ACCI - ACPI) / 100**