Sumerian Project
Software Requirements Specification
CS 491

Danielle Thurow
Seoung Jung
Zachary Fox
Thomas Fritchman

Contents

Revision History

Revision	Description	Date
1.0	Initial Document	6/6/2014

1 INTRODUCTION

1.1 PURPOSE

For assyriologists, consistently identifying months and years when the tablets were created is a vital part of recreating a Sumerian social network. The Date Extrapolator will solve this problem in two parts, and will be integrated with the work done by the previous group.

The first part is the implementation of an algorithm. This will identify the years and months, and will take into account things such as damage and scribes transcription errors. The conclusions of the algorithm will be tested against training data to analyze correctness. It will also accept outside input to attempt to correct any conclusions the algorithm has made. There will be a relatively easy way to adjust the parameters of the algorithm.

The second part of the solution is user interface. This will allow the user to give input on the algorithms correctness. It will also display statistics about the algorithms correctness.

1.2 INTENDED AUDIENCE AND READING SUGGESTIONS

Readers of this document include any persons involved in the development of this program as a whole. This document will outline all requirements necessary, pertaining to the Date Extrapolator program, and will create a bridge between the customer and designers, in order to create an agreement on what is crucial to the overall success of this project.

1.3 PRODUCT SCOPE

1.3.1 SCOPE OF INITIAL RELEASE

Release 1 will be:
FE-01 not implemented
FE-02 not implemented
FE-03 not implemented
FE-04 implement way to tweak algorithm for our specific algorithm
FE-05 basic web page that displays statistics information
FE-06 A simple implementation of a semi-naive algorithm

1.3.2 SCOPE OF SUBSEQUENT RELEASES

Release 2 will be:
FE-01 not implemented
FE-02 provide web page that displays algorithmically-chosen dates from text for confirmation
FE-03 adds confirmed dates to database and tweaks algorithm
FE-04 no update
FE-05 give the statistics a better GUI for web page
FE-06 improve implementation/ statistics for our algorithm

Release 3 will be:
FE-01 implement completely
FE-02 tweak and improve
FE-03 tweak and improve

FE-04 tweak and improve
FE-05 tweak and improve
FE-06 tweak and improve

1.4 REFERENCES

www.wwucuneiform.com
https://sites.google.com/site/wwucsseniorprojectcuneiform/

2 OVERALL DESCRIPTION

2.1 PRODUCT PERSPECTIVE

It is an extension of an existing project aiming to improve the functionality of the current software.

2.2 CONTEXT DIAGRAM
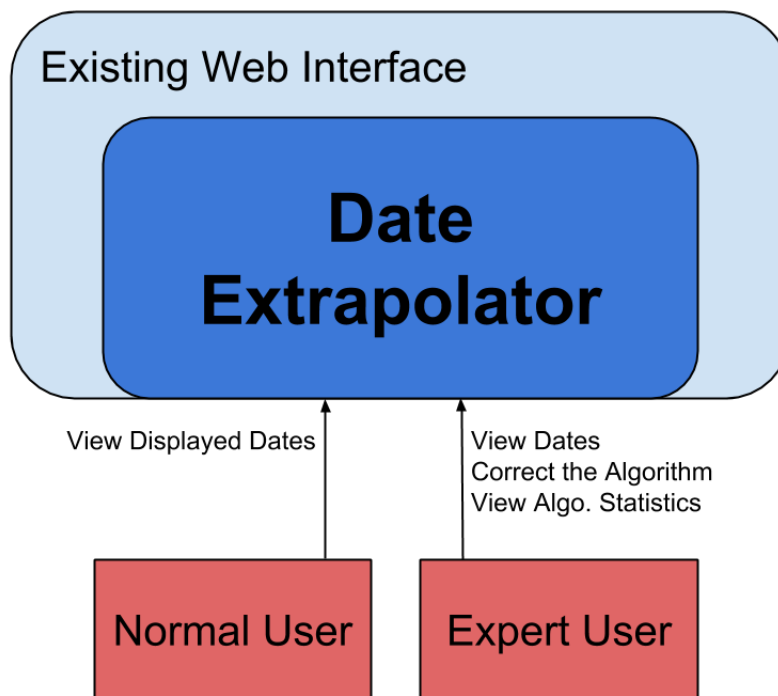
2.3 USER CLASSES AND CHARACTERISTICS

- Expert User: an expert user is allowed to confirm or disagree with the algorithms suggested date, as well as do everything a normal user can.

- Normal user: A normal user is allowed to see the algorithms suggested dates and statistics of the current algorithm.

2.4 OPERATING ENVIRONMENT

This program is to be built into the currently existing web application.

2.5 ASSUMPTIONS AND DEPENDENCIES

AS-1: experts input is noncontroversial and correct
AS-2: there is enough time
AS-3: pattern exists in Sumerian date to create efficient algorithm

DE-1: depending on work of previous groups work

3 EXTERNAL INTERFACE REQUIREMENTS

3.1 USER INTERFACES

Navigation controls will have a similar feel to the rest of the existing product. UI details will be included in another specification.

3.2 SOFTWARE INTERFACES

PHP for website.
Java for database.
Python for cleaning the data.

4 SYSTEM FEATURES

4.1 CORRECTIONAL INTERFACE

4.1.1 DESCRIPTION AND PRIORITY

Allows expert users only to correct the dates the algorithm suggests.
Priority: High

4.1.2 APPLICABLE USE CASES

UC-02

4.2 ALGORITHM TRAINING

4.2.1 DESCRIPTION AND PRIORITY

Algorithm uses expert users input in order to refine itself.

4.2.2 APPLICABLE USE CASES

UC-05
UC-02

4.3 STATISTICS

4.3.1 DESCRIPTION AND PRIORITY

Allows user to see the current statistics for the algorithm (such as correctness, parameters, etc.)
Priority: Medium

4.3.2 APPLICABLE USE CASES

UC-06
UC-01

4.4 APPLIED ALGORITHM

4.4.1 DESCRIPTION AND PRIORITY

Our current algorithm that will decide on dates in the tablets.
Priority: HIGH

4.4.2 APPLICABLE USE CASES

UC-04
UC-05

5 OTHER NON-FUNCTIONAL REQUIREMENTS

5.1 PERFORMANCE REQUIREMENTS

This application must calculate dates and display them to the user in a reasonable amount of time.

5.2 SOFTWARE QUALITY ATTRIBUTES

The top priority for the software quality is for it to be accurate 60% of the time. It is designed to use the existing software already in place for this database.

5.3 USER DOCUMENTATION

The user documentation will be minimal, the program should be intuitive enough that extra documentation is not required.

5.4 PROJECT DOCUMENTATION

We will include basic developer documentation for any continuation group after us.

6   USE CASES

Name: UC-01 Statistics Interface			
Created By:	Group	Last Updated By:	
Date Created:	5/27/14	Date Last Updated:	

Actor:	Expert user
Description:	interface that allows user to view statistics
Preconditions:	
Postconditions:	
Priority:	Medium
Frequency of Use:	Medium/Low
Normal Course of Events:	Go to tab/ link for statistics page
Alternative Courses:	
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	
Notes and issues:	

Name: UC-02 correct algorithms dates			
Created By:	Group	Last Updated By:	
Date Created:	5/27/14	Date Last Updated:	

Actor:	Expert User
Description:	interface that allows user to correct algorithms dates
Preconditions:	must be identified as an expert user
Postconditions:	algorithm needs to be corrected (UC-05)
Priority:	Medium
Frequency of Use:	roughly greater than 40% of time
Normal Course of Events:	Expert user clicks tab/link for correcting algorithm. Algorithm displays dates for tablet (UC-03). User corrects algorithm. Submits the changes
Alternative Courses:	
Exceptions:	
Includes:	UC-03
Special Requirements:	
Assumptions:	user is an expert
Notes and issues:	

Name: UC-03 Display Dates			
Created By:	Group	Last Updated By:	
Date Created:	5/27/14	Date Last Updated:	

Actor:	Expert user
Description:	Interface that allows user to view the algorithms results
Preconditions:	
Postconditions:	
Priority:	High
Frequency of Use:	High
Normal Course of Events:	User views tablet. Dates are displayed
Alternative Courses:	
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	
Notes and issues:	

Name: UC-04 process tablets			
Created By:	Group	Last Updated By:	
Date Created:	5/27/14	Date Last Updated:	

Actor:	algorithm
Description:	algorithm goes through tablets and identifies dates
Preconditions:	tablet is in the database
Postconditions:	
Priority:	High
Frequency of Use:	Every time expert user corrects algorithm
Normal Course of Events:	Pull expert opinion (if any) (UC-05). Goes through database, dates them
Alternative Courses:	Pull expert opinion (if any) (UC-05) Only dates subset of database,
Exceptions:	
Includes:	UC-05
Special Requirements:	
Assumptions:	
Notes and issues:	

Name: UC-05 pull expert opinion			
Created By:	Group	Last Updated By:	
Date Created:	5/27/14	Date Last Updated:	

Actor:	algorithm
Description:	algorithm gets expert users corrections
Preconditions:	
Postconditions:	
Priority:	Medium
Frequency of Use:	Every N time steps, pull expert user data from date extrapolator
Normal Course of Events:	N time steps pass query date extrapolator for all expert user corrections
Alternative Courses:	
Exceptions:	
Includes:	
Special Requirements:	
Assumptions:	
Notes and issues:	

Name: UC-06 Algorithm Statistics			
Created By:	Group	Last Updated By:	
Date Created:	5/27/14	Date Last Updated:	

Actor:	algorithm
Description:	algorithm gives date extrapolator its current statistics
Preconditions:	algorithm has run at least once
Postconditions:	
Priority:	Medium
Frequency of Use:	Every time expert user queries about statistics
Normal Course of Events:	Gets a query from date extrapolator (UC-03) gives current statistics to date extrapolator
Alternative Courses:	
Exceptions:	
Includes:	UC-03
Special Requirements:	
Assumptions:	
Notes and issues:	

Traceability Matrix

		FE-01	FE-02	FE-03	FE-04	FE-05	FE-06
		provide users ways to add new tablets	has interface which allows expert users to correct the algorithm results.	uses expert users input to update and refine algorithm.	a way to tweak algorithm	show statistics for each algorithm	have an algorithm that pulls dates out of the tablets
UC-01	Statistics Interface					X	
UC-02	correct algorithms dates			X	X		X
UC-03	Display Dates						X
UC-04	process tablets			X			X
UC-05	pull expert opinion		X				
UC-06	Algorithm Statistics					X	