Using **Low-Code** to prototype an **App** helps to improve **Quantity & Quality** of transcriptions of **Historical Data.**

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Evolution of the Historian Data Entry Application: Supporting Transcribathons in the Digital Humanities through MDD
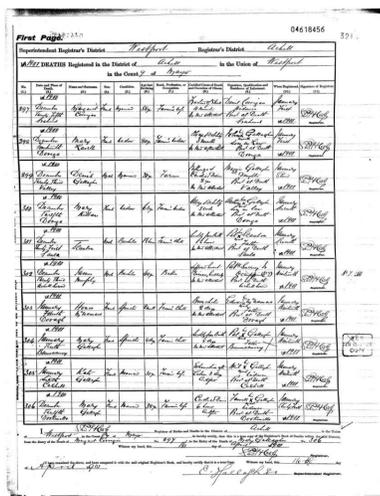
Death and Burial Data: Ireland 1864-1922 (*DBDIrl*) is a digital humanities project, which uses historical civil registration of death as its primary dataset.

The data sets need to be digitalized for further analyzes. But Optical Character Recognition on the old writing is difficult.
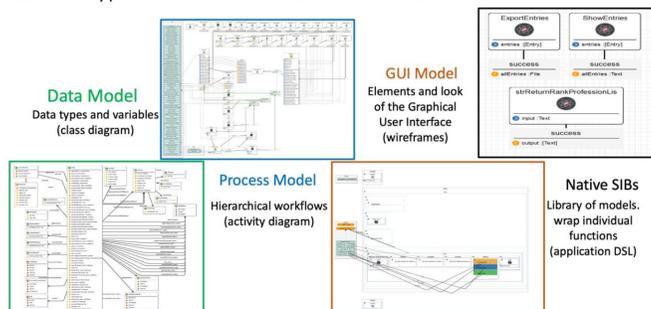→ Manual transcriptions are necessary.

Challenge: The transcribed data needs to have a standardized format and should be easy reviewable. Also, a tool aiding the transcribers would be apricated.

Goal: Use Model-Driven Development (MDD) / Low-Code to create a purpose build web app, which stores the data in a coherent format.

Results: Last iteration of the transcriberthon received a high user satisfaction (>90%). Very little in the logic of the application and the features we have developed, tested, and validated, that is bound to this particular data set, and even to the application domain (history data). Nearly everything, including the specific lists and nosologies, is parameterised and thus easily exchangeable.


Model Types and Concrete Models of DIME

Data Model — Data types and variables (class diagram)

GUI Model — Elements and look of the Graphical User Interface (wireframes)

Process Model — Hierarchical workflows (activity diagram)

Native SIBs — Library of models. wrap individual functions (application DSL)

V.1
- User Interface
- Data Entry Operations
- Data Storage Facility
- User Management
- Entry Supervision

V.2
- More User Friendly
- Data Pre-population
- Drop-downs
- Getting Suggestion Help
- Cloud Hosting
- CI/CD Pipeline Implemented

V.3
- Data Export as File
- Error Handling

V.4
- Data Export Error Fixing
- Instruction Added
- Entry Search & Filter

V.5
- Machine Learning
- NLP Text Extraction
- .TIFF File Crop and Addition

Includes Another Research (Ongoing)
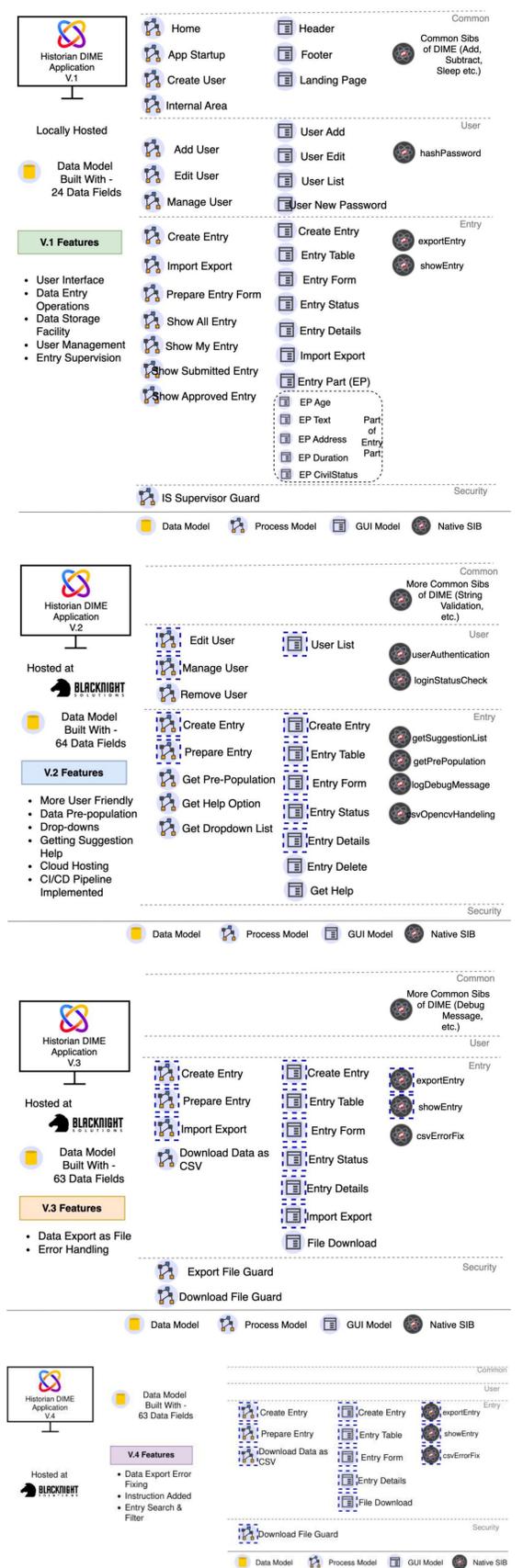
- Schieweck, A., Murphy, R., Khan, R., Breathnach, C., & Margaria, T. (2022, June). Evolution of the Historian Data Entry Application: Supporting Transcribations in the Digital Humanities through MDD. In *2022 IEEE 46th Annual Computers, Software, and Applications Conference (COMPSAC)* (pp. 177-186). IEEE.
- Khan, R., Schieweck, A., Breathnach, C., & Margaria, T. (2021). Historical civil registration record transcription using an eXtreme Model Driven approach. *Труды института системного программирования РАН*, 33(3), 123-142.
- O'Shea, E., Khan, R., Breathnach, C., & Margaria, T. (2020, December). Towards automatic data cleansing and classification of valid historical data an incremental approach based on mdd. In *2020 IEEE International Conference on Big Data (Big Data)* (pp. 1914-1923). IEEE.

Iterations of the App

Historian DIME Application V.1 — Locally Hosted — Data Model Built With - 24 Data Fields

V.1 Features
- User Interface
- Data Entry Operations
- Data Storage Facility
- User Management
- Entry Supervision

Historian DIME Application V.2 — Hosted at BLACKNIGHT — Data Model Built With - 64 Data Fields

V.2 Features
- More User Friendly
- Data Pre-population
- Drop-downs
- Getting Suggestion Help
- Cloud Hosting
- CI/CD Pipeline Implemented

Historian DIME Application V.3 — Hosted at BLACKNIGHT — Data Model Built With - 63 Data Fields

V.3 Features
- Data Export as File
- Error Handling

Historian DIME Application V.4 — Hosted at BLACKNIGHT — Data Model Built With - 63 Data Fields

V.4 Features
- Data Export Error Fixing
- Instruction Added
- Entry Search & Filter