

Archie - The Development and Implementation of an Open Source Archaeological Database System

<http://archiedb.com>

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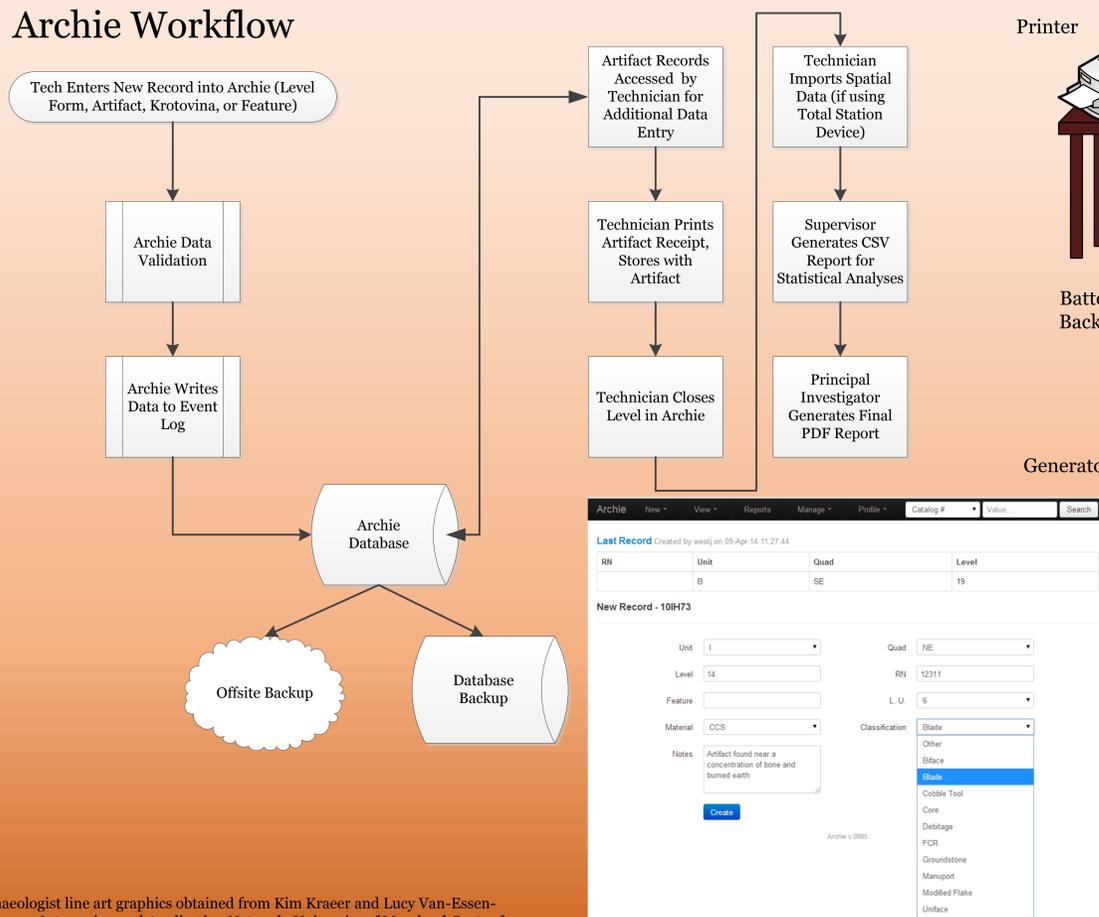
What is Archie

Archie is an online, light-weight, open source inventory system for archaeological artifacts. With feedback from real world use in the field over the last several years, Archie has evolved into a robust, secure application capable of handling hundreds of active users and millions of entries. Archie supports associating multimedia files such as photos, audio and video commentary, and 3D scans of artifacts – all without any specialized client software beyond a web browser.

Why Develop Archie?

With the ever increasing amounts of data recorded in archaeological excavations, we needed to be able to record as well as retrieve catalog data quickly and securely. While commercial, proprietary applications were available, there was a lack of open source applications available custom tailored to archaeological excavations. Furthermore, while inventory systems did exist, none were specifically tailored to performing field excavations.

Archie Workflow



Cooper's Ferry - Test Case

Over the last five years, we have been developing and evaluating Archie at the Cooper's Ferry archaeological site in West central Idaho. Cooper's Ferry, like many archaeological sites, has significant challenges when working with computer hardware.

- Lack of onsite electricity, data, or cellular connection.
- Multi-user environment with 15-20 students accessing the system concurrently.
- Over 30,000 recorded artifacts with a projected 10,000-15,000 additional per year.
- Extreme weather conditions with frequent temperatures over 40°C, high dust, and occasional thunderstorms.

Results of Test Case

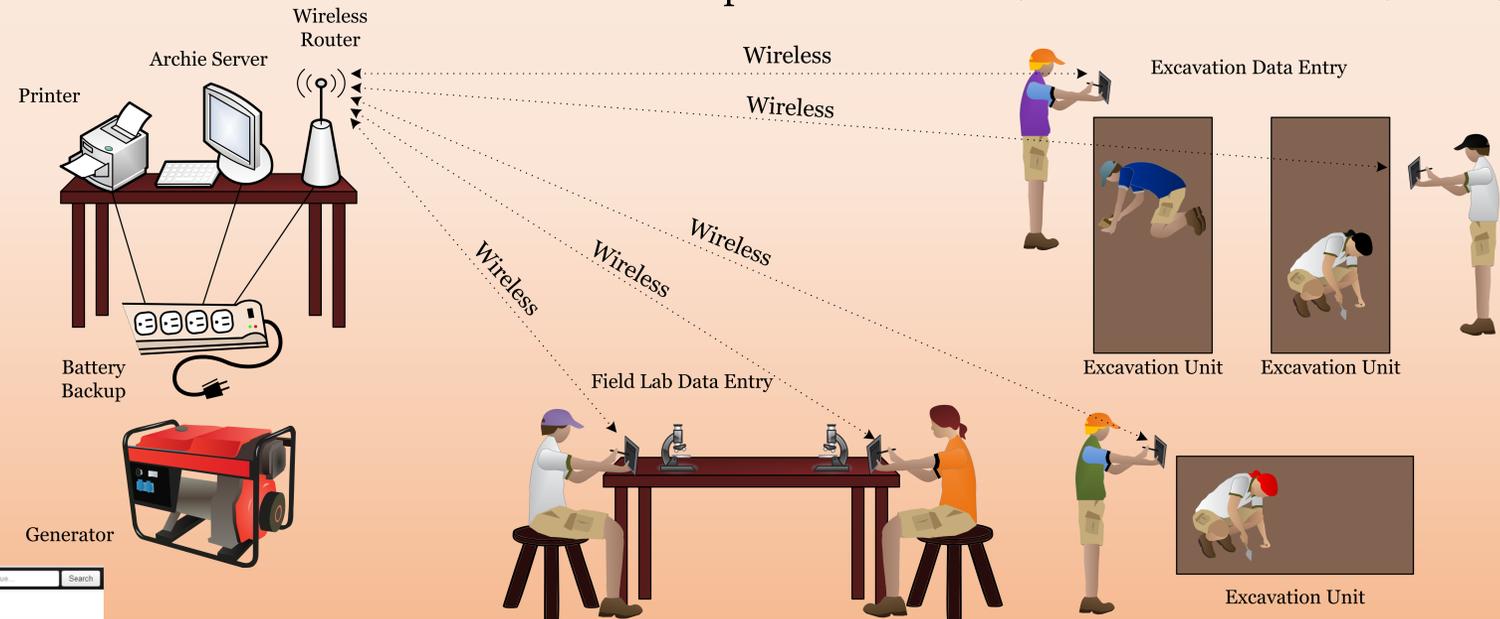
“Archie has saved us thousands of hours in cataloging and tens of thousands of dollars, allowing us to put these funds to use in other areas of the excavation”. – Dr. Loren Davis, P.I. at Cooper's Ferry.

Before using Archie, an audit of the artifact catalog showed an approximate error rate of 10% in the artifact catalog. Errors occasionally still occur, but at a greatly reduced rate.

Data is now available for immediate analysis in the field using geospatial statistical analyses, allowing for excavation methodologies to be adjusted in real time.

Power was a challenging feature of the test case; battery backup devices must be used to clean power provided by inverters and generators. Excessive heat caused one data entry netbook to fail in its third year of operation.

Field Tech Setup



Key Features

- Open source so you can configure it to meet your needs
- Easily backed up to plain text formats – no lost data or proprietary formats
- Customizable fields removes issues of misspellings or misclassifications (no more ccs bones in artifact catalogs)
- Lightweight, yet scalable to hundreds of concurrent users and millions of records
- Allows for auditing of excavators and lab techs –see who's working hard and who's not
- Receipt printing with QR Codes for quick lookups of artifacts
- Supports import of Total Station™ data for spatial recordation.

System Requirements

- Computer with network connection
- Any operating system capable of running the applications listed below:
- Apache 2 or compatible webserver
- PHP
- MYSQL
- Client machine with web browser

At left: Simplified Artifact Entry Form
Below: Printed Artifact Receipt

