Information in the SERLER repository
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The central entity or thing in SERLER is the Evidence Source, which is a journal article or conference proceedings or book or web site that meets our quality criteria.

The Evidence Source has 5 parts to it, mainly extracted from the article by the analyst.

A bibliographic Reference

This has the title, author, year, source journal/book, (publisher if a book), DOI, number, volume, page numbers. This information should come from a submitter and if there are some parts missing, the moderator should complete these.
As a searcher I want to be able to search and display based on this information.

An example of the bibliographic information to be stored in SERLER (formatted in APA format n this case) is:

Runeson, P., & Höst, M. (2008). Guidelines for conducting and reporting case study research in software engineering. *Empirical Software Engineering*, *14*(2), 131–164. http://doi.org/10.1007/s10664-008-9102-8

As a Bibtex file this would be:

```
@article{Runeson:2008ix,
author = {Runeson, Per and H{\"o}st, Martin},
title = {{Guidelines for conducting and reporting case study research in software engineering}},
journal = {Empirical Software Engineering},
year = {2008},
volume = {14},
number = {2},
pages = {131--164},
month = dec
}
```

I am not sure what is needed for a web site as an evidence source – maybe check APA requirements?

A Credibility rating

This is a 5 star rating that is the average of those assigned by users of SERLER. It indicates how credible (quality) the article is. A reason can optionally be given by a user assigning a rating to an article. It should be displayed as 0-5 stars with the number of raters it is based on displayed. The moderator should be able to over-ride this value.

Research Design

This is information about the research methods that are used in the study or studies reported in the journal article. It includes

The research question or aim (optional). The analyst will extract this from the article.

The research method used. This should be a fixed list including ***Case study, Field Observation, Experiment, Interview, Survey***. Have the flexibility for the SERLER admin to modify, add or delete these. The analyst will select this. Multiple values may be selected.

The research metric(s) – how was the research outcome measured. (optional). The analyst will extract this from the article and there may be multiple values.

The research participants. This is a fixed list that includes ***undergraduate students, postgraduate students, practitioners.*** Have the flexibility for the SERLER admin to modify, add or delete these. The analyst will select this. Multiple values may be selected.

Evidence Item (benefit or outcome being investigated)

The Evidence items are evidences for the method, technique or tool beingEach article (evidence source) can provide empirical evidence of a specific outcome (or several outcomes) related to specific SE methods (that are part of a specific SE methodology). There may be multiple evidence items for each evidence source. This evidence item contains information:

*The benefit or outcome under tes*t (not optional). This relates to the obj3ctive of the study. This will be extracted from the article by the analyst.

The context of the evidence item studied includes information about *where, when, and how* the evidence was gathered, as well as *what* evidence and by *who*m.

The *result* of the gathered evidence – did it support the benefit or outcome being tested for (or not, or inconclusive). This is mandatory.

The Evidence item may have optionally a *confidence rating* assigned by the analyst based on their evaluation of how convincing the evidence is. This is a 5 star rating and may be added to by future analysts and the average displayed.

> The optional *method implementation integrity* is an evaluation by the analyst of the correctness of the implementation of method according to some standard description. For example TDD is claimed but not well executed then the integrity would be low.

The Evidence Item(s) and associated information will be extracted by the analyst from the Evidence Source (the article).

Method

Each Evidence Item may be associated with one or more of a standard set of software development *methods*. The SE method may relate to the practice, technique, method or tool that may be part of some methodology. Each Evidence Item may be associated with one or more method (e.g. Pair programming), that may in turn be associated with 1 or more methodology (e.g/ Extreme programming – XP). The SE method should be a standard list of names and descriptions including **TDD, BDD, pair programming, planning poker, daily standup meetings, story boards, user story mapping, continuous integration, retrospectives, burn down charts, requirements prioritisation, version control, code sharing.** Have the flexibility for the SERLER admin to modify, add or delete these. The analyst will select these. Multiple values may be selected.

Methodology

An SE method, technique or tool that is the object of the study may be part of an SE methodology. This should be a fixed list that includes the names **Scrum, Waterfall, Spiral, XP, Rational Unified Process, Crystal, Clean room, Feature Driven Development, Model Driven Development, Domain Driven Development, Formal methods, Problem Driven Development, Cloud computing, Service Oriented Development, Aspect Oriented Development, Valuse Driven Development , Product Driven Development, Agile.** Each of these should have a brief 1 sentence description. The analyst will assign these and a method may be associated with one or more methodology.

Example

For example in an article (**The Evidence Source)** it may be that TDD (**SE method**) is investigated by the researcher (**Evidence Item context, "who"**) to see if its use improves code quality (the **Evidence Item benefit under test**) by measuring the code quality of a student team (**Research Design participants)** doing TDD on a specific project assignment (**Evidence Item context, where when, what**) using agile methods (**SE methodology**) compared to another group (**Research Design participants**) not doing TDD using agile methods. McCabe's cyclomatic complexity metric (**Research Design metric**) is used to measure code quality. This experiment (**Research Design method**) shows no difference in the metric for the two groups (**Evidence Item result).**

Other information.
Each **submitted article** should include the bibliographic details, the submitter's logon, the submission date and a set of status values related to the workflow that include:
To be moderated
Accepted (ready for analyst)
Rejected (stored but unavailable to the general user)
Analysis complete (available for general user)
Each of these should have a date and implementer information.

Each **user profile** should include the following information:
User login name
Password (encrypted)
User full name
User email
User Affiliation (institution or organisation)
User SERLER role (admin, moderator, analyst, user, member of SDM class)
Optionally user gender
Optionally user age

Saved searches will need to be saved somewhere

I would like there to be a section on the Home page for interesting new evidence "news".

Please come up with a logo SERLER with what it stands for and green colours.