

## Programmatically encrypting data linkage fields at a project level within the Secure Anonymised Information Linkage (SAIL) databank

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### Introduction/Background

The ability to link datasets within the Secure Anonymised Information Linkage (SAIL) databank provides researchers with a powerful tool to analyse multiple datasets. The ability to combine several datasets also has the adverse effect of potential identification of an individual. Further encrypting linkage fields at a project level limits the links to datasets specific to the project only. This presentation discusses the opensource web based administration tool that programmatically applies project encryption in a consistent and timely manner, logging administrator actions.

### Objectives

1. Identify encryption methodology
2. Programme encryption steps and log steps
3. Design and implement web based user administration tool

### Approach

Utilising existing Secure Anonymised Information Linkage (SAIL) databank security, providing researchers with a view of their data, separating data linkage fields into a separate secure lookup table. Using Python programming language to automate the Structured Query Language (SQL) scripts required to accomplish this, as well as Python packages to interact with the databank and web based administration tool.

### Results

Project encrypted views created for several projects and scores of datasets. Encrypted linkage fields unique to each project ensur-

ing views across projects can not be linked either to each other or the original datasets.

### Conclusions

Encryption process is programmable and administered through web tool.

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