Engineer Software

Built a database-driven CV generator

Built a database-driven CV, references, portfolio and cover-letter generator in Python — 41 modules, 10,580 lines — rendering six output formats from one 23-table SQLite source assembled by a 19-step idempotent pipeline.

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41

modules rendering six formats from one database

Situation. A CV, a reference sheet, a portfolio and a cover letter are the same facts arranged four ways, and keeping them as four documents means every correction is made four times and eventually is not. Three languages multiplies that by three. The failure mode is not that a document is wrong; it is that two documents disagree and nothing says which one is current.

Task. One source of facts had to produce every document, in every language, in every format, with the arrangement decided by code rather than by whoever last edited a file.

Action. The source is a SQLite database of twenty-three tables — achievements, titles, companies, regions, categories, services, profiles, references, summaries — assembled by a nineteen-step pipeline that runs from an empty file to a complete database in one command. The steps are ordered and each is written to be safe to repeat, so the pipeline can be run against an existing database without duplicating a row. Forty-one Python modules totalling 10,580 lines render six output formats from it: HTML, PDF in two variants, plain text, Markdown and JSON, through six Jinja templates and eight stylesheets. Runtime dependencies were held to exactly two, a template engine and a PDF renderer, on the argument that a document generator which cannot be installed in five years has not preserved anything. Targeting is a first-class concept rather than a manual edit: a profile selects which achievements appear and in what order, so a document aimed at one kind of reader is a query rather than a copy.

Result. Six formats, three languages and five themes come out of one database, and a corrected sentence is corrected once. The cost is that the system is now the only way to produce a document — there is no longer a file to open and edit in a hurry, and adding a language means adding it everywhere before anything builds at all.

Bring this experience to your project

Use “Built a database-driven CV generator” as a starting point for a similar challenge in your organisation. The services behind this work are available for your project. The shape of a system worked out on paper first, so the parts fit and the cost is known before anyone writes code.

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Look behind the result

Read the situation, decisions and result in this example. We can discuss which parts transfer to your constraints and which need another approach. Built a database-driven CV generator — 41 modules rendering six formats from one database

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Need one source of truth behind every document you send?

Talk through your project with the engineer responsible for delivery. We agree the scope, price basis and handover in writing before work begins.

Role context: Python Engineer. It draws on Solution Architecture, Backend Engineering, Full-Stack Development, Databases, SQL, Automation & CI/CD, Python and Internationalization. And while you are here, we are rather good at Platform & Solution Architecture, Backend & API Development, Full-Stack Product Development, Internationalization & Localization and Database Design & Modeling.

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One piece of **a longer record** — and it is all on this site.

Every entry is written the same way: the situation, the task, what we did and what changed.

See the whole record

Define the improvement you need

Describe the workflow, the existing interfaces and the users who need the change. We can define a testable delivery and a handover that lets your team maintain it.

See what it costs Get in touch →

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