

Artifacts of the Ephemeral

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Espacio Psicoanalítico de Barcelona

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About This Presentation

All examples and demos in this presentation have been tested with Claude Opus 4.7 from Anthropic. The approaches described here should be transferable to models of comparable capability, with appropriate adaptations.

Note: This document¹ was written using [RexxPub](#), a Rexx Publishing Framework.²

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1. URL of this document: <https://www.epbcn.com/pdf/josep-maria-blasco/2026-05-04-Artifacts-of-the-Ephemeral.pdf>;
HTML version: <https://rexx.epbcn.com/rexx-parser/doc/publications/37/2026-05-04-Artifacts-of-the-Ephemeral/>.
Presented to the [37th International Rexx Language Symposium](#), held at the [Espacio Psicoanalítico de Barcelona](#) and online from the 3rd to the 6th of May, 2026.
 2. See <https://rexx.epbcn.com/rexx-parser/doc/rexxpub/>.

Advanced AI Assistants Have a Computer Inside

There's a Computer in There

Open a chat with a modern AI assistant, and a full Linux machine boots behind the scenes. Not a simulation. Not a sandbox. A real Ubuntu 24.04 with root access, network, and a complete toolchain.

```
lsb_release -a
```

```
Distributor ID: Ubuntu  
Description:   Ubuntu 24.04.1 LTS  
Release:      24.04  
Codename:     noble
```

The chat interface is only the surface. Behind it, there's an entire computer sitting there, waiting.

A Complete Environment

The AI environment is a standard Linux box — install packages, compile C, run servers. Anything you'd do on a fresh Ubuntu machine, your assistant can do:

```
curl -o /tmp/oorex.deb https://rexx.epbcn.com/oorex-barcelona2026.deb
dpkg -i /tmp/oorex.deb
rexx -e "say 'Hello from the 37th International Rexx Symposium!'"
```

```
Hello from the 37th International Rexx Symposium!
```

That's ooRexx, running inside the assistant's session. Downloaded, installed, executed, and ready for real work — in seconds.

But It's Ephemeral

When you close the chat, the machine disappears. Everything — installed software, files, state — gone.

Next session, your assistant starts from zero. No memory of what you did, what you built, or what you agreed on. A fresh machine, a blank slate.

```
> Can we continue our conversation about the Papoola?  
I don't have any memory of previous conversations – each chat with me starts fresh. So I don't have context on what we discussed about the Papoola before.
```

This is both a limitation and a design constraint. It shapes everything that follows. We will come back to it.

Three Projects

A Note on Skills

For the assistant to write idiomatic ooRexx, we give it a *skill*: not a reference manual — it already knows the language — but a two-page list of pitfalls. Don't use `RESULT` as a variable name. The logical operators are not short-circuit. That kind of thing.

```
-- WRONG: crashes if i == 1
If ch == "#" & i > 1 & text[i - 1] == " " Then ...

-- RIGHT: commas as short-circuit AND
If ch == "#", i > 1, text[i - 1] == " " Then ...
```

With that, it programs in ooRexx more than decently. Now, three projects.

From a Spreadsheet to a Web Application (1/4)

The starting point was a real spreadsheet managing the finances of a group of companies: an entity registry (suppliers, clients, banks, tax authorities), issued and received invoices, bank statements with simplified accounting categories and cost centres, and summary sheets providing treasury and accounting views — all dynamically customizable by date, including forecasts.

We uploaded the spreadsheet to the AI and started asking questions. It handled the Excel data effortlessly. Then came the real question: could it replicate this functionality as a set of ooRexx CGI's?

From a Spreadsheet to a Web Application (2/4)

Inicio Administración Josep Maria Blasco

Inicio > marti > Martí Capital, S.L.U. > Tesorería

2026 2025 2024 2023 2022 2021 2020 Todas Banca Roma, S.A. Banca Vallcarós, S.A.U. Caixa Hasta: 04/19/2026

MES	TOTAL	SALDO	7	640	642	623	621	626	628	631	4750	625/629	2	252/245/542/53X	681	662	520	4
			INGRESOS	NÓMINAS	SS EMPRESA	PROFESIONALES	ALQUILERES	COMISIONES	SUMINISTROS	TASAS	M303	OTROS	INMOVILIZADO	CRÉDITOS A 3ºS	AMORTIZACIONES	INTERESES	CAPITAL	IVA SC
SALDO ACTUAL		102.402,63																
dic/2023	1.258,12	102.402,63	7.934,56	-4.367,00	-835,84	-837,55		-0,18	-131,73			-981,71					-95,64	-197,1
nov/2023	24.721,81	101.147,68	9.067,14	-4.367,00	-835,84	-1.151,97		-0,18	-134,72			-209,62	21.002,65				-95,64	-264,1
oct/2023	-3.872,64	76.425,87	10.813,94	-4.367,00	-835,84	-837,55		-3,35	-220,36	-484,37	-4.962,48	-241,94					-95,64	-205,1
sept/2023	1.316,55	22.596,12	7.320,34	-4.367,00	-835,84	-961,11		-0,18	-181,27	-470,14		-209,62					-95,64	-227,1
ago/2023	3.991,04	78.981,96	9.067,14	-4.367,00	-835,84	-885,11		-0,18	-149,53	-34,56		-209,62					-95,64	-209,1
jul/2023	-88.834,39	74.990,92	7.320,34	-4.367,00	-835,84	-2.439,32		-0,18	-212,64		-16.809,00	-373,88	-68.093,75				-95,64	-541,1
jun/2023	-147.609,49	163.825,31	37.763,10	-4.367,00	-835,84	-1.035,38		-6,83	-102,60	-2.869,06		-209,62	-180.394,66				-95,64	-232,1
may/2023	180.146,05	311.017,31	252.836,72	-4.367,00	-835,84	-4.040,79		-0,18	-137,41	-754,47		-341,56	-87.445,68				-95,64	-855,1
abr/2023	-184.707,55	130.871,26	33.363,15	-4.367,00	-835,84	-2.853,34	698,72	-0,18	-198,72	-233,20		-241,94	-10.305,25				-95,64	-174.680,00
mar/2023	1.775,19	315.996,30	12.499,27	-4.367,00	-835,84	-1.985,37		-0,18	-162,73	-2.499,04		-400,00	-2.620,20				-95,64	-432,1
feb/2023	2.141,11	314.221,11	8.874,66	-4.369,62	-835,84	-2.069,04		-0,18	-190,28			-400,00	-786.060,00				-113,11	-462,1
ene/2023	-24.625,99	307.926,20	12.040,74	-4.367,00	-822,74	-5.721,04	-11.585,27	-0,18	-237,19	-554,55		-1.098,14	-8.331,36				-95,64	-3.665,1
SALDO ANTERIOR		332.884,87																
TOTAL	-234.300,19	408.901,10	-52.406,62	-10.016,98	-24.817,57	-10.886,55	-11,98	-2.059,18	-7.899,39	-21.771,48	-4.917,65	-1.122.248,25				-1.165,15	-174.680,00	-7.919,1

Figure 1: Treasury view

From a Spreadsheet to a Web Application (3/4)

In about a week of intensive work, the assistant built a complete web application. It wrote the CGIs, the CSS, and the JavaScript from scratch, running on RexxHttp — an ooRexx CGI framework written in 2006 that still powers most of our sites. We discussed and agreed design decisions together.

A second week went into polishing the migration to SQLite — the assistant tended to get confused by the denser, multi-column sections of the spreadsheet, and untangling them took real effort. The application is in production today.

From a Spreadsheet to a Web Application (4/4)

Empresas > Marti > Marti Housing, S.LU. > Banca Vallcaró, S.A.U. > Conciliar movimiento número 1765000000

Conciliar movimiento número 1765000000

FECHA CONTABLE	2026-03-02
FECHA VALOR	2026-03-02
LITERAL BANCO	Trans/codina-picart finques, s.lu.
IMPORTE	5.591,77
SALDO	111.179,55
COMENTARIOS	

Conciliaciones vinculadas

Conciliado: **5.591,77**

CÓDIGO	FECHA FRA.	TOTAL FRA.	IMPORTE CONCILIADO	ENTIDAD	CONCEPTO	ACCIONES
R00339/2026	2026-02-28	92,20	92,20	Codina-Picart Finques, S.LU.	Com. de admón. - febrero 2026 [Montblau, 202]	Desvincular
R00340/2026	2026-02-28	84,54	84,54	Codina-Picart Finques, S.LU.	Com. de admón. - febrero 2026 [Tres Pous, 253]	Desvincular
R00341/2026	2026-02-28	70,07	70,07	Codina-Picart Finques, S.LU.	Com. de admón. - febrero 2026 [Tres Cellers, 198]	Desvincular
R00342/2026	2026-02-28	113,28	113,28	Codina-Picart Finques, S.LU.	Com. de admón. - febrero 2026 [Horta Nova, 37]	Desvincular
MH00005/2026	2026-02-01	1.523,82	1.523,82	Carles Eguia Cifuentes	Alquiler Pg. del Montblau 202 Febrero 2026	Desvincular
MH00006/2026	2026-02-01	1.397,44	1.397,44	Greta Schmitt	Alquiler Carrer dels Tres Pous 253 Febrero 2026	Desvincular
MH00007/2026	2026-02-01	1.158,13	1.158,13	Ivanka Schultz	Alquiler Pl. dels Tres Cellers 198 Febrero 2026	Desvincular
MH00008/2026	2026-02-01	1.872,47	1.872,47	Lluïsa Oliveras Dorrego	Alquiler Horta Nova 37 Febrero 2026	Desvincular

[← Volver a movimientos](#)

Figure 2: Bank reconciliation detail

Picking Up ooSQLite (1/5)

ooSQLite is an ooRexx binding for SQLite, originally written by Mark Miesfeld. After Mark's untimely death in 2012, the project was largely abandoned. From time to time someone would touch it, but there was no sustained development.

We asked the AI to look at the project. It compiled ooSQLite from source, studied the manual, and wrote a test harness from scratch. When the tests ran, they uncovered several bugs in the original code.

Josep Maria: *Now write a test for aggregate UDFs on an empty result set. We need to verify that `xFinal` handles the case where `xStep` was never called.*

Picking Up ooSQLite (2/5)

Claude: *Here's the test:*

```
::Method testAggregateSumEmptyResultSet
  db = self~openMemoryDB
  db~exec("CREATE TABLE nums (val INTEGER);")
  handler = .AggregateSumHandler~new
  rc = db~createFunction("rexx_sum", handler, 1, , "xStep", "xFinal")
  self~assertEquals(0, rc, "createFunction should return OK")
  rows = db~exec("SELECT rexx_sum(val) FROM nums;", .true)
  self~assertEquals(0, rows[1]["REXX_SUM(VAL)"], -
    "SUM on empty table should return 0")
  db~close
```

```
> Segmentation fault (core dumped)
```

Picking Up ooSQLite (3/5)

Claude: *That's a SIGSEGV. Let me look at `finalCallback()` in `ooSQLite.cpp`. The problem is at line 2302:*

```
pCFunctionCallback pcf = pcacb->pcfcb;
```

`pcfcb` is only initialized inside `stepCallback()`:

```
if ( pcacb->pcfcb == NULL )
{
    pcacb->aggregateObj = TheNilObj;
    pcacb->pcfcb = (pCFunctionCallback)sqlite3_user_data(sqlContext);
}
```

Picking Up ooSQLite (4/5)

When the result set is empty, `stepCaLLback` is never invoked, so `pcfcb` remains `NULL`. Then `finalCaLLback` dereferences it — crash.

The fix is straightforward: add the same `NULL`-check at the top of `finalCaLLback()`:

```
if ( pcacb->pcfcb == NULL )
{
    pcacb->aggregateObj = TheNilObj;
    pcacb->pcfcb = (pCFunctionCallback)sqlite3_user_data(sqlContext);
}
```

Josep Maria: *Nice catch. Skip the empty-set case in the tests for now — we'll revisit when we fix the C++.*

Picking Up ooSQLite (5/5)

The author of these slides can read C++ but would not be able to maintain a project like ooSQLite alone. AI makes it possible for a developer to pick up an abandoned project in a language that is not their strongest, understand it, test it, and start improving it — work that would otherwise remain undone.

The Rexx Parser³ (1/3)

The Rexx Parser is a comprehensive parser for ooRexx, currently in active development. In a fresh session, the assistant sets up the whole environment from scratch: it downloads the project, installs ooRexx, runs the unit test suite, installs Apache with CGI support, deploys the parser's web interface, and runs the integration tests against it.

This is more than writing code. It's operating a real software project — dependencies, infrastructure, deployment, testing — end to end, in a single session, on a machine that didn't exist an hour ago.

3. The Rexx Parser and RexxPub (a publishing framework built on top of the Parser) each have a dedicated companion presentation at this Symposium: *The Rexx Parser Revisited* and *RexxPub — A Rexx Publishing Framework*.

The Rexx Parser (2/3)

```
/* Sample Rexx code with TUTOR extensions */
::Method open Package Protected
  Expose x pos stem.
  Use Strict Arg name

  a   = 12.34e-56 + " -98.76e+123 " -- Highlighting of numbers
  len = Length( Stem.12.2a.x.y )    -- A built-in function call
  pos = Pos( "S", "String" )       -- An internal function call
  Call External pos, len, .True     -- An external function call
  .environment~test.2.x = test.2.x -- Method call, compound variable
  Exit "नमस्ते"G, "P def M", "🦀🍌" -- Unicode strings

Pos: Procedure -- A label
  Return "POS"( Arg(1), Arg(2) ) + 1 -- Built-in function calls
```

The Rexx Parser (3/3)

From there, everyday work proceeds normally: add a new option to one of the parser's utilities, write the corresponding unit test, update the documentation, run the full test suite. Code, tests, and documentation — maintained as a single, coherent flow.

A Metaproject

The Continuity Problem

We saw earlier that the machine disappears at the end of every chat. For an ongoing project, that's a serious problem: every session, your assistant starts with no knowledge of what was done before, what conventions were agreed upon, or what's left to do.

Developers who use AI assistants for real work already handle this — pasting a summary at the start of each chat, uploading notes from the previous session, keeping a handoff document. These are all sensible responses to the same problem. They just tend to be informal, inconsistent, and hard to maintain as the project grows.

We were no exception. So we formalised what we were already doing.

Separating State from Project (1/3)

The key idea is to separate *state* from *project*.

Project	What's in it
A Rexx parser	Code, tests, build infrastructure
A financial management web application	Accounting records, company setup, database schema
A book	Manuscripts, references
A Symposium paper	Slides, iterations, references

The *project* is the thing you're working on. It can be something you've been working on for years, or something you're starting from scratch — the metaproject doesn't care.

Separating State from Project (2/3)

File	Purpose
<code>setup.md</code>	How to start the environment
<code>handoff.md</code>	What happened last session
<code>conventions.md</code>	Style, terminology, decisions that stick
<code>handoffs/</code>	Archive of previous handoffs
...	...

The *state* is everything the assistant needs to pick up where the last session left off: what was done, what was decided, how the project is organised, and what to do next. The metaproject manages the state as a simple set of markdown files.

Separating State from Project (3/3)

From `handoffs/handoff-20260419-v3.md` :

*On review, I flagged the Papoola reference as obscure for the RexxLA audience. Josep Maria pushed back: “I always like to introduce an absurd, surreal touch in my texts — the Papoola is from Philip K. Dick’s *The Simulacra*, and one of my Linux boxes is called Tralfamadore, an extraterrestrial planet invented by Vonnegut.” Withdrawn. Nerd-pass granted, no questions asked: “this is not a business meeting, it’s a Symposium of programmers.”*

An Artifact of the Ephemeral

Once you make that separation, something follows: the state is no longer informal documentation. It becomes an artifact of the ephemeral. And if it's an artifact, it deserves to be treated as one — with its own structure, its own protocols, its own versioning.

That's what a *metaproject* is: a project whose object is other projects.

For a developer who wouldn't otherwise organise state transfer by hand, the metaproject automates it entirely. For a developer who would — and could — organise it themselves, the metaproject offloads that work to the assistant, which applies the protocol consistently and never forgets a step.

Thank You!

Questions?

<mailto:jose.maria.blasco@gmail.com>

Downloads:

<https://rexx.epbcn.com/metaproject/metaproject-latest.zip>.