



Azure Functions, FakeXrmEasy, Dataverse, and dotnet core

Jordi Montaña



¡GRACIAS PATROCINADORES!

PLATINO



ORO



PLATA



ABOUT ME

Jordi Montaña

- Began coding at 10 yrs old
- .Net in 2006
- Master's Degree in Computer Science, Universitat Politécnica Catalunya (UPC), 2007
- Started with CRM 4 in 2011
- Author of **FakeXrmEasy** since 2014
- Founded DynamicsValue in 2015

SOCIAL MEDIA

- Twitter: <https://twitter.com/jordimontana>
- LinkedIn: <https://es.linkedin.com/in/jordimontana>
- Email: jordi@dynamicsvalue.com

TALK LINKS

- Slides: <https://github.com/DynamicsValue/bizzsummit-es-2022>
- Sample code: <https://github.com/DynamicsValue/fake-xrm-easy-samples>
- FakeXrmEasy Docs: <https://dynamicsvalue.github.io/fake-xrm-easy-docs/quickstart/>

AGENDA

- The Journey of **FakeXrmEasy (FXE)**
- Why?
- Evolution of Unit Testing in Dynamics / Dataverse
- The new Dataverse Client SDK, and new FXE versions
- Demo
- OSS Licensing Considerations
- Q & A

Journey of FakeXrmEasy (FXE)

In 2013 I was told...

- "Unit testing is **too complex, too time consuming**"
- "It's xRM man, no one cares about quality of the software"
- "Not **worth it**"

Journey of FakeXrmEasy (FXE)

... but what if it's complex BECAUSE ...

- you're **mocking** every single request, every time?
- and mocks don't actually **mimic** Dataverse / Dynamics behavior?
- and the code for mocking is actually **bigger** than, say, plugin code?
- and maybe that's **WHY** is not worth it?...

Journey of FakeXrmEasy (FXE)

... and so ... what IF ...

- you didn't have to mock anything (and it was done for you?)
- you could just use the **IOrganizationService** (something you're already familiar with?)
- it could **mimic Dataverse / Dynamics** behavior?
- more like **data-driven**, like when you doing **normal development**?

Journey of FakeXrmEasy (FXE)

... and SO we could...

- reduce costs because we could spot issues much earlier?
- run thousands of tests at scale? (because they run In-Memory)
- speed-up the dev process because no need to deploy in-between changes?

Journey of FakeXrmEasy (FXE)

... and so In 2014 I started working on FakeXrmEasy...

YET, for a couple of YEARS I was....

- working pretty much alone as a single contributor, **and**
- repeatedly told... guess what??

Journey of FakeXrmEasy (FXE)

... the SAME :)

- "It's xRM man, no one cares about quality of the software"
- "Not worth it"
- "You're wasting your time man..."

Journey of FakeXrmEasy (FXE)

BUT, things started to change...

- Met Raz and delivered (my first) CRM Saturday talk in Manchester, 2016
- There **were 4** people attending
- Yes, you read that right :)

Journey of FakeXrmEasy (FXE)

Next CRM Saturday in London:

- Over 100 attendees...

Journey of FakeXrmEasy (FXE)

Following CRM Saturday events:

- Zurich (Switzerland)
- Dubai (UAE)
- Manchester (UK)
- Madrid and Barcelona (Spain)
- Dallas, Texas (US)
- Kyiv (Ukraine)
- ...

Journey of FakeXrmEasy (FXE)

TODAY, more than 7 YEARS later...

FakeXrmEasy Use : 2M downloads !

- 2 M+ downloads: [https://www.nuget.org/packages?
q=FakeXrmEasy](https://www.nuget.org/packages?q=FakeXrmEasy)
- ~ 20% of Microsoft Crm Sdk downloads
- Used in multi-million dollar projects (many Fortune 100s included)

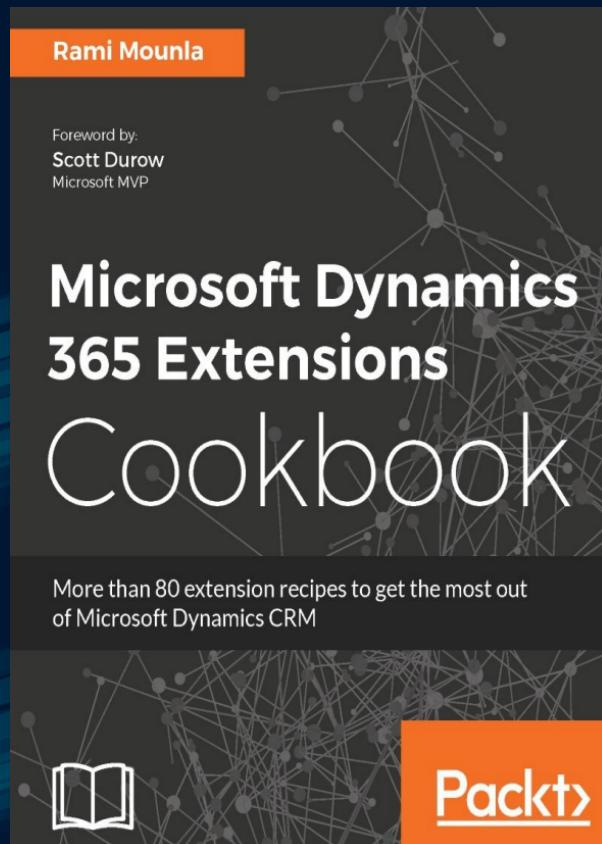
Journey of FakeXrmEasy (FXE)

FakeXrmEasy in books



Journey of FakeXrmEasy (FXE)

FakeXrmEasy in books



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FakeXrmEasy in books



Journey of FakeXrmEasy (FXE)

FakeXrmEasy on official MSFT Docs

<https://docs.microsoft.com/en-us/power-apps/developer/data-platform/testing-tools-server>

Journey of FakeXrmEasy (FXE)

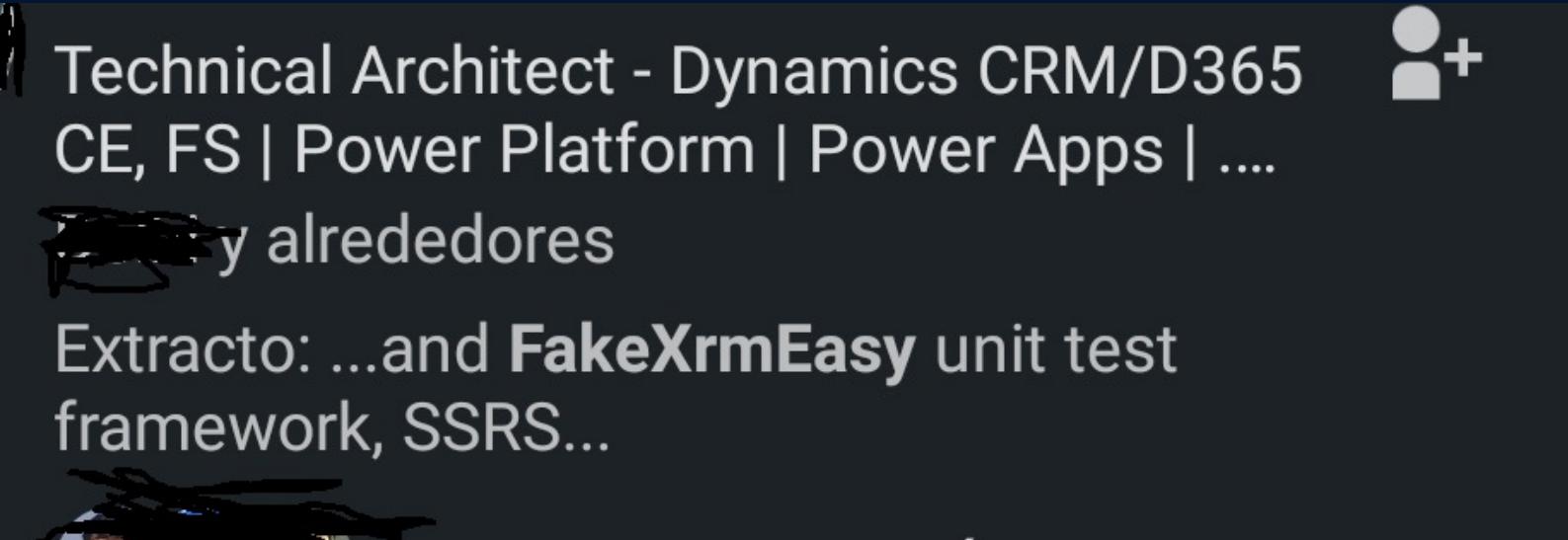
FakeXrmEasy on Research Gate

"Challenges and Opportunities in Low Code Testing"

https://www.researchgate.net/publication/347478419_Challenges_opportunities_in_low-code_testing

Journey of FakeXrmEasy (FXE)

FakeXrmEasy as a LinkedIn skill

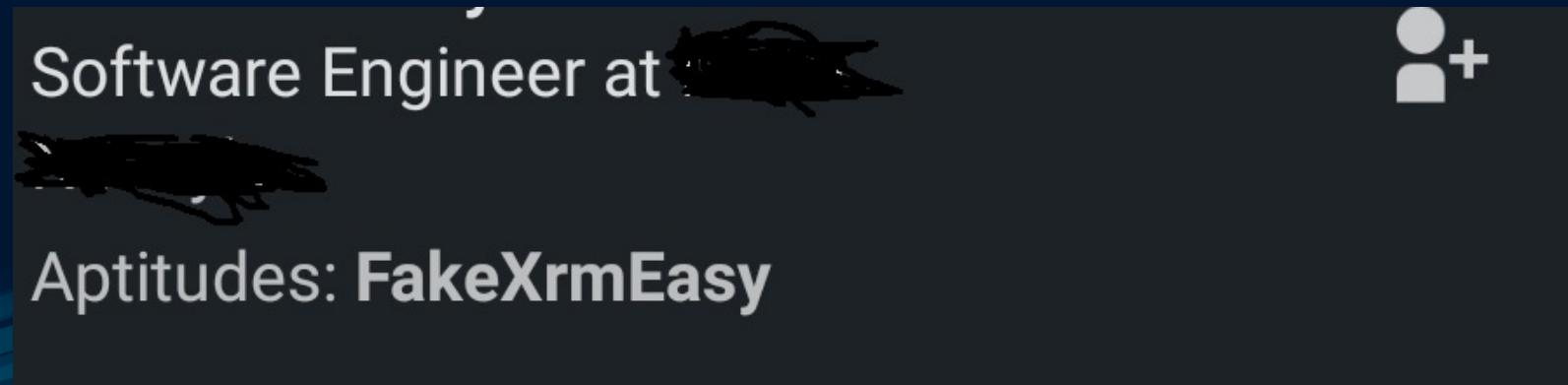


A screenshot of a LinkedIn profile snippet. It shows the following information:

- Skills:** Technical Architect - Dynamics CRM/D365 CE, FS | Power Platform | Power Apps | ...
- Experience:** 10+ años alrededores
- Extracto:** ...and **FakeXrmEasy** unit test framework, SSRS...

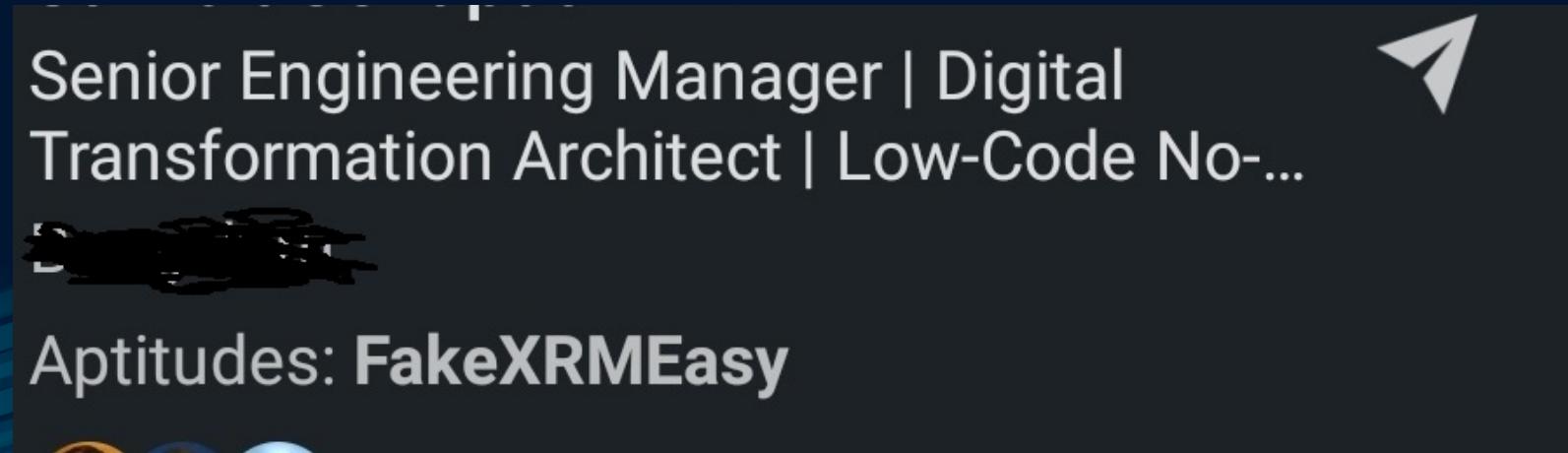
Journey of FakeXrmEasy (FXE)

FakeXrmEasy as a LinkedIn skill



Journey of FakeXrmEasy (FXE)

FakeXrmEasy as a LinkedIn skill



Journey of FakeXrmEasy (FXE)

Even JOBS asking for FakeXrmEasy exp...

Requirements

To be successful in this role, you should meet the following requirements:

- Candidate should have experience of Microsoft Dynamics CRM implementation experience and have participated in a minimum of 3 complete life cycle implementations. Hands on technical experience on Dynamics 365 for Sales (online) is a must.
- Experience using the CRM SDK to interface programmatically with Dynamics CRM.
- Able to interpret requirement and customize CRM to achieve asked functionality
- Microsoft .Net stack – will be familiar with .NET 4.6.2.
- Excellent C# and JavaScript programming skills
- Test driven techniques including TDD, automated unit testing and mocking.
- Exposure to writing C# Unit Tests using framework such as Nunit, FakeXrmEasy, Moq
- Comfortable working with GIT source control

Journey of FakeXrmEasy (FXE)

Even JOBS asking for FakeXrmEasy exp...

Preferred Experience:

- ☒ VS Code /.NET Core / TypeScript/ NodeJS
- ☒ Canvas Apps / Power Apps Portals (or ADX Studio Portals)
- ☒ Azure Logic Apps / Power Automate (Cloud Flows)
- ☒ FakeXrmEasy / EasyRepro / Playwright
- ☒ Azure SQL Server / Data Export Service (or Azure Synapse) / SSIS (or Azure Data Factory)

Journey of FakeXrmEasy (FXE)

And, finally, happy customers ...



“ I consider unit testing a core part of our development process for Dynamics CRM, and FakeXrmEasy is simply the best tool for it. Especially for the modern .NET Core platform. It saves us hours of development time every week. ”

Michal Vrana - Technical Leader at Kentico

Moral of the Story ...

Don't listen to naysayers

Be consistent

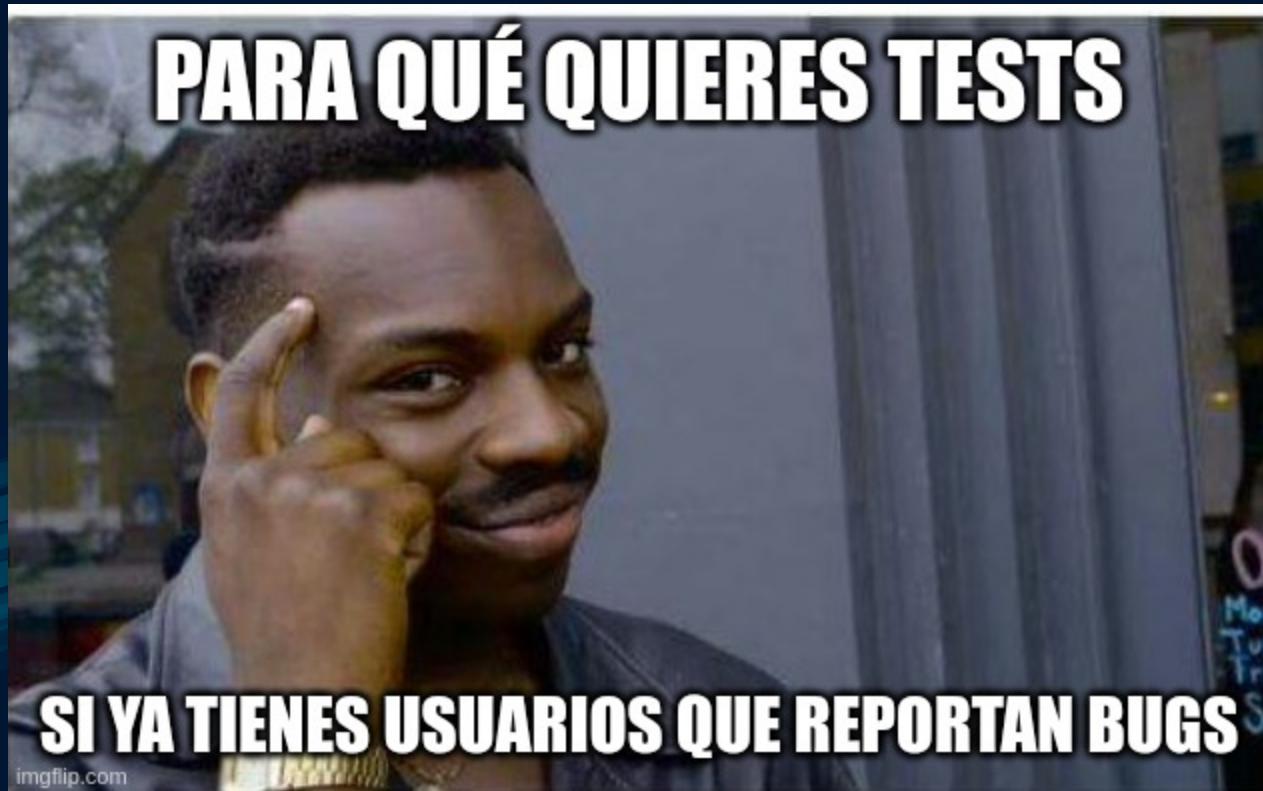
Do sleep more than me

Why?

Increased developer efficiency

<https://dynamicsvalue.com/white-paper>

Why?



Evolution of Unit Testing in Dataverse

Manual Fakes and Mocks	
FakeXrmEasy In-Memory Data Driven Tests	
In-Memory Azure Functions with Plugin integration tests	

DEMO

Scenario

- A contact is created via an azure function
- A plugin triggers to create a follow up task activity

DEMO

Scenario

FXE v3 => Dataverse Client SDK in .net core

FXE v2 => Microsoft.CrmSdk.CoreAssemblies

- 1. Azure function unit tests (FXE 3.2.0)
- 2. Plugin unit tests (FXE 2.2.0)
- 3. Pipeline Simulation (FXE 3.2.0)

OSS Licensing Considerations

Triple license model

- Reciprocal Public License 1.5: OSI - Approved OSS license
- Modified PolyForm NonCommercial 1.0.0
- Commercial (EULA)

OSS Licensing Considerations

Basically you can use **FakeXrmEasy** free of charge:

- In OSS projects, and / or
- For a **Non-commercial** use and / or
- As part of a **Non-Commercial** organization

OSS Licensing Considerations

- You'll need a commercial license for proprietary code and commercial use.
- Pricing: <https://dynamicsvalue.com/pricing>
- No brainer: ~ 0,88 coffees / developer / day
- FAQ: <https://dynamicsvalue.github.io/fake-xrm-easy-docs/licensing/faq/>

OSS Licensing Considerations

Reciprocal Public License (RPL 1.5) is NOT new:

- DuendeSoftware (authors of IdentityServer)
- NServiceBus

OSS Licensing can be quite complex....

Question: Is .net core OSS ??

OSS Licenses major companies love ...

- Permissive: MIT (Expat), Apache 2.0
- Weak copyleft: GPL-like (GPL, LGPL, ...)

OSS Licenses major companies don't love so much...

... and that they are key to sustainability

- Pretty much anything different...
- AGPL 3.0 (Affero General Public License 3.0)
- RPL 1.5
- THE comprehensive list: <https://spdx.org/licenses/>

Thank You!

Q & A

By asking a question you're agreeing to the Beer-Ware License ;)

<https://spdx.org/licenses/Beerware.html>