A Look at Low-code and No-code Platforms in GIS

I moderated a panel on GIS careers recently. All six of the panelists, representatives from both academia and industry, agreed that everyone in the field should be able to program and use the concepts of computational thinking. What actually constitutes programming, however, is changing. I'm seeing more and more references to "low-code" and "no-code" development options. What are these tools and platforms? How are they being integrated into GIS software and solutions?

Low-code and No-code

Forrester, coined the term "low-code" back in June 2014, but some suggest implementations date back to 2011. Low-code refers to "platforms that enable rapid application delivery with a minimum of hand-coding, and quick setup and deployment, for systems of engagement." Its sibling, no-code, requires no hand-coding.

The basic ideas is that low-code platforms enable those familiar with programming to put apps together more quickly than they can from scratch. No-code platforms enable those with no programming experience at all to create useable, if not elegant, apps.

The Reality of Low-code and No-code Platforms

As is true with any development tool or platform, low- and no-code offerings are not silver bullets. While low-code platforms minimise the amount of hand coding needed, the app creator must have some familiarity with programming and the goal of the app to be created. Low-code does not eliminate programming, it just speeds it up.

These environments can introduce more players into app development. The visual environment of the platforms means that the app's end users might design the interface they'd like with drag and drop tools. That interface can then be passed to the programming team to add the needed functionality.

No-code environments are ideal for non-programmers or organisations that want to avoid hiring or outsourcing a programmer for a quick, basic app. Because the app creator does not have the time, skills or resources to devote to develop an application from scratch, no-code platforms and the apps built from them are simple. The tradeoffs for the extreme ease of use are limitations in functionality and user interface design. Still, the best platforms can create sold, working applications.

How far can you go with low- and no-code apps? It depends on the platform and the creator's ingenuity. Some platforms support uploading to and optimisation for Apple and Google's marketplaces. Some do not. There is still discussion among industry leaders about the apps' "enterprise readiness" and security.

Low-code, No-code and GIS

I first saw the term "zero code" applied to GIS in a marketing effort from TerraGO last August. The company platform, called Magic, promises "custom mobile apps in minutes without code" and 90% cost reduction, "without hiring more developers or writing a single line of code." It can create apps for Apple's App Store, Google Play and cloud deployment.

A recent FedTech article reports "The U.S. Geological Survey... has relied on open-source platforms for 30 years and started using low-code software on select projects in 2014." Among other things, the Survey taps TrackVia, a low-code management workflow platform from Apiant, to enable app connectivity to the National Water Information System.

Esri's templates for story maps and its AppStudio for ArcGIS fall into the low and no-code arena. Mapmakers including elementary school students and data visualisation professional have built story maps to share data, video, photos and more. AppStudio enables non-programmers to configure mobile apps for Android, iOS, Windows, Mac OS X and Linux.

Further Democratising GIS

The availability of low- and no-code platforms means GIS end users and busy programmers can create apps more quickly and easily. It's up to organisations and their staff members to explore and evaluate if and how low- and no-code tools and platforms

can best serve the bottom line.

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