

Making the Minecraft[®] on demand project open-source and extensible by the community

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Abstract:

The French National Institute of Geographic and Forest Information (IGN), created in 2016 the Minecraft[®] on demand service. It allows users to generate a Minecraft world using real-world geographic data, such as terrain elevation, roads, buildings, and so much more. This service, presented by Lecordix et al. (2018), won the first prize in 2017 at Washington in the “Digital Product” category of the Map Awards¹.



Figure 1. Example generated world (church Notre-Dame-de-Paris).

The service, operated by *IGNfab*, has been used more than 110 000 times to generate worlds in France and other countries since 2016 (an average of 50 worlds per day). There are 3 data sources currently available: IGN (France), SPW (Wallonia) and OSM (world). One of the original goals of this service was to provide easy access to geographical data of IGN for children. This was a success, and a partnership with the French Ministry of National Education, has made us improve the service with, for example, a new output format (Minetest, an open-source alternative to Minecraft[®]), OSM data for worldwide-support, among other various features, discussed by Lecordix et al. (2019), Lecordix and Kumarasamy (2021). Then we made another partnership with the Wallonia cartography agency to integrate their geographical data too. And today, we wish to give the ability to anyone who maintain geographical data to incorporate them as well, allowing their users to generate Minecraft[®] and Minetest world using this data.

Because the original version of the generator was strictly bound to IGN data, it was quite a challenge to adapt it to OSM and SPW data, and merely unthinkable to take arbitrary geographical data as input. This is one of the reasons that made us go for an entirely new version of the code, from scratch, designed with what we learned from the version one. With this new version, we aim to support the most data sources possible by providing an abstract model in which we can fit all kind of representation of a data. This way, we can create interfaces for standard formats like the WFS from OGC, and some common data sources like OSM. If someone is using another format to represent his data, he just needs to write an implementation capable of reading it, and transforming it into the abstract model.

Making the project open-source will hopefully bring people interested in sharing their data to improve generated worlds quality, but also talented Minecraft[®] players that may suggest improvements in the generated structures. Plus, additional

¹<https://icaci.org/icc2017/>

projects, in various domains, may emerge from this foundation. For instance, we plan to organize an international project involving geographical data from several countries to address energy issues.

In this version two, we will also focus on user experience: How difficult is it to generate a world? To use it? To navigate it? To accomplish this task, we plan to rework the web interface used to order the map, and add extra indications inside the generated world to guide the player as he takes his marks into the wild world of cartography.

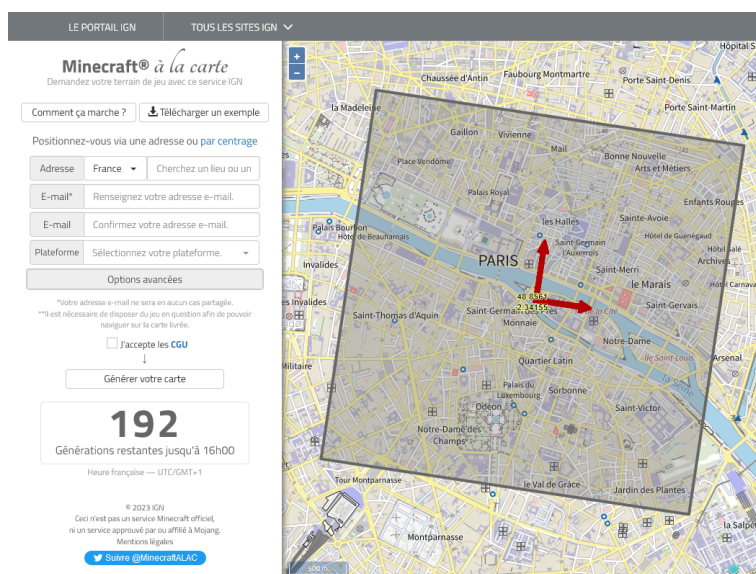


Figure 2. The current generation interface.

In this paper, I will present the work needed to make the Minecraft® on demand service open-source.

References

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