

# What are Open Badges & How do they work?

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## Introduction

There is currently a large gap in recognition between formal and informal education. Skills gained in less formal educational settings are often overlooked and underappreciated. In order to bridge this gap the Mozilla Foundation<sup>[5]</sup> developed Open Badges<sup>[1]</sup> and the infrastructure to support an open badges ecosystem that has the capacity to store and retrieve skills.

## Problem Description

The major problem was to find out what exactly are badges, how are they created, issued, earned and displayed.

In order to find out how badges are created, earned, issued and displayed an investigation into a number of existing badging systems and open badges implementations was undertaken.

This investigation showed a number of existing institutions already had some form of badges or achievements implemented. All of those investigated either have already transitioned or have started transitioning to the open badges infrastructure. This goes to show that open badges have quickly become recognized as the standard for badging systems.

## What are badges?

Badges, commonly called achievements or awards, are a collection of JSON objects capable of being verified by an issuing organization and are used as evidence of some knowledge or skill an earner may possess.

## Issuing Badges

Badges are issued by creating and hosting a 'badge assertion' on a publicly accessible URL. An assertion is the core details about a specific badge, stored in a JSON object and includes a verification link back to the issuing body where the assertion is hosted to verify the badges authenticity.

A badges 'merit' and how valuable a badge is relies entirely on the social standing and perception of the issuing body, the badge criteria and the details describing the badge in it's assertion.

## Earning Badges

Depending on the issuer, an earner may be required to provide some evidence demonstrating that they meet certain criteria before they can be awarded a badge. Once the issuing organization is satisfied with the supplied evidence they will then generate the badge assertion for that user. The user is then able to store a link to that badge and display it in whatever way they wish.

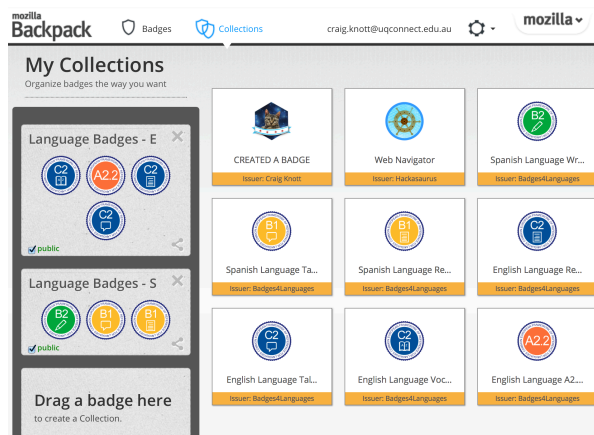


Figure 1: Mozilla Badgekit<sup>[3]</sup>

## Displaying Badges

Badges can be displayed using any website or application as long as the badge assertion address is known, this is a difficult problem, specifically if you have badges from a variety of issuers.

The Mozilla Backpack<sup>[3]</sup> is the recommended system for storing badges in a central location as it is designed specifically for managing any number of badges earned from any number of issuers. Through the backpack users can control what badges are publicly accessible through the backpack API, sort their badges into groups and even add additional information about individual badges.

External websites and applications are able to access a users public badges using the Mozilla Backpack's badge display API.

## Open Badges BadgeKit

Using this knowledge badges were then created for testing unity<sup>[4]</sup> visualizations. Creating badge assertions by hand was extremely repetitive. This led to the discovery of the Mozilla BadgeKit<sup>[2]</sup>, a simple administration interface to manage the creation and issuing of an entire collection of badges.

BadgeKit was installed locally in order to better understand how it works and incorporate it into future work with badges. BadgeKit was used to verify the knowledge gained through research about badges and how they are issued, earned and displayed.

## Unity3D

In order to showcase the backpacks badge display API, a Unity3D<sup>[4]</sup> asset package was created providing the ability to take a backpack users email address as the only input, download and display all their publicly accessible badges listed on their backpack, and give other scripts easy access to all of the badge assertion information. The other scripts can easily expand upon this building block to add additional features (e.g. search feature). Figure 2 shows a demonstration of how the asset package can be used to create a simple badge display.

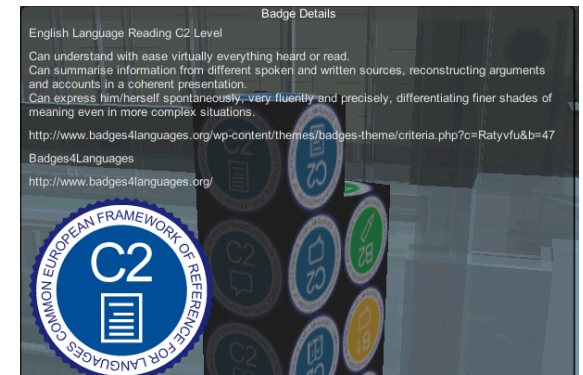


Figure 2: Unity3D Asset Package Demo

## Conclusion

This investigation into badges results in the ability to create, issue and display badges by hand and with the BadgeKit. The created unity asset package will be extremely valuable in future work with displaying badges in unity using the backpack.

## References

- [1] <http://openbadges.org/>
- [2] <http://badgekit.openbadges.org>
- [3] [backpack.openbadges.org/](http://backpack.openbadges.org/)
- [4] <http://unity3d.com/>
- [5] <http://mozilla.org/>



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