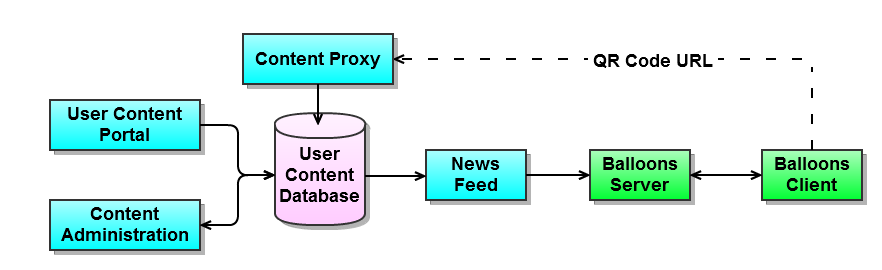
Balloons Project – System Architecture

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# Introduction

This document gives an overview of the entire Balloons Project system along with a brief description of its main components. Further details on each individual system can be found in the corresponding section of documentation.

# System Overview



Items in light blue are web-based components, written in PHP and producing either HTML/JS/CSS page output or JSON objects. Green items are written in C# 4.0 and the pink database is an SQL RDBMS. The QR Code URL is accessed by users when viewing content and is usually interpreted by a third-party device such as a mobile phone.

## User Content Database

The User Content Database is used to store user content submitted from the web front end. Important information stored includes general content information such as title and image; when the content was submitted; and the name of the user who submitted the content (for moderation purposes and deter the submission of inappropriate content). The database also stores the current “score” of each custom article; this comes from the content voting system.

## Web-Front Ends: User Content Portal & Content Administration

Two web-based front ends exist. The User Content Portal is used by users to submit custom content which will appear as a balloon on the system. Once content is submitted it is stored in the User Content Database. The Content Administration section lets administrators review and moderate any user generated content and will be primarily used to remove offensive or otherwise inappropriate content.

## Content Proxy

The content proxy is used to provide an interface for end users to rate content by either giving it an up or down vote. Once the vote is cast, it is stored against the story in the database and the user is redirected to the URL of the content.

## News Feed

The News Feed component is responsible for choosing some content for the front-end; ratios for the different content-types are defined in the feed whilst the number of items to fetch is determined by the caller. When requested, it generates a JSON object which is consumed by the Balloons Server.

## Balloon Server

The Balloon Server is responsible for coordinating all the balloons on the Balloon Clients. This involves parsing the News Feed to get balloons, sending balloons to each client and dealing with balloons travelling between screens as well as balloons being popped by the user.

When a client connects to the server, it must generate new balloons; this causes the feed to be refreshed. Once the balloons are generated they are pushed to the new client. If a client disconnects, all its balloons are randomly redistributed to the other screens.

## Balloon Client

The Balloon Client displays balloons in a graphical manner and allows users to interact with the display. The main elements of the display are the balloons themselves which have a short description of the article they represent and the news-reader element which displays the full content of the article as well as an image and QR Code which directs users via the Content Proxy to the news item.