

Backend Coding Test 02

Description

Game server hosting didn't work out, so Shockbyte is now a birdhouse manufacturer and has started the rollout of smart birdhouses all around the world. These smart birdhouses keep track of residents (birds and their eggs).

Goal

As the developer, we ask you to create a backend application in NestJS. This is the backend with which the birdhouses communicate.

For the bird houses to communicate with the backend it at least needs to comply with BIRD (Bird International Registration Devices) meaning that the following endpoints are minimally necessary;

- Register a new birdhouse /house POST
 - Request: { longitude: number, latitude: number, name: string }
 - Response: { id: uuid, ubid: uuid, birds: number, eggs: number, longitude: number, latitude: number, name: string } (201)
- Update information for a birdhouse /house/<ubid> PATCH
 - Request: { longitude: number, latitude: number, name: string }
 - Response: { birds: number, eggs: number, longitude: number, latitude: number, name: string } (200)
- Update / add to occupancy data history for a birdhouse /house/<ubid>/occupancy POST
 - Request: { birds: number, eggs: number }
 - Response: { birds: number, eggs: number, longitude: number, latitude: number, name: string } (201)
- Get information about itself /house/<ubid> GET
 - Response: { birds: number, eggs: number, longitude: number, latitude: number, name: string } (200)
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The API might require other endpoints for normal functioning, the endpoints mentioned above are always required.

The birdhouses all supply the following header as authentication(except registering):
X-UBID: <UBID>

A UBID (Unique Birdhouse Identifier) is similar to a UUID.
Example: 69e03f88-2a05-4d8d-a540-073f8910aec5

All actions done in the API should be logged so all events that happened can be viewed.

The endpoints should be well tested. As BIRD is an internationally used protocol, we can't afford the application to go down due to a small error.

Furthermore we have some rules for the creation of birdhouses.

- The name of a birdhouse can not be shorter than 4 and can not be longer than 16
- Endpoints that receive information from birdhouses must be secured and match the X-UBID header with a UBID of a sold birdhouse. Other endpoints do not need to be secured as they will be public.
- Keep a history for birdhouse residence
- Each birdhouse has a registration number, only real registration numbers can talk with these endpoints. Registration numbers/birdhouses can be added in bulk to the API. (very simple authentication)
- Prune birdhouses that have not received an update in a year
- The UBID is the same as the birdhouse registration number

Lastly, you must document your thought process in a README.md file.