A+E technical interview project

Instructions

Please design an implementation of the system described below. This may be done in the language of your choice, or in pseudocode.

Requirements

We would like to build a jukebox program.

The jukebox stores multiple albums, each of which contains multiple songs. Users should be able to select songs with a five-character identifier: a two-digit ID for the album, a hyphen, and a two-digit ID for the song. For example, the fourth song on the first album should be identified as "01-04."

As users select songs, the songs should be added to a play queue. Songs should be played in the order they are selected.

Adding a song to the queue costs one credit. Credits are purchased by the user in whole-number dollar amounts. $1 dollar purchases 3 credits; $2 purchases 7 credits; and $5 purchases 18 credits. Any positive whole number should be accepted; for example, $8 should purchase 28 credits ($5 + $2 + $1) while $10 should purchase 36 credits ($5 + $5).

The jukebox should be able to:

- List available albums and songs with their appopropriate IDs;
- Accept dollar amounts and credit the user appropriately;
- Add new songs to the queue;
- Report the song currently playing; and
- Report the next song to play.

While not part of the current requirements, we'd also like to eventually build an HTTP API for the jukebox. While you don't need to build it, please give some thought to how you'd implement it and be prepared to discuss a potential design.

We have provided sample data for albums and songs -- use it if helps you.

Assessment criteria

Our objective is to see and understand your approach to problem-solving. There is no "correct" design we're looking for. We're also not necessarily looking for a perfect solution; we're far more interested in your thought process than the specific results.

We welcome any questions you may have.