

WFYI Program Schedule 'Bot'

WFYI would like to create a system to automatically respond to user inquiries about program air dates and times. The system will poll Twitter and Facebook for user posts matching a predefined pattern*. The system will get its program information from an internal WFYI program database. A Web based interface to access program schedule data will be implemented by WFYI to fit a specification designed in collaboration with the EPICS team(s).

I initially envision several components to this project:

- 1) User Query Parser – parse a user's question pulling out likely program name token(s) and interrogate the Program Lookup Interface for results. WFYI would like to investigate the feasibility of trying to parse natural human language.
 - a. *Natural language parser:
 - i. Given a sample of question phrases parse out the program name(s) for sending to schedule interface to make a query.
 1. e.g. "When does Downton Abbey air next", "What time is No Limits on?"
 - ii. WFYI can provide many examples of questions.
 - b. *Script based/fixed format:
 - i. As an alternate: We may teach our users to use a specific format for phrasing questions.
 1. e.g. for twitter "#AskWFYIProgramBot <Program Name>"
 2. Not sure what to do on Facebook yet...
- 2) Query Engine – interface between the different user interface platforms (currently Twitter and Facebook) and send queries to the program look up back end.
 - a. Receive a raw user query from one of the platform 'hooks'.
 - b. Send the raw query to the User Query Parser to format the query into something the Program Lookup Backend understands.
 - c. Send the query to the Program Lookup Backend.
 - d. Respond to the hooks with the response from the lookup backend.
- 3) Program Lookup Backend – something WFYI will build to suite specifications defined by the design of the Query engine
 - a. Potentially a SOAP interface, or basic RESTFUL service.
- 4) Twitter Hook – listen for and respond to queries that come in on WFYI's twitter channel.
 - a. Read twitter posts with a given #hashtag (#AskWFYIProgramBot?)
 - b. Write a reply tweet with the query results
- 5) Facebook Hook – listen for and respond to Facebook posts that come into WFYI's Facebook page asking about program air dates/times
 - a. Maybe the questions will follow a specific pattern, or contain a key phrase, e.g. AskWFYIProgramBot

The technologies used to implement the components will need to run on Windows Server 2008 or Windows Server 2003. This design is also considered only a draft and WFYI encourages architectural input from the EPICS team.

