Title
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**ANTswers: an interactive library FAQ**

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**BACKGROUND**

ANTswers is an AIML chatbot (robot) [botmaster] built to answer questions about the UCI Libraries but also to respond to general conversation. AIML is available from the library homepage [http://www.lib.uci.edu/AIML] – all conversations are anonymous, and no login is required.

Introduction: March 2014 for beta testing. ANTswers is built for an academic library with 2 main libraries, a study center, Special Collections & Archives, and a medical library. Our goal is creating a library chatbot was to:

• Enhance (not replace) library services;
• Serve a large number of people at any one time of the day;
• Serve a wide range of library patrons;
• Use it to provide irreplaceable information;
• Provide UCI specific information.

**IMPLEMENTATION**

ANTswers was in development for a year prior to going live. A focus group of 13 members of library staff was created to discuss the personality, look and feel, and scope of the chatbot. The majority of the AIML programming was completed by 1 staff member (botmaster) with support provided by a programmer in the Libraries’ CIP department.

- 9/23/13 – 12/9/13
  - Focus: Focus group determines scope and personality
- 12/9/13 – 3/25/14
  - Focus: Development of AIML files and testing
- 3/25/14 – current
  - Transcripts reviewed and revision to database made by botmaster.
- 4/25/14 – current
  - ANTswers goes live

**BASICS OF AIML**

AIML stands for Artificial Intelligence Markup Language and is an XML compliant language. Each question/pair is considered a unit of knowledge and is represented as:

```
$where category$|$pattern$|$template$|template$|category$<pattern>QUESTION|patterns|template$|category$|template$|category$<pattern>CONTACT YOU</pattern>
```

Where category defines the unit of knowledge, pattern defines the keyword, phrase, or question, and template defines the chatbot's response. Recursion can be used to map secondary categories to the primary category.

**MAINTENANCE**

Transcripts are reviewed on a daily basis (M-F) in our Lib Web Admin System, and forward the best solution was a statistics database built using MySQL which pulls transcripts from Program-O and allows for tagging, reviewing (statistics), and forwarding transcripts to other library staff.

**EVALUATION**

While Program-O contains transcript logs they are just viewable. Initially in the testing phases a Google form was used to track statistics on each conversation but the connection between the statistics and the conversation was lost. Moving forward the best solution was a statistics database built using MySQL which pulls transcripts from Program-O and allows for tagging, reviewing (statistics), and forwarding transcripts to other library staff.

**RESULTS**

Data is from 3/25/14 – 6/9/15

- Total number of conversations: 715
- Total number of questions: 3,486
- Total number of Library questions: 1,918 (55% of total)
- Total number of General questions: 1,554 (45% of total)

**FUTURE PLANS**

- Redesign of ANTswers’ library related files due to a changing library web presence.
- Create a new database using knowledge gained from the existing transcripts – goal is to eventually reach a 95% answer rate for library questions. ANTswers will then move out of beta.
- A research project is currently underway to compare how questions are asked in in-person reference, QuestionPoint (24/7), and ANTswers.

**BUILD YOUR OWN CHATBOT**

This collection includes approximately 130 AIML files that are available for download and for the use in creating other library chatbots. You will need to review and edit each of the files for your particular institution. To implement your own library chatbot you will need a server, chatbot software [we use Program-O], editing software [we used Notepad+++] and at least minimal experience with HTML, CSS, JavaScript and AIML.