

Gabby: a Chatbot for a Virtual Art Gallery

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Yan Steimle

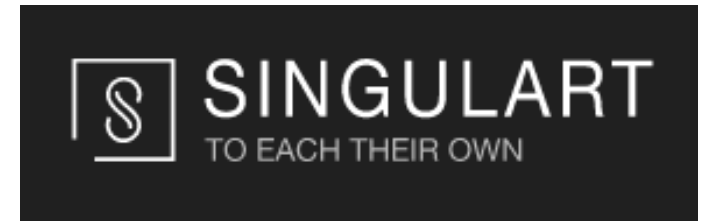
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Project Summary

- Develop a chatbot for a Virtual Gallery web application
 - Virtual Gallery: silent auction for artwork
 - RASA chatbot framework
 - Chatbot tasks:
 - list and modify user bids (assumes user “Foo” is logged in)
 - answer questions about bidding process and auction schedule
- Deliverables:
 - “Placeholder” Virtual Gallery web application and database
 - Trained chatbot (including the custom action server)

Methodology: Research

- Online art galleries



- Silent auctions



- RASA documentation and tutorials



[Rasa Open Source](#)

[Rasa X](#)

[Rasa Action Server](#)

- RASA example chatbots

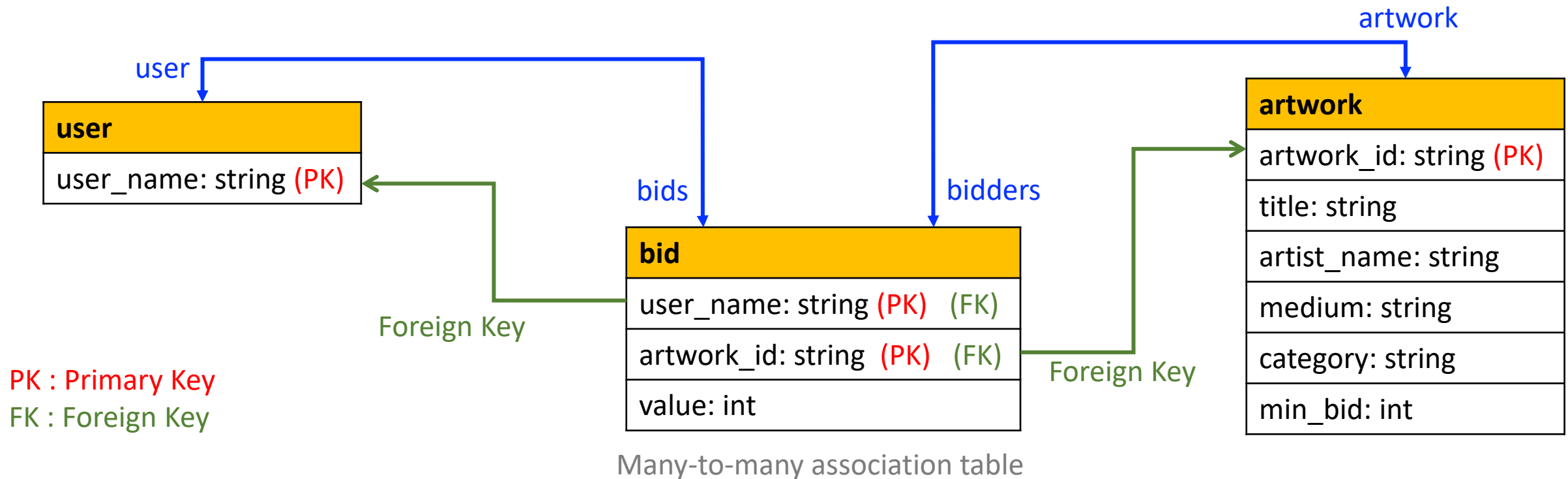
- Financial Services Example Bot [🔗](#)

- SQLAlchemy and SQLite



Methodology: Development

- “Placeholder” Virtual Gallery web application (Python Flask)
- Minimal database (SQLAlchemy and SQLite)



Methodology: Development

- Installed Rasa X
- Created training data
 - NLU (intents and paraphrases)
 - Rules
 - Responses
- Created custom action server
 - SQLite Database
- Rasa X “Talk to your bot” feature
 - Interactive learning

Activity Table

Note: changes from the version in the project description are indicated in red.

Activity	Estimated Time	Actual Time (approx.)	Deliverable
Search for online art galleries and auctions	2h	1h	List of possible customer questions
Search for a dataset containing generic chatbot queries and paraphrases	2h	1h	Found Rasa example chatbots (including intents and paraphrases)
Explore Rasa documentation and read tutorial articles about building chatbots using Rasa	4h	5h	None
Read tutorials and articles about SQLAlchemy and SQLite for Python	1h	4h	None
Install Rasa X and try out the included minimal “Hello World” chatbot	5h	5h	Minimal working chatbot (and working Rasa X installation)
Write the training data for the chatbot	6h	6h	
Create the database and include sample data. Create placeholder web application.	2h	5h	SQLite database with sample data and basic web application.
Develop the action server for the chatbot	5h	6h	Code for the chatbot action server
Train and run the chatbot	3h	3h	Final chatbot

Challenges

- Setting up Rasa X (compatible versions for requirements)
- Designing a non-linear dialogue using forms, rules and stories
- Understanding what went wrong

Demonstration









What have I learned?

- How to create a chatbot using Rasa.
 - Training data, rules, and stories
 - Interactive learning
 - Custom action server
- Designing a functional chatbot is more involved than I thought
 - Getting specific information from the user (forms)
- Impossible to anticipate all situations the chatbot might face
 - To make chatbot fully functional, need beta testers







Conclusion

- Chatbot for Virtual Gallery application
 - Answer general questions
 - Modify bids for logged-in user
- Quality over Quantity

References

- Singulart FAQ. 
- Saatchi Art. For Buyers – Help Home. 
- Bid Beacon Blog. *What Is a Silent Auction and How Do They Work?* 
- Bidding Owl. *What is a Non-Profit Silent Auction?* 
- Rasa – Community Showcase. “Financial Demo Assistant: a Starter Pack for Banking”. 
- Rasa: Developer Documentation Portal. 
- Bruno Krebs. “SQLAlchemy ORM Tutorial for Python Developers”. In: *auth0 Blog* (Nov. 9, 2017). 
- Rasa example chatbot: Concertbot. 

References

- Doug Farrell. “Data Management With Python, SQLite, and SQLAlchemy”. In: *Real Python* (Oct 14, 2020). 
- “Introductory Tutorial of Python’s SQLAlchemy”. In: *Python Central* (Dec 12, 2013). 
- SQLAlchemy 1.4 Documentation. 
- Bryan Weber. “Using Python datetime to Work With Dates and Times”. In: *Real Python* (May 4, 2020). 
- Rasa Community Forum. 
- **Github Repository:** <https://github.com/yansteimle/virtual-gallery-chatbot> 

Note: Specific references consulted when writing certain parts of the code (e.g. for the custom action server) are indicated with comments directly in the code (see the Github Repo).

References

- Abhishek Verma. “Effortlessly Build Chatbots With Rasa 2.0: A Step-by-Step Tutorial”. In: *Towards Data Science* (Nov 9, 2020). [🔗](#)
- Bikash Sundaray. “Create Chatbot using Rasa Part-1”. In: *Towards Data Science* (Aug 27, 2019). [🔗](#)