autosistant: An Automated Service Clerk

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Project Introduction

- Conversational agent that helps you buy and order products from an online store.
- “A+ Features”
  - Configurable conversational triggers
  - Configurable product knowledge
  - Deep Domain Knowledge
  - Natural conversation

Other Features

- Variable conciseness
- Easy administration
- Web deploy-able
- Natural Language Independence (Configuration)
- Suggestion Prompting
- Lots more...

Stan's Auto Parts | autosistant Chat Client

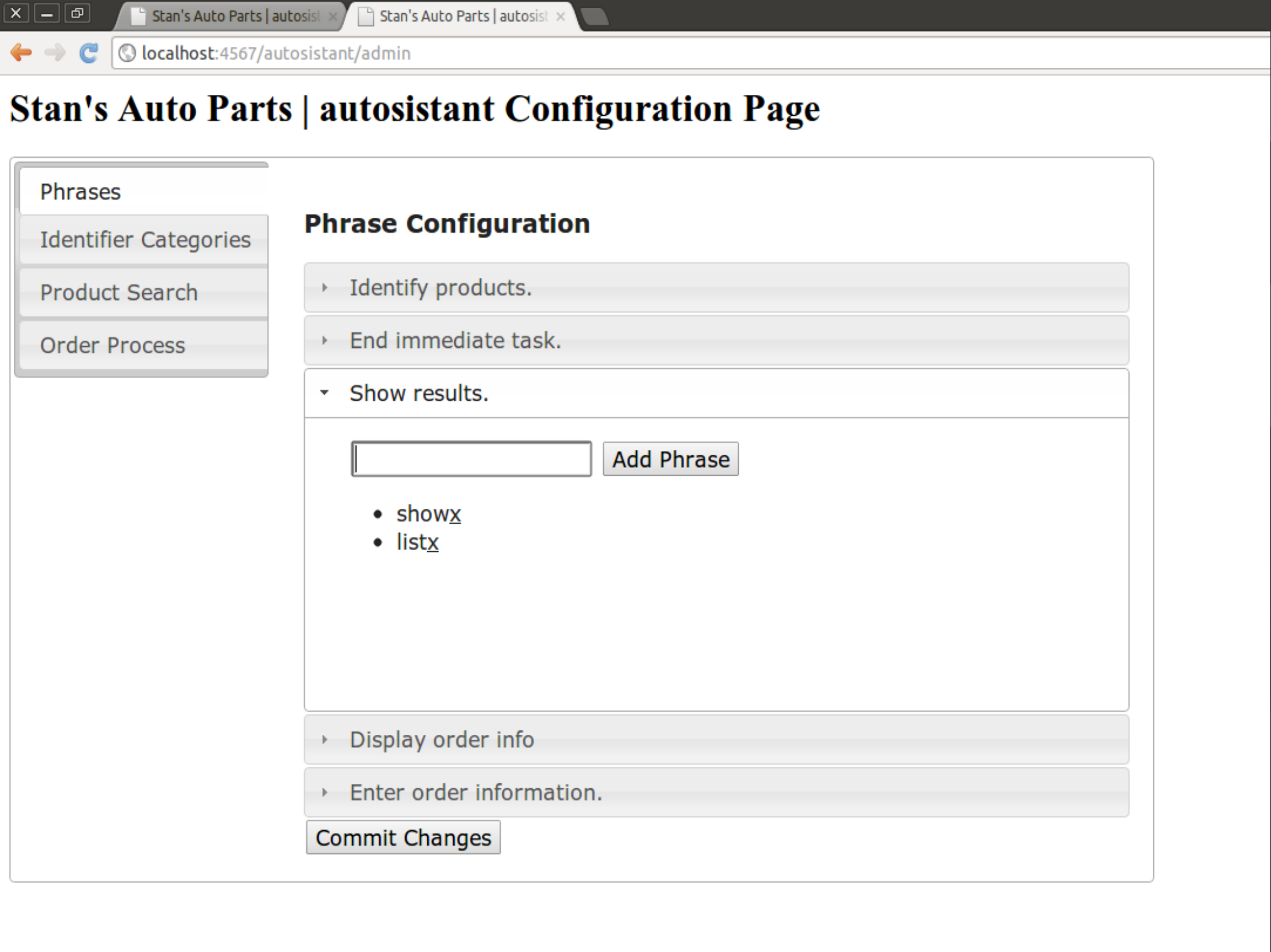
```
Agent: Hello!  I will be your assistant for today.  How can I help you?

Me: Hi, I'd like to buy something.
Agent: What production year was this vehicle made in?
Me: 1980
Agent: What is the model name of this vehicle?
Me: It is a pickup.
Agent: What part are you looking for?
Me: A camshaft for the engine.
Agent: These are the products I have identified:
        p0:      20R Engine Camshaft. In stock: 11. Price: $290.00
Which item(s) would you like to add to the order?
Me: I would like 1 p0, please!
Agent: Your current order includes:
         Price: $290.00. Product: 20R Engine Camshaft. Quantity: 1

I have no current tasks to complete, how can I help you?
```

Type your message here!

Send Message!


Stan's Auto Parts | autosist
Stan's Auto Parts | autosist
localhost:4567/autosistant/admin
Stan's Auto Parts | autosistant Configuration Page
Phrases
Identifier Categories
Product Search
Order Process
Phrase Configuration
Identify products.
End immediate task.
Show results.
Add Phrase
showx
listx
Display order info
Enter order information.
Commit Changes

Stan's Auto Parts | autosistant Configuration Page

- Phrases
- Identifier Categories
- Product Search
- Order Process

Product Search Configuration

option Add

- 20r x

called Add

- engine block x

year Add

- 1980 x

make Add

- toyota x

model Add

- hilux x
- pickup x

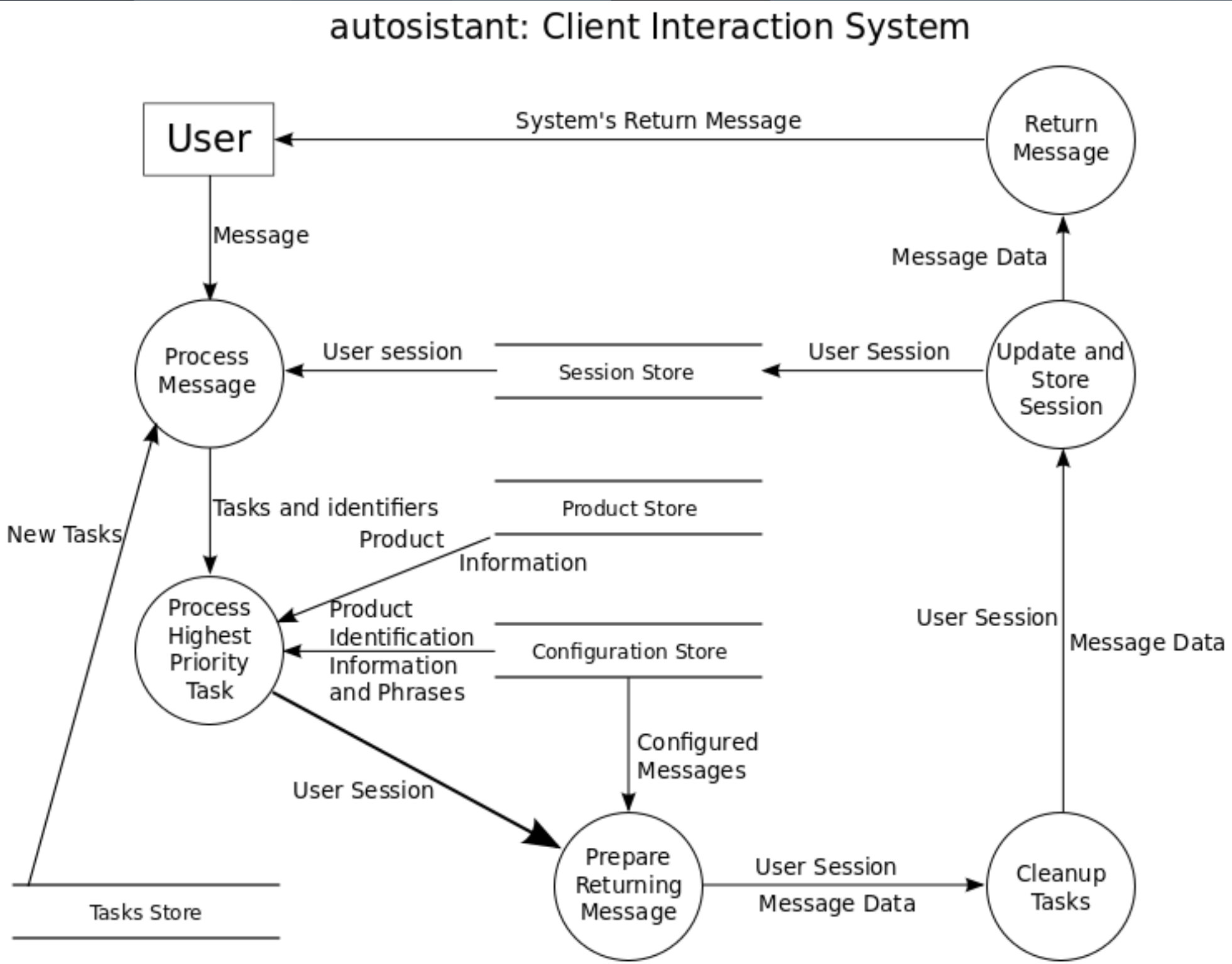
Go Back Commit Changes

Inspiration

- NAPA Auto Parts Clerk
- Wolfram Alpha
- FedEx's Automated Package Delivery Processing System

How It Works

- The system pulls out “trigger words” that map to system tasks.
- All other words treated as potential input.
- System manages a collection of tasks and always attempts to complete most important of these.
- All information for the conversation managed in a user session variable, stored in a database between messages.


autosistant: Client Interaction System
User
System's Return Message
Return Message
Message
Message Data
Process Message
User session
Session Store
User Session
Update and Store Session
Tasks and identifiers
Product Store
New Tasks
Product Information
Process Highest Priority Task
Product Identification Information and Phrases
Configuration Store
User Session
Message Data
Configured Messages
User Session
Prepare Returning Message
User Session
Message Data
Cleanup Tasks
Tasks Store

SDLC Choice: Modified XP

- XP with limited upfront design and heavy use of iterations (design-code-test).
- Pros
  - Worked well with my extremely limited time frame
  - Allowed me to be flexible with design; design “on the fly”
- What would I change?
  - A little more upfront design to accommodate for better configurability

Challenges

- Didn't know anything about the languages and technologies I used. Had to learn everything from scratch
- Time management: other research/courses, non-academic commitments. Put in more time then I really had
- Scope creep: wanted to pack in more features then I really had ability to add

Rewards

- Learned lots about Ruby/Sinatra, Javascript/JQuery, JSON, AJAX, etc.
- Placed foundation for a piece of software I could potentially commercialize
- Came up with ideas for new projects

Conclusion

- www.github.com/graemedouglas/autosistant
- gdouglas.dev@gmail.com With any questions!