

Zitti - DigitalXC Coding Problem 1

Problem statement

Vasee AI Corporation has opened out a challenge to build its highly intelligent personal robotic assistant called Zitti. Zitti is capable of responding to a few instructions and questions. It can clean the room, fetch your newspaper and answer a few questions. The Robot works based on the instruction/question issued to it.

For example:

Instruction: Hey. How are you?

Response: Hello, I am doing great.

I: How's the weather outside?

R: It's pleasant outside. You should take a walk.

I: Clean my room

R: Room is cleaned. It looks tidy now. Job completed at <current time>

I: Add Soap to my shopping list

R: Soap added to your shopping list.

I: Fetch the newspaper

R: Here is your newspaper.

I: Add <any-item> to my shopping list

R: <any-item> added to your shopping list.

I: Read my shopping list

R: Here is your shopping list. Soap, Shampoo, Conditioner.

You decided to give it a try and take up the Zitti challenge:

But you have to make sure that the Robot has a bit of a logic as well. The responses can vary based on a few conditions:

Example 1: You ask it to clean the room again within 10 minutes, it politely declines stating:

The room was just cleaned <minutes since the last time the room was cleaned> minute(s) ago. I hope it's not dirty

Example 2 - You ask it to fetch the newspaper within the same day, it politely declines stating:

I think you don't get another newspaper the same day

Example 3 - You ask it to add an existing item on shopping list, it politely declines stating:

You already have <item name> in your shopping list

Example 4 - When you shopping list is empty, it says:

You have no items in your shopping list

Example 5 - When the question does not match any of the above mentioned template, it declines stating:

Hmm.. I don't know that

For a better understanding, please find a set of sample inputs and the corresponding outputs below:

Input:

Hey. How are you?
Clean my room.
Fetch the newspaper.
Clean my room.
Read my shopping list.
Fetch the newspaper.
Add Bread to my shopping list.
Add Eggs to my shopping list.
Add Bread to my shopping list.
Read my shopping list.
How much is $5 + 2$?
How's the weather outside?

Output:

Hello, I am doing great.
Room is cleaned. It looks tidy now. Job completed at <current time>
Here is your newspaper.
The room was just cleaned 0 minute(s) ago. I hope it's not dirty
You have no items in your shopping list
I think you don't get another newspaper the same day
Bread added to your shopping list
Eggs added to your shopping list
You already have Bread in your shopping list
Here is your shopping list. Bread, Eggs.
Hmm.. I don't know that
It's pleasant outside. You should take a walk.

Build a command line program for the above-mentioned problem statement. You are free to use any (Object oriented or functional) programming languages that you are comfortable with.

You can enter question/instruction one at a time as a conversation mode or read all commands from a text file and run it from command line and print all the output.

Submission Requirements

1. No need of any UI. A simple command line program would do.
2. Follow the best practices that you deem necessary
3. Writing proper tests is an added advantage
4. Having a local git repository is very much advised. Please zip the local repo and send it to us. Do not push the repository to any public sites like github/gitlab/bitbucket etc.
5. Having a README file with all necessary details like how to install dependencies, how to run the program etc. is very much advised
6. While we consider the completeness of the solution as a key criteria, we equally value the design, quality of code and its extensibility.

Happy Coding!