

**RSS NEWS FEEDER PROJECT**

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**Introduction:**

The code implements a program to filter news stories fetched from RSS feeds based on user-defined criteria. Here's a breakdown of the key components and functionalities:

**Data Structures:**

* **NewsStory Class (Problem 1):**
  + This class represents a single news item retrieved from an RSS feed.
  + It has attributes to store:
    - guid: Unique identifier for the news story.
    - title: Title of the news story.
    - description: Description of the news story.
    - link: Link to the full news article.
    - pubdate: Publication date of the news story.

**Trigger Classes (Problems 2-9):**

* **Trigger Class (Abstract):**
  + This is an abstract class that defines an interface for evaluating news stories.
  + Specific trigger types inherit from this class and implement the evaluate method which determines if a news story meets the trigger criteria.
* **PhraseTrigger Class (Problem 2):**
  + This class checks for the presence of a user-specified phrase in the news story.
  + It has a \_init\_ method that takes the phrase as input and stores it in lowercase for case-insensitive matching.
  + It implements the is\_phrase\_in method that checks if the phrase exists in the provided text (title or description) after converting both to lowercase and removing punctuation.
* **TitleTrigger Class (Problem 3):**
  + This class inherits from PhraseTrigger and specifically checks for the phrase in the title of the news story.
  + It overrides the evaluate method to call is\_phrase\_in on the news story's title.
* **DescriptionTrigger Class (Problem 4):**
  + This class inherits from PhraseTrigger and specifically checks for the phrase in the description of the news story.
  + It overrides the evaluate method to call is\_phrase\_in on the news story's description.
* **TimeTrigger Class (Problem 5):**
  + This class checks the publication date of a news story against a specified time.
  + Its \_init\_ method takes a time string in a specific format ("%d %b %Y %H:%M:%S") and converts it to a datetime object in the Eastern Time Zone (EST).
* **BeforeTrigger Class (Problem 6):**
  + This class inherits from TimeTrigger and checks if the publication date of the news story is before the specified time in EST.
  + It overrides the evaluate method to compare the news story's publication date with the trigger's time.
* **AfterTrigger Class (Problem 6):**
  + This class inherits from TimeTrigger and checks if the publication date of the news story is after the specified time in EST.
  + It overrides the evaluate method to compare the news story's publication date with the trigger's time.
* **NotTrigger Class (Problem 7):**
  + This class negates the evaluation of another trigger.
  + Its \_init\_ method takes another trigger object as input.
  + It overrides the evaluate method to return the logical NOT of the evaluation result from the stored trigger.
* **AndTrigger Class (Problem 8):**
  + This class requires both specified triggers to evaluate to True for the overall trigger to be True.
  + Its \_init\_ method takes two trigger objects as input.
  + It overrides the evaluate method to return True only if both stored triggers evaluate to True.
* **OrTrigger Class (Problem 9):**
  + This class requires at least one of the specified triggers to evaluate to True for the overall trigger to be True.
  + Its \_init\_ method takes two trigger objects as input.
  + It overrides the evaluate method to return True if either of the stored triggers evaluates to True.

**Functions:**

* **process(url):**
  + This function fetches and parses news stories from a provided RSS feed URL.
  + It uses the feedparser library to parse the RSS feed and extracts details like title, description, link, and publication date.
  + It converts the publication date to a datetime object and translates the title and description using the translate\_html function (implementation not provided).
  + It returns a list of NewsStory objects.
* **filter\_stories(stories, triggerlist): (Problem 10)**
  + This function filters a list of news stories based on a provided trigger list.
  + It iterates through each news story and the trigger list.

**Conclusion:**

The provided RSS feed filter code offers a customizable tool to stay informed about news articles matching your interests. Here are the key takeaways:

* **Functionality:** It retrieves news stories from RSS feeds, filters them based on user-defined criteria (triggers), and displays the filtered titles and descriptions in a graphical window.
* **Triggers:** You can define various triggers to filter news based on keywords in titles or descriptions, or based on the publication time (before/after a specific time). You can even combine these triggers using logical operators (AND, OR, NOT) for more complex filtering.
* **Customization:** The program allows customization through a trigger configuration file (triggers.txt). By implementing the read\_trigger\_config function (Problem 11), you can specify triggers in the file and the program will read them during execution.
* **Refreshing News Feed:** The program refreshes the news feed periodically (every 2 minutes by default) to keep you updated with the latest news matching your criteria.

Overall, this code provides a valuable tool for efficiently staying informed about specific news topics based on your preferences.

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