Project report

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**Fundamental of Programming**

**Introduction:**

The program is designed to personalize news content by allowing users to filter news stories obtained from RSS feeds according to their preferences. Here's a breakdown of the main elements and functions:

**Data Structures:**

**NewsStory Class:**

Represents an individual news item fetched from an RSS feed.

Contains attributes such as a unique identifier (guid), title, description, link, and publication date.

**Trigger Classes:**

An abstract class that establishes a framework for assessing news stories.

Specific trigger types inherit from this class and implement the evaluate method to determine if a news story aligns with the trigger's criteria.

**PhraseTrigger Class:**

Verifies the presence of a user-specified phrase in a news story.

Initializes with a phrase, storing it in lowercase for case-insensitive matching.

Implements a method to check if the phrase exists in the provided text (title or description) after converting both to lowercase and removing punctuation.

**TitleTrigger Class:**

Extends from PhraseTrigger and specifically examines the presence of the phrase in the news story's title.

Overrides the evaluate method to invoke the phrase checking process on the news story's title.

**DescriptionTrigger Class:**

Extends from PhraseTrigger and specifically examines the presence of the phrase in the news story's description.

Overrides the evaluate method to invoke the phrase checking process on the news story's description.

**TimeTrigger Class:**

Compares the publication date of a news story with a specified time.

Initializes with a time string in a specific format and converts it to a datetime object in the Eastern Time Zone (EST).

**BeforeTrigger Class:**

Inherits from TimeTrigger and verifies if the news story's publication date is before the specified time.

Overrides the evaluate method to compare the news story's publication date with the trigger's time.

**AfterTrigger Class:**

Inherits from TimeTrigger and verifies if the news story's publication date is after the specified time.

Overrides the evaluate method to compare the news story's publication date with the trigger's time.

**NotTrigger Class:**

Reverses the evaluation of another trigger.

Initializes with another trigger object and overrides the evaluate method to return the logical NOT of the stored trigger's evaluation result.

**AndTrigger Class:**

Requires both specified triggers to evaluate to True for the overall trigger to be True.

Initializes with two trigger objects and overrides the evaluate method to return True only if both stored triggers evaluate to True.

**OrTrigger Class:**

Requires at least one of the specified triggers to evaluate to True for the overall trigger to be True.

Initializes with two trigger objects and overrides the evaluate method to return True if either of the stored triggers evaluates to True.

**Functions:**

**process(url):**

Retrieves and parses news stories from a given RSS feed URL.

Utilizes the feedparser library to parse the RSS feed and extract details like title, description, link, and publication date.

Converts the publication date to a datetime object and translates the title and description.

Outputs a list of NewsStory objects.

**filter\_stories(stories, triggerlist):**

Filters a list of news stories based on a provided trigger list.

Iterates through each news story and the trigger list, returning only those stories that meet the criteria established by any trigger in the list.

**Conclusion:**

The provided RSS feed filter code is a customizable tool designed to keep you informed about news articles that match your interests.

Key points include:

**Functionality:** It fetches news stories from RSS feeds, sieves them based on user-set criteria (triggers), and showcases the refined titles and descriptions in a graphical interface.

**Triggers:** Users can set diverse triggers to sift news by keywords in titles or descriptions, or by publication time (pre or post a specific time). These triggers can be amalgamated using logical operators (AND, OR, NOT) for intricate filtering.

**Customization:** The tool offers customization via a trigger configuration file (triggers.txt). By integrating the read\_trigger\_config function (Problem 11), users can define triggers in the file, which the program will read during operation.

**Refreshing News Feed:** The program automatically updates the news feed at intervals (typically every 2 minutes) to ensure you receive the latest news that aligns with your criteria.

In essence, this code furnishes an effective means to stay informed about specific news topics tailored to your preferences