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Course Nano-Project

For the course: Introduction to Programming with Python

Business Requirements

Question 1

Write a program that asks the user how many Fibonacci numbers to generate and then generates them. Take this opportunity to think about how you can use functions. Make sure to ask the user to enter the number of numbers in the sequence to generate (Hint: The Fibonacci sequence is a sequence of numbers where the next number in the sequence is the sum of the previous two numbers in the sequence. The sequence looks like this: 1, 1, 2, 3, 5, 8, 13, …)

Question 2

Write a program (using functions!) that asks the user for a long string containing multiple words. Print back to the user the same string, except with the words in backwards order. For example, say I type the string: My name is Michele Then I would see the string: Michele is name My shown back to me.

Question 3

Ask the user for a string and print out whether this string is a palindrome or not. (A palindrome is a string that reads the same forwards and backwards.)

Question 4

For this exercise, we will keep track of when our friend's birthdays are, and be able to find that information based on their name. Create a dictionary (in your file) of names and birthdays. When you run your program, it should ask the user to enter a name, and return the birthday of that person back to them. The interaction should look something like this: >>> Welcome to the birthday dictionary. We know the birthdays of: Albert Einstein Benjamin Franklin Ada Lovelace >>> Whose birthday do you want to look up? Benjamin Franklin >>> Benjamin Franklin's birthday is 01/17/1706

Question 5

Use the BeautifulSoup and requests Python packages to print out a list of all the article titles on the New York Times homepage.

Question 6

Take the code from the question 5 and instead of printing the results to a screen, write the results to a txt file. In your code, just make up a name for the file you are saving to.

DESCRIPTION

The Dataset contains historical sales data for 45 Amazon stores located in different regions.

SUMMARY

Dataset Description

The Dataset contains historical sales data for 45 Amazon stores located in different regions. Each store contains a number of departments and have to predict the department-wide sales for each store. In addition, Amazon runs several promotional markdown events throughout the year. These markdowns precede prominent holidays, the four largest of which are the Super Bowl, Labor Day, Thanksgiving, and Christmas. The weeks including these holidays are weighted five times higher in the evaluation than nonholiday weeks. Part of the Dataset is modelling the effects of markdowns on these holiday weeks in the absence of complete/ideal historical data.

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This file contains anonymized information about the 45 stores, indicating the type and size of store.

This is the historical training data, which covers to 2019-02-05 to 2021-11-01. Within this file you will find different fields:

Store – the store number

Dept – the department number

Date – the week

Weekly_Sales - sales for the given department in the given store

IsHoliday - whether the week is a special holiday week Temperature - average temperature in the region

Fuel_Price - cost of fuel in the region

MarkDown data is only available after Nov 2020 and is not available for all stores all the time. Any missing value is marked with an NA.

CPI – the consumer price index

Unemployment - the unemployment rate

For convenience, the four holidays fall within the following weeks in the dataset (not all holidays are in the data):

Super Bowl: 12-Feb-19, 11-Feb-20, 10-Feb-21, 8-Feb-18

Labor Day: 10-Sep-19, 9-Sep-20, 7-Sep-21, 6-Sep-18

Thanksgiving: 26-Nov-19, 25-Nov-20, 23-Nov-21, 29-Nov-18

Christmas: 31-Dec-19, 30-Dec-20, 28-Dec-21, 27-Dec-18

Remove all the duplicate or irrelevant columns to the questions below.

Questions

- What holiday generally does the stores experience high sales?
- Comparing the Holiday and non-holiday seasons, which season generally does better in sales?
- Which store has the highest sales so far?
- What year did each store experience the most sales?
- Analyse the unemployment rate and customer price

Please access the link to the dataset here: Amazon Sales_Data Set.csv

Subimission Instructions

1. **Submission criteria**
   - Please refer to the email to which this document was attached.

2. **Email for submission**
   - To: trainingsupport@stackwisr.com
     Cc: cx@stackwisr.com

3. **Nano Project deadline**
   - Please refer to the email to which this document was attached.

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4. **Training Support contact details:**
   - To: trainingsupport@stackwisr.com
     Cc: cx@stackwisr.com

To help us assist you more efficiently, send us an email about your problem or question as a first step. If it's a technical issue, attaching screenshots of the incident would be very helpful. This way, we can diagnose and address your concern more swiftly. We aim to respond within 24 hours of receiving your email.

- Available from Monday to Friday, from 9am to 5pm

We wish you all the best with your learning and career development.