ASSIGNMENT#6

LOOK UP WEBSITES CONTAINING THE FOLLOWING DATA REPRESENTATIONS

ANALYZE THE WEBSITES IN TERMS OF STRUCTURE AND COMPOSITION. NAME THE TECHNOLOGY/METHODS USE FOR CREATING THE WEB DATABASE.

1. **Using JSON (JavaScript Object Notation)**

   o Youtube

   o Ancestry.com

   o Facebook

   App is sending server information and server is sending the app back information (request and response) You don't send plain text but objects

2. **Using XML (Extensible Markup Language)**

   o Amazon

   o Wikipedia?

   o NASA Feed

   o Facebook/Instagram

Language markup to store and transport data. Separate info from the presentation. Not the primary data format for the above.

YOUTUBE EXAMPLE:

Request URL: https://www.youtube.com/youtubei/v1/log_event?alt=json&key=AlzaSyAO_FJ2SIqU8Q4STEHLGCilw_Y9_11qcW8
Request Method: POST
Status Code: 200 OK
Remote Address: 142.250.115.91:443
Referrer Policy: strict-origin-when-cross-origin

Response Headers
Alt-Svc: h3=":443"; ma=2592000,h3-29=":443"; ma=2592000

If successful, this method returns a response body with the following structure:

```
{
  "kind": "youtube#searchListResponse",
  "etag": etag,
  "nextPageToken": string,
  "prevPageToken": string,
  "regionCode": string,
  "pageInfo": {
    "totalResults": integer,
    "resultsPerPage": integer
  },
  "items": [
    search Resource
  ]
}
```

```
{
    "responseContext": {
        "serviceTrackingParams": [
            {
                "service": "CSI",
                "params": [
                    {
                        "key": "c",
                        "value": "WEB"
                    },
                    {
                        "key": "cver",
                        "value": "2.20240313.05.00"
                    },
                    {
                        "key": "yt_li",
                        "value": "1"
                    },
                    {
                        "key": "GetUnseenNotificationCount_rid",
                        "value": "0xd274dd59e6e5a2fd"
                    }
                ]
            },
            {
                "service": "GFEEDBACK",
                "params": [
                    {
                        "key": "logged_in",
                        "value": "1"
```

Thinkin Bout You
737K · Subscribed · Share
78M views 5 years ago
Provided to YouTube by Universal Music Group
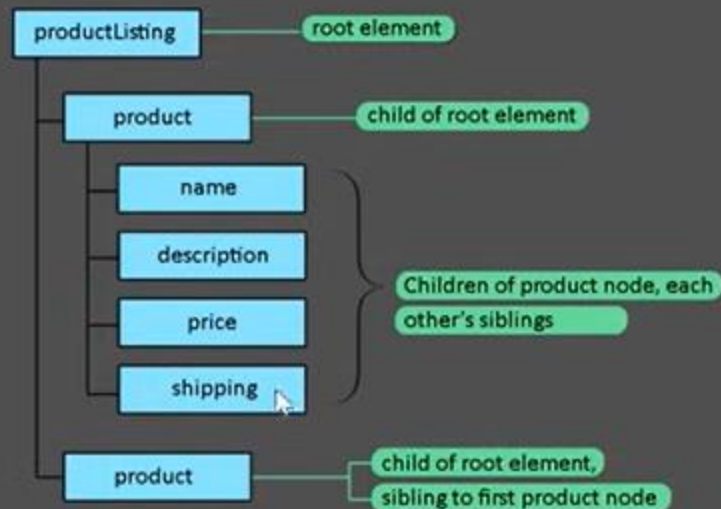Thinkin Bout You · Frank Ocean ...more

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XML was designed to store and transport data

The XML language has no predefined tags

eXtensible markup language, it lets you define your own tags

XML separates information from presentation

XML STRUCTURE

productListing → root element

product → child of root element

name
description
price
shipping
→ Children of product node, each other's siblings

product → child of root element, sibling to first product node

```xml
<?xml version="1.0"?>
<productListing title="My Products">
  <product>
    <name>Product One</name>
    <description>Product One is an exciting new widget that will
      simplify your life.</description>
    <cost>$19.95</cost>
    <shipping>$2.95</shipping>
  </product>
  <product>
    <name>Product Two</name>
  </product>
  <product>
    <name>Product Three</name>
    <description>This is such a terrific widget that you will
      most certainly want to buy one for your home and another one
      for your office!</description>
    <cost>$24.95</cost>
    <shipping>$0.00</shipping>
  </product>
</productListing>
```

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```xml
<?xml version="1.0" encoding="UTF-8" ?>
<rss version="2.0" xmlns:content="http://purl.org/rss/1.0/modules/content/" xmlns:wfw="http://wellformedweb.org/CommentAPI/" xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:atom="http://www.w3.org/2005/Atom" xmlns:sy="http://purl.org/rss/1.0/modules/syndication/" xmlns:slash="http://purl.org/rss/1.0/modules/slash/">
<channel>
        <title>NASA Image of the Day</title>
        <description>The latest NASA &quot;Image of the Day&quot; image.</description>
        <link>https://www.nasa.gov/image-of-the-day/</link>
        <atom:link href="https://www.nasa.gov/feeds/iotd-feed" rel="self" type="application/rss+xml" />
        <language>en-us</language>
        <managingEditor>brian.dunbar@nasa.gov (Brian Dunbar)</managingEditor>
        <webMaster>brian.dunbar@nasa.gov (Brian Dunbar)</webMaster>
        <docs>http://blogs.law.harvard.edu/tech/rss</docs>
                <item>
                        <title>Gemini VI Astronauts Thomas P. Stafford and Walter M. Schirra Jr.</title>
                        <link>https://www.nasa.gov/image-detail/s65-56151orig/</link>
                        <description>Gemini VI astronauts Thomas P. Stafford (left), pilot, and Walter M. Schirra Jr., command pilot, are shown during suiting up exercises at Cape Kennedy, Florida.
</description>
                        <enclosure url="https://www.nasa.gov/wp-content/uploads/2024/03/s65-56151orig.jpg" length="803344" type="image/jpeg" />
                        <guid isPermaLink="false">https://www.nasa.gov/image-detail/s65-56151orig/</guid>
                        <pubDate>Tue, 19 Mar 2024 14:29 GMT</pubDate>
                        <source url="https://www.nasa.gov/feeds/iotd-feed">NASA Image of the Day</source>
                </item>
                <item>
                        <title>St. Patrick&#039;s Aurora Illuminates the Night Sky</title>
                        <link>https://www.nasa.gov/image-detail/gsfc-20171208-archive-e000760orig-stpatricksaurora-iotd/</link>
                        <description>This majestic image of the dazzling green lights of the aurora borealis was captured on March 17, 2015, around 5:30 a.m. EDT in Donnelly Creek, Alaska.</description>
                        <enclosure url="https://www.nasa.gov/wp-content/uploads/2024/03/gsfc-20171208-archive-e000760orig-stpatricksaurora-iotd.jpg" length="1832166" type="image/jpeg" />
                        <guid isPermaLink="false">https://www.nasa.gov/image-detail/gsfc-20171208-archive-e000760orig-stpatricksaurora-iotd/</guid>
                        <pubDate>Fri, 15 Mar 2024 17:53 GMT</pubDate>
                        <source url="https://www.nasa.gov/feeds/iotd-feed">NASA Image of the Day</source>
                </item>
                <item>
                        <title>Celebrating Pi Day on the International Space Station</title>
                        <link>https://www.nasa.gov/image-detail/iss068e075336/</link>
                        <description>NASA astronaut and Expedition 68 Flight Engineer Stephen Bowen holds a small pie that is festively decorated in commemoration of Pi Day aboard the International Space
Station.</description>
                        <enclosure url="https://www.nasa.gov/wp-content/uploads/2024/03/iss068e075336orig-iotd.jpg" length="3345615" type="image/jpeg" />
                        <guid isPermaLink="false">https://www.nasa.gov/image-detail/iss068e075336/</guid>
                        <pubDate>Thu, 14 Mar 2024 18:47 GMT</pubDate>
                        <source url="https://www.nasa.gov/feeds/iotd-feed">NASA Image of the Day</source>
                </item>
                <item>
                        <title>Apollo 9 Crew Comes Home</title>
                        <link>https://www.nasa.gov/image-detail/s69-27919orig/</link>
                        <description>Immediately after splashdown, a recovery helicopter from the USS Guadalcanal hovers over the Apollo 9 spacecraft. Still inside the Command Module are astronauts James
A. McDivitt, David R. Scott, and Russell L. Schweickart. Splashdown occurred at 12:00:53 p.m. EST March 13, 1969, only 4.5 nautical miles from the USS Guadalcanal, the prime recovery ship, to conclude a
successful 10-day Earth-orbital mission in space.</description>
                        <enclosure url="https://www.nasa.gov/wp-content/uploads/2024/03/s69-27919orig.jpg" length="3495600" type="image/jpeg" />
```

EXPRESS THE FOLLOWING QUERY IN SQL USING NO SUBQUERIES AND NO SET OPERATIONS. (HINT: LEFT OUTER JOIN)

select *ID*
from *student*
except
select *s id*
from *advisor*
where *i ID* **is not null**

SELECT s.id

FROM student s LEFT OUTER JOIN advisor a

    ON s.id = a.s_id

WHERE a.i_id IS NULL

    OR a.s_id IS NULL;

USING THE UNIVERSITY SCHEMA, WRITE AN SQL QUERY TO FIND THE NAMES AND IDS OF THOSE INSTRUCTORS WHO TEACH EVERY COURSE TAUGHT IN HIS OR HER DEPARTMENT (I.E., EVERY COURSE THAT APPEARS IN THE COURSE RELATION WITH THE INSTRUCTOR'S DEPARTMENT NAME). ORDER RESULT BY NAME.

```
SELECT name, ID
FROM instructor as I
WHERE EXCEPT (
    SELECT course_ID
    FROM Course as c
    WHERE i.dept_name= c.dept_name
    AND c.course_id NOT  IN
    SELECT ct.course_id
    FROM teaches ct
    WHERE ct.ID=i.ID)
ORDER BY name
```