Milestone 2

2020 Spring CmpE352 Group 9

27 May 2020

Contents

1 Executive Summary

1.1 Project Description

The aim of our project "Bazaar API Center" is to create a website containing several API's that gives information about a chosen date in the past. In our website, there are 5 API functionalities that is shown: NASA Astronomical Picture of the Day(APOD for short), Historical Weather Data, News of the Day (APOD), Currency Rates and Coronavirus Tracking. When chosen date is submitted, all 6 data (NASA's astronomical picture of that date, weather data, currency rates, news about that astronomical picture, daily news about technology and Coronavirus tracking) are provided via Bazaar API Center. Bazaar API Center also gives you an opportunity to add certain dates to your favorites list and use them easily afterwards. The functionalities are not limited to those mentioned and all are elaborated in the following sections.

1.2 Work Done So Far

We have managed to create a RESTful API and a front-end template to use the API. All members have a unique API that contributes to Bazaar API Center. At the very beginning of this process we have talked about the functionalities our application will have. After we got some ideas, we looked up for API's and let them lead us a good application idea. Then we have spent some time on learning Git and tried feel comfortable on pushing on something. We have opened issues , assigned necessary people on it and started developing

Some endpoints are created by single person, some created by a group. Every endpoint is developed in different branch. Through creating our endpoints we used Postman regularly to check if they work. After completing the endpoints, we created our pull requests, reviewed pull requests, resolved conflicts and merged in the end. Next step was to implement tests for our endpoints. Again we have worked on separate branches for it.

Next step was to implement front end. We tried to take advantage of experiences some of our members have and work they did earlier. Initially we decided on outcome of our application. Then everybody spent some time on get information from endpoints. After we managed to do that, we started to decorating our website.

The final step was to add our final product into a Docker container and push it as an EC2 instance.

1.3 Road Ahead

We overcame every difficulty so far. We have learned a lot about developing an application. Although we are under circumstances that we never lived on, we

have managed to finish the project. In future we will be dealing with our main application "Bazaar". We think our end-product is solid in this practice app and try to learn from mistakes, not doing the same mistakes while developing "Bazaar". We will improve ourselves in other areas too. Because we will be developing an Android application for instance. ... As time went on, we started to master each property and worked more efficiently. Although we are yet to become a professional, our final product looks fascinating. In the end, we learned a lot of new information and we are looking into the next Milestone: cmpe451.

1.4 Challenges Through the Road

None of us have previously worked with neither Git nor any web frameworks before, hence there were a lot of challenges for every one of us: issues, manually handling conflict problems, Flask.. the list goes on. Branches, pull and merge requests seem easy to understand but hard to use efficiently. Same goes for JavaScript, even if we barely scratched the surface of "front-end development", our task was hard to accomplish. Yet, now that we are somewhat experienced in both Flask and Javascript, working on another project, even if the project seems harder than this project, would take relatively shorter amount of time.

Since the final product needs to be stored as a Docker container, our last challenge was to be able to use Docker. Compared to the other tasks, this was relatively easy but it can still be counted as hard for an inexperienced group. The course video that was uploaded to the moodle was quite helpful to us, such an example is one of the best ways to understand how a program like Docker works.

2 List and Status of Deliverables

Deliverable	**Status**	**Description**
Milestone 2 - **Group** Deliverable	Done	This report.
Milestone 2 - **Individual** Deliverable	Done	Submitted to Moodle Individually.
Bazaar API Center	Done	The website is open to use.
Github Repository	Mostly Done	The repository that we used for "Bazaar API Center"

3 Evaluation of the Status of Deliverables

1. **Milestone 2 - Group Deliverable:**

   Milestone 2 Report consists of the work we did as a group since Milestone 1. In that time, we have worked on the application assignment. Therefore, the content of the report is about this assignment. Most of the parts of the report is prepared successfully before the deadline.

2. **Milestone 2 - Individual Deliverable:**

   Every group member prepared and submitted their own contribution to the API development process.

3. **Bazaar API Center:**

   The website is up and running. It features the use of several different APIs. Though they are built separately, they now compliment each other in many ways and work coherently altogether. The main functionality, which is to input a date and receive various data (NASA picture, news about NASA picture, daily news, weather, coronavirus tracking, currency rates) about said date, works seamlessly. There are still countless minor improvements to be made, but we had neither the time nor the equipment to make them in an efficient manner. Though, we are quite content with how the website looks and functions at the end of it all.

4. **Github Repository:**

   We tried to use Github repository to maximum effect. We branched out for most of the individual work we have done and merged them with the parent branch after due process. Every addition of code is documented. We had some compatibility problems regarding some branches but we resolved them with some extra work. Our use of issues was not the greatest, but every group member were aware of their assignment during the process. This assignment was a great instructive experience for all of us regarding the use of Github repository.

4 Tools and Processes

The main way we deliver our project is via **our repository on GitHub**.

- GitHub:
  GitHub allows us to easily handle version management. We need this kind of tool in order to finish this project with 10 people who are working remotely. We also have a wiki page that contains our documentation. Overall, GitHub is a pretty well-functioning website to use while remote coding so code of our project is implemented our GitHub repository, as requested.

- Flask:
  Essentially, Flask is a web development framework. We used Flask for building our web application. As we see while development process, Flask is a powerful tool to developing REST APIs. It was very heavyweight and easy to use, therefore we decided on using Flask. Since we didn't create a too complicated web application, Flask did not raise any problems for us in the process.

- Bootstrap:
  Bootstrap contains free HTML and CSS templates for interface components. Our main page's template is based on Bootstrap. It provided us some very sleek templates and allowed us to have an eye-appealing design.

- Overleaf:
  Overleaf is an online LaTeX editor that's easy to use. We wrote the Milestone 2 report together by using Overleaf.

- JavaScript:
  JavaScript allows us to create the functionality for our html page. With the help of it we got the information from our endpoints. Also we could write functions for our html. Javascript is also very easy to learn and use

- Dockers:
  Dockers offers containers that can work on multiple devices, this solves the problems caused by the run-environment. Since we need to upload our project into AWS, the container is a must. Dockers is one of the most popular container softwares and it is such for a reason: it is easy and powerful. Hence we chose to deploy our project as a Docker image.

5 Member Reports

Hasan Demirkiran	• Researching RESTful APIs and web frameworks. • Initializing Frontend Repository, creating dummies. • Frontend: Create script template that fetches JSON from API • Reviewing teammates' codes via our Discord channel, helping them if necessary • Helping teammates in any case for the Frontend issues. • Attending all of the meetings • Created pull requests (Test Cases written fo the weather API 77, Api weather forecast 74 • Creating manual unittests.(test-early-date-weather,test-input-format-weather, test-output-format-weather, test-output-format-weather-today) • Frontend: Redesign favorites button, allign it, add modal, check bottom warning etc. • Reviewing teammates codes and pull requests regularly • Implement some get-weather functions in app-calls.py • Followed issues that I have been assigned • Handle conflict while merging • Create footer for the web page(deleted later) • Create search bar for the web page

Muhsin Etki	• Researching RESTful APIs and web frameworks. • I found Covid19 tracking API's by searching • Improvements on the front-end of the overall page • Reviewing teammates' codes for pull requests and merges • Implemented routes "/api/covid19" • Contributed to Milestone Report 2 • Attending meetings • Created pull requests (API_ Development_Covid19 #63) • Created necessary issues in the group's GitHub repository • Delivered individual Milestone Report 2 (Executive Summary, Member Reports)

Şadi Uysal	• Research about RESTful API's, how to use them • Choosing API's to use in Bazaar API Center • Created API_Development_Currency branch,merge and deleting it • Created FrontEnd_Development branch • Created FrontEnd_Development_Currency branch,merge and deleting it • Coding the whole backend for currency API [api_currenciesToday(),api_currencies(date)] • Coding the whole frontend for currency API(currency part index.html) • Coding the whole unit tests(test_currency.py) for currency API • Created pull requests (#70,#83) • Resolved conflicts and errors according to reviews • Reviewing teammates' codes for pull requests and merges • Reviewing teammates' codes and get reviews via our Discord channel • Created necessary issues in the group's GitHub repository • Attending meetings

Ömer Cihan Benzer	• Researching RESTful APIs and web frameworks. • Initialising Flask Repository, creating dummies. • Back-end of "favorites" section. • Back-end of "NASA APOD". • Researching Front-end development via Javascript-DOM. • Frontend: Create script template that fetches JSON from API. • Frontend: Create the script to fetch and list favorites. • Front-end: Astronomy Picture of the Day and Related Article • Dockerizing the final product, deployment to AWS. • Further researching Git/GitHub, .gitignore • Handling multiple merge conflicts. • Creating manual unittests. • Overall small improvements, reorganization, typos etc..

Emine Alcan Unsal	• Research about RESTful API's, how to use them • Choosing API's to use in Bazaar API Center • Coding the front-end part of Weather API • Improvements on the front-end of the overall page • Reviewing teammates' codes for pull requests and merges (Test Cases written fo the weather API #77, Api weather forecast #74, News api #65, Api development covid19 #63) • Reviewing teammates' codes via our Discord channel, helping them if necessary • Resolved some errors in unit tests for Weather API and added forward date unit test • Created branches or provided parts of code for branches (API_Development, API_Weather_Testcases, FrontEnd_Development, Frontend_Dev_Weather, API_Weather_Forecast, Frontend_Dev_Fav_Section) • Contributed to Milestone Report 2 (Executive Summary, Member Reports, Tools and Processes) • Attending meetings • Created pull requests (API_ Weather_Forecast #69, Weather API test cases additions #79) • Learned JavaScript for implementation of the frontend • Used Visual Crossing API for obtaining historical weather data. • Created necessary issues in the group's GitHub repository

Halil İbrahim Orhan	• Research about RESTful API's, how to use them • Chosing and finding API's(NewsAPI and Dandelion API) • Opened News API Implementation and Front End Implemetation issues • Implementation of checkInputFormat and getMaxDate functions in utils.py • Implementation of test_early_date_nasa, test_early_date_news, test_input_format_nasa, test_input_format_news, test_output_format_nasa, test_output_format_nasa in test_news.py • Implementation of get_news, get_nasa_news and get_topics in api_calls.py • Reviewing teammates' codes and sharing with 'teammate' • Created branches FrontEnd_Development_NasaNews and news_unit_test • Implemented routes "/api/news/nasa/<string:date>", "/api/news/<string:date>" and "/api/context" • Attended Meetings • Contributed to Milestone Report 2 (Executive Summary, Member Reports) • Implemented html for our part of front end in index.html • Implemented script functions update_news and myfunction in index.html • Implemented nasa news script in index.html • Delivered individual Milestone Report 2 (Executive Summary, Member Reports) • Followed issues i have been assigned

Mehmet Berk Kemaloğlu	• Research about RESTful API's, how to use them • I found Covid19 tracking API's by searching • I did some manual tests on this API to get desired data. • I implemented "getCasesByCountryAndDate", "getAllCountriesByDate", "getTurkeyByDate", and "getGlobalAndTurkeysDataByDate" methods of "covid.py" file • I updated "getcovid " method of "apicalls.py" file • I implemented covid part of the "index.html" • Reviewing teammates' codes for pull requests and merges • Contributed to Milestone Report 2 • Handled conflicts while merging

Fırat Bulut	• Research RESTful API's. • Research for APIs to use. Found a couple but all were discredited. • Attend weekly meetings • Implementation of sortByConfidance and checkDate in utils.py. • Implementation of get_news and get_nasa_news in api_calls. • Implementation of test cases get_recent_date_news, get_recent_date_nasa, get_forward_date_news, get_forward_date_nasa in test_news.py • Implementation of front-end part of News API. • Create pull requests specified in individual report. • Review other group members' codes and help improving the code, specified in individual report. • Various debugging and minor improvements in other parts of the code. • Write parts of Milestone 2 Report.

6 Documentation and URL

Bazaar API Center

Bazaar API Center

The Documentation

Base URL = http://127.0.0.1:5000/

Getting Covid Results By Date

Takes date as input and returns that day's global and Turkey data.

URL: "/api/covid

Method: GET

Parameters:/{{date}}

Response:

URL:http://127.0.0.1:5000/api/covid/2020-05-25

[{"NewConfirmed":98206,"NewDeaths":3030,"NewRecovered":56379,"TotalConfirmed":5492996,"TotalDeaths":351576,"TotalRecovered":2167913},
{"Active":33430,"City":"","CityCode":"","Confirmed":157814,"Country":"Turkey","CountryCode":"TR","Date":"2020-05-25T00:00:00Z","Deaths":4369,"Lat":"38.96","Lon":"35.24","Province":"","Recovered":120015}]

Getting Weather Results By Date

Takes date as input and returns that day's weather for the user's location.

URL: "/api/weather

Method: GET

Parameters:/{{date}}

Response:

URL:http://127.0.0.1:5000/api/weather/2020-05-24

{ "columns": { "address": { "id": "address", "name": "Address", "type": 1, "unit": null }, "cloudcover": { "id": "cloudcover", "name": "Cloud Cover", "type": 2, "unit": "%" }, "conditions": { "id": "conditions", "name": "Conditions", "type": 1, "unit": null }, "datetime": { "id": "datetime", "name": "Date time", "type": 3, "unit": null }, "dew": { "id": "dew", "name": "Dew Point", "type": 2, "unit": "degF" }, "heatindex": { "id": "heatindex", "name": "Heat Index", "type": 2, "unit": "degF" }, "humidity": { "id": "humidity", "name": "Relative Humidity", "type": 2, "unit": "%" }, "info": { "id": "info", "name": "Info", "type": 1, "unit": null }, "latitude": { "id": "latitude", "name": "Latitude", "type": 2, "unit": null }, "longitude": { "id": "longitude", "name": "Longitude", "type": 2, "unit": null }, "maxt": { "id": "maxt", "name": "Maximum Temperature", "type": 2, "unit": "degF" }, "mint": { "id": "mint", "name": "Minimum Temperature", "type": 2, "unit": "degF" }, "name": { "id": "name", "name": "Name", "type": 1, "unit": null }, "precip": { "id": "precip", "name": "Precipitation", "type": 2, "unit": "in" }, "precipcover": { "id": "precipcover", "name": "Precipitation Cover", "type": 2, "unit": "%" }, "resolvedAddress": { "id": "resolvedAddress", "name": "Resolved Address", "type": 1, "unit": null }, "sealevelpressure": { "id": "sealevelpressure", "name": "Sea Level Pressure", "type": 2, "unit": "Pa" }, "snowdepth": { "id": "snowdepth", "name": "Snow Depth", "type": 2, "unit": "in" }, "temp": { "id": "temp", "name": "Temperature", "type": 2, "unit": "degF" }, "visibility": { "id": "visibility", "name": "Visibility", "type": 2, "unit": "mi" }, "wdir": { "id": "wdir", "name": "Wind Direction", "type": 2, "unit": null }, "weathertype": { "id": "weathertype", "name": "Weather Type", "type": 1, "unit": null }, "wgust": { "id": "wgust", "name": "Wind Gust", "type": 2, "unit": "mph" }, "windchill": { "id": "windchill", "name": "Wind Chill", "type": 2, "unit": "degF" }, "wspd": { "id": "wspd", "name": "Wind Speed", "type": 2, "unit": "mph" } }, "locations": { "36.7867,31.4431": { "address": "36.7867,31.4431", "alerts": null, "currentConditions": null, "distance": 0, "id": "36.7867,31.4431", "index": 0, "latitude": 36.7867, "longitude": 31.4431, "name": null, "stationContributions": null, "time": 0, "values": [{ "cloudcover": null, "conditions": "", "datetime": 1590278400000, "datetimeStr": "2020-05-24T00:00:00+03:00", "dew": 32.5, "heatindex": 79.9, "humidity": 25.93, "info": null, "maxt": 82.3, "mint": 60.7, "precip": 0, "precipcover": 0, "sealevelpressure": null, "snowdepth": null, "temp": 70.8, "visibility": 6.2, "wdir": 334.58, "weathertype": "", "wgust": null, "windchill": null, "wspd": 24.2 }] } } }

Getting Top Tech News by Date

Takes date as input and returns top technology news from US in English between 1 month ago and the specified date.

URL: "/api/news

Method: GET

Parameters:/{{date}}

Response:

URL:http://127.0.0.1:5000/api/news/2020-05-16

[{ "author": "Cointelegraph By Samuel Haig", "content": "Ripple partner and investor, SBI Holdings, announced plans to integrate Ripple-powered settlements across ATMs in Japan.\r\nThe news was revealed in SBI's latest financial report, announcing a plan to ... [+1513 chars]", "description": "SBI wants to use Ripple-powered settlement to make it easier for Japanese consumers to access funds regardless of banking affiliation", "publishedAt": "2020-05-17T00:00:00Z", "source": { "id": null, "name": "Cointelegraph" }, "title": "Ripple Settlements Are Coming to Japanese ATMs", "url": "https://cointelegraph.com/news/ripple-settlements-are-coming-to-japanese-atms", "urlToImage": "https://s3.cointelegraph.com/storage/uploads/view/d664f5a8d9dd58a7aae4efbef4f312cc.jpg" }, { "author": "By Claire Mitzel claire.mitzel@roanoke.com 981-3334", "content": "Earlier this school year, Elizabeth Rice, 12, stood up in her James Madison Middle School classroom to present a project on a planet.\r\nElizabeth has Down syndrome, and because different little things... [+13627 chars]", "description": "Educators, bracing for learning loss when students return to the classroom, are trying to minimize disruption to learning and mitigate exacerbated inequities.", "publishedAt": "2020-05-17T00:00:00Z", "source": { "id": null, "name": "Roanoke Times" }, "title": "Emergency distance learning shows value of support, stability in the classroom", "url": "https://www.roanoke.com/news/education/emergency-distance-learning-shows-value-of-support-stability-in-the-classroom/article_38d9a77d-ee39-5b6e-b76c-c2c4ba80ba73.html", "urlToImage": "https://bloximages.newyork1.vip.townnews.com/roanoke.com/content/tncms/assets/v3/editorial/d/d1/dd19a728-ddfd-5d2b-a12a-45c74d7390ad/5ebdacc103149.image.jpg?

crop=1763%2C992%2C0%2C91&resize=1120%2C630&order=crop%2Cresize" }, { "author": "Cameron Thibos, Liliane Mouan, Simon Massey", "content": "Migration from Africa to Europe has, since the long summer of migration in 2015, been at the top of the European political agenda. As right-wing parties have gained at the ballot box through their an... [+19441 chars]", "description": "Since 2016 the EU has intervened massively into African affairs in order to prevent further migration. But has it been effective, and how have Africans perceived this onslaught?", "publishedAt": "2020-05-17T00:00:00Z", "source": { "id": null, "name": "Open Democracy" }, "title": "After the 'migration crisis': how Europe works to keep Africans in Africa", "url": "https://www.opendemocracy.net/en/beyond-trafficking-and-slavery/after-migration-crisis-how-europe-works-keep-africans-africa/", "urlToImage": "https://cdn-prod.opendemocracy.net/media/images/Cover_Colour_crop.2e16d0ba.fill-1200x630.jpg" }, { "author": "communities@mercola.com (Dr. Joseph Mercola)", "content": "Disclaimer: The entire contents of this website are based upon the opinions of Dr. Mercola, unless otherwise noted. Individual articles are based upon the opinions of the respective author, who retai... [+1049 chars]", "description": ""In a room where people unanimously maintain a conspiracy of silence, one word of truth sounds like a pistol shot." ~ Czesław Miłosz1\r\n\n\nIn recent years, a number of brave individuals have alerted us to the fact that we're all being monitored and manipulated ...", "publishedAt": "2020-05-17T00:00:00Z", "source": { "id": null, "name": "Mercola.com" }, "title": "Harvard Professor Exposes Google and Facebook", "url": "https://articles.mercola.com/sites/articles/archive/2020/05/17/surveillance-capitalism.aspx", "urlToImage": "https://media.mercola.com/ImageServer/Public/2020/March/FB/surveillance-capitalism-fb.jpg" }, { "author": "Scott Morefield", "content": "YouTube removed a video of a prominent epidemiologist explaining his view that achieving "herd immunity" is the best way to combat the ongoing coronavirus pandemic.\r\nDr. Knut M. Wittkowski is a forme... [+2562 chars]", "description": "YouTube removed a video of a prominent epidemiologist explaining his view that achieving "herd immunity" is the best way to combat the coronavirus pandemic.", "publishedAt": "2020-05-16T23:59:21Z", "source": { "id": null, "name": "The Daily Caller" }, "title": "'Epidemiologist's Video On Coronavirus 'Herd Immunity' Had 1.3 Million Views, Until YouTube Removed It", "url": "https://dailycaller.com/2020/05/16/knut-wittkowski-youtube-censorship-coronavirus-herd-immunity/", "urlToImage": "https://cdn01.dailycaller.com/wp-content/uploads/2020/05/GettyImages-936980924-e1589667713637.jpg" }, { "author": "Lara Pearce", "content": "Coupons: Shop and save with our best Tech deals of 2020", "description": "

A nine-year-old boy in France has died from symptoms similar to those of Kawasaki disease after testing positive to COVID-19.

", "publishedAt": "2020-05-16T23:57:43Z", "source": { "id": null, "name": "9News" }, "title": "Coronavirus: Boy, 9, dies from Kawasaki-like illness in French hospital", "url": "https://www.9news.com.au/national/coronavirus-boy-9-dies-from-kawasaki-like-illness-in-french-hospital/9a306eb6-43ed-40c1-9747-e2bc90c7500e", "urlToImage": "https://imageresizer.static9.net.au/hEuMtDXNx1m8GWDt7tF8CisfSAg=/1200x628/smart/https%3A%2F%2Fprod.static9.net.au%2Fs%2F6ed93802-9729-4e2c-b9c8-bf6a3f362f59" }]

Getting Top News Articles About NASA Picture of the Day

Takes date as input and returns the top news article about the NASA picture of the day between specified date and today.

URL: "/api/news/nasa

Method: GET

Parameters:/{{date}}

Response:

URL:http://127.0.0.1:5000/api/news/2020-05-13

{ "author": "Shannon Stirone", "content": "Jupiter has one of the most bizarre atmospheres in the entire solar system. Gas giants like Jupiter are believed to have some kind of semi-solid core, but are mostly made of gas like hydrogen, helium… [+3273 chars]", "description": "NASA's Juno orbiter, along with its Hubble and Gemini telescopes, will help scientists better understand the planet's atmosphere.", "publishedAt": "2020-05-23T14:00:00Z", "source": { "id": "wired", "name": "Wired" }, "title": "Space Photos of the Week: Keeping an Eye on Jupiter's Storms", "url": "https://www.wired.com/story/space-photos-keeping-an-eye-on-jupiters-storms/", "urlToImage": "https://media.wired.com/photos/5ec85271448999d7ae47db3f/191:100/w_1280,c_limit/photo_space_juno_2_PIA21972.jpg" }

Getting Currency Rates for Date

Takes date as input and returns the currency rates for specific date.

URL: "/api/currencies/

Method: GET

Parameters:/{{date}}

Response:

URL:http://127.0.0.1:5000/api/currencies/2020-05-13

{ "base": "TRY", "date": "2020-05-13", "rates": { "CAD": 0.2009332859, "EUR": 0.1318200393, "GBP": 0.1163245937, "USD": 0.1433542927 } }

Getting NASA Picture of the Day

Takes date as input and returns that day's NASA picture of the day.

URL: "/api/apod

Method: GET

Parameters:/{{date}}

Response:

URL:http://127.0.0.1:5000/api/apod/2020-05-16

{ "copyright": "Paul Schmit", "date": "2020-05-16", "explanation": "A dark river seems to flow through this sky from the horizon toward colorful clouds near red giant star Antares. Murky looking, the dark river is a dusty nebula obscuring background starlight near the central Milky Way, although the dark dust nebula contains mostly hydrogen molecular gas. Dust scattering starlight around Antares, alpha star of Scorpius, creates the unusual yellow-hued reflection nebula. Above it, bright blue double star Rho Ophiuchi is embedded in more typical dusty bluish reflection nebulae, with red emission nebulae also scattered through the interstellar space. Globular star cluster M4 looks almost like a bright star just above and right of Antares, though it lies far behind the colorful clouds, at a distance of some 7,000 light-years. The dark river itself is about 500 light years away. To create the startling night sky view, all background and foreground exposures were made back to back with the same camera and telephoto lens on the same night from the same location. In combination they produce a stunning image that reveals a range of brightness and color that your eye can't quite perceive. Recorded in the early hours of January 31, the composite also captures Mars still near the eastern horizon and rising to join rival Antares on the celestial stage. Bright Mars and its watery reflection are left of a lonely tree in the Bosque del Apache National Wildlife Refuge, New Mexico, planet Earth.", "hdurl": "https://apod.nasa.gov/apod/image/2005/Reflections_APOD.jpg", "media_type": "image", "service_version": "v1", "title": "The Dark River to Antares", "url": "https://apod.nasa.gov/apod/image/2005/Reflections_APOD1200.jpg" }