DBAs in LOCKDOWN

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Have a comment? Suggestion? Want to submit an article proposal? **Here's how to do it.**

Editorial

Dear ORAWORLD Readers.

As we are going into the second year of the pandemic facing home office, lockdowns and in general keeping safe, what is more natural than talking to people from our community about how they are keeping up in these strange times?

Christian Trieb from DOAG has been interviewing DBAs in how they and their business handle the challenges. Meet Dagmar Förster, Ulrike Schwinn, and Thomas Tretter in our title story "In times like these: DBAs in Lockdown".

In the seventh article in our APEX series, Carsten Czarski from Oracle, gives you some tips how to call Oracle APEX functionality from PL/SQL. Did you know about this feature that is already part of your installations?

Emmanuel Ruez, President of AUFO (French speaking Oracle User Group), has some news about the changes in the user group communities in France, and how the AUFO is growing as un umbrella association.

GraphQL is another topic in this edition and Phil Wilkins from Cap Gemini, will guide you through an introduction, how to use, pitfalls, challenges, and what It means to Oracle.

Mike Dietrich from Oracle opens up our new series "What's Your Passion?" where we will ask different people from the Oracle community to tell us about their hobbies.

I have saved an issue from October 2000, of a Brazilian magazine where Larry Ellison was interviewed under the parole 'The bad guy from internet'. I give you a small excerpt but in retrospect. It seems clear what the plan was even if not in detail, and from that time, step by step towards the Oracle we see today, 20 years later.

Enjoy our latest issue.

Yours,
Ann-Sofie Vikström Often
Board member of OUGN (Norway)

Editorial

„The Best Bet for 2030"

www.commitstrip.com

220 MILLION
US DOLLARS

A German-born computer expert from San Francisco recently made **international headlines** because of an expensive mishap: On paper, Stefan Thomas owns 220 million dollars. The only problem: he can't access the money because he forgot the password to his Bitcoin account.

Thomas had studied business informatics at the Stuttgart University of Cooperative Education for one year in 2005, then dropped out and started his own software services company in Switzerland. In 2010, he produced the video **"What is Bitcoin?"** in which he explained the concepts of cryptocurrency. As a thank you, he was given a total of 7,002 Bitcoins by a "big cryptocurrency fan" in 2011. The problem: He lost his password, a digital key, to his online wallet that same year. This password alone gives you access to your Bitcoins, and no one else knows the combination.

For over nine years, Thomas has been trying in vain to remember the password combination: "I would just lay in bed and think about it. Then I would go to the computer with some new strategy, and it wouldn't work, and I would be desperate again." Especially since the rising value of bitcoin caused the value of his "lost treasure" to skyrocket further and further into the millions.

Meanwhile, Thomas, who has lived and worked in San Francisco for eight years, has only two attempts left to enter the correct combination. If he gets it wrong, he'll be locked out forever. He has stored his IronKey cache of Bitcoins in a safe place, so he doesn't have it in front of him all the time: "I got to a point where I said to myself, 'Let it be in the past, just for your own mental health.'"

The German entrepreneur can at least take comfort in the fact that he is not alone in his dilemma. According to experts, Bitcoins with a total current value of 140 billion US dollars are stored in lost or locked-out online wallets.

In Times Like These: DBAs in Lockdown

As part of the series "The Future of the DBA", which has been running on various events since 2017, the panel "In times like these: DBAs in Lockdown" took place at the DOAG 2020 Conference + Exhibition. The participants discussed how the Corona lockdown has changed the working world for DBAs.

Panel leader Christian Trieb, Senior DBA at Paragon and DOAG Board Member Database, welcomed three participants with different perspectives to the virtual conference stage: Ulrike Schwinn from Oracle Germany, Dagmar Förster, Oracle end user at the insurance company Alte Leipziger Lebensversicherung a.G., and Thomas Tretter, self-employed Oracle partner.

Christian Trieb
What has changed for you with the lockdown?

Dagmar Förster
The most obvious thing is that there are no more business trips, and no trainings or meetings on site. In addition, consultants no longer come to us.

Ulrike Schwinn
All our projects are now carried out online, whereby we at Oracle are well positioned in terms of infrastructure. Since there are no trips, there is more time for projects. Our project volume has increased significantly.
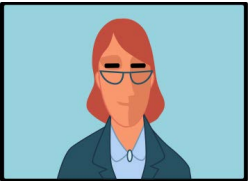
Thomas Tretter
I notice that companies are prepared differently for the situation. Difficulties are more on the emotional than on the technical level. With some project partners, I have the impression that they are out of the loop. Some have the opinion that employees only work properly when they are on site.

Dagmar Förster
I make different observations depending on the department: After the first lockdown, there were department heads who insisted on having everybody working from home, while others wanted to see their employees at least once a week. Still others responded to the respective situation of the employees: "Do what's best for you – do you have risk factors at home? Do you have to look after small children? Or is the exchange in the office important to you?"
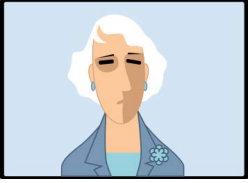
Christian Trieb
How has communication with colleagues and external parties changed?

Dagmar Förster
I was surprised how well online consulting works. For example, the support with patching Exadata: Before that we always sat together in a large conference room and projected everything onto the wall – but it also works amazingly well remotely.

Thomas Tretter
Before, we always did release changes over the weekend, and the whole group was there. That has now taken place twice remotely and – as everyone involved had to admit afterwards – it was better, more effective and faster. Teams is a good software that I personally like better than other solutions. You can see each other's screen directly and don't even have to walk into the other office.
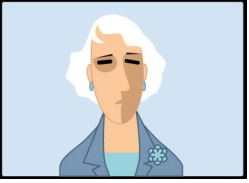
Ulrike Schwinn
It depends on who you are dealing with. Internally, we use Zoom, but customers use different software. You have to practice defining the setup correctly. But overall communication has become more spontaneous and maybe even better. Since you can now always be reached, customers sometimes dare to make an ad hoc call, while traveling and making appointments previously presented certain barriers.

Dagmar Förster
But I also see disadvantages in communication with colleagues. For example, something very simple, coffee with colleagues from other departments falls by the wayside. We then met each other on Skype, but somehow that didn't become established. It's just not as nice as on site. And of course you notice a lot more things when you're in the office.

Thomas Tretter
I disagree. I work much more effectively now because communication is reduced to dailies. These are primarily about professional exchange, but the coffee talk is also included. I actually don't miss much.
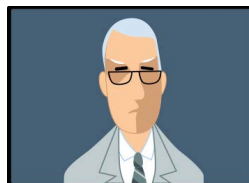
Ulrike Schwinn
We also miss this cross-departmental coffee exchange and therefore there are now initiatives from various groups – for example a virtual coffee kitchen to get into conversation outside of technical issues. I think that is very important. Otherwise, information will be lost. Maybe there are also fewer rumors now (laughs).

Christian Trieb
How do you rate the situation? Where do you see the advantages and disadvantages?
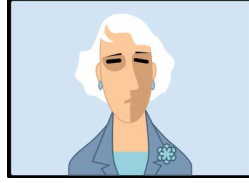
Thomas Tretter
The omitted travel times are a great advantage. And the new spontaneity. I used to not go up three floors to see a colleague who might not even be sitting at his desk. Everything is much more spontaneous now. I like it a lot, and it's ultimately more effective. But of course you have to come to terms with the situation. I don't sit in front of the laptop for eight hours but do something different from time to time – just like before in the office.

Dagmar Förster
The situation now is just a necessity. We simply lose too much on a personal level for example, that we cannot properly say goodbye to colleagues who are retiring. What helped me with the home office was getting better equipment. At first, I didn't have a big monitor, so it was torture. Now I have a rocking stool, and that's a lot better than sitting on the dining room chair. A permanent home office requires certain equipment.

Thomas Tretter
We are of course in a very good position in this group. I also know colleagues who don't have that much space at home and sometimes have to look after children on the side.

Ulrike Schwinn
What I and certainly others feel: It's much easier to set fixed working hours when you drive to the office and then come back home. In the home office, I sometimes have the impression that I could work around the clock. So it is important to consciously take breaks.

Dagmar Förster
It was a learning process for me too. I start working much earlier, but I don't cycle to work, and I can't motivate myself to take a bike ride after work. Another change is that I now have to take care of the food myself every day because the canteen is no longer available. Now, I always get to eat something I like, but it takes more time. In the beginning, I also felt guilty when I went into the kitchen to make myself a coffee. What if someone calls right now? Although in the office you are sometimes in the hallway as well and not at your desk.
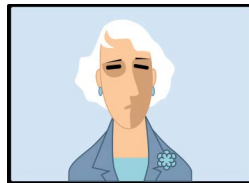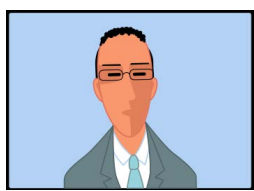
Thomas Tretter
I also have colleagues who want to have a clear separation. I have been self-employed and mentally online all day for 20 years. But many colleagues want the working day to end as soon as they leave the office. You now have to make the transitions more smoothly. I think that's positive, I can now do something for two hours during the day and don't have to apologize for it.

Ulrike Schwinn
I feel the same. I just meant that it is difficult not to work all day. You have to learn to make this cut yourself. Otherwise, there is a risk of overwork. When the sun is shining, I just go outside sometimes. You have to define that for yourself. It used to be more predefined.
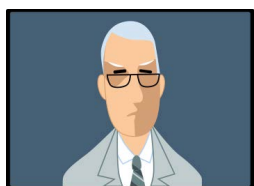
Work & Life

Christian Trieb
Does it make a difference to you whether you have databases in the cloud or on-site?

Thomas Tretter
I'm actually a DBA and didn't work on the hardware beforehand. I looked after Exadatas, but never saw them physically. So I don't care. If the trend now goes to the cloud, then it goes to the cloud.
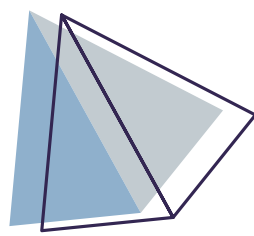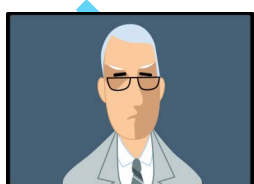
Dagmar Förster
I can't say much, we have the databases on-premises, but I don't think it makes that much of a difference.
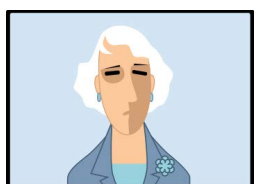
Thomas Tretter
It definitely is a different job. If you look after a database in the cloud, you have different admin tasks. But over time, the job changes anyway. Now it has changed a little more. Network tasks have been added that I didn't have to deal with before, but you get used to them quickly. What has also changed is the issue of costs. In the past, costs were discussed only once. An investment was ahead, you weighed the alternatives and then it ran for three or four years. Now, we are constantly discussing the cost of the cloud. At least once a week, parameters such as storage or CPU time are checked. Where can we save three euros? We didn't have this discussion before.

Christian Trieb
What will remain after the end of the pandemic and what will not go back?

Dagmar Förster
We'll probably see a mix. You will do without a lot of business trips, but it's nice to have a meeting again and see the people on site. Although in some cases Skype may not be that bad, because it stays a little quieter when there is a dispute (laughs).

Ulrike Schwinn
It turned out that previous on-site projects also work online and maybe there is an alternative to saying: Can't we continue to do this online? Still, I'm very much in favor of a mix: You have to see and meet each other once on a project. That makes a difference. We'll probably keep both, and I think that's a good thing.
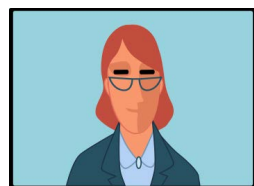
Thomas Tretter
I think it will boil down to a 4:1 week breakdown. I also understand that there are situations in which a personal meeting simply makes more sense and is better. Not from a technical, but from an emotional point of view. I also think it's important to get to know people once on new projects.

Ulrike Schwinn
Another aspect is online learning. There are now many more offers. We now have product managers from the USA offering workshops in different time zones. Information is therefore easier and more available. A lot happened there. With the certifications, too, the focus was placed on learning thanks to the new options.
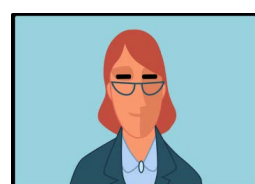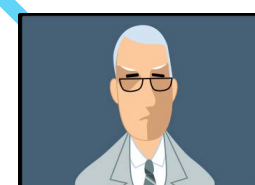
Dagmar Förster
I would make a difference depending on the duration of the training. For short one to two hour sessions or half-day training sessions, it's much easier to get involved, as you can register quickly without having to go anywhere. That's a good thing. You can listen to a 1-hour training session on a topic with little effort. On the other hand, 1-week online training sessions can be really exhausting.
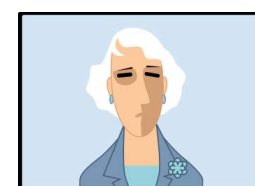
Thomas Tretter
We had a meeting with our database community yesterday and the opinion was: Home office for normal operations is wonderful, but with regard to the conference, the prevailing opinion was that it should take place on site. So that you can meet people and get out of the operational business. And the beer with colleagues in the evening is also missing.
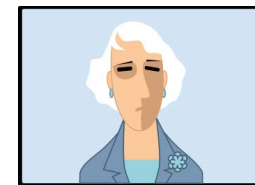
Christian Trieb
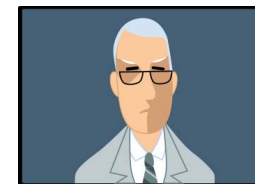What are your wishes for the near future?

Dagmar Förster
Normalization. I want to go back to the office, attend a meeting and have coffee with colleagues. That's enough for me.
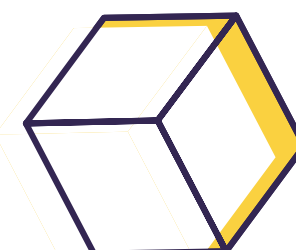
Thomas Tretter
I want to regain control of what is happening and not be forced to work from home or drive to the office. And right now we all don't have that control.

Ulrike Schwinn
I also want it to go back to normal and that you have the choice to say: I'll meet someone now or I'll work at home. I just hope that normality will return.

Christian Trieb
Thank you for the discussion.

About Christian Trieb

Christian has been a member of the German Oracle User Group DOAG since 1991 and a board member since 1999. At DOAG, he is the Head of the Competence Center Support and the Head of the Database Community. He represents DOAG in the International Oracle Users Group Community (IOUC) in the Committee for Quality and Support. Furthermore, Christian is involved in the European Oracle User Council (EOUC) and participated in the beta test of the database version 10gR2 in 2005 as a representative of the European user groups. Professionally, he is a Senior Database Administrator at Paragon Data GmbH. Oracle appointed Christian Trieb to the circle of Oracle Ace Directors in December 2011.

About Ulrike Schwinn

Ulrike holds a degree in mathematics and currently works as a Solution Engineer at Oracle Germany. In her role, she acts as a trusted advisor and technology evangelist for customers and partners, supporting customer projects of high technical and political complexity with in-depth technical expertise and many years of field experience. She also advises and trains customers on the latest Oracle database and cloud technologies. She has contributed to several Oracle book projects, is an Oracle blogger, writes articles in German journals and is a speaker at IT congresses.

About Dagmar Förster

Dagmar started her IT career as a support specialist for operating systems and since 2007 has been mainly involved with Oracle, with a preference for Multitenant, Data Guard, RAC and still troubleshooting. She was involved in one of the first proof of concepts in Europe for Exadata. After several years in consulting, she has been working for Alte Leipziger – Hallesche Group since 2014.

About Thomas Tretter

Thomas is an Oracle database specialist working as a self-employed freelancer. He has been a member of DOAG since 1992. Currently, Thomas is DOAG's representative of the Rhine-Main regional group, the Deputy Head of the Database Community and a member of DOAG's advisory board. He hosts many events providing varied presentations by himself and other Oracle users. Because he is a lot on the road as a freelancer, Thomas sees many different Oracle installations and techniques.

Ann-Sofie Vikström Often

BACK TO THE FUTURE - THE "BAD GUY FROM THE INTERNET" OR "PROPHET OF CHAOS?"
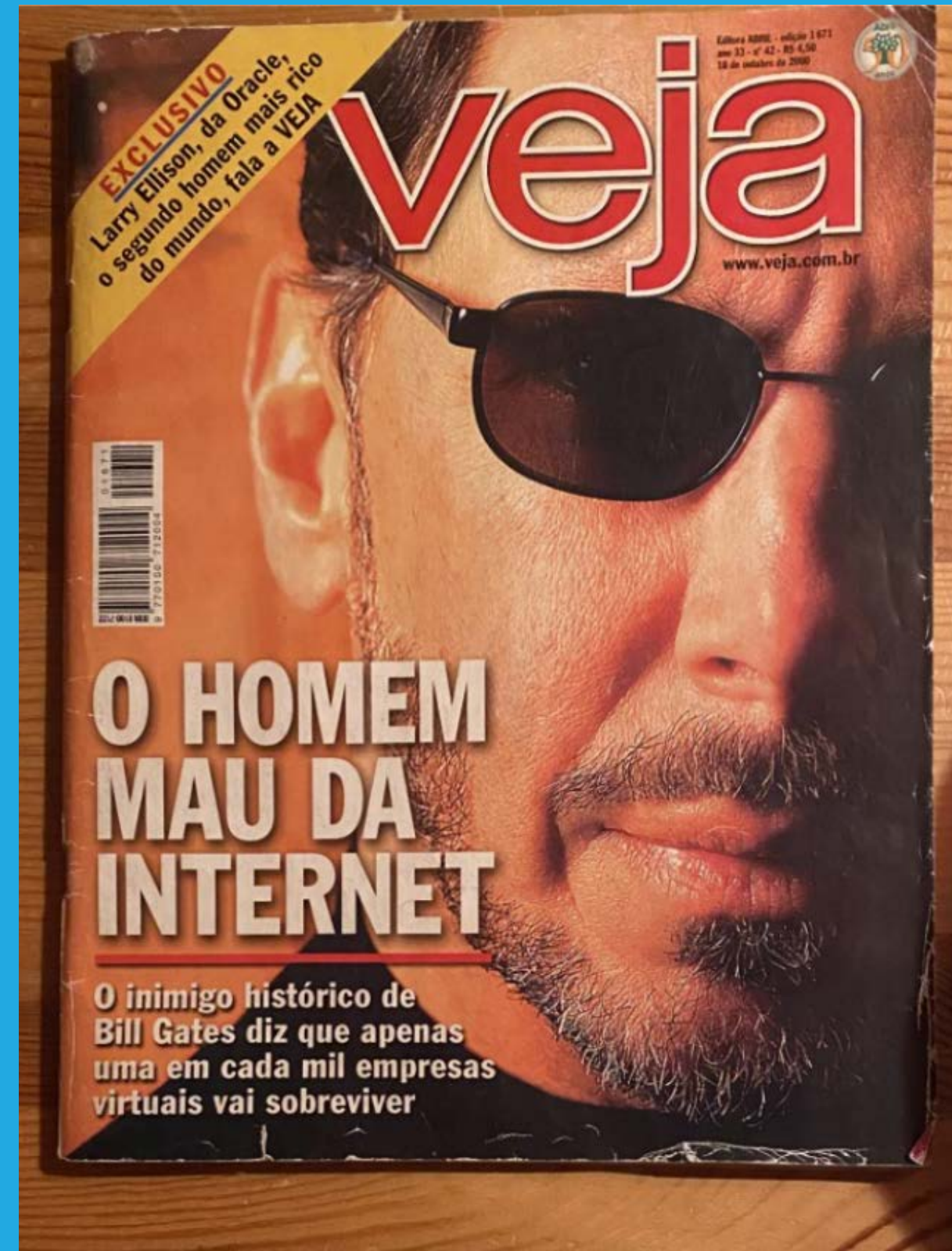
During some years I had a subscription of Veja, a Brazilian weekly magazine. In one of the issues was a brilliant article about Larry Ellison and Oracle. I have saved that issue from October 2000, as I, at that time, worked with Oracle. In retrospect, a lot of what he predicted in this interview has become true. But the coolest part is how Larry Ellison steered the enterprise to be what it became 20 years later with the use of internet, Oracle Cloud.

The article was titled "Larry Ellison, The Prophet of Chaos" in which he predicted an earthquake of use of the internet. This was definitely not an understatement, even if the wording "cloud" was not mentioned.

One of his predictions however was not fulfilled: "Microsoft will not die but will stay as a fossil from a great era of personal computers." Since this was in the year 2000, it is easy to understand why: Microsoft at that time was going into another direction than Oracle, but they turned themselves around, and made Azure to what it is today. There was also a battle going on accusing Microsoft of being a monopolist, pushing Netscape out of the market in favor of their own Internet Explorer.

Larry Ellison also thought that giant companies of traditional economy should still dominate the scene, since they probably would succeed to do the shift to the internet – another prediction that came true.

I was not able to find out about his prediction that one out of 1,000 companies would not make it in the internet revolution. But he meant that if an internet shop selling dog food was doing good in the traditional market, it would probably still doing good or better with their internet shop. Otherwise, the dog food store will just be a dog food store amongst others selling the same. Make sense?

EXCLUSIVO
Larry Ellison, da Oracle, o segundo homem mais rico do mundo, fala a VEJA

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O HOMEM MAU DA INTERNET

O inimigo histórico de Bill Gates diz que apenas uma em cada mil empresas virtuais vai sobreviver

Today we also have enterprises with disruptive innovations threatening the traditional economy like banking, taxi and onsite stores, accommodations, etc.

In the article, Ellison also expressed his believe that the B2B market had bigger possibilities to survive. Also, he was speaking about the internet in the same way as how the development of electrical energy, railway, telegraphs and telephones changed the world.

And that it will evolve with different ways to connect to the internet without a personal computer. He predicted that the internet would become available through the phone, your cell phone, and other more simple devices.

Using the internet now, in 2021, is done amongst all from cell phones, tablets, and connected devices using the internet of things. I remember that for a while the network computer was a hot topic, as for personal use, but what we see today is more or less personal computers, even though they are connected to the cloud instead of having installations on the PC.

I wanted to share a little piece from this very long article with you since it is easy to forget how leaders of great enterprises are predicting and pointing out the future as a red ribbon. Sometimes with adjustment of the ribbon of course but always forward.

Work & Life

Interview by Christian Luda

What's Your Passion?
Mike Dietrich: "I Can't Imagine Life Without Music"

Oracle plays a significant role in our lives but of course there is a life apart from it. In our new series "What's Your Passion?" we interview known people from the Oracle cosmos about their hobbies. For the first part of the series, we talked to Mike Dietrich, Distinguished Product Manager for Oracle Database Upgrade and Migrations, about his passion for music and record collecting.

Mike, what does music mean to you?
Let me answer this with a nice example: I'm big Japan fan and one of my favorite record stores in Japan is Tower Records. In front of the store, they have this big sign saying: "No music, no life". And that pretty much sums it up for me: I can't imagine life without music. Losing hearing ability would be one of the worst things as I love to listen to music in good quality. Last year I did a hearing test and fortunately everything is fine. Music accompanies me through life. There are many events in life that I associate with music. The first girlfriend. The pool hall. I used to play pool a lot of when I was young, and they always played Chris de Burgh's "Spanish Train and Other Stories" album which I then bought myself later on. When I'm traveling, music is always around, and I always have my headphones with me. So, music is really important for me.

Do you remember one special point in time when you caught the music bug?
Yes, I can clearly pin that down: When I lived in Nuremberg, my best friend who lived next door said to me one Sunday: "Come over, my parents just left." So, we could use his dad's stereo system in the living room. My friend put on "The Wall" by Pink Floyd that had just came out. It must have been either 1979 or 1980. We turned the music up really loud and all of a sudden, this acoustic helicopter started flying through the room. It was insane. I was infected with Pink Floyd right there and wrote it down on my birthday wish list. Then I got "Wish You Were Here" from my cousin and "The Wall" a bit later. That was the igniting experience. Since then, music has always been there.

Was Pink Floyd your first record?
No, my first record, I got from my aunt – it's a bit embarrassing – it was an ABBA record. The second

one was "Greatest Hits" by Queen, then came "Wish You Were Here" and "Ammonia Avenue" by Alan Parsons Project. I still have all of those. I never gave away records.

Did you have people around you influencing your taste in music?
I was heavily influenced by my cousins. They played everything from Kiss, to Kraftwerk and Pink Floyd. I always tell my cousin who is eight years older than me that, in terms of music, I was socialized by him. And then it was mainly my neighbor friend. He had a room at the back of his parents' house, where we could turn up the volume. I remember listening to Genesis' self-titled album which had the song "Mama" and the instrumental piece "Home by the Sea". We listened to that insanely loud, over and over again. He also dug up stuff that I didn't know before. Later on, around seventh grade, I had a school friend who occupied the attic of a large family home. He had a Denon system and we listened to a lot of rock music. Groups like Boston and Saga. Around that time, cassettes also became important. Making mix tapes for the first girl crush. I remember McDonald's had a raffle where you could win a Sony DD2 Walkman. I didn't win, so I bought it myself from my birthday money. That Walkman accompanied me for years. That's also when overdubbing started: "Lend me the record and I'll put it on tape."

Copying records on tape was a big thing for me and my friends too. We always made sure we didn't buy the same records...
It was the same with us. I had "World Wide Live" by The Scorpions and a friend bought the group's "Savage Amusement" album. We always gave a tape to the person who bought the record, and the next day you got a copy at school and listened to it in your Walkman on the way home. Young people today can't even imagine that. Now, everything is available on the Internet. My daughter uses Spotify and listens
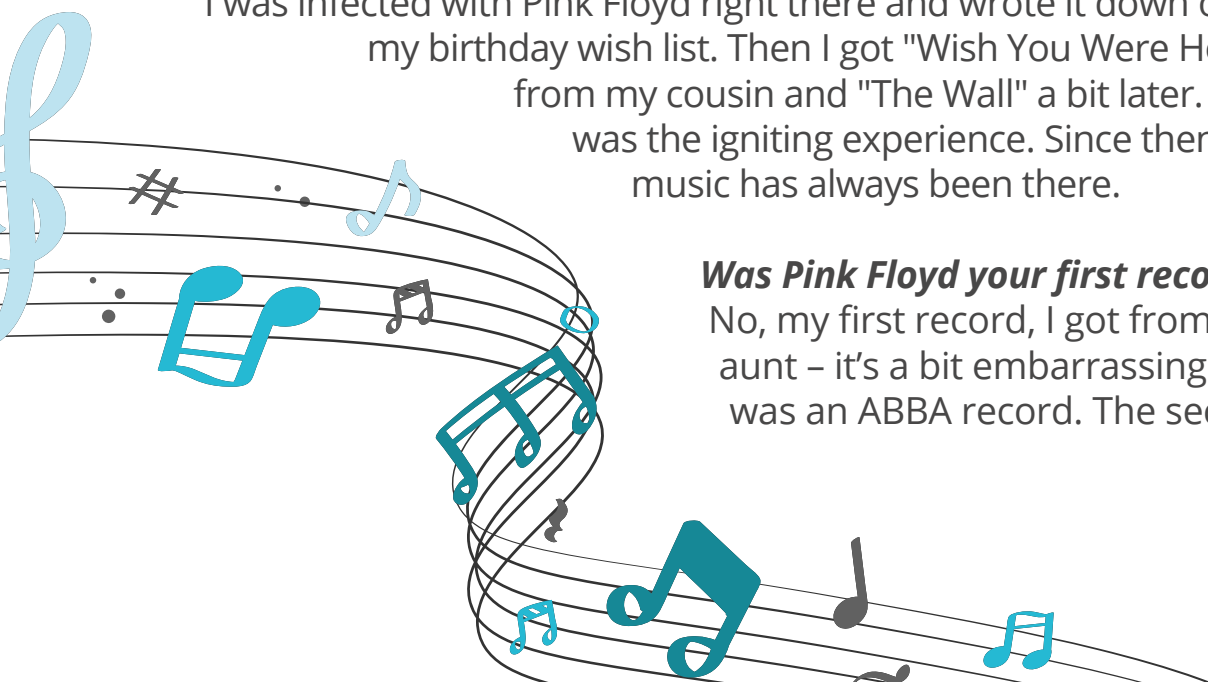
to whatever she feels like.

Do you think that today's availability has changed the value of music?

Yes, when we bought records, we had to spend our pocket money. In Nuremberg, the records were still relatively cheap, we had good competition from small stores, and you got albums for 14 D-Marks. But you could only buy maybe one or two records a month, so you listened to these records a lot. In the beginning, we only had public radio, and at some point, the private stations were added, but the choice of music was still limited. Today, I go on YouTube or Spotify, type in "Dream Theater" and immediately get all the records plus another 50 suggestions. I think that the appreciation for music has suffered a lot. For me it's fine, it still means the same to me, but for the new generation music has become a commodity and disposable.

**When you first got into music, did you only listen to rock music?**

At first, it was mainly rock music. Pink Floyd, Genesis, a bit of folk, too. In Nuremberg we have the Trempelmarkt, a big flea market that runs through the old town. That's where I bought "Teaser and the Firecat" by Cat Stevens. Then, at some point my older cousin came and said I needed to listen to Keith Jarrett's "The Köln Concert". That was the time of CDs, when I was around 17. After Keith Jarrett my cousin hipped me to Jan Garberek. From then on, I was fully infected with the jazz virus. Mainly modern jazz and Scandinavian jazz. I also saw Garberek live a lot. In Nuremberg, they had the Jazz Days in the Meistersingerhalle where I saw many jazz artists perform. Then, I discovered my love for heavy metal. It got broader and broader often depending on the mood. Electronic music came at some point and I rediscovered Kraftwerk. Just recently
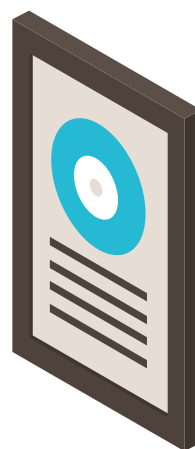
I bought the German reissues of "Radio-Activity" and "Trans-Europe Express". What I don't listen to at all is Schlager. I can't do much with classical music either.

You mentioned CDs. So, you had a CD phase in between?

Yes, unfortunately I also bought CDs for a while. That was a financial mistake in retrospect. I have about 2,000 CDs. It always bothered me that the prices were so high and the covers way too small. My daughter is 10 and when I pull out a record, she looks at it with total interest and often discovers things that I haven't even seen. You can forget about that with a CD. Nevertheless, it was a very practical medium. I had a portable CD player and one in the car. I started buying CDs from the States and decided to get all the CDs from Mobile Fidelity Sound Lab who remastered a lot of classic rock stuff. I have up to 500 releases from that label. At that time there were no bidding agents on Ebay, so I was sitting there at 2 in the morning making bids. In the early days there were no seconds on Ebay, only minutes, so you had to be lucky. And there was no PayPal yet, so I had to go into the city to American Express and buy a money order, put it in the envelope and send it to the States. That took about a week until I got the email that they received my money order and a week or two later the CD finally arrived. Later, I discovered SACDs, Super Audio CDs. They sound much better and come very close to the LP in terms of warmth and resolution. But there aren't that many. I'm an LP guy. Fortunately, I still bought LPs during my CD phase. And they were worth it. For example, I bought a limited and numbered Robert Plant record. If I sold it today, I would get around 500 euros. But that's not why I bought them, it's just nice to know. Holding a record in your hands is just different. And for me it also
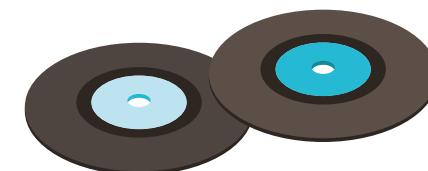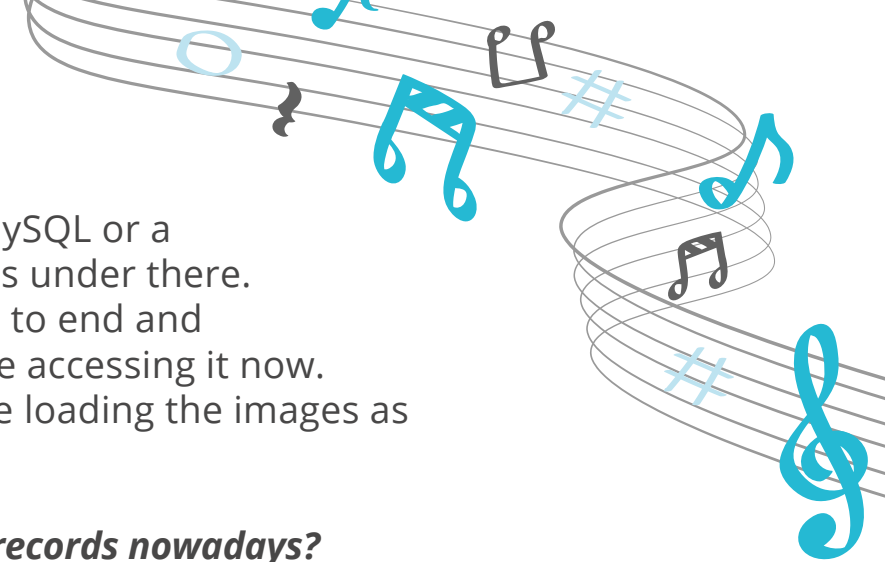
sounds better. The only one who doesn't like it is my wife. She thinks it's terrible because it takes up so much space. Every now and then she curses when she can't find a folder in our shelf because I've rearranged my records again (laughs).

Do you use Discogs?
Yes, I have my collection on Discogs, but actually rather born out of necessity, because it happened to me once that I bought a record twice or wasn't sure if I had it yet. That's when I came across Discogs. I just found it convenient that you can scan the barcodes. The newer ones have a barcode, the older ones I had to enter by hand. And I also entered a few new ones that weren't on Discogs yet. One time in Japan, they had Japanese pressings of all the Journey records in almost mint condition. The covers all look so similar, so I wasn't sure if I had them or not. And that's where Discogs really came in handy. Also, for comparing prices. I was once at Oracle in Redwood Shores and then went to a record store in San Mateo but found out through Discogs that it was way too expensive. Typical Californian prices.

As a database expert, how do you rate Discogs?
Last weekend I washed records. When I buy records, they always go into the record cleaning machine first and then I enter them into Discogs right away. And once again, their login server didn't work. That's when I thought: "Put something behind it that works!". The interface is okay, it's relatively reduced, I don't need any bells and whistles. The possibility to do a CSV export is also great. In general, Discogs is a good thing but could use a little fine-tuning. Actually, this could be a classic case of putting the data into an autonomous data warehouse and then letting the database build a few indexes on it, because then it's available and they can buy additional compute power. I suspect they're also somewhere in AWS,
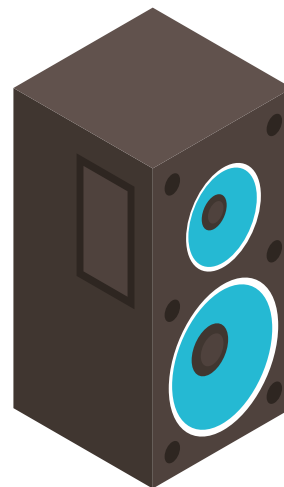
but that's definitely a MySQL or a Postgres database that's under there. At some point it's going to end and there's too many people accessing it now. And the fact that they're loading the images as well makes it sporty.

Where do you buy your records nowadays?
Most of the records I've bought in the last 3 years have been in stores. Japan is my Mecca for buying records. I know exactly what the customs allow. The quality is extremely good because they have conservative grading. The records usually come with a piece of paper that has the grading and often an explanation to it, for example, that a poster is included. It's all in Japanese so Google Translate helps a lot. I've bought probably 150 records in Japan in the last three years. I always have an extra suitcase in my hand luggage and sometimes a few extra bags. In Germany, I buy mostly at JPC. I have a Rolling Stone subscription, so I get an 8 % discount. And if I make it into the city, I have a really good record store here in Munich called Mono. You can talk shop there, talk about the music. Unfortunately, no stores are open at the moment. You can just have great experiences in record stores. Two years ago, during Collaborate I went to Austin when it was Record Store Day. I picked out a store and went there early. I was there at 7:30 in pouring rain and it opened at 8 but people were already lining up for two blocks. However, the prices were great and the people so friendly. I flew home with 20 records. A year ago, I was in Canada, in Regina, which is in the middle of nowhere with minus 35 degrees. The colleague I was traveling with was from Regina and took me to a café after dinner. We're having coffee and Rush comes on and I'm a big Rush fan. I said: "If we could go to a record store now, that would be it." And my colleague said: "I know a good second-hand store, let's go there,

it should still be open." We then invaded the store at 9 in the evening and I bought records from Metallica, Mogwai and Anathema, one of my favorite bands. I went home with a stack of records and was happy like a child on Christmas.

Mike, thanks a lot for taking your time.

About Mike Dietrich

Mike is based in Bavaria, Germany and has 30 years IT experience, holding a degree as Graduate Engineer (Dipl. Ing. NT/DT) in Data Systems and Information Technology of Georg-Simon-Ohm Technical University, Nuremberg. He is Distinguished Product Manager for Oracle Database Upgrade and Migrations and a patching specialist, working for Oracle for almost 25 years. Mike acts as interlink between customers/partners and the Oracle Upgrade Development. He is holding technical workshops between Arctic and Antarctica – or in the virtual space, assisting customers in their reference projects onsite and remotely worldwide. Mike is an experienced conference speaker and besides being a music lover and LP/vinyl enthusiast, he's a passionate mountain hiker and cyclist. Find out more on Mike's blog: **https://MikeDietrichDE.com**

Mike Dietrich's Top 5 Albums

1 — Pink Floyd – "The Wall" (1979)

2 — Radiohead – "OK Computer" (1997)

3 — Porcupine Tree – "Deadwing" (2005)

4 — GoGo Penguin – "A Humdrum Star" (2018)

5 — Black Sabbath – "Heaven and Hell" (1980)

Oracle Application Express (Part 7):

Carsten Czarski

Power to the Developer
Selected APEX PL/SQL APIs

Introduction

The latest APEX release 20.2 comes with a set of more than 40 PL/SQL packages, which can be recognized by the **APEX_** prefix. Many of these are there to control specific APEX components, some are to administer APEX, and others contain utility functions to use in custom business logic or in stored procedures.

This article introduces a few selected packages and illustrates when and how to use them. Packages were chosen based on customer questions and requests received by the author. Of course, this is not a complete list – that would exceed the focus of a magazine article by far. For more detailed information about the various API functionality, refer to the APEX documentation and particularly the **API Reference** book.

An APEX session with PL/SQL

Many APEX PL/SQL packages actually require an APEX session. This is not a problem when using them within APEX applications (e.g. in PL/SQL page processes). However, errors will be raised when called from outside (for instance, within a database job).

Since APEX 18.1, the **APEX_SESSION** package provides super-easy PL/SQL procedures to either create a new APEX session, or to attach to an existing one. The code in *Listing 1* runs in SQL*Plus, SQL Developer or with any database connection: it initializes an APEX session context for application **103**, page **1** and the APEX username **ADMIN**. Of course, application 103 must be in a workspace which has the current database schema assigned.

```
apex_session.create_session(
    p_app_id    => 103,
    p_page_id   => 1,
    p_username  => 'ADMIN' );
```
Listing 1: Establishing an APEX session context

Using the code in *Listing 2*, we can attach to an already existing session.

```
apex_session.attach(
    p_app_id      => 103,
    p_page_id     => 1,
    p_session_id  => 3855378226776 );
```
Listing 2: Attaching to an already existing session

Having the APEX session context in place, the PL/SQL code can interact with APEX as it was PL/SQL code on an APEX page: Almost all APEX packages are available to use. For instance, the procedure can set page or application items with **APEX_UTIL. SET_SESSION_STATE**. The function **V** can be used to retrieve an item value.

More than just a cursor: Executing Queries

APEX components typically execute SQL queries or HTTP requests (when built on top of a *REST Data Source*). The query or REST Data Source result data is then visualized as a report, chart or as something else. But sometimes the developer wants to execute a query within a stored procedure, in order to apply business logic on the result data.

For a normal SQL query, this is straightforward: every PL/SQL developer knows how to execute a query within PL/SQL. But what about data from a REST Service? Can custom PL/SQL code use a REST Data Source, as the APEX engine can?

Of course, the answer is *Yes*.

The **APEX_EXEC** package provides a programmer's interface to the APEX query execution infrastructure. This is particularly useful for **REST Enabled SQL** references or **REST Data Sources**,

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where APEX does all the HTTP request processing and response data parsing *(Figure 1)*.

Listing 3 illustrates, how the APEX_EXEC package is used to invoke a REST Data Source programmatically. Note that the code does not contain any explicit HTTP request or JSON parsing. That is all done by the APEX engine – the developer gets a "cursor" back, which allows to walk through the response row by row, and to access individual column values. All low-level work is done by the APEX Engine.

APEX_EXEC contains not only OPEN_WEB_SOURCE_QUERY, but also the more generic OPEN_QUERY_CONTEXT: Based on the parameters being passed in, SQL queries are executed locally or via REST Enabled SQL, or a REST Data Source is invoked.

For Plug-In developers, there is a special overload of OPEN_QUERY_CONTEXT, which uses the current region settings. That

Figure 1: REST Data Sources are declarative references to external REST APIs

```
declare
  l_context apex_exec.t_context;
  l_filters apex_exec.t_filters;
begin
  -- we need to create an APEX session context; APEX must know,
  -- which application the REST data source is in.
  apex_session.create_session(
     p_app_id      => 103,
     p_page_id     => 1,
     p_username    => 'CCZARSKI' );

  -- let's restrict the result rows to strong earthquakes
  apex_exec.add_filter(
     p_filters      => l_filters,
     p_column_name  => 'MAG',
     p_filter_type  => apex_exec.c_filter_gte,
     p_value        => 4 );

  -- execute the REST Data Source; APEX does all HTTP request
  -- and JSON parsing automatically. The "static ID" is found in
  -- the "Advanced" section.
```

```
  l_context := apex_exec.open_web_source_query(
                       p_module_static_id => 'USGS_Earthquakes',
                       p_filters          => l_filters );

  -- walk through the "cursor" and process result data
  while apex_exec.next_row( p_context => l_context ) loop
     sys.dbms_output.put_line(
        apex_exec.get_varchar2( p_context => l_context,
                                p_column_name => 'TITLE' ) || ': ' ||
        apex_exec.get_number(   p_context => l_context,
                                p_column_name => 'MAG' ) );
  end loop;

  -- close all resources
  apex_exec.close( p_context => l_context );
exception
  when others then
     apex_exec.close( p_context => l_context );
     raise;
end;
```

Listing 3: Using APEX_EXEC to invoke a REST Data Source

Users & Groups

Figure 2: Interactive Grid region with an active filter

```
declare
  l_region_id number;
  l_context    apex_exec.t_context;
  l_filters    apex_exec.t_filters;
begin
  -- attach to the current session; look up the session ID first.
  -- this call is not required if the calls runs from within APEX
  apex_session.attach(
     p_app_id      => 103,
     p_page_id     => 1,
     p_session_id  => 3855378226776 );

  select region_id
  into l_region_id
  from apex_application_page_regions
  where application_id  = 103
     and page_id        = 1
     and static_id      = 'ig-emp';

  -- execute the region query, including filters
  l_context := apex_region.open_query_context(
               p_page_id    => 1,
               p_region_id  => l_region_id );

  -- walk through the "cursor" and process result data
  while apex_exec.next_row( p_context => l_context ) loop
     sys.dbms_output.put_line(
        apex_exec.get_varchar2( p_context => l_context,
                                p_column_name => 'ENAME' ) || ': ' ||
        apex_exec.get_number(   p_context => l_context,
                                p_column_name => 'SAL' ) );
  end loop;

  -- close all resources
  apex_exec.close( p_context => l_context );
exception
  when others then
     apex_exec.close( p_context => l_context );
     raise;
end;
```

Listing 4: APEX_REGION.OPEN_QUERY_CONTEXT executes the current query of a region

allows Plug-In code to be independent from the concrete settings of the region where the Plug-In is used.

Sometimes developers don't want to pass in a specific SQL query; the *current query* of an APEX region should be used instead. This is very often required for Interactive Reports or Interactive Grids: when executing the region query within PL/SQL code, all the current settings (filters, computations, etc.) must be taken into account *(Figure 2)*.

The **OPEN_QUERY_CONTEXT** function in the **APEX_REGION** package comes to the rescue: the code in *Listing 4* shows an example and even runs in SQL*Plus or SQL developer. It attaches to the current session and executes the currently active Interactive Grid query, respecting the active filters. When trying this out, make sure to replace the session ID in the call to APEX_SESSION.ATTACH with your actual value. The function returns an instance of APEX_EXEC.T_CONTEXT, which acts as a cursor and which can be processed similar to the example in *Listing 3*.

String and parser utilities

Quite a few of the APEX PL/SQL APIs provide functionality to parse data and to do string operations. Over the years, a lot of such functionality was added to APEX, based on customer requests.

The **APEX_STRING** package contains a collection of basic string operations:

- **SPLIT** converts a separated string into an array.
- **JOIN** does the reverse; all members of an array are concatenated to a string.
- **PUSH** is a simple call to add a string element to an array.
- **SHUFFLE** reorders a string array.
- The **PLIST** functions allow to maintain an array of key-value pairs. **GET**, **PUSH**, **PUT** or **DELETE** retrieves, adds, changes or deletes a key-value pair, respectively.

```
select * from table(
  apex_string.grep(
    'This is a text with some mail adresses. The first one is ' ||
      'a.a@oracle.com, we have noname@company.com and '         ||
      'thesupport@firma.co.uk',
    '[A-Z0-9._%+-]*@[A-Z0-9.-]*\.[A-Z]*',
    'i'
  ))


COLUMN_VALUE
--------------------------
a.a@oracle.com
noname@company.com
thesupport@firma.de
```

Listing 5: APEX_STRING.GREP extracts multiple regular expression matches

```
select col009 as city, col010 as state
  from table( apex_data_parser.parse(
    p_content   => apex_web_service.make_rest_request_b(
                    'https://people…/cities.csv',
                    'GET' ),
    p_file_name => 'cities.csv' );

CITY                                     STATE
---------------------------------------- ----------
City                                     State
Youngstown                               OH
Yakima                                   WA
:                                        :
```

Listing 6: APEX_DATA_PARSER.PARSE parses CSV, XLSX, JSON or XML files

A special, and very powerful function is **GREP**. Based on a regular expression, it returns *all matches* nicely as a string array. *Listing 5* illustrates this:

The **APEX_STRING_UTIL** package was introduced with APEX 20.1 and provides more specialized string functions. Among others these are:

- **FIND_EMAIL_ADDRESSES** extracts email addresses without the need to pass in the correct regular expression.
- **FIND_TAGS** extracts "tags", which are typically prefixed by "#".
- **FIND_LINKS** extracts HTTP or HTTPS URLs.
- **GET_SLUG** removes special characters, replaces whitespace with dashes and optionally appends a hash value to make the result unique. This is useful when keys are to be appended to readable and search-engine friendly URLs.

The **APEX_DATA_PARSER** package provides an interface to the APEX engine's file parser, which is used internally in SQL Workshop Data Loading. The file parser supports CSV, XLSX (Spreadsheet), XML and JSON files. And, as a goodie for the readers of this article: Try parsing an *iCalendar* (.ics) file with APEX_DATA_PARSER.

The **PARSE** table function is most important: It accepts the file to be parsed as a BLOB, and additional parameters to control parser behavior. Parsed data is returned as rows and columns. Since PARSE is a *table function*, it allows *set based processing* of parsed data. *Listing 6* shows an example.

APEX_DATA_PARSER can also return meta data about the parsed file: the DISCOVER function returns column names and detected data types. GET_COLUMNS can be used for convenient access to this information *(Listing 7)*.

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Web Services and HTTP Requests

When working with a REST API, using REST Data Sources and APEX_EXEC (described above) is recommended, because of the obvious advantage: All low-level work, like doing HTTP requests and response parsing, is done by the APEX engine; and developers don't have to worry about it.

To just execute "plain" HTTP requests, APEX provides the **APEX_WEB_SERVICE** package. Within APEX applications, APEX_WEB_SERVICE should always be used instead of the database UTL_HTTP package.

- APEX_WEB_SERVICE requests are logged, and all requests can be reviewed in the *APEX Webservice Log*.
- APEX_WEB_SERVICE validates whether workspace request limits are exceeded and prevents the call if this is the case.
- APEX_WEB_SERVICE is tightly integrated with other APEX features, like *Web Credentials*.

```
select apex_web_service.make_rest_request(
        p_url         => 'https://earthquake…/all_hour.geojson',
        p_http_method => 'GET' ) as response
  from sys.dual;

RESPONSE
------------------------------------------------------------------
{"type":"FeatureCollection","metadata":{"generated":1612962722000,
"url":"https://earthquake.usgs.gov/earthquakes/feed/v1.0/summary/
all_hour.geojson","title":"USGS All Earthquakes, Past Hour","sta-
tus":
200,…
```

Listing 8: Direct HTTP request using APEX_WEB_SERVICE

```
select *
  from table( apex_data_parser.get_columns( apex_data_parser.discover(
    p_content   => apex_web_service.make_rest_request_b(
                   'https://people…/cities.csv',
                   'GET' ),
    p_file_name => 'cities.csv' ) ) );

COLUMN_POSITION   COLUMN_NAME     DATA_TYPE
---------------   -------------   ----------------
             1    LATD            NUMBER
             :    :               :
             9    CITY            VARCHAR2(50)
            10    STATE           VARCHAR2(50)
```

Listing 7: Information about columns and data types in a CSV file

Listing 8 shows a simple example of executing a HTTP GET request using APEX_WEB_SERVICE.

MAKE_REST_REQUEST returns response data as a CLOB; if a REST API returns binary responses, use **MAKE_REST_REQUEST_B**, in order to receive a BLOB.

APEX_WEB_SERVICE has built-in support for the APEX **Web Credentials** feature, which is very useful when REST APIs require authentication. *Figure 3* shows how to create a Web Credential named "**my_user**". The secret password will be stored encrypted and can only be used by the APEX engine – it is never returned in clear text.

Since APEX 20.2, credentials can be additionally protected with the **Valid for URLs** attribute. If configured, APEX only uses the credential for target URLs matching one of the provided valid

endpoints. If that is not the case, an error message is raised. To change the Valid URLs, the credential secret (password) must be entered again.

Once a Web Credential is created, it can be referenced in calls to MAKE_REST_REQUEST or MAKE_REST_REQUEST_B, as illustrated in *Listing 9*. The developer does not need to deal with the sensitive password at all, everything is done within the APEX engine. Note that an APEX session context is required in order to access the Web Credential.

But what if the REST API requires *individual credentials*, typed in by the end user?

The **APEX_CREDENTIAL** package allows to maintain Web Credentials with PL/SQL: a new username and password can be stored either persistently or only for the current APEX session. *Listing 10* illustrates how to change the contents of the "**my_user**" Web Credential, but only for the current APEX session.

Besides Basic Authentication, Web Credentials also support the **OAuth2 Client Credentials** flow: that means that the process of exchanging *Client ID* and *Client Secret* for an Access Token is done transparently by the APEX engine.

Also, Web Credentials support native **Oracle Cloud Infrastructure Authentication** (if APEX runs on database versions 18.3 and higher). Since APEX 20.2, Web Credentials can also be passed to the REST API as **HTTP Header** or as part of the **URL Query String**. In all cases, APEX knows that the credential is a sensitive value and treats it accordingly.

```
-- APEX_CREDENTIAL usage requires an APEX session context.
begin
  apex_session.create_session(
    p_app_id     => 103,
    p_page_id    => 1,
    p_username   => 'ADMIN' );
end;

select apex_web_service.make_rest_request(
    p_url                   => 'https://earth…/all_hour.geojson',
    p_http_method           => 'GET',
    p_credential_static_id  => 'my_user' ) as response
  from sys.dual;

RESPONSE
----------------------------------------------------------------
…
```
Listing 9: Use APEX_WEB_SERVICE together with a Web Credential

Figure 3: Store credentials securely and encrypted as a "Web Credential"

```
begin
  apex_credential.set_session_credentials(
    p_credential_static_id  => 'my_user',
    p_username              => 'other_user',
    p_password              => 'super-secret' );
end;

select apex_web_service.make_rest_request( …
```
Listing 10: Use (transient) session credentials for the "my_user" Web Credential

Other APEX PL/SQL APIs

The following list contains brief use case explanations for other than the bespoke APEX PL/SQL APIs. For a complete reference, review the APEX documentation, and here particularly the **APEX API Reference** book.

- **APEX_AUTOMATION**
  ... was introduced with the Automation feature in APEX 20.2 and allows to kick off automations from a PL/SQL procedure. Also, it contains procedures for the automation code to log current state.
- **APEX_APPLICATION_INSTALL**
  ... controls application imports done with SQL*Plus: Procedures are used to adjust the application ID, target workspace, application alias and other application attributes.
- **APEX_APP_SETTING**
  ... is an interface to a very simple key-value store. Application Settings allow to store and retrieve configuration values by key.
- **APEX_COLLECTION**
  ... allows developers to create, maintain and delete APEX Collections. While the APEX_COLLECTION package manipulates collections and collection data, the APEX_COLLECTIONS view allows to retrieve data from a collection.
- **APEX_ESCAPE**
  ... contains utility functions to escape values before emitting as part of HTML or JSON output. Especially the HTML or HTML_ATTRIBUTE functions are very

```
Declare
  l_values apex_json.t_values;
  l_json   varchar2(32767) := '{"json": {"attr1":
1, "attr2": "b"}}';
begin
  apex_json.parse(
    p_values => l_values,
    p_source => l_json );

  sys.dbms_output.put_line(
    apex_json.get_number(
      p_values => l_values,
      p_path   => 'json.attr1' ) );
end;
```

Listing 11: Parse JSON with APEX_JSON

```
declare
  l_json   varchar2(32767) := '{"json": {"attr1":
1, "attr2": "b"}}';
  l_attr1  number;
begin
  select attr1 into l_attr1
    from json_table(
      l_json,
      '$.json'
      columns ( attr1 number path '$.attr1' ) );

  sys.dbms_output.put_line( l_attr1 );
end;
```

Listing 12: JSON Parsing using the JSON_TABLE SQL function

important to harden APEX applications against XSS vulnerabilities. As a rule of thumb, APEX_ESCAPE should be used whenever user-generated content is emitted as part of HTML or JSON output.

- **APEX_IG and APEX_IR**
  ... allow to control Interactive Reports and Interactive Grids, using PL/SQL. This includes adding or removing filters, maintaining and resetting reports. Although APEX_IR also allows to retrieve the current Interactive Report's SQL query, it's recommended to use APEX_REGION.OPEN_QUERY_CONTEXT for this purpose.
- **APEX_MAIL**
  ... allows sending emails.
- **APEX_ZIP**
  ... allows build or to unpack ZIP archives.
- **APEX_UTIL**
  ... is the "and everything else" PL/SQL package. APEX_UTIL contains a number of procedures and functions for various purposes. Important areas are:
  - Workspace User Management (CREATE_USER, EDIT_USER)
  - Report Printing functionality (GET_PRINT_DOCUMENT)
  - Page and Region Cache Management

APEX_JSON

The APEX_JSON package deserves a separate paragraph. It contains functions to parse and to construct JSON documents. *Listing 11* shows how to parse a small JSON document with APEX_JSON.

However, native JSON *parsing* functionality was added to the Oracle Database with version 12.1.0.2, and native JSON *generation* with 12.2. Version 18 of the Oracle Database improved JSON functionality by adding CLOB support and more powerful JSON path expressions. And since the native functions are part of the database engine itself, they're much faster than the PL/SQL implementation of APEX_JSON.

So, it is recommended to use native JSON functionality whenever possible. *Listing 12* shows an example.

Summary

APEX provides not only declarative low code development, but also a large set of PL/SQL API functionality, which can be used in custom stored procedures or business logic on APEX pages.

API functionality includes not only programmatic control on specific APEX features, like Automations, Interactive Reports or Interactive Grids, but also a number of useful utilities to parse data, process strings, execute queries and much more.

More Information
- Information and environment to test-drive APEX
  http://apex.oracle.com/en

- Oracle APEX API documentation (Package Reference)
  https://docs.oracle.com/en/database/oracle/application-express/20.2/aeapi/index.html

- Oracle Application Express Blog
  http://blogs.oracle.com/apex

About Carsten Czarski

Carsten works for Oracle in Germany since 2001. He started in the Presales organization helping customers and partners regarding database-centric application development. Since March 2016, Carsten is a member of the Application Express development team. Focus of his work is on the new support for REST services in APEX – beyond that Carsten looks after the Calendar component and the Data Loading facility. He is a frequent speaker at international user group conferences.
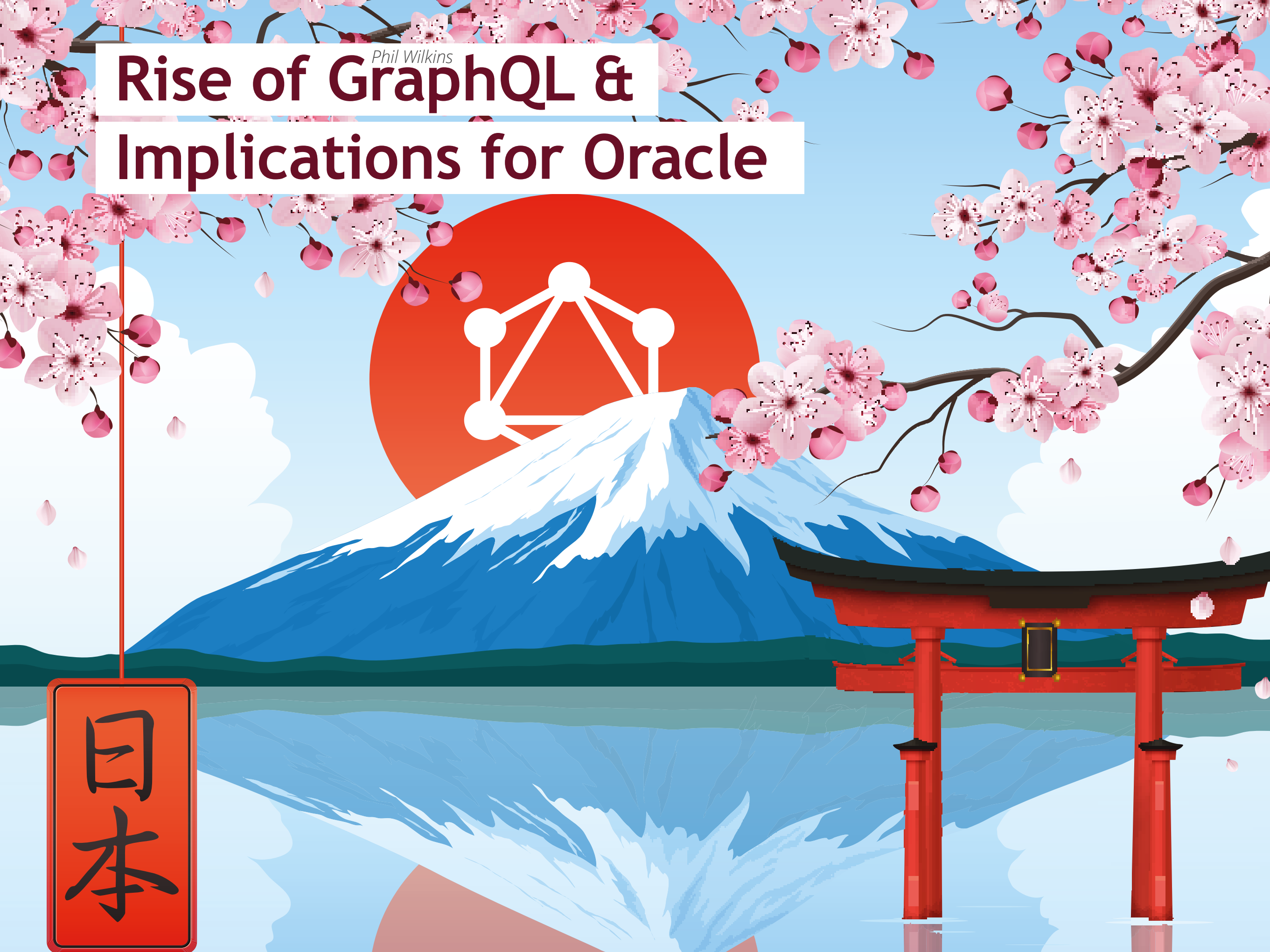
If you're involved with enabling access to data then you'll have at least heard of GraphQL but may not be familiar with what it can do, why it is making such an impression on the IT industry. So the goal of this article is to introduce the value proposition, the strengths, and weaknesses, and how it is making an impression on the Oracle technology ecosystem, and how I think it may impact going forward, from the database to SaaS.

What is GraphQL

GraphQL describes itself as "A query language for your API" but taking that at face value would fire up the interest of those in the app development, integration, and cloud-native. Yet, there is a lot more to it – something that could impact DBAs and those in the application space. Hopefully, you're still with me.

So let's address the classic misassociation of linking GraphQL to being SQL for graph databases. Easy mistake to make, but that is covered by the **GQL Standard**. The linkage comes from the fact that some design ideas from Graph Theory have been implied to the use of an interface schema, and that's where it ends. Perhaps the best way to understand GraphQL at the highest level is to understand how it came into existence.

A little history …

Back in 2012, Facebook observed that their platform was seeing the majority of its use is coming from the mobile application rather than the website. The mobile application used REST APIs and was very conscious of data volumes being used (4G networks only started to roll out commercially a year or two before). REST interfaces being used therefore had been designed to be sparing with information because of the bandwidth considerations for mobiles.

The result was that to render an application page may necessitate many API calls as they gathered all the information.

This had two undesirable effects, the user experience could feel slow as rendering a page could require a constant back and forth as all the needed data was pulled because obtaining data from the previous call could help formulate the next API request. That constant back and forth created a lot of work for the back end servers. The alternative to this would have been to make the APIs pass a lot of data 'just in case' which would have made for a costly and slow user experience, given the networks at the time.

This forced Facebook to rethink its approach which led to what we know as GraphQL. Before we look at what Facebook did, it's worth completing the little history lesson. In 2015 Facebook made GraphQL specification and reference implementation open source. Within 18 months, GraphQL had implementations in most major languages and some large names like GitHub, AirBnB had adopted it and saw benefits. This has fueled confidence in its adoption and value. Then in 2018, Facebook and other leaders in the GraphQL sector established the GraphQL Foundation as

Figure 1: Early adopters of GraphQL

a child organization of the Linux Foundation just like the Cloud Native Computing Foundation (CNCF), giving assurance and stability to the governance of the standard. Which has further helped its growth in adoption.

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How did GraphQL solve Facebook's problem?

The secret to GraphQL's success revolves around a couple of relatively simple ideas.

- In REST-based API calls, you call a URL and you will receive back a predefined JSON payload. Which may not contain all the information you want, and is likely to have data you don't need. GraphQL allows you to tell the back end server what data you want based on a schema. If I only want 3 attributes out of 30, I only specify the 3 wanted in the request, and only receive the 3 requested in the response.

- The schema that describes the operations and available data elements in the different operations can describe entity relationships. For example, if you use the Star Wars API (swapi.dev) and request details on a character it will return the characters but only references to which films they appear in. If I want to display the names of those films, I must run through that list of links retrieving each film. In GraphQL representation, these definitions can be linked. So, in a request, I can express the need for the film name as well. To developers this looks like object composition, and DBAs would see this is as SQL joins being expressed.

- REST is a loose set of ideas, and how you deal with some classic problems like interface versioning is very open to interpretation (or not being addressed at all). The way GraphQL works means it can easily address API versioning issues and imposes some ways of doing things without making life complex as SOAP and WSDL does.

- It is still based on JSON with a lot of RESTful ideas (just not as pure to the concept) and hasn't torn up the rule book on APIs like the move from WSDL and SOAP to being REST-based. This is far more of an evolution and easier to absorb.
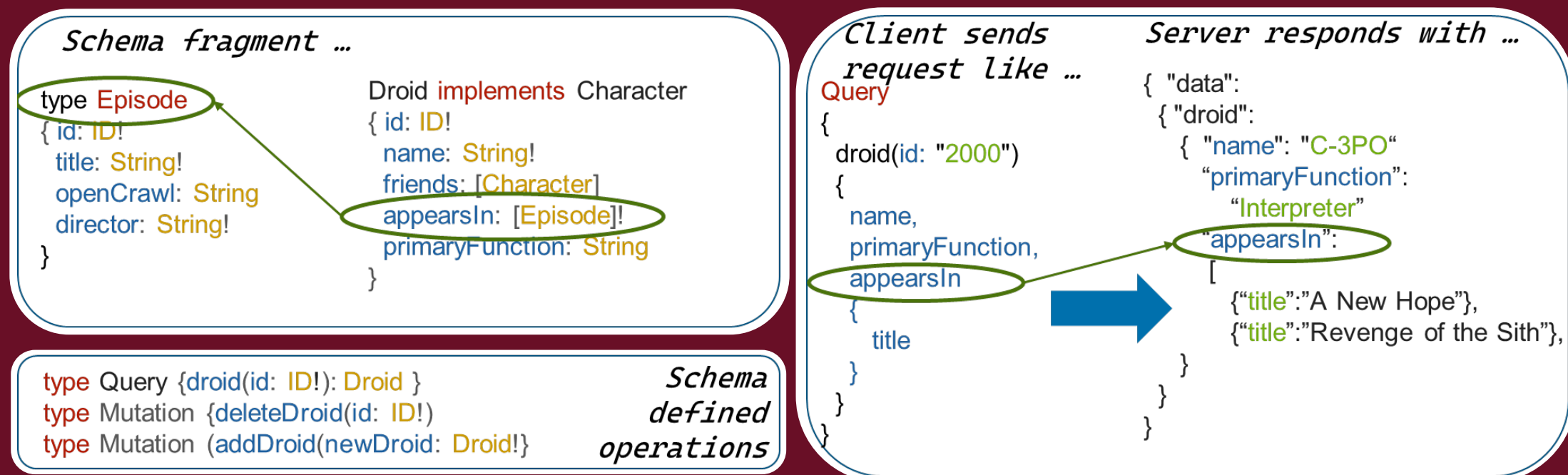
Figure 2: Fragment of schema and a request and response. We've highlighted the relationship between entities and the request uses that relationship, but only asking for a subset of available values

It is worth saying that GraphQL is not the silver bullet to the challenges of REST web services. It does have its own weaknesses, for example caching is a lot more problematic. The schema model makes it tempting to closely align with the underlying DB schemas which bring different risks.

What does this mean to Oracle?

That depends on which part of the Oracle stack you're working with. From the foundations of databases, it points to the possibility of an evolution for ORDS. Rather than exposing tables in a RESTful manner, you have a GraphQL schema representation of the data stored and an endpoint for all your CRUD operations requesting and returning customized structures reflecting only the necessary data without committing a cardinal sin of SQL being used in the API calls. The most common open-source implementations for the GraphQL server-side are built with JavaScript. With the DB 21c announcements we see support for JavaScript and GraalVM inside the database – in theory, this gives you the means to deploy an open-source GraphQL server yourself. But I'd be willing to bet money that the next step will be something like ORDS with a module prebuild that you can deploy a GraphQL capability with. Possibly supported with tools to define the schema based on the DB.

For mid-tier solutions, spinning up and run GraphQL implementations with Oracle tech has been covered by blogs from both Oracle and the community on this. But what perhaps is more intriguing is the steady inertia and support around Helidon. Whilst everyone will know WebLogic, Helidon is of a new generation of MicroProfile standard application servers. The **MicroProfile** standard is being led by the Eclipse Foundation to define a lightweight, container-friendly application container that may well end up superseding J2EE. The commitment is reflected in bringing in people like Graeme

Rocher the founder of Micronaut to support the great work from the likes of Tomas Langer and Dmitry Kornilov in building Helidon and supporting the standard. Probably the most important connection to GraphQL in this space is the recently announced **MicroProfileGraphQL** specification which defines GraphQL in conjunction with MicroProfile which has **recently been released** and Helidon has already got an implementation of this capability incorporated. Whilst the standard is not directly part of the core MicroProfile, it is only a matter of time.

As for applications, one of the keys to successful SaaS solutions is good APIs. The ability to extend (not customize) enterprise applications are crucial as these applications can't address every edge case. Enablement of building out specific extensions is important as a business enabler. Large SaaS applications such as ERP and HCM to use a Gartner term are systems of record. If you want to surround these with your differentiators – you need to get data in and out quickly – the job of the API. GraphQL provides the means to express an API that makes it easy for the consumer, it also has the means to manage the load impact of APIs as Facebook demonstrated. GraphQL may not be a deal-breaker when it comes to product features in the purchasing decision for SaaS. But if there is a close-run thing between two options, then it's the kind of factor that can become a Kingmaker as the expression goes.
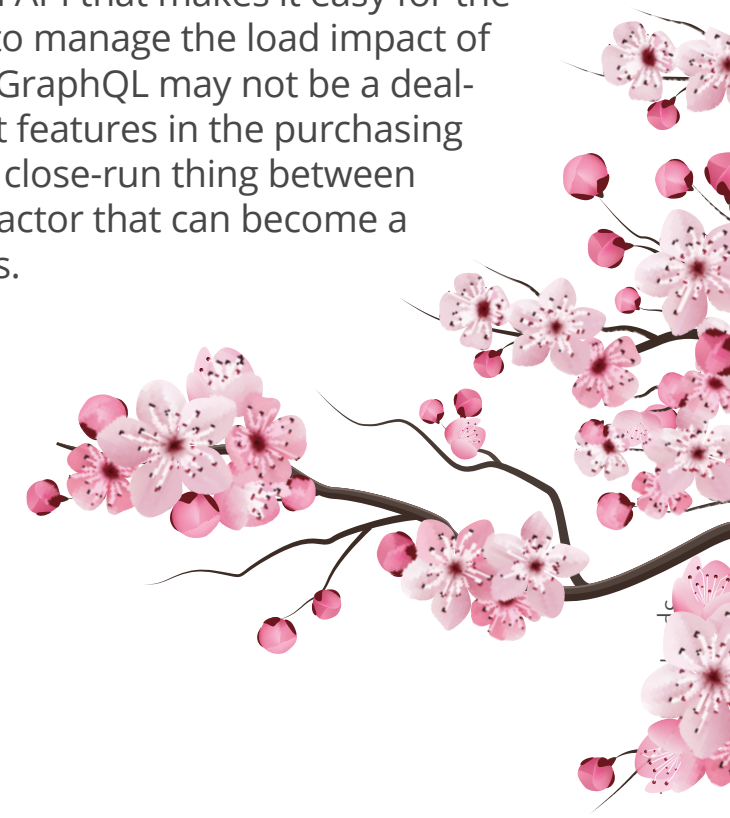
The old expression "with greater power, comes great responsibility" still holds very true. GraphQL gives us the potential for very powerful APIs. That responsibility is reflected in the use of good security and good design and I'll explore this in the next article.

If you'd like to know more about GraphQL and APIs more generally – then I've compiled a list of useful resources at including links into my own presentations on the subject at **https://blog.mp3monster.org/publication-contributions/api-platform/api-useful-resources/#GraphQL**

About Phil Wilkins

Phil is an Oracle Ace Director, Technology Evangelist & Snr Consultant Architect for Capgemini. He specializes in PaaS and particularly with API and modern development techniques such as microservices and Integration Cloud. Phil has supported the publication of several Java development books as a technical reviewer; in addition to being a published author himself with several co-authored books to his name, along with regular blog posts (**https://blog.mp3monster.org/**) and magazine articles. His latest book covers Unified Logging. Phil has presented at events around the world from Sweden to California and is a co-organizer to the London Oracle Developer Meetup.

Techs & Nerds

Emmanuel Ruez

News from Oracle's French Users Group: 2 new Communities to Increase Exchanges and Sharing of Experiences

In 2021, the PeopleSoft User Club becomes an AUFO Community.

During the Extraordinary General Assembly of the PeopleSoft Users Group which met on November 18, 2020, the participants decided that the PeopleSoft Users Group members would join, as of January 1, 2021, the members of AUFO (Association des Utilisateurs Francophones Oracle). This decision is the result of discussions held since 2018 on the future of the Club with the aim of optimizing exchanges. The PeopleSoft Users Group as an association under the 1901 law was therefore dissolved on December 31, 2020. A dedicated PeopleSoft community was created within AUFO.

The AUFO already has several communities bringing together users of the same solution or of a particular sector. For example, the NetSuite Community, the Finance Cloud Community or the Public Sector Community. Their creation was in response to specific user needs and expectations.

Joining AUFO brings several benefits to community members.

Indeed, the AUFO maintains privileged relationships with Oracle, both locally with the French management and internationally, particularly through meetings organized by and with other European Users Groups in which the AUFO has been participating for many years and regular exchanges during monthly phone meetings.

The integration of the PeopleSoft community within AUFO will enable PeopleSoft users to benefit from this quality of listening in order to make their voice heard with more weight. It is also an opportunity to broaden their network by participating in the transversal events organized by AUFO.

Another 2021 news concerning Communities is the creation of the Eloqua Users Community.

Eloqua is part of Oracle's CX range. This solution allows to structure, make profitable and improve the efficiency of teams and marketing campaigns. It also helps align marketing with sales to accelerate revenue development.

The launch of this Community took place on February 2, during a webinar to which Oracle France's Eloqua customers were invited. Yamna Amraoui, CX Program Manager of ALD Automotive and Eloqua user accepted with great enthusiasm to be the pilot of this Community. During this webinar, she shared the experience of ALD Automotive, 2020 winner of the User Experience Trophy for the implementation of Oracle Eloqua in 30 countries*. 19 organizations represented by 22 employees attended this session. Following Yamna's testimony,

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participants discussed the topics they would like to address in future Community meetings. From now on, the challenge for AUFO is to ensure that the 19 organizations present join this Community. We will not fail to keep you informed!

*Named ALD Max, the project started in 2015 on the observation that marketing was very manual with e-mail distribution lists, sometimes a few tools in large subsidiaries. The objective was obviously to unify the approaches and tools between the two business lines and to harmonize the group's marketing strategy: although the maturity was correct in France, small countries were still relying on manual selection processes.

ALD is a subsidiary of the Société Générale Group dedicated to mobility and fleet financing. Relying on Accenture, it has implemented Oracle Eloqua to manage marketing actions in 30 subsidiaries with 6 administrators for 1.54 million contacts. The project concerned the group's two main activities: leasing (B2B) and vehicle resale (B2C).

About Emmanuel Ruez

Emmanuel, 56, is a graduate of the University of Grenoble. He spent the first ten years of his career working for consulting firms and software publishers, including Oracle, and has worked with a number of major French groups to assist them in implementing IT solutions. From 1998, Emmanuel was recruited by Gaumont where he was in charge of the eBs solution. In 2001, he joined the Accounting Department of the Orange Group and worked on a number of IT solution creation and implementation projects. Emmanuel has been a member of AUFO since 1998 and became its president this year.

Events

JavaLand 2021

March 16 - 17, 2021
online
https://www.javaland.eu

The OUG Ireland Series

March (every Tuesday)
online
https://ukoug.org/page/ougirelandseries

UKOUG Technology Summit

April 20 + 22, 2021
online
https://ukoug.org/page/techsummit2021

APEX World 2021

June 2 + 3, 2021
Zeist, Netherlands
https://www.nloug.nl/events/apex-world-2021

Kscope21

June 20 - July 1, 2021
Nashville, TN, USA
https://kscope21.odtug.com/

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