Building an Application is as simple as “ABC” in IBM Cloud Pak for Data

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IBM

Welcome to the session

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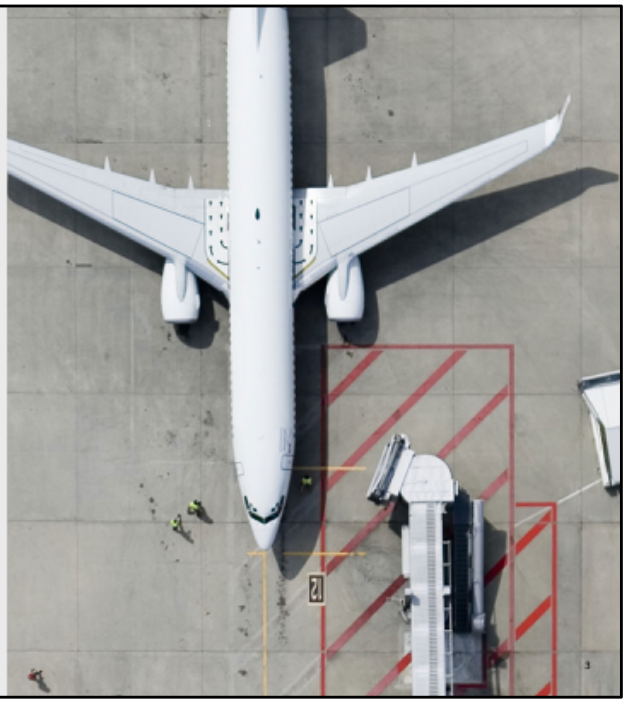
Let’s get started

Travelbid



The Used Case:

- TravelBid is fictitious startup company, located at New York City.
- They provides discounted hotel and rental car reservation service within the city.
- TravelBid has a bulk of hotel and rental car vendors, from where they fulfill travel reservation for their clients.

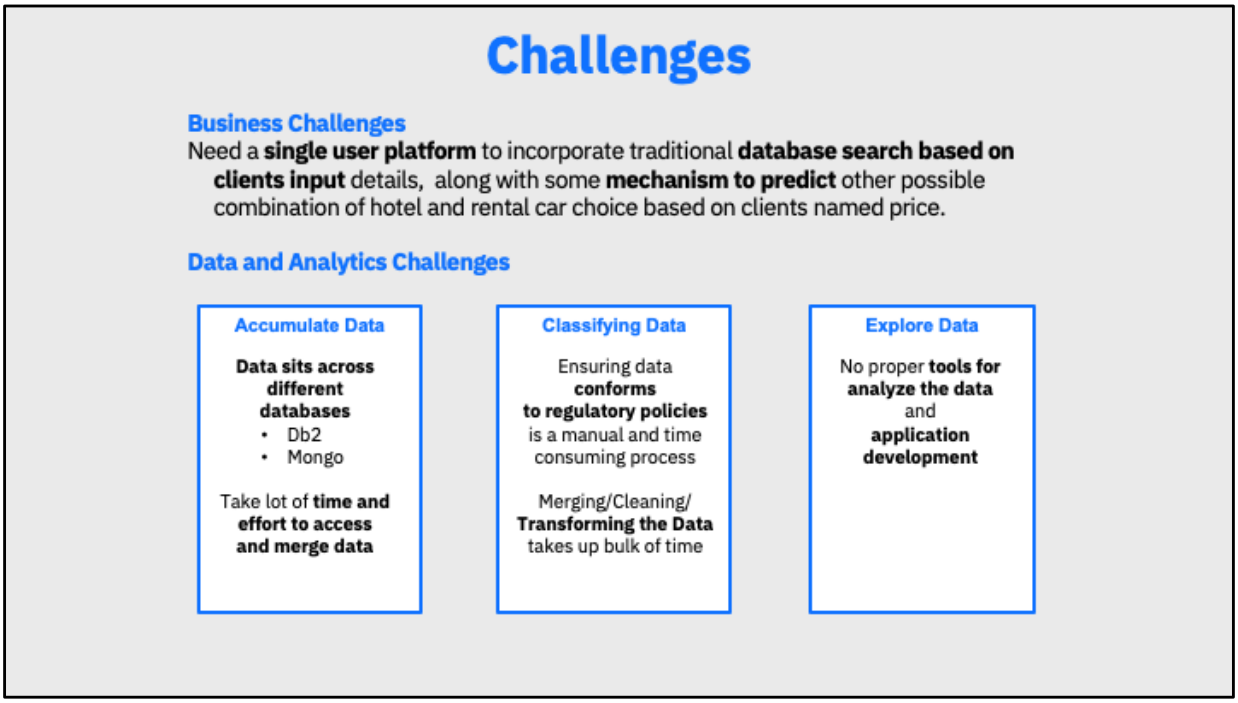
Requirements are….

Looking for a data & analytics platform that can allows them easily implement an e-commence system

Where they can have access their different vendor databases, pertaining to hotel and rental car reservation.

There should be an application interface, which allows potential clients named their price for hotel rooms and car rentals

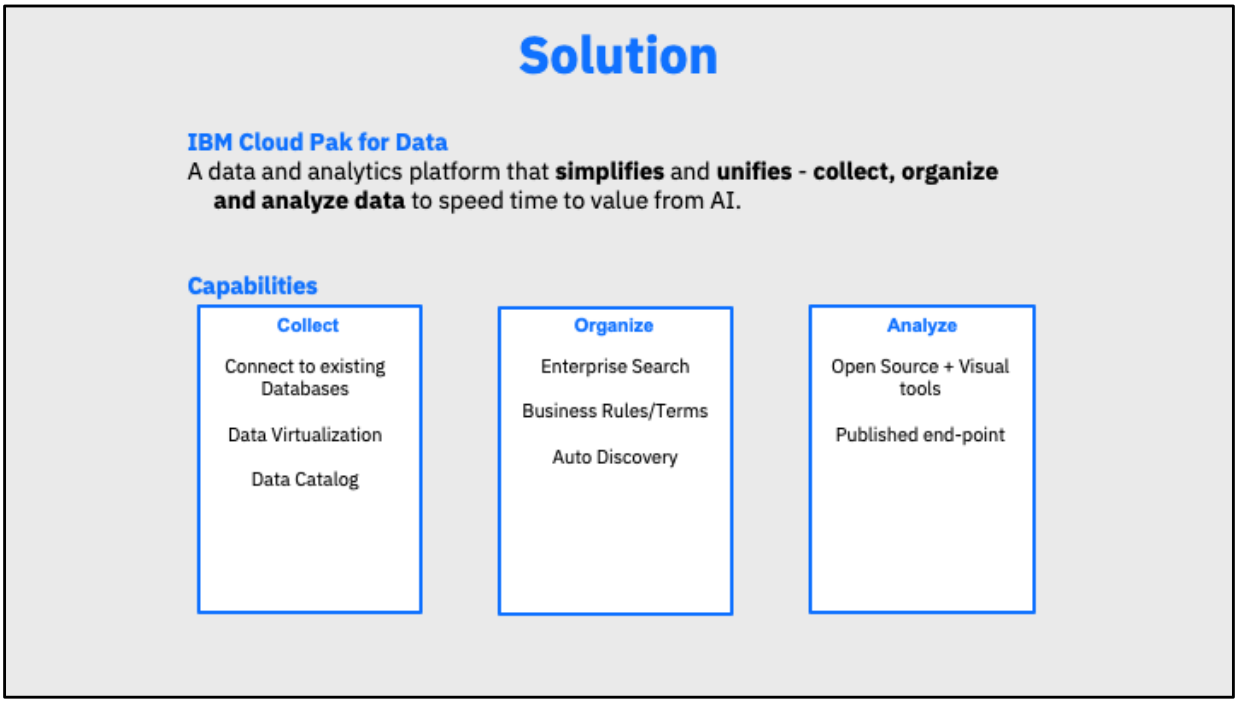
Depends on client's named price, system generates list of hotel and car matches within the prices.



As a startup, TravelBid wants to keep their operating cost as low as possible. Their main business challenge is come up with a single user platform to incorporate traditional **database search based on clients input** details, along with some **mechanism to predict** other possible combination of hotel and rental car choice based on clients named price.

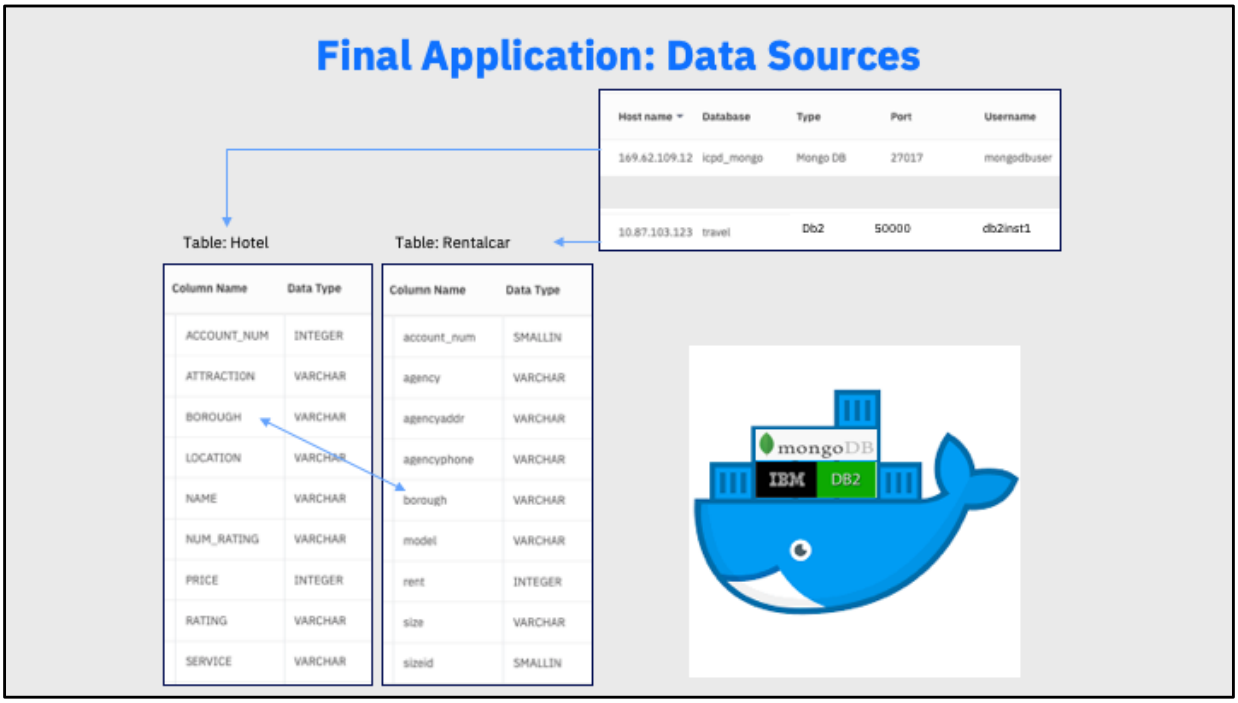
They have several challenges from data and analytics prospective.

- Data sources are scattered over different databases, which takes lot of time and effort to access and merge data.
- As a travel service provider, TravelBid operated their business in certain regulatory environment. They need to ensure all their data must governed by necessary regulatory policies.
- Managing, cleaning and transform the data takes lot of their time.
- Right tools for analyze the data and develop applications are not available in their current environment.



IBM Cloud Pak for Data is a possible platform that can fulfill all TravelBid's requirements.

Cloud Pak for data has three distinct pillars that simplifies and unifies - collect, organize and analyze data to speed time to value from AI.



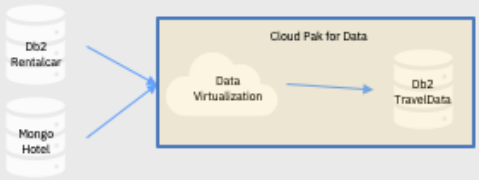
In next few slides you will see how we combined different aspects and built the application.

TravelBid largely used two data sources for their travel reservation business.

The HOTEL table resides on a Mongo database and stores information about hotels in New York City, where as RENTALCAR table is on Db2 database that store information about different rental car agencies and their fleets.

BOROUGH is the common primary key on these tables. It represents different sections within New York City.

Final Application: Virtual Table




```
CREATE VIEW TRAVELDATA#
      AS SELECT "USER999"."RENTALCAR"."MODEL"  CARMODEL,
                "USER999"."RENTALCAR"."AGENCY" CARAGENCY,
                "USER999"."RENTALCAR"."SIZE"   CARSIZE,
                "USER999"."RENTALCAR"."BOROUGH" BOROUGH,
                "USER999"."RENTALCAR"."SIZEID" SIZEID,
                "USER999"."HOTEL"."NAME"       HOTEL,
                "USER999"."HOTEL"."RATING"     HOTELRATING,
                ("USER999"."HOTEL"."PRICE" + "USER999"."RENTALCAR"."RENT") COST
      FROM "USER999"."RENTALCAR", "USER999"."HOTEL"
      WHERE "USER999"."RENTALCAR"."BOROUGH" = "USER999"."HOTEL"."BOROUGH";
```

You will use the Data Virtualization to marge two different data sources and build a virtual table (view).

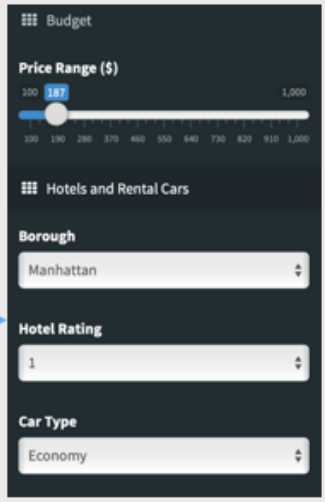
Use this virtual table for analyzing data and run query.

Depend on the user name you used for login to the cluster, may need to change the schema name in this view statement. In this example, user name admin is associated with schema “USER999”.

Final Application: Input

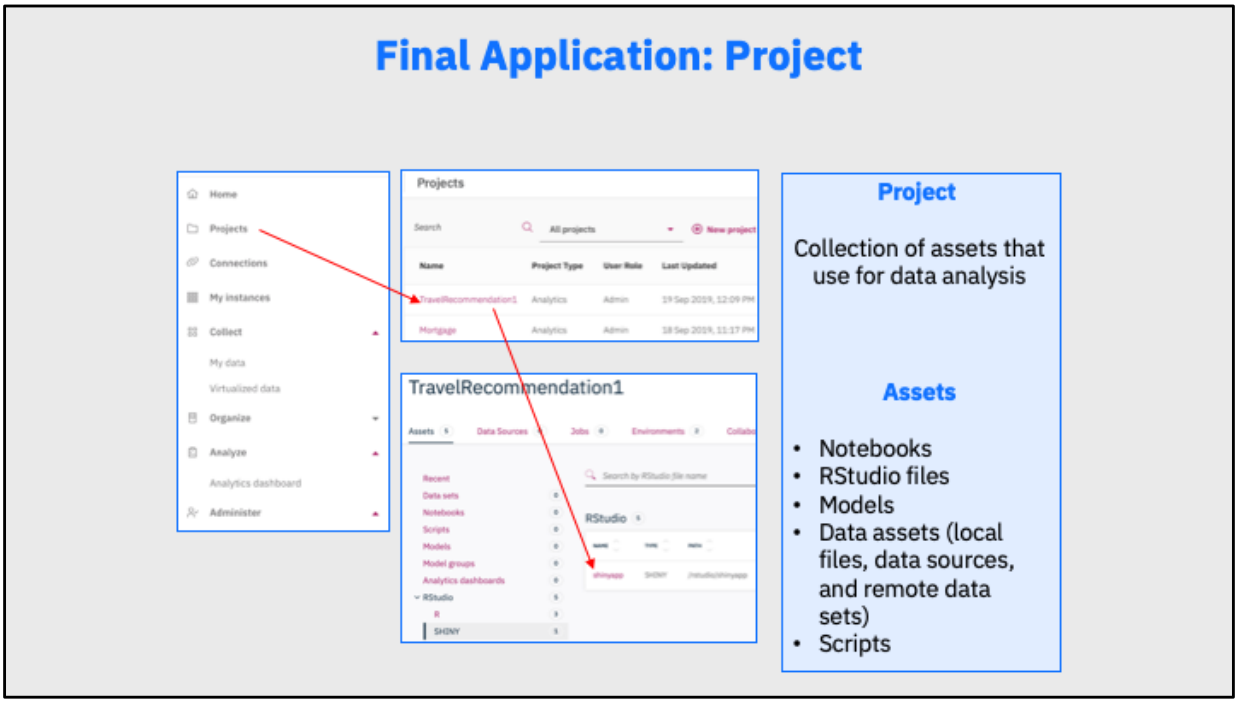
Recap of Requirements

- Build a data and analytics platform for rapidly develop an e-commerce system
- Potential **travelers named their price** for hotel rooms and car rentals
  - Price
  - Location
  - Hotel Rating
  - Car Type
- Depends on named price, system generates list of hotel and car matches within the prices



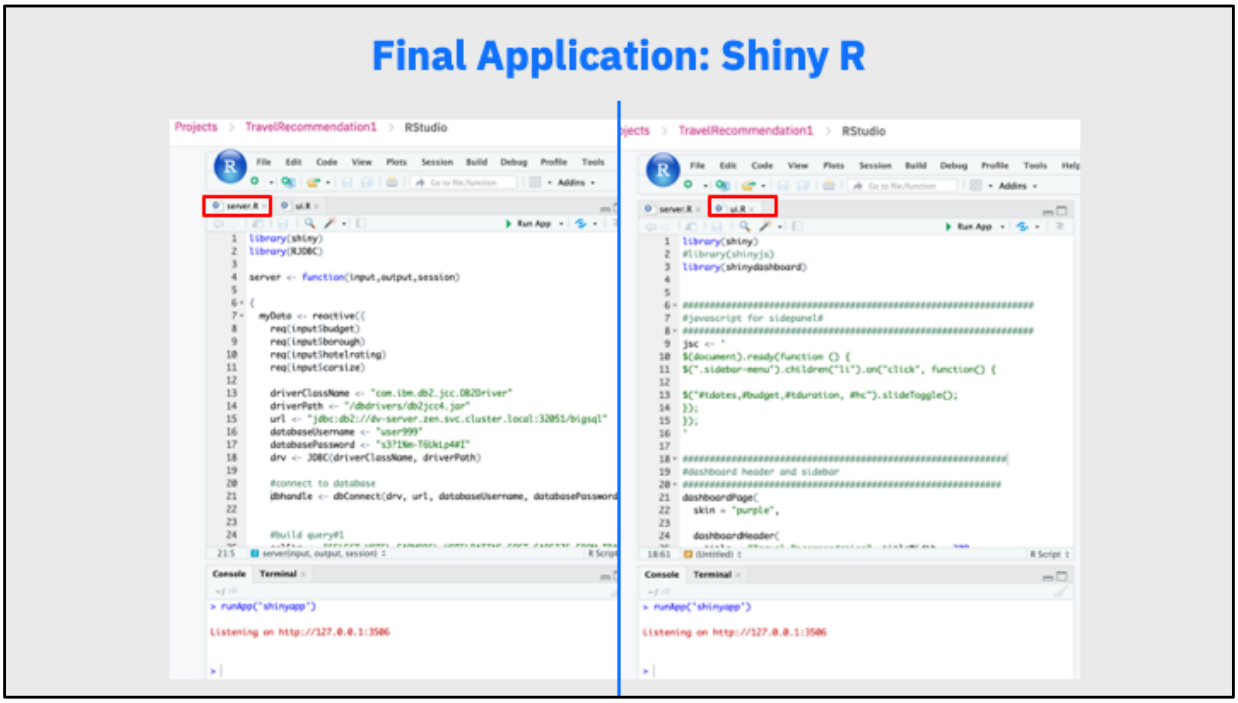
If we recollect our requirements…

You need to build an application where potential clients named their price for hotel and car.
To get a batter understanding and fulfill clients need accurately, you need to take some input s from client., e.g., Price, Location, Hotel Rating, Car Type etc. So these inputs has to be part of your user interface, while building the R Shiny App.



In Cloud Pak for Data all required assets are clubbed under a project. Assets could be notebook, R scripts, data sets, models etc.

You create a project first to collect all asserts. Inside that project you create R Shiny application.



As you know, R is an open source programming language that used for statistical computing and graphical representation of data. The R language is widely used among statisticians and data miners for developing statistical software and data analysis.

R shiny developed on R programming language that provide an easy web application framework for turn your data into an interactive web application.

The best part it simple and easy. You don't need to know whole lot of HTML or JavaScript. But you you can make your app more interesting by using some HTML.

Shiny app has two main components: 1) The user interface script to control the layout and appearance of application, 2) server script is use for connect and manipulate data.

There are tons of information on internet to learn about Shiny R. One of them is 'shiny.rstudio.com'.

Final Application: Web Interface

Input / Budget

- Price Range
- Borough
- Hotel Rating
- Car type

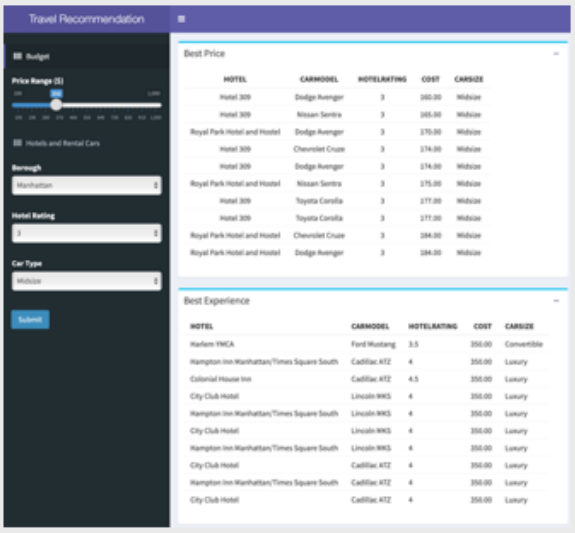
Output / Best Price

- Cost Effective

Output / Best Experience

- Unique Experience

Deploy Application



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The application provides a Web based interface. It takes necessary information as input from client and depends on input information it suggests travel packages.

Left part used for get Input from clients.
- Client provides their daily budget for hotel and rental car for staying at New York City.
- Application also collect information about the place where they want to stay, their preferred hotel rating and a car type they want to use.

Based on the input, application generates two sets of reservation suggestions.

The top-right section shows, ten cost effective, or cheapest combination of of hotels and rental car price for a day, which based on client's hotel rating and car type.

Bottom section provides list of ten unique experience hotel and car combination within client's budget.

Cloud Pak for Data has an inbuilt web server under Watson Studio. Once the application ready you can deploy it on the platform and anyone with the published web link can easily access it on the internet. This application can be govern by the Cloud Pak for Data.

What we've done to get here:

Cloud Pak for Data (CPD) installed and available

Relational databases (ex: Db2, MongoDB) created and available

Business glossary and governance policies created and available for import

Analytics project created with R Shiny

Access and sign in

Clusters

- https://ibm.biz/296cluster1
- https://ibm.biz/296cluster2
- https://ibm.biz/296cluster3
- https://ibm.biz/296cluster4
- https://ibm.biz/296cluster5

Users

- ctp1, ctp2, ctp3, ctp4, ctp5

Password

- ctpctp

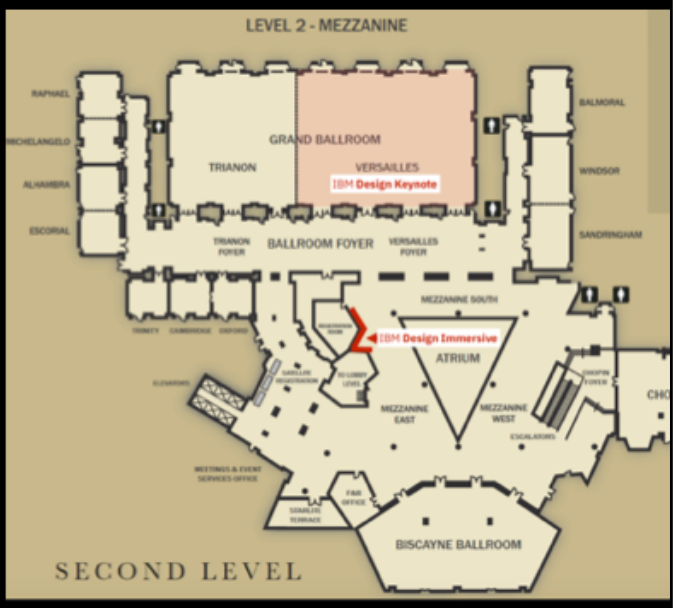
There are five Cloud Pak for Data clusters available for you to try out this lab. You need to follow the lab instruction to build the Shiny R application.

Instruction is available on your lab computer or you can download it from following address:
https://drive.google.com/file/d/1cBBUjt19T7shlNexjVM2i9KFwJ5A9wjn/view?usp=sharing

But wait, there's more!

Additional questions?
Want to learn more about ICPD?

Come visit us at the Level 2 Atrium Foyer
spoiler: there's swag



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- Organize (Unified Governance & Integration)
- Analyze (Data Science & AI)
- Infuse (Business Analytics, Watson Apps & Solutions, Digital Business Automation)
- Modernize (IBM Cloud Pak for Data)

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Thank you

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