IBM Professional Certification Program

Study Guide Series

Exam C1000-084 IBM Cloud Pak for Data V3.x Associate Architect

Purpose of Exam Objectives

When an exam is being developed, the Subject Matter Experts work together to define the role the certified individual will fill. They define all of the tasks and knowledge that an individual would need to have in order to successfully implement the product. This creates the foundation for the objectives and measurement criteria, which are the basis for the certification exam.

The Certification item writers used these objectives to develop the questions that they wrote, and which will appear on the exam.

It is recommended that you review these objectives. Do you know how to complete the task in the objective? Do you know why that task needs to be done? Do you know what will happen if you do it incorrectly? If you are not familiar with a task, then go through the objective and perform that task in your own environment. Read more information on the task. If there is an objective on a task here is about a 95% chance that you WILL see a question about it on the actual exam.

After you have reviewed the objectives and completed your own research, then take the assessment exam. While the assessment exam will not tell which question is answered incorrectly, it will tell you how you did by section. This will give you a good indication as to whether you are ready to take the actual exam or if you need to further review the materials.

Note: This is the high-level list of objectives. As you review these objectives, you will see a more detailed level of how to perform the task.

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Section 1 – Platform / Modernization

Task: 1.1 Design and implement a solution for Cloud Pak for Data

Subtasks:

1.1.1 Describe the functional categories for Cloud Pak for Data Services

1.1.2 List the services that Cloud Pak for Data includes in the base

1.1.3 Summarize the tools required to install, maintain and monitor Cloud Pak for Data

1.1.4 List which services support Node Affinity and Anti-Affinity

1.1.5 Distinguish between the roles of the Red Hat OpenShift cluster administrator and that of the Red Hat OpenShift Project administrator

1.1.6 Describe a topology of a Cloud Pak for Data cluster

1.1.7 List where a Cloud Pak for Data can be deployed

1.1.8 Summarize when an air-gapped install is used

1.1.9 Describe the differences between the use cases of nodes on Cloud Pak for Data

Reference links:

1.1.1 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/overview/overview.html

1.1.2 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/services.html

1.1.3 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/install/service_accts.html

1.1.4 https://www.ibm.com/support/knowledgecenter/en/search/%22node%20affinity%22?scope=SSQNUZ_3.0.1

1.1.5 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/plan/planning.html

1.1.6 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/plan/architecture.html

1.1.7 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/overview/overview.html

1.1.8 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/install/service_accts.html

1.1.9 https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/overview/overview.html

Note in general use these links:

RHAT

https://docs.openshift.com/container-platform/4.5/welcome/index.html

And links listed in the KC

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1

CPD Announcement letter

https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?infotype=an&subtype=ca&appname=gpateam&supplier=897&letternum=ENUS220-197

CPD Community

https://community.ibm.com/community/user/cloudpakfordata/home

IBM Developer

https://developer.ibm.com/components/cloud-pak-for-data/

Task: 1.2 List the features of Cloud Pak for Data as a platform (technical)

Subtasks:

1.2.1 Describe the advantages of Red Hat OpenShift

1.2.2 Describe how to deploy services

1.2.3 Describe the options for auditing Cloud Pak for Data

1.2.4 Describe how to restart a failed pod

1.2.5 Describe multi-tenancy

1.2.6 Describe how to manage Cloud Pak for Data deployments

1.2.7 Describe how to scale a service

Reference links:

https://www.redhat.com/en/resources/red-hat-openshift-overview

https://www.ibm.com/support/producthub/icpdata/docs/content/SSQNUZ_current/cpd/admin/admin-web-client.html

https://www-01.ibm.com/common/ssi/ShowDoc.wss?docURL=/common/ssi/rep_ca/9/897/ENUS220-329/index.html&request_locale=en

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/plan/architecture.html

https://docs.openshift.com/container-platform/4.5/architecture/architecture.html

Task: 1.3 Describe the value proposition of Cloud Pak for Data (ease-of-use)

Subtasks:

1.3.1 Describe the suite of services that Cloud Pak for Data supports

1.3.2 Summarize the features on the Cloud Pak for Data home page

1.3.3 Describe where to find Cloud Pak for Data documentation

1.3.4 Describe the customization the Cloud Pak for Data home page allows

1.3.5 Describe the integration of services on Cloud Pak for Data

1.3.6 List the advantages of the role-based common UI

Reference links:

https://developer.ibm.com/articles/intro-to-cloud-pak-for-data/

https://www.ibm.com/support/producthub/icpdata/docs/view/overview/SSQNUZ_current/cpd/overview/overview.html?t=Overview%20and%20architecture&p=overview

https://www.ibm.com/support/producthub/icpdata/docs/view/overview/SSQNUZ_current/cpd/overview/overview.html?t=Overview%20and%20architecture&p=overview

https://www.ibm.com/support/producthub/icpdata/docs/view/overview/SSQNUZ_current/cpd/overview/overview.html?t=Overview%20and%20architecture&p=overview

https://www.ibm.com/support/producthub/icpdata/docs/content/SSQNUZ_current/cpd/overview/whats-new.html#whats-new__enhancements

Task: 1.4 Identify security considerations for Cloud Pak for Data

Subtasks:

1.4.1 \Describe how communications are secured with a CPD Solution

1.4.1.1 Describe the elements required to carry out TLS and SSL

1.4.1.2 Summarize how a Certificate Authority is used to secure communications

1.4.1.3 Summarize the advantages orfusing TLS to secure communications CPD?

1.4.1.4 Describe how bearer tokens are used with CPD

1.4.2 \Authentication and Authorization Requirements and Mechanics

1.4.2.1 Describe where a user identity can be defined when used with CPD?

1.4.2.2 Summarize when LDAP could be used

1.4.2.3 Summarize the usage of different roles to provide authorization to services

1.4.2.4 Summarize when IAM could be used

1.4.2.5 Describe how SAML Federation could be used

1.4.3 Controlling Access to Data and Assets

1.4.3.1 Describe how to safe guard Data source access

1.4.3.2 Summarize how is data secured that stored on CPD

1,4.3.3 Describe encryption options

1.4.3.4 List the times that data needs to be secure (At rest, in flight)

1.4.3.5 Define namespaces, subnets and describe common ingress/egress controls

1.4.3.6 Describe how networks are isolated and policies established to secure assets

1.4.3.7 Describe the facilities for tracking usage and Auditing activity on CPD

1.4.3.8 Name some information Security Standards that influence data security

Reference links:

Security Considerations

Efficient Management of Network Policy

Security White Paper

Auditing CPD

IBM Guardium

Understanding Authentication on OpenShift

Backup and Restoring Projects

GDPR Readiness

ISO Information Security Management

AICPA Cyber Security Resource Center

Task: 1.5 Compare and contrast Physical Architecture in Cloud Pak for Data

Subtasks:

1.5.1 Summarize the need for different types of storage (Block Storage, Object Storage, File Storage)

1.5.2 List important considerations when selecting the following technologies as a storage type: NFS, PortWorx, OpenShift Container Storage

1.5.3 Summarize the considerations of physically disparate databases vs co-located data source services

1.5.4 Describe how physical, multitenant projects would be partitioned in a single CPD instance

1.5.5 Describe some options for optimizing physical resources over distributed networks

1.5.6. List topology difference between Cloud Pak for Data on a Cloud vs On Premises

Reference links:

Storage Considerations

Managing data caches and queries

Supported Data Sources: Storage Class Considerations ???

CPD Architecture

Multi-Tenancy Defined

IBM Cloud Link

Getting Started with Secure Gateway

Task: 1.6 Distinguish sizing considerations for Cloud Pak for Data

Subtasks:

1.6.1 Describe the storage requirements for Cloud Pak for Data services

1.6.2 Describe the memory requirements for Cloud Pak for Data services

1.6.3 Describe the CPU/GPU requirements are for Cloud Pak for Data

1.6.4 Itemize essential requirements when scaling services or adding nodes to an OpenShift Cluster

1.6.5 Itemize considerations when deploying to other Cloud Providers like AWS, Azure, Google?

Reference links:

System Requirements for IBM CPD

System Requirements for Services

Node Settings

Requirements for DB2 on SELinux

Requirements for DB2 Warehouse on SELinux

Task: 1.7 Describe the licensing models for Cloud Pak for Data

Subtasks:

1.7.1 Discuss the editions of Cloud Pak for Data

1.7.2 Describe the kinds of basic services included in Cloud Pak for Data

1.7.3 Summarize the licensing consideration for different types of services (included, premium and third party)

1.7.4 Describe the tools available to monitor & manage resource usage?

Reference links:

Controlled Modernization on a flexible platform

Managing Billing and Usage

Services in the Catalog

Section 2 – Collect

Task: 2.1 List and define the appropriate services for Data-Modernization Patterns

Subtasks:

2.1.1 List all the database services that can be provisioned in the catalog

2.1.1.1 Describe key capabilities of each of the supported database services

2.1.1.2 List the IBM and 3rd party data source services

2.1.1.3 List all the services available for real time data ingestion

2.1.1.4 Describe moving data vs accessing data to modernize data estate of an enterprise

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/data-source-svc.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/access/data-sources.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/svc-bigsql/bigsql_using.html

Task: 2.2 Connect hybrid data-sources across the enterprise

Subtasks:

2.2.1 Describe how all the enterprise data can be accessed

2.2.1.1 List various supported IBM specific Data sources

2.2.1.2 List various connection types

https://www.ibm.com/support/producthub/icpdata/docs/view/data-access/SSQNUZ_current/wsj/manage-data/create-conn.html?t=Access%20data%20sources&p=data-access

2.2.1.3 Describe Data Virtualization data vendor sources available in the platform

2.2.1.4 Define various cloud data sources that can be accessed

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/manage-data/create-conn.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/manage-data/conn_types.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/access/access-data.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/access/data-sources.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/manage-data/conn_types.html

Task: 2.3 Integrate hybrid data-sources across the enterprise

Subtasks:

2.3.1 Describe a scenario when you would integrate various Cloud Data Sources to enterprise data-sources

2.3.1.1 Define various data integration services available in Cloud Pak for Data (Data Stage, Data Virtualization, real-time events processing)

2.3.1.2 List Data Sources available at project level

2.3.1.3 List advantages of creating global connections vs local project based connections to various data sources

2.3.1.4 Define various to develop application in IBM Streams

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/manage-data/connected-data.html

https://www.ibm.com/support/producthub/icpdata/docs/content/SSQNUZ_current/cpd/svc/streams/developing-intro.html

Task: 2.4 Design a data-virtualization topology (Data Virtualization vs ETL)

Subtasks:

2.4.1 Describe a virtual data lake

2.4.2 Explain the security features of Data Virtualization

2.4.3 Describe the use of roles in Data Virtualization

2.4.4 Describe interfaces and tools supported by Data Virtualization in Cloud Pak for Data for queries

2.4.5 Describe how to virtualize a file vs a database such as Netezza or Microsoft SQL Server

2.4.6 Describe backup, restore and Disaster Recovery support for Data Virtualization in Cloud Pak for Data

2.4.7 Describe data governance used in Data Virtualization in Cloud Pak for Data

2.4.8 Describe how to Improve query performance in Data Virtualization in Cloud Pak for Data

2.4.9 Explain how to define a data source in Data Virtualization

2.4.10 Explain how to provision Data Virtualization

Reference links:
https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/dv/create-virt-file.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/dv/virtualizing_data.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/svc-welcome/dv.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/overview/whats-new.html?view=embed#whats-new__services

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/dv/dv-bar.html

https://youtu.be/Z74slPENVhM

https://youtu.be/_wTPW6GeHPE

https://youtu.be/eQ0M28pRixU

Task: 2.5 Describe the benefits of using data-virtualization

Subtasks:

2.5.1 Explain how Data Virtualization can help you get insight to data across your enterprise

2.5.2 Explain schema folding

2.5.3 Describe how to create a virtualized view of multiple data sources

2.5.4 Describe the caching feature in Data Virtualization

2.5.5 Describe how data virtualization can enhance performance

2.5.6 Describe where a Data virtualized view can be stored

2.5.7 Describe use cases for Data Virtualization

Reference links:
https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/dv/data-caches.html?view=embed

https://www.ibm.com/downloads/cas/97AJPYNN

https://developer.ibm.com/tutorials/virtualizing-db2-warehouse-data-with-data-virtualization/

Task: 2.6 Describe the various data access methodologies

Subtasks:

2.6.1 List ways to integrate Hadoop and unstructured data

2.6.1.1 Describe how data on Hadoop can be accessed from Cloud Pak for Data

2.6.1.2 Describe how a Data Engineer can supply data needed for a project

2.6.1.3 Describe the process of connecting to unsupported data source listed in connections tab

2.6.1.4 Describe the process of working with Db2 for z/OS databases

Reference links:
https://www.ibm.com/support/producthub/icpdata/docs/content/SSQNUZ_current/cpd/access/t_fulfill_data_req.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/db2z/work-with-db-db2z.html

Section 3 – Organize

Task: 3.1 List and define the appropriate services for Data-Governance Patterns

Subtasks:

3.1.1 Explain the key capabilities of the data governance service

3.1.1.1 Explain the use of Watson Knowledge Catalog in a data governance solution

3.1.1.2 Explain the use of DataStage in a data governance solution

3.1.1.3 Explain the use of Regulatory Accelerator in a data governance solution

Reference links:
https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/data-gov-svc.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/catalog/get-started-op.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/datastage/c_transf_data.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/iira/iira-overview.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/catalog/overview-wkc.html

Task: 3.2 Identify different data governance techniques

Subtasks:

3.2.1 Explain the different types of data governance activities

3.2.1.1 Describe the role of data protection rules and policies

3.2.1.2 Describe the role of categories, business terms, classifications, and data classes

3.2.1.3 Summarize the process to curate data

Reference links:

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/catalog/get-started-op.html#artifacts

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/governance/dmg52.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/governance/governance_rules.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/governance/dmg_rules.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/organize/curate.html

Task: 3.3 Describe the key features of a catalog

Subtasks:

3.3.1 Explain the capabilities enabled by a catalog

3.3.1.1 Describe the process of creating catalog artifacts

3.3.1.2 Describe the process of curating data assets

3.3.1.3 Describe how to manage workflows in Watson Knowledge Catalog

3.3.1.4 Explain how a catalog enables users to find data

3.3.1.5 Explain the options for controlling access to assets in a catalog

3.3.1.6 Explain how a catalog enables users to work with data in projects

Reference links:

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/catalog/get-started-op.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/catalog/access-asset.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/governance/workflow-definition.html

Task: 3.4 Describe how to prepare self-service data for the business analyst

Subtasks:

3.4.1 Describe how to use data transformation tools

3.4.1.1 Explain the differences between the data transformation tools in Cloud Pak for Data

3.4.1.2 Describe the data request process

3.4.1.3 Describe how to expose data to an analytics project

Reference links:

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/datastage/c_transf_data.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/refinery/refining_data.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/access/t_fulfill_data_req.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/manage-data/add-data-project.html

Task: 3.5 Leverage the community capabilities for knowledge catalogs

Subtasks:

3.5.1 Describe the benefits of building a community around a knowledge catalog

3.5.2 Describe the importance of the review, ranking and comment capabilities provided to collaborators and users of the catalog

3.5.3 Describe the benefits of using multiple catalogs

Reference links:

https://www.ibm.com/account/reg/signup?formid=urx-45527

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/catalog/administer-catalog.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/wkc.html

Task: 3.6 Describe the regulatory capabilities of Cloud Pak for Data

Subtasks:

3.6.1 Explain the primary benefit of using the Regulatory Accelerator service

3.6.2 Describe the technical components used in the Regulatory Accelerator to interpret regulations.

3.6.3 Explain the use case for using a Regulatory Compliance Project

3.6.3.1 Describe the usage of a Regulatory Compliance project

3.6.3.2 List the industries that the Regulatory Accelerator can help with in a Regulatory Compliance project

3.6.4 Describe ways to map business to regulatory terms

3.6.5 Explain the difference between governance and regulatory compliance

Reference links:

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/iira/iira-overview.html

Task: 3.7 Discuss the purpose of the Industry Accelerators

Subtasks:

3.7.1 Summarize the use cases of the Industry Accelerators

3.7.1.1 List the industries the use cases help

3.7.2 Describe how Industry Accelerators can be used to jump start development

3.7.2.1 List the services used by the Industry Accelerators

3.7.2.2 List what advantages an industry accelerator afford a project

3.7.3 Describe how to find and install accelerators

3.7.3.1 Explain where to download accelerators

3.7.3.2 Explain where to find documentation about the accelerators

3.7.3.3 Explain how to import and deploy accelerator projects

3.7.4 Explain the advantages of using the Customer 360 Degree View Industry accelerator

3.7.4.1 List the services needed to use the accelerator

3.7.4.2 List the use cases that this accelerator can be used with/for.

Reference links:
https://community.ibm.com/accelerators/?context=analytics

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/cpd/svc/industry-accel-svc.html

https://community.ibm.com/community/user/cloudpakfordata/viewdocument/customer-360-degree-view?CommunityKey=c0c16ff2-10ef-4b50-ae4c-57d769937235&tab=librarydocuments

Task: 3.8 Identify governance options for analytics projects assets

Subtasks:

3.8.1 Identify the different analytics asset types that can be added to the governance catalogs

3.8.2 Describe how to add the different types of analytics assets to the governance catalog

Reference links:
https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/catalog/assets-catalog.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/catalog/add-asset.html

Section 4 – Analyze

Task: 4.1 List and define the appropriate services for Data-Science Pattern

Subtasks:

4.1.1 Explain key capabilities of each service

4.1.1.1 Explain the use of Watson Studio in a data science project

4.1.1.2 Explain the use of Watson Machine Learning in a data science project

4.1.1.3 Explain the use of Watson OpenScale in a data science project

4.1.2 List required and optional services

4.1.2.1 List required and optional services for a data science project

4.1.2.2 Explain integration between services for Data-science Pattern

Reference links:

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/wsl.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/wml.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/aiopenscale.html

Task: 4.2 Classify use-cases as descriptive, predictive, and prescriptive

Subtasks:

4.2.1 Identify examples of descriptive analytics use cases and select services that can be used to implement them.

4.2.2 Identify examples of predictive analytics use cases and select services that can be used to implement them.

4.2.3 Identify examples of prescriptive analytics use cases and select services that can be used to implement them.

Reference links:

https://www.ibm.com/analytics/data-science

https://www.ibm.com/cloud/blog/announcements/decision-optimization-now-available-in-watson-machine-learning-service

https://www.ibm.com/products/cognos-analytics

Task: 4.3 Choose the appropriate framework and tools for analyst skill sets

Subtasks:

4.3.1 Describe capabilities of open source tools

4.3.1.1 List key programming languages and frameworks for data science

4.3.1.2 List tools that are typically used by open source data scientists

4.3.1.3 Explain the strengths of Spark compared to Python and R

4.3.2 Describe capabilities of tools for citizen data scientists

4.3.2.1 List key features of AutoAI

4.3.2.2 List key features of Modeler Flows

Reference links:
https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/wsl.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/analyze-data/autoai-overview.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/spssmodeler.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsd/spss-modeler.html

Task: 4.4 Describe the difference between open-source framework vs open-source tools

Subtasks:

4.4.1 Distinguish between open source tools and APIs

4.4.2 Explain which open source tools can be used in Cloud Pak for Data

4.4.3 Explain which open source APIs can be used in Cloud Pak for Data

Reference links:
https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/svc-welcome/wsl.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/analyze-data/cust-env-parent.html

Task: 4.5 List the advantages of using open-source tools in Cloud Pak for Data

Subtasks:

4.5.1 List features of open source tools that are only available in Cloud Pak for Data

4.5.2 Describe environment management in Cloud Pak for Data

4.5.3 Describe library and package management in Cloud Pak for Data

Reference links:
https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/manage-data/jobs.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/analyze-data/environments-parent.html

https://www.ibm.com/support/knowledgecenter/en/SSQNUZ_3.0.1/wsj/analyze-data/cust-env-parent.html

Task: 4.6 Describe the deployment options of data-science assets

Subtasks:

4.6.1 Describe deployment spaces in Cloud Pak for Data

4.6.1.1 Describe how to create a Deployment Space

4.6.1.2 Identify the 6 types of assets that can be added to a Deployment Space

4.6.1.3 Describe how to import a model into a deployment space

4.6.1.4 Describe how to create a deployment from a Deployment Space

4.6.2 Describe, at a high level, deployment of an SPSS Modeler Flow

4.6.3 Describe how to deploy a Decision Optimization Model with Watson Machine Learning

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/analyze-data/ml-spaces_local.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsd/spss-modeler.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/do/WML_Deployment/DeployIntro.html

Task: 4.7 Describe how model-ops/ML-ops can be implemented in Cloud Pak for Data

Subtasks:

4.7.1 Describe the key steps in the model-ops/ML-ops process

4.7.2 Describe services needed to implement model-ops/ML-ops

4.7.3 Identify the APIs used to implement model-ops/ML-ops

Reference links:

https://www.ibm.com/cloud/machine-learning/modelops

https://www.ibm.com/cloud/architecture/architectures/machine-learning-ops-solution

Section 5 – Infuse

HENRY - Task: 5.1 Describe industry solutions in Cloud Pak for Data

Subtasks:

5.1.1 Summarize the concept of AI for Customer Service (e.g. Watson Assistant, Watson Discovery)

5.1.2 Summarize the concept of AI for IT Operations (e.g. Watson AIOps)

5.1.3 Summarize the concept of AI for Financial Services (e.g. RegTech, Planning Analytics)

5.1.4 Summarize the concept of AI for Healthcare (e.g. Watson Assistant, etc.)

Reference links:

https://www.ibm.com/artificial-intelligence

- https://www.ibm.com/cloud/ai/customer-service
- https://www.ibm.com/watson/aiops
- https://www.ibm.com/industries/banking-financial-markets/risk-compliance
- https://www.ibm.com/watson-health/learn/artificial-intelligence-healthcare

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/svc-aiops/aiops-insight-ovr.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/services.html#services__ai

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/usecase/use-cases.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/fci/fci-get-started.html

https://fswb-documentation.knowis.net/latest/

https://www.ibm.com/products/watson-assistant-health-benefits

Task: 5.2 Describe the capabilities of AI for financial operations in Cloud Pak for Data

Subtasks:

5.2.1 Describe the purpose of the Planning Analytics Workspace

5.2.2 Describe the purpose and capabilities of Planning Analytics for Excel

5.2.3 Describe the purpose of using the Decision Optimization service

5.2.3.1 List the artifacts used in Decision Optimization

5.2.4 Describe the purpose for Financial Crimes Insight

5.2.4.1 Describe the capabilities of Financial Crimes Insight

5.2.4.2 Describe the capabilities of Financial Services Workbench

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/svc-welcome/pa.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/svc-pa/pa-get-started.html

https://www.ibm.com/support/knowledgecenter/SSD29G_2.0.0/com.ibm.swg.ba.cognos.tm1_prism_gs.2.0.0.doc/pa_paw.html

https://www.ibm.com/support/knowledgecenter/SSD29G_2.0.0/com.ibm.swg.ba.cognos.ug_cxr.2.0.0.doc/pa_pax.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/do/ICPD_home.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/fci/fci-get-started.html

https://www.ibm.com/support/knowledgecenter/SSCKRH_6.5.1/main/welcome.html

Task: 5.3 Describe the capabilities of business intelligence (Cognos Analytics) in Cloud Pak for Data

Subtasks:

5.3.1 Describe the purpose and capabilities of dashboards and stories

5.3.2 Describe the purpose and capabilities of explorations

5.3.3 Describe the purpose and capabilities of Cognos Analytics Reporting

5.3.4 Describe the purpose and capabilities of data modules

Reference links:

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.1.0/com.ibm.swg.ba.cognos.ca_gtstd.doc/c_gtstd_dashboards_stories.html

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.1.0/com.ibm.swg.ba.cognos.ug_ca_dshb.doc/wa_dashboard_discoveryset_intro.html

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.1.0/com.ibm.swg.ba.cognos.ug_ca_dshb.doc/ca_stories_intro.html

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.1.0/com.ibm.swg.ba.cognos.ca_explorations.doc/ca_explorations_intro.html

https://www.ibm.com/support/knowledgecenter/SSEP7J_11.1.0/com.ibm.swg.ba.cognos.ug_cr_rptstd.doc/c_understand_rs.html

Task: 5.4 Identify the key Watson capabilities (assistant, discovery, speech APIs) in Cloud Pak for Data

Subtasks:

5.4.1 Describe the Watson Assistant capabilities available in IBM Cloud Pak for Data

5.4.1.1 Describe how to provision an instance of Watson Assistant after it is made available in IBM Cloud Pak for Data

5.4.1.2 Describe how to give users access to the Watson Assistant instance.

5.4.1.3 Describe how to create a dialog skill in Watson Assistant

5.4.1.4 Describe how to add intents from a content catalogs

5.4.1.5 Describe how to build a dialog for Watson Assistant

5.4.1.6 Identify the key elements of a complex dialog

5.4.1.7 Describe the key function of slots with Watson Assistant

5.4.1.8 Describe how to integrate Watson Discovery with Watson Assistant

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/watson/assistant.html

https://cloud.ibm.com/docs/assistant-data?topic=assistant-data-getting-started

https://cloud.ibm.com/docs/assistant-data?topic=assistant-data-getting-started#getting-started-build-dialog

https://cloud.ibm.com/docs/assistant-data?topic=assistant-data-tutorial

https://cloud.ibm.com/docs/assistant-data?topic=assistant-data-tutorial-slots#tutorial-slots-add-dialog-with-slots

5.4.2 Describe the Watson Discovery capabilities available in Cloud Pak for Data

Subtasks:

5.4.2.1 Describe how to provision an instance of Watson Discovery after it is made available in IBM Cloud Pak for Data

5.4.2.2 Describe how to assign users to the Watson Discovery instance

5.4.2.3 Identify the four project types for Watson Discovery

5.4.2.4 Describe how to create and manage collections

5.4.2.5 Identify the top 4 document types used in Discovery (PDF, MS Word, MS PowerPoint, MS Excel)

5.4.2.6 Describe how to upload data into Watson Discovery

5.2.4.7 Identify at minimum 5 key data sources that Watson Discovery can connect to

5.2.4.8 Describe what facets are and how they are used

5.2.4.9 Describe the use of Smart Documents (SDU).

5.2.4.10 Describe how to create the different type of enrichments

5.2.4.11 Describe the different query concepts supported by Watson Discovery Service

Reference links:

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/watson/discovery.html

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-projects#project-type

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-collections#createcollection

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-collections#supportedfiletypes

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-collection-types

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-facets

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-configuring-fields

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-create-enrichments

https://cloud.ibm.com/docs/discovery-data?topic=discovery-data-query-concepts

5.4.4 Describe the Watson Speech Services available in IBM Cloud Pak for Data (Language Translator, Speech to Text, Text to Speech

Subtasks:

5.4.4.1 Describe how to access the Watson Language Translator in IBM Cloud Pak for Data

5.4.4.2 Identify the 6 Watson Services that Watson Language Translator can integrate with.

5.4.4.3 Describe the basic functions of Watson Speech to Text

5.4.4.4 Describe how to access an instance of Watson Speech to Text

5.4.4.5 Describe the three transcription options for Watson Speech to Text

5.4.4.6 Identify the 4 mechanisms making a basic request to the Watson Speech to Text Service

5.4.4.7 Describe how to access a Watson Text to Speech instance

5.4.4.8 Describe the basic functions of the Watson Text to Speech Service

5.4.4.9 Describe the two key interfaces to the service (HTTP and WebSockets)

5.4.4.10 Describe what neural voices are in the Watson Text to Speech Service

References:

https://www.ibm.com/support/producthub/icpdata/docs/content/SSQNUZ_current/svc-lang/language-translator-admin.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/watson/speech-to-text.html

https://cloud.ibm.com/docs/speech-to-text-data?topic=speech-to-text-data-gettingStarted#transcribeOptions

https://cloud.ibm.com/docs/speech-to-text-data?topic=speech-to-text-data-basic-request

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/watson/text-to-speech.html

https://cloud.ibm.com/docs/text-to-speech-data?topic=text-to-speech-data-gettingStarted

https://cloud.ibm.com/docs/text-to-speech-data?topic=text-to-speech-data-usingHTTP

https://cloud.ibm.com/docs/text-to-speech-data?topic=text-to-speech-data-usingWebSocket

https://cloud.ibm.com/docs/text-to-speech-data?topic=text-to-speech-data-voices#neuralVoices

Task: 5.5 Compare the major forms of AI solutions and their applicability to common business issues.

Subtasks:

5.5.1 Describe the Retail Predictive Analytics with Weather and how it applies to a retail business case (SPSS Modeler and Cognos Dashboards)

5.5.2 Describe the Live Event Prediction Accelerator and how it applies to the financial industry

5.5.3 Describe the key challenges faced by the utility business and how AI can help Customer Attrition Prediction

Reference links:

https://community.ibm.com/community/user/cloudpakfordata/viewdocument/retail-predictive-analytics-with-we

https://community.ibm.com/accelerators/catalog/content/Life-Event-Prediction-Accelerator

https://community.ibm.com/accelerators/catalog/content/Utilities-Customer-Attrition-Prediction

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wsj/analyze-data/ml-overview_local.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/do/ICPD_home.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wos/getting-started.html

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/wos/wos-monitor-overview.html

https://www.ibm.com/cloud/watson-openscale

https://www.ibm.com/support/knowledgecenter/SSQNUZ_3.0.1/cpd/svc/fci/fci-get-started.html

https://www.ibm.com/support/knowledgecenter/SSCKRH_6.5.1/main/welcome.html