

Data Technician

Name:

Course Date:

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Day 1: Task 1

Please research and complete the below questions relating to key concepts of cloud.

Be prepared to discuss the below in the group following this task.

What can cloud computing do for us in the real-world?	<p>Instead of owning and using physical hardware, Cloud computing allows people and organizations to use computing resources over the internet to:</p> <ul style="list-style-type: none">• Store data online (Google Drive, iCloud, Dropbox)• Run applications without installing them (Gmail, Office 365)• Access systems from anywhere using any device• Streaming services (Netflix, Spotify)• Support remote work and online learning• Scale resources easily (more storage or power when needed)• Backup and disaster recovery to protect data• Quick and convenient sharing of data.																
How can it benefit a business?	<p>Cloud computing helps businesses operate more efficiently and competitively. It lowers the costs using a pay-as-you-go pricing, there is no need to buy or maintain expensive servers. They only pay for what they use. The scalability and faster deployment are able to launch applications quickly.</p> <p>Allowing for remote collaboration, letting teams work from anywhere. Advanced built-in security tools for security and compliance.</p>																
What's the alternative to cloud computing?	<p>The main alternative is traditional physical IT servers; these are owned and managed by the individual or company. This requires a high upfront cost, and it will need physical space, power, and cooling. Maintenance and updates are handled internally, and there is limited scalability.</p>																
What cloud providers can we use, what are their features and functions?	<table border="1"><thead><tr><th>Features</th><th>AWS</th><th>Azure</th><th>GCP</th></tr></thead><tbody><tr><td>Compute</td><td>Lambda</td><td>Virtual Machines</td><td>App Engine</td></tr><tr><td>Storage</td><td>S3, EBS</td><td>Blob Storage</td><td>Cloud Storage</td></tr><tr><td>Databases</td><td>DynamoDB</td><td>SQL Database</td><td>BigQuery</td></tr></tbody></table>	Features	AWS	Azure	GCP	Compute	Lambda	Virtual Machines	App Engine	Storage	S3, EBS	Blob Storage	Cloud Storage	Databases	DynamoDB	SQL Database	BigQuery
Features	AWS	Azure	GCP														
Compute	Lambda	Virtual Machines	App Engine														
Storage	S3, EBS	Blob Storage	Cloud Storage														
Databases	DynamoDB	SQL Database	BigQuery														



Cloud Computing

Day 1: Task 2

Please research the below cloud offerings, explain what they are and examples of use cases.

Cloud Offerings	Explain what it is	When / how might you use this service in the real-world?
IaaS (Infrastructure as a service)	<p>IaaS provides basic computing infrastructure over the internet:</p> <p>Servers (VM's) Storage Networking (firewalls, IPs, load balancers)</p> <p>You control the operating system and everything above it, but the cloud provider manages the physical hardware.</p> <p>Almost full control: OS, apps, data</p> <p><i>You build everything on top of rented hardware</i></p>	<p>You can use IaaS when you want maximum control and flexibility, such as for:</p> <p>Hosting a custom web application with specific OS or software needs</p> <p>Migrating an on-premises server to the cloud ("lift and shift")</p> <p>Running legacy applications that can't easily be rewritten</p> <p>Creating development and testing environments quickly</p>
PaaS (Platform as a service)	<p>PaaS provides a ready-to-use platform for building and deploying applications.</p> <p>You don't worry about servers or operating systems—just your code.</p> <p>Medium control: Apps & data</p> <p><i>You build apps on a managed platform</i></p>	<p>PaaS can be used for when you want to focus on development, but not infrastructure, such as for:</p> <p>Developing web or mobile applications quickly</p> <p>Startups that want to launch products fast</p> <p>Teams with limited system administration expertise</p> <p>Applications that need automatic scaling</p>
SaaS (Software as a service)	<p>SaaS delivers fully finished software applications over the internet.</p> <p>You just log in and use the software—no installation or maintenance.</p> <p>Minimal control: Usage only</p> <p><i>You just use the software</i></p>	<p>You can use for SaaS when you need ready-made software with no technical overhead, such as for:</p> <p>Email and collaboration tools</p> <p>Customer relationship management (CRM)</p> <p>Accounting and payroll systems</p> <p>File storage and sharing</p>



Day 1: Task 3

Please research the below terms and explain what they are, when they would be appropriate and a real-world example of where it could be implemented (i.e. what type of organisation).

Public Cloud	A public cloud is owned and operated by a third-party provider, and resources are shared among many users over the internet. It's appropriate when organizations want low cost, scalability, and minimal maintenance. Example: Startups or small businesses using AWS, Azure, or Google Cloud to host websites or applications.
Private Cloud	A private cloud is dedicated to a single organization, offering greater control, security, and customization. It's appropriate when an organization handles sensitive data or has strict compliance requirements. Example: Banks, hospitals, or government agencies running cloud infrastructure just for their organization.
Hybrid Cloud	A hybrid cloud combines public and private clouds, allowing data and applications to move between them. It's appropriate when organizations want flexibility, such as keeping sensitive data private while using public cloud for scalability. Example: A retail company keeping customer data in a private cloud but using public cloud services during high-traffic sales periods.
Community Cloud	A community cloud is shared by multiple organizations with similar needs, such as security or compliance requirements. It's appropriate when organizations want to share costs and resources while meeting common standards. Example: Several universities or healthcare organizations sharing a cloud system for research or patient data.



Day 2: Task 1

Describe, with examples, the **three** major areas that the Computer Misuse Act deals with.

Area	Description	Example
Unauthorised access to computer material	Gaining unauthorised access to a computer or network, even if no further damage is done.	A hacker gained access to the Hub's computer system and viewed files, even without staff authorization.
Unauthorised modification of computer material	Modifying, adding, or removing data from a computer without authorisation.	Putting ransomware or malware that encrypts files and demands money on a company network.
Unauthorised access with intent to commit further offences	Gaining access to a computer system with the goal of committing theft or fraud, for example.	Obtaining login credentials from a school system in order to submit fraudulent grant applications.

The computer misuse act 1990 is an act where an individual can be criminalised because of computer related offense. Describe three extra powers that the Police and Justice Act 2006 (Computer Misuse) has added.

Description
<p>The creation and distribution of hacking tools:</p> <p>Making, supplying, or obtaining tools (such as software or equipment) intended for hacking or committing computer crimes is now prohibited. The original act's primary focus was on unlawful access.</p>
<p>Targeting Denial-of-Service attacks (DoS):</p> <p>Denial-of-Service (DoS) and Distributed Denial-of-Service (DDoS) attacks, which are designed to prevent computer services from operating, are now illegal under the Act.</p>
<p>Stronger penalties for serious attacks:</p> <p>The Act increased the maximum punishments for serious cybercrimes, such as those that seriously disrupt or harm computer systems.</p>



Look at the below website to answer the questions:
<https://www.gov.uk/personal-data-my-employer-can-keep-about-me>

Write down three items of data which a company can store about an employee.

Name

Address

Emergency contact details

Give three more examples of data that an employer can only store if they first get the employee's permission.

Religion

Genetics

Health and medical conditions

Conduct further research to answer the below questions.

Question	Answer
Provide one example of: Copyright infringement	Downloading and distributing a pirated music or movie file from the internet without the owner's or creator's consent. This breaks copyright law, the creator has the sole right to distribute and sell their work.
Provide one example of: Plagiarism	Copying text from a book, essay, or webpage and passing it off as your own without citing the original author. Even if it's not quite the same as copyright infringement, it is regarded as immoral and a type of intellectual theft.



What are two consequences of copyright infringement and software piracy?	<ul style="list-style-type: none"> ● Legal consequences: When people or companies use or distribute copyrighted content without authorisation, they may be subject to penalties, legal action, or even criminal prosecution.
Give three possible consequences for individuals when using pirated software	<ul style="list-style-type: none"> ● Legal penalties: Using software without a valid license violates copyright law, users may be subject to fines or legal action. ● Security risks: Pirated software often contains malware, viruses, or spyware, which can steal personal information or damage the computer. ● Loss of functionality and support: Pirated software may not receive vital updates, which could result in flaws, crashes, or incompatibility with other programs.

Listed below are some laws which we have covered today:

1. Computer Misuse Act 1990
2. Police and Justice Act 2006 (Computer Misuse)
3. Copyright, Designs and Patents Act 1988
4. Copyright (Computer Programs) Regulations 1992
5. The Health and Safety (Display Screen Equipment) Regulations 1992
6. Data Protection Act 2018
7. Consumer Rights Act 2015

- Insert a number in the first column of each row to match each of the statements with one of the above Acts.



- One of statements is incorrect and not illegal. For this statement, write ‘Not illegal’.

Act number	Clause
3 & 4	With some exceptions, it is illegal to use unlicensed software
7	Any product, digital or otherwise, must be fit for the purpose it is supplied for
1	Unauthorised modification of computer material is illegal
2	It is illegal to create or use a hacking tool for penetration testing
6	Personal data may only be used for specified, explicit purposes
5	Employers must provide their computer users with adequate health and safety training for any workstation they work at
2	It is illegal to distribute hacking tools for criminal purposes
‘Not illegal’	It is illegal to distribute an illicit recording
6	Personal data may not be kept longer than necessary
1	Gaining unauthorised access to a computer system is illegal
5	Employers must ensure that employees take regular and adequate breaks from looking at their screens
1	It is illegal to prevent or hinder access (e.g. by a denial-of-service attack) to any program or data held in any computer
6	Personal data must be accurate and where necessary kept up to date

Day 3: Task 1

Please complete the below lab (3) ‘Explore relational data in Azure’ and paste evidence of the completed lab in the box provided.





Explore relational data in Azure

Learning Path 02 (CSS)

Duration:	2 Hours, 15 Minutes
Lab Series:	DP-900T00-A Microsoft Azure Data Fundamentals [Cloud Slice Provided]
Virtualization Platform:	Hyper-V
RAM:	6.5GB
Cloud Platform:	Azure
Content Version:	2
Is Exam:	No
Status:	Not Running

Launch

Completed
lab

AdventureWorks (sqlserver57776434) | Query editor (preview)

```
2 ctName,
3 ory,
4
5
6 t AS p
7 ProductCategory AS c
8 egoryID = c.ProductCategoryID;
```

ProductID	ProductName
771	Mountain-100 Silver
772	Mountain-100 Silver

Tip: The JOIN shows how to pull related data (the category name) from another table using a matching ID.

16. Close the query editor pane, discarding your edits.

Tip: If you've finished exploring Azure SQL Database, you can delete the resource group that you created in this exercise. Deleting the resource group removes all the resources in one step. It also minimizes cost.

Previous End Next

1 Hr 51 Min Remaining





Day 3: Task 2

Please complete the below lab (4) 'Explore non-relational data in Azure' and paste evidence of the completed lab in the box provided.

Explore non-relational data in Azure

Learning Path 03 (CSS)

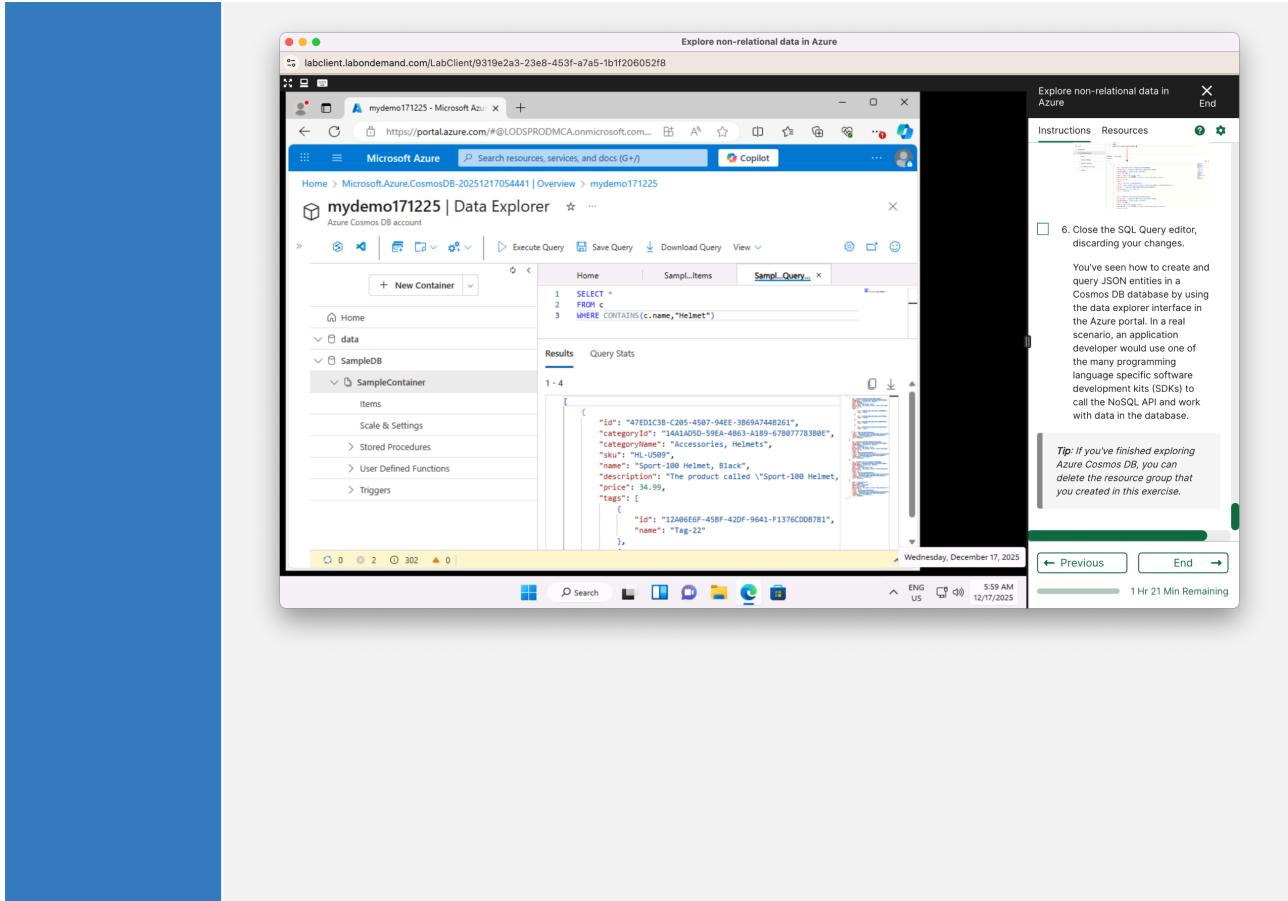
Duration:	2 Hours, 15 Minutes
Lab Series:	DP-900T00-A Microsoft Azure Data Fundamentals [Cloud Slice Provided]
Virtualization Platform:	Hyper-V
RAM:	6.5GB
Cloud Platform:	Azure
Content Version:	2
Is Exam:	No
Status:	Not Running

Launch

Completed lab

The screenshot shows the Microsoft Azure portal with a completed deployment named 'demotest171225_1765977101406'. The deployment status is 'Your deployment is complete'. The deployment details show a start time of 12/17/2025, a correlation ID of 36949c, and a resource group. Below the deployment details, there are sections for 'Cost Management', 'Microsoft Defender for Cloud', and 'Free Microsoft tutorials'. To the right, a sidebar titled 'Explore blob storage' provides instructions and resources. A progress bar at the bottom indicates '2 Hr 8 Min Remaining'.





Day 3: Task 3

Please complete the below lab (5) 'Explore data analytics in Azure' and paste evidence of the completed lab in the box provided.



Explore data analytics in Azure

Learning Path 04 (CSS)

Duration: 3 Hours
 Lab Series: DP-900T00-A Microsoft Azure Data Fundamentals [Cloud Slice Provided]
 Virtualization Platform: Hyper-V
 RAM: 6.5GB
 Cloud Platform: Azure
 Content Version: 2
 Is Exam: No
 Status: Not Running

[Launch](#)

Explore data analytics in Azure

Instructions Resources

3. Select the **Run** button to run the query and review the results, which should include the average trip distance for each day of the week.

Tip: This query groups trips by day name and calculates the average distance, showing a simple example of aggregation you can build on.

Messages Results

```
SELECT DATENAME(dw,tpepPickupDatetime) AS Day,
       AVG(tripDistance) AS AvgDistance
  FROM taxi_rides.parquet
 GROUP BY DATENAME(dw,tpepPickupDatetime)
```

Day	AvgDistance
Wednesday	2.82953699686272
Tuesday	2.8207447008204
Saturday	2.9886075182174
Thursday	2.8541154546796
Sunday	3.0
Monday	2.8

Clean up resources

If you've finished exploring Microsoft Fabric, you can delete the workspace you created for this exercise.

Tip: Deleting the workspace removes all items created in the lab and helps prevent ongoing charges.

Previous Next

1 Hr 55 Min Remaining

Completed lab

Explore data analytics in Azure

Instructions Resources

Driving data insights & better service without scanning everything.

4. Select the query code and run it to see 100 rows of data from the table.

Tip: `taxi` | summarize PickupCount = count()

5. Review the results, then modify the query to show the number of taxi pickups for each hour:

Tip: `bin(..., 1h)` groups events into hourly buckets, making

6. Highlight the modified query and run it to see the results.

Previous Next

1 Hr 19 Min Remaining



Explore data analytics in Azure

<https://app.fabric.microsoft.com/groups/65dbfd36-9b04-4dbf-9ecc-a781be9eeb3/d...>

Fabric **taxi-data** **GovsEventhous** **GovsEventhous**

Eventhouse **Database** **Queryset**

Copilot

Workspaces

GovsEventhous

System overview

Databases

Monitoring

Search

KQL databases

GovsEventhous

Tables

taxi

Shortcuts

Fabric

Tab

Run **Preview** **Recall** **Copy query** **More...**

2 // Here are two articles to help you get started with KQL:
3 // KQL reference guide - <https://aka.ms/KQLguide>
4 // SQL - KQL conversions - <https://aka.ms/sqlcheatsheet>

5 //*****
6
7 // Use "take" to view a sample number of records in the table and check the data
8 taxi
9 | summarize PickupCount = count() by bin(todatetime(tpep_pickup_datetime),
10 1 hour)

Table 1

tpep_pickup_datetime ▾ PickupCount ▾

tpep_pickup_datetime	PickupCount
2022-06-01 00:00:00.000	1
2022-06-01 05:00:00.000	4
2022-06-01 06:00:00.000	16
2022-06-01 08:00:00.000	46
2022-06-01 09:00:00.000	2,720
2022-06-01 10:00:00.000	5,999

Instructions **Resources**

Driving and visualizing small samples without scanning everything.

4. Select the query code and run it to see 100 rows of data from the table.

5. Review the results, then modify the query to show the number of taxi pickups for each hour:

```
kg
taxi
| summarize PickupCount = count()
```

6. Highlight the modified query and run it to see the results.

Tip: `bin(..., 1h)` groups events into hourly buckets, making

Previous **Next**

1 HR 19 Min Remaining

Explore data analytics in Azure

<https://app.fabric.microsoft.com/groups/65dbfd36-9b04-4dbf-9ecc-a781be9eeb3/d...>

Test1 • Last saved: Today at 4:11 AM

File **Home** **Insert** **Modeling** **View** **Optimize** **Help** **Format** **Data / Drill**

Clipboard

Data

Sum of Revenue by Category

Sum of Quantity by Category

Sum of Revenue by City

ProductNames

Sum of Revenue

City

Visualizations

Instructions **Resources**

Turning a static report into an interactive experience.

13. On the File menu, select **Save**. Then save the file with an appropriate .pbix file name. You can open the file and explore data modeling and visualization further at your leisure.

Tip: Saving a .pbix keeps your model, queries, and report together so you can reopen and iterate later.

If you've a Power BI service subscription, you can sign into your account and publish the report to a Power BI workspace.

Tip: Publishing to the Power BI service lets you share the report, schedule refresh, and collaborate with others in your workspace.

Congratulations

You have successfully completed this lab. Click **End** to mark the lab as **Complete**.

Previous **End** **Next**

25 Minutes Remaining



Day 4: Task 1

In your teams, complete the Azure DP-900 practice exam and paste your result below – this is open book and please research and discuss your answers as a team.

6 🔗	<p>Practice Assessment: DP-900T00-A Microsoft Azure Data Fundamentals</p> <p>Practice Assessment for Microsoft Certifications for DP-900T00-A</p>	<p>Additional Details</p> <p>Required: No Available Instructor-Led: Yes Available Self-Paced: Yes</p>
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Result

Your practice assessment results | Microsoft Learn

learn.microsoft.com/en-us/credentials/certifications/azure-data-fundamentals/practice/results?assessmentId=24&practice-assessm...

Practice Assessment Results: December 18, 2025

Practice Assessment for Exam DP-900: Microsoft Azure Data Fundamentals

It took you 13 minutes to complete this assessment.

Overall Results

To be better prepared for the exam, aim to achieve a score of 80% or higher in multiple attempts.

Score: 90%

[Show My Answers](#)

Performance by assessment section

To further strengthen your skills in the following areas, refer to the Customized Learning Material section below.

Describe core data concepts	<div style="width: 100px; background-color: #f0f0f0; height: 10px; position: relative;"><div style="width: 95%; height: 100%; background-color: #2e71a1; position: absolute; left: 0; top: 0;"></div></div>
Identify considerations for relational data on Azure	<div style="width: 100px; background-color: #f0f0f0; height: 10px; position: relative;"><div style="width: 90%; height: 100%; background-color: #2e71a1; position: absolute; left: 0; top: 0;"></div></div>
Describe considerations for working with non-relational data on Azure	<div style="width: 100px; background-color: #f0f0f0; height: 10px; position: relative;"><div style="width: 95%; height: 100%; background-color: #2e71a1; position: absolute; left: 0; top: 0;"></div></div>
Describe an analytics workload on Azure	<div style="width: 100px; background-color: #f0f0f0; height: 10px; position: relative;"><div style="width: 90%; height: 100%; background-color: #2e71a1; position: absolute; left: 0; top: 0;"></div></div>





Day 4: Task 2

1. Scenario Background

"Paws & Whiskers" is a growing pet shop that aims to improve its business by analysing sales, customer information, and inventory data. Currently, the data is collected manually or stored in spreadsheets. Management is interested in transitioning to Microsoft Azure to streamline data storage, analysis, and reporting, enabling them to make data-driven decisions.

2. Data Laws and Regulations

Identify and explain the data laws and regulations relevant to handling customer data within the proposal. Ensure you cover the following points:

- **GDPR Compliance:** Highlight the importance of adhering to the General Data Protection Regulation (GDPR), particularly as it relates to storing and processing customer information.
- **Data Protection Act (DPA) 2018:** Outline how the DPA 2018 may affect the way "Paws & Whiskers" collects and stores data, ensuring compliance with UK laws on data privacy.
- **Other Industry Standards:** Research any additional data protection standards or regulations that may apply to pet shop data, particularly if they involve sensitive or payment information.

3. Azure Service Recommendations

Recommend Microsoft Azure services that would suit the company's data analysis needs and explain why these services are suitable. Your recommendations should include:

- **Data Storage:** Identify suitable storage options, such as **Azure Blob Storage** or **Azure SQL Database**, and discuss the benefits of each for storing large datasets, including inventory, sales transactions, and customer details.
- **Data Analysis Tools:** Recommend tools such as **Azure Machine Learning** for customer behaviour analysis or **Azure Synapse Analytics** for analysing sales trends.
- **Data Integration and Automation:** Explain how services like **Azure Data Factory** could automate data collection and integration processes, improving efficiency.



4. Data Types and Data Modelling

Define the types of data "Paws & Whiskers" will need to work with and describe your approach to data modelling:

- **Data Categories:** Identify key data types, such as customer demographics, transaction history, pet inventory, and product categories.
- **Data Modelling Approach:** Outline how you would structure this data using a relational model or a data warehouse approach, considering factors like tables, entities, relationships, and primary keys.

5. Data Storage Formats and Structures in Azure

Discuss how you would store data within Azure and the formats you would recommend:

- **Data Formats:** Specify recommended formats (e.g., CSV for raw data imports, JSON for structured data, Parquet for analytics) and explain why these formats are suitable for specific data types.
- **Data Security and Encryption:** Include recommendations for securing data using Azure's built-in encryption features and access controls to ensure compliance with data privacy regulations.

6. Additional Considerations

Provide any other considerations that might enhance data handling and efficiency in Azure, such as:

- **Backup and Disaster Recovery:** Outline a backup plan using **Azure Backup** or **Azure Site Recovery** to safeguard against data loss.
- **Data Visualisation:** Discuss potential use of **Power BI** within Azure for creating dashboards that provide management with real-time insights into sales and customer trends.
- **Future Scalability:** Comment on how Azure services can scale as the business grows, accommodating larger datasets and more complex analyses.

Submission Guidelines:

1. **Structure:** Ensure your report is well-organised, with sections for each task (e.g., Data Laws, Azure Services, Data Types, etc.).
2. **Formatting:** Include headings, bullet points where appropriate, and any visuals or diagrams that support your explanations.
3. **References:** Cite any resources or regulations referenced in the report.
4. **Length:** Aim for 1500-2000 words.

1. Introduction

"Paws & Whiskers" is a growing pet shop, in order to enhance its business operations, the business can leverage its data analysis. Currently, the company collects data manually or stores it in spreadsheets, which is inefficient, prone to errors, and a challenge to scale. utilising Microsoft Azure as a cloud-based platform for inventory, sales, and customer data management and analysis. Making the switch to Azure, the business can:



- Automate data collection and integration.
- Use advanced analytics to learn more about customer trends.
- Create visual reports for informed business decisions.
- Ensure data security and regulatory compliance.

This report will talk about the laws that protect customer information, suggest Azure services, explain the best data types and modelling methods, talk about data storage formats, and look at other things that can make data handling more efficient.

2. Data Laws and Regulations

Important laws for "Paws & Whiskers" include the GDPR, the UK Data Protection Act (DPA) 2018, and other industry standards. Allowing for legal and ethical requirements must be strictly followed when handling customer data.

GDPR (General Data Protection Regulation)

- Only gather information necessary for orders, loyalty programs, etc.
- Be clear with customers informing them how their data will be used and stored.
- Allow customers to control their data, they can view, update, or ask for it to be deleted.
- Keep data safe and protect it from breaches with proper security measures.

UK Data Protection Act 2018 (DPA)

- This law applies on top of GDPR in the UK.
- Ask customers for permission before using their data for marketing.
- Don't save data for too long: Data should only be kept for as long as is required.
- Protect sensitive data: Extra care is needed for payment or other sensitive information.

Following these rules keeps customer data safe, builds trust, and keeps Paws & Whiskers legally compliant.

3. Azure Service Recommendations

Microsoft Azure offers a dependable and secure way for Paws & Whiskers to store, manage, and make use of its business data. For data storage:

Azure SQL Database is ideal for organised information such as customer details, sales records, and stock levels, as it keeps everything structured and easy to update.

Azure Blob Storage is well suited for storing files like spreadsheets, receipts, and product images, all kept safely in one place. Together, these services ensure data is easy to access and can grow as the business grows.

For understanding the data better, tools like:

Azure Synapse Analytics can help spot sales trends and busy periods.

Azure Machine Learning can be used to learn more about customer behaviour and preferences. To save time and reduce manual work.

Azure Data Factory can automatically collect and move data from different sources into Azure, keeping information up to date and improving overall efficiency.

4. Making Sense of the Data

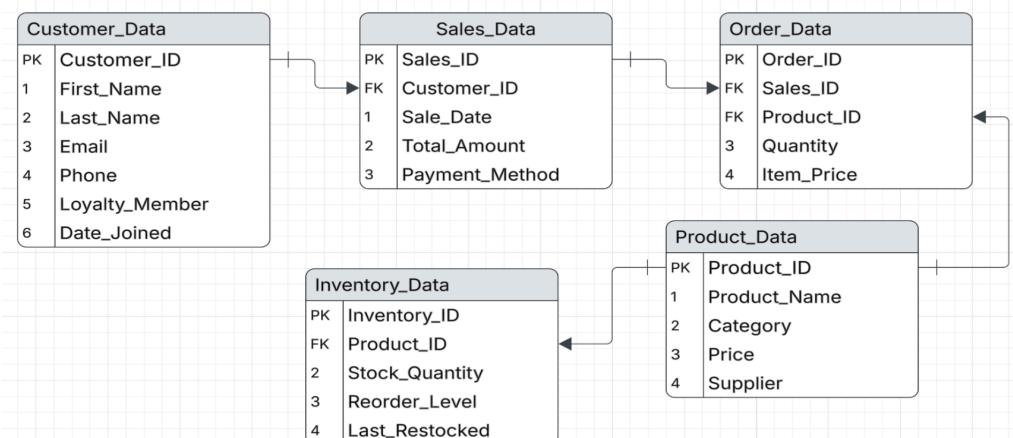
Azure helps turn data into useful information for the business .

Data Analysis & Reporting Tools

Tool	What It Does	Why It Helps
Azure Synapse Analytics	Finds patterns in sales data	Shows what sells best and when
Azure Machine Learning	Predicts customer behaviour	Helps target offers and promotions
Power BI	Creates simple charts and dashboards	Makes performance easy to understand



To support daily operations and future growth, Paws & Whiskers needs to work with several different types of data. The attached data schema shows how this information can be organised clearly and efficiently using a **relational data model**. This approach stores data in separate but connected tables, reducing duplication and improving accuracy.



Using this structured data model provides several advantages:

- Reduces duplicate data (e.g. product details stored once)
- Improves data accuracy and consistency
- Makes reporting faster and more reliable
- Supports future expansion, such as online sales or additional stores

This schema also aligns well with Microsoft Azure services such as Azure SQL Database and Azure Synapse Analytics, making it suitable for both daily operations and advanced business analysis. Using these tools will help managers make informed decisions based on facts and not guesswork.

Power BI can be used to turn business data into simple charts and easy-to-read dashboards. Instead of looking through spreadsheets, managers at Paws & Whiskers can quickly see how the business is performing at a glance. The dashboards can show **sales trends**, **customer buying habits**, and **current stock levels**, helping staff understand what is selling well and what needs restocking. Because the information updates automatically, management can make real-time decisions about promotions, ordering new stock, and marketing activities. Overall, Power BI makes business performance clear, visual, and easy to understand for everyone, even without technical knowledge.

5. Automating Everyday Tasks

Azure Data Factory

- Automatically collects data from sales systems and spreadsheets
- Updates reports without manual effort
- Reduces errors and saves staff time

For Paws & Whiskers, data would be stored securely in **Microsoft Azure** using different file types depending on how the data is used. When first uploading or importing data, straightforward spreadsheet-style files (like **CSV**) would be used because they are simple to prepare and easy to understand. Structured formats like **JSON** would be used to neatly store customer and sales information so systems can read and update it easily.

For analysing large amounts of sales and stock data, a format designed for fast reporting (such as **Parquet**) would be used, helping reports load quickly and run smoothly. To keep data safe, Azure automatically locks (encrypts) information both when it is stored and when it is being transferred, so it cannot be read by unauthorized users. Access is tightly controlled so only approved staff can see the sensitive information, helping Paws & Whiskers meet data protection laws and protect customer privacy. This means employees can focus more on customers and less on paperwork.



6. Types of Data Used

Using Microsoft Azure helps Paws & Whiskers handle its data more **efficiently** and **safely**, for both now and in the future. The business works with several types of linked data, including:

- Customer details (such as names and loyalty membership)
- Sales information (what was sold, when, and for how much)
- Stock levels and product details like food, toys, accessories, and grooming services.

Every customer, product, and order has a unique ID, and sales are connected to both customers and items. All of this information is arranged into a clear framework. This improves the accuracy, speed, and comprehensibility of reporting.

Only authorised personnel are able to view sensitive data thanks to Azure's automatic encryption and access controls, and frequent backups guard against data loss. If something goes wrong, the data can be quickly restored, giving peace of mind and ensuring the business can continue running. Managers can also use **Power BI** dashboards to see up-to-date information on sales, best-selling products, stock levels, and customer trends in a simple visual format. As Paws & Whiskers grows, Azure can easily scale to handle more customers, more data, and even new stores or online sales, without the need to replace existing systems.

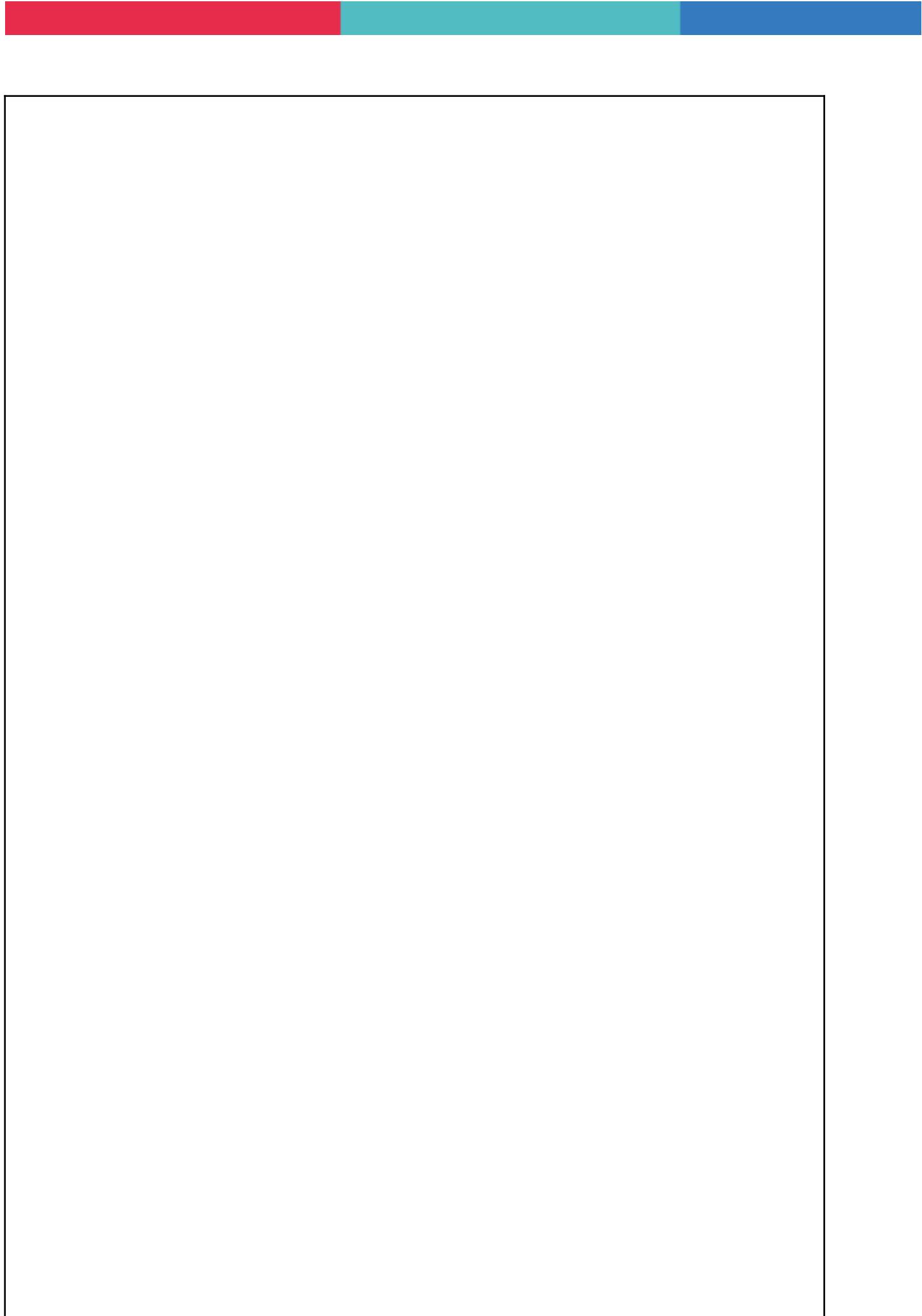
Business Benefits Summary

Benefits	What It Means
Saves time	Less manual data work
Reduces errors	Automated data handling
Improves sales	Better insights and predictions
Protects data	Built-in security and compliance
Scales easily	Grows with the business

References:

- European Union. **General Data Protection Regulation (GDPR)**. 2018. <https://gdpr-info.eu>
- UK Government. **Data Protection Act 2018**. <https://www.gov.uk/data-protection>
- Microsoft Azure. **Azure Blob Storage**. <https://azure.microsoft.com/en-us/services/storage/blobs/>
- Microsoft Azure. **Azure SQL Database**. <https://azure.microsoft.com/en-us/services/sql-database/>
- Microsoft Azure. **Azure Synapse Analytics**.
<https://azure.microsoft.com/en-us/services/synapse-analytics/>
- Microsoft Azure. **Azure Data Factory**. <https://azure.microsoft.com/en-us/services/data-factory/>
- PCI Security Standards Council. **PCI DSS Requirements**. <https://www.pcisecuritystandards.org/>







We have included a range of additional links to further resources and information that you may find useful, these can be found within your revision guide.

END OF WORKBOOK

Please check through your work thoroughly before submitting and update the table of contents if required.

Please send your completed work booklet to your trainer.

