

## Worksheet 2 Answer Key – Grade 7 Computing –

### Unit 2: Managing Data, Topic 2.3: Databases

**Section A:** Fill in the Blanks using words from the list provided. Some of the words in the list will not be used.

rule	unique	< 80	Primary Key	Record
duplicate	> 80	Greater than	Less than	Field

1. A **Primary Key** must contain a **unique** value for every single record, helping to prevent duplicate entries.
2. When searching a database, a **criterion** is a **rule** used to filter which records are displayed.
3. In a database, using **the > operator** in a query will select numbers that are **Greater than** the data given.
4. In a database table, the row is called a **record**.
5. To find all students with marks greater than 80, we can use the criterion **marks > 80**

### Section B: Multiple Choice Questions (MCQs)

1. Which field best represents a Primary Key in a school's database table of students?  
a) Teacher's Name   b) Date of Birth   c) Favourite Subject   **d) Student ID**
2. A command or function that retrieves and filters data based on specific criteria is called:  
a) Field   **b) Query**   c) Data   d) Chart
3. In a database search, if you use the criterion Age < 12, which records will be returned?  
a) age 12 and over   b) age exactly 12   c) **age 11 and under**   d) All records
4. Which symbol is used for "less than" in a search criterion?  
a) =   b) >   **c) <**   d) <>
5. Which search criterion will find products that cost more than 1000?  
a) Cost < 1000   b) Cost = 1000   **c) Cost > 1000**   d) Cost ≤ 1000
6. This type of conditional formatting uses colours to show low, medium, and high  
a) Formulas   **b) Colour Scales**   c) Data bars   d) Icon sets

## Section D: Short Answer Questions

1. Explain in one sentence why a field like First Name is a poor choice for a Primary Key.

First name is a poor choice for primary key as first names can be similar or repeating so these are not unique and suitable for primary key.

2. Explain why Conditional Formatting is a useful tool when analysing data in a large spreadsheet.

Conditional formatting is useful as it helps you highlight the required or the important data by changing text or cell color in a large spreadsheet.

3. If you use a single criterion to search a database using text fields, like Game Name < "S", which part of the alphabet will the returned results be from?

It will return game names that come before "S" alphabetically i.e., entries starting with letters A through R (or any text that sorts before "S").

## Section E: Database and Spreadsheet Scenario Questions

### Scenario 1: Primary Keys and Database Structure

A section of a game database is shown below:

Player Number	Player Name	Game Name	Age Rating	Genre
1	Mohammed Khan	Bill & Betty	12+	2D Platform
2	Charlie Jones	Build Blocks	3+	Arcade
3	John Adams	Ping Pong	3+	Arcade
4	Mohammed Khan	Bill & Betty	12+	2D Platform
5	Carla Estevez	Ping Pong	3+	Arcade

1. Which field in the table above can be selected as the Primary Key?

Player Number as it is unique for each row.

2. Explain why Player Name is not a suitable field to be the Primary Key in this table.

This is because names are not unique in the table (e.g., "Mohammed Khan" appears more than once), so they cannot uniquely identify records.

### Section C: Match the Columns (5 marks)

Column A	Column B
1. Table	a) consists of two or more columns to uniquely identify a record.
2. Record	b) A column in database table
3. Field	c) Collection of records arranged in rows and columns
4. Composite Primary Key	d) A Row in a table

### Section D: Short Answer Questions

1. What is a query? Give one example.

**A query is a request to the database to retrieve or filter records that meet specified conditions.**

**Example: Marks > 80 : returns students with marks greater than 80.**

2. Give any three characteristics of a primary key.

1. **Unique** for every record (no two records share the same Primary key).

2. **Not empty / Not null** (every record must have a value).

3. **Stable / rarely changes** (should not be updated frequently).

3. What does it mean to search using a criterion? Give one example using ">".

**Searching using a criterion means filtering records so only those that meet the condition are shown.**

**Example: Marks > 50 finds students whose marks are greater than 50.**

4. Write one example of a search query that shows students who scored less than 50 marks.

**Marks<50**

### Section E: Spreadsheet and Database Scenario Questions

#### Question 1 (Database Scenario):

You are managing a database of students:

- Write a criterion to find students who have marks greater than 80.

**Marks > 80**

- Write a criterion to find students who are younger than 13. **Criterion to find students who are younger than 13: Age < 13**

Student ID	Name	Age	Marks
ST01	Ayesha	13	82
ST02	Ahmed	12	76
ST03	Sana	14	65
ST04	Bilal	13	89

## Question 2: School Library Database

Your school librarian keeps all book records in a database table called **Books**.

Book_ID	Title	Author	Year_Published	Copies_Available
B001	The Secret Garden	F. H. Burnett	1911	4
B002	Wonder	R. J. Palacio	2012	2
B003	Harry Potter	J. K. Rowling	1997	5
B004	The Hobbit	J. R. R. Tolkien	1937	1

1. Write a search criterion to find all books published after 2000.

Search criterion to find all books published after 2000: **Year\_Published > 2000**

2. Write a search criterion to find books that have less than 3 copies available.

Search criterion to find books that have less than 3 copies available:

**Copies\_Available < 3**

3. If you want to find all books written by “J. K. Rowling,” what criterion would you use?

Criterion to find all books written by “J. K. Rowling”: **Author="J. K. Rowling"**

**Question 3:** Look at the **computer games** database table on the right:

- a. What is the **primary key** in computer game database?

**Game Code**

- b. Write a query to **select schools greater than B:**

**Schools > “B”**

- c. Why is the **Genre** field not appropriate to be set as the primary key?

Genre field is not appropriate to be set as the primary key because it is not unique for every book. It can be similar for many books.

Game code	Game name	Genre	Age rating (Age+)
BB01	Bill & Betty	2D platform	12
BB02	Build Blocks	Arcade	3
PP01	Ping Pong	Arcade	3
SA01	Super Adventurer	2D platform	12
BSB01	Blocks Super Build	Puzzle	3
TGR01	The Great Race	Racing	3
TPT01	Theme Park Tycoon	Simulation	8
HSH01	Home Sweet Home	Simulation	8
WIO01	Work It Out	Puzzle	8
PB01	Point Blank	2D platform	12
TR01	Train Ride	2D platform	8
HM01	Hospital Manager	Simulation	8
BK01	Bungo Kawaii	3D platform	8
FB01	Flip Buggy	Racing	3
CD01	Countdown Doug	Puzzle	8
CC01	Chuck's Challenge	3D platform	12
RB01	Risky Business	Simulation	12
WC01	Word Crush	Puzzle	8
Z01	Zoomer	Racing	12
DG01	Diggy Hole	Simulation	3
PC01	Portal Combat	Arcade	12
AB01	Angry Bugs	Puzzle	3
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**d. Answer the following:**

- i. Create a query to find out which games have **a name that begins with one of the first three letters of the alphabet**. Display the **game name field only**.

SELECT GameName from Computer Games Database WHERE Game Name = 'A' OR Game Name = 'B' OR Game Name = 'C' (This is a rough estimate of the answer, Perfect SQL Syntax is not expected)

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- ii. Which **results** are in your query?

Angry Bugs,Bill & Betty,Blocks Super Build,Build Blocks,Bungo Kawaii,Chuck's Challenge,CountdownDoug

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- iii. Explain what **criteria** you used for your query and why?

The criterion used is game name < "D" which will only select the game names starting from the first three letters of alphabet that come before "D".

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**Question 4:** Make a query by following the directions given below about the table of Fruits shown:

- a) Select Fruits less than D:

Fruits < "D"

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- b) Select Fruits greater than D:

Fruits > "D"

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	A
1	FRUITS
2	Apples
3	Tangerines
4	Bananas
5	Pears
6	Pineapples