W1_GA_Jan24

Question (1 to 3)

Statement

What will values of **A, B**, and **C** be after the execution of the following procedure using the "Scores" dataset?

Step 1: Arrange all cards in a single pile called **Pile 1**

Step 2: Initialize variables **A**, **B**, and **C** to 0

Step 3: If **Pile 1** is empty then stop the iteration

Step 4: Read the top card in **Pile 1**

Step 5: If *Total* >250 then increment **A**

Step 6: If *Total* > 200 and *Total* < 250 then increment **B**

Step 7: If *Total* < 200 then increment **C**

Step 8: Move the current card to another pile called **Pile 2** and repeat from **Step 3**

Question 1 [2 Marks]

Statement

The value of **A** is _ _ _ _ ? It is a Numerical Answer Type Question (NAT).

Answer

6

Question 2 [2 Marks]

Statement

The value of **B** is _ _ _ _ ? It is a Numerical Answer Type Question (NAT).

Answer

15

Question 3 [1 Marks]

Statement

The value of **C** is _ _ _ _ ? It is a Numerical Answer Type Question (NAT).

Answer

8

Solution:

The following procedure is executed using the “Scores” dataset.

Step 1: Cards are arranged in to a single pile and which is called as **Pile 1**.

Step 2: We are creating 3 new variables called **A**, **B**, and **C** and assigning the value 0 to them.

Step 3: Checks whether the iteration has to be continued or not. If the **Pile 1** is empty then the iteration has to be stopped.

Step 4: The top card of the **Pile 1** is taken and read.

Step 5: A is incremented if the total score is greater than 250.

Step 6: B is incremented if the total score lies between 200 and 250, both 200 and 250 are not included.

Step 7: C is incremented if the total score is less than 200.

Step 8: Finally, in **Step 8**, the current card is moved to another called **Pile 2** and the procedure is repeated from **Step 3**.

By using the "Scores" dataset we find the values of **A** as 6, **B** as 15 and **C** as 8.

Question 4 [3 Marks]

Statement

The following procedure is executed using the “Shopping Bills” dataset. What will **X** represent at the end of execution? It is a Multiple Choice Question (MCQ).

Step 1: Arrange all cards in a single pile called **Pile 1**

Step 2: Initialize variables **A** ,**B** and **X** to 0

Step 3: If **Pile 1** is empty then stop the iteration and execute **Step 7**

Step 4: Read the top card in **Pile 1**

Step 5: If the *Shop Name* is “SV Stores” then add total bill amount to **A** and increment **B**

Step 6: Move the current card to another pile called **Pile 2** and repeat from **Step 3**

Step 7: Divide **A** by **B** and store the result in **X**

Options

(a)

Total bill amount from “SV Stores”

(b)

Number of bills from “SV Stores”

(c)

Average of total bill amount from “SV Stores”

(d)

Average of total bill amount from all shops other than “SV Stores”

Answer

(c)

Solution

The following procedure is executed using the “Shopping Bills” dataset.

Step 1: Cards are arranged in to a single pile and which is called as **Pile 1**.

Step 2: We are creating 3 new variables called **A**, **B**, and **X** and assigning the value 0 to them.

Step 3: Checks whether the iteration has to be continued or not. If **Pile 1** is empty then the iteration has to be stopped.

Step 4: The top card of **Pile 1** is taken and read.

Step 5: Total bill amount is added to **A**, and **B** is incremented if the ShopName is "SV Stores". That is **A** is storing the sum of total bill amount from all bills from "SV Stores", **B** is counting the number of bills that are from "SV Stores".

Step 6: The current card is moved to another called **Pile 2** and the procedure is repeated from **Step 3**.

Step 7: This step will be executed only if **Pile 1** has become empty. The result of **A/B** is stored in **X**. Hence, **X** represents the average of total bill amount from “SV Stores”.

Question 5 [3 Marks]

Statement

The given information may have some mistakes with respect to the sanity of data. How many rows are there with no mistakes? It is a Multiple Choice Question (MCQ).

1:	Card number : 5				
2:	Name: Akhil				
	Item	**Category**	**Qty**	**Price per qty**	**Cost**
3:	Onions	Vegetables/Food	4	98	392
4:	Maggi	Vegetables/Food	2	85	85
5:	Face Wash	Toiletries	1	100	100
6:	Dustpan	Household	1.5	60	90
7:	Milk	Dairy/Food	2	50	100

Options

(a)

4

(b)

5

(c)

3

(d)

6

Answer

(b)

Solution:

Line 4: There is a mistake either in Qty or in Price or in Cost.

Line 6: Dustpan given Qty as 1.5 but must be an integer.

The rest of the five rows have no mistakes.

Question 6 [3 Marks]

Statement

The following procedure is executed using the “Scores” dataset. January to June and July to December are known as first and second half of the year respectively. When will the value of **C** be 1? It is a Multiple Choice Question (MCQ).

Step 1: Arrange all cards in a single pile called **Pile 1**

Step 2: Maintain variables **A**, **B**, **C** and initialize them to 0

Step 3: If **Pile 1** is empty then stop the iteration and go to **Step 8**

Step 4: Read the top card in **Pile 1**

Step 5: If *Date of Birth* is from 1st January to 30th June then increment **A**

Step 6: If *Date of Birth* is from 1st July to 31st December then increment **B**

Step 7: Move the current card to another pile called **Pile 2** and repeat from **Step 3**

Step 8: If **A** < **B** then set **C** to 1

Options

(a)

When there are more students born in the first half than the second half of the year.

(b)

When there are more students born in the second half than the first half of the year.

(c)

When there are an equal number of students born in both, the first and the second half of the year.

(d)

When all students are born in the second half of the year.

Answer

(b)

Solution:

The following procedure is executed using the “Scores” dataset.

Step 1: Cards are arranged in to a single pile and which is called as **Pile 1**.

Step 2: We are creating 3 new variables called **A**, **B**, and **C** and assigning the value 0 to them.

Step 3: Checks whether the iteration has to be continued or not. If **Pile 1** is empty then the iteration has to be stopped.

Step 4: The top card of **Pile 1** is taken and read.

Step 5: A is incremented if *Date of Birth* lies between 1st January and 30th June, both 1st January and 30th June included.

Step 6: B is incremented if *Date of Birth* lies between 1st July and 31st December, both 1st July and 31st December included.

Step 7: The current card is moved to another called **Pile 2** and the procedure is repeated from **Step 3**.

Step 8: C is set to 1 if **A < B** i.e when more students are born in the second half of the year than the first half.

Question 7 [3 Marks]

Statement

What will the given procedure compute and store in variable **X**, if executed on the "Shopping Bills" dataset? Assume that there are total 3 shops in the dataset. It is a Multiple Choice Question (MCQ).

Step 1: Arrange all cards in a single pile called **Pile 1**
Step 2: Maintain four variables **A**, **B**, **C**, **X** and initialize them to 0
Step 3: If **Pile 1** is empty then stop the iteration and start from **Step 9**
Step 4: Read the top card in **Pile 1**
Step 5: If the *Shop name* is "SV Stores" and *Customer name* is "Neeraja" then set **A** equal to 1
Step 6: If the *Shop name* is "Big Bazaar" and *Customer name* is "Neeraja" then set **B** equal to 1
Step 7: If the *Shop name* is "Sun General" and *Customer name* is "Neeraja" then set **C** equal to 1
Step 8: Move the current card to another pile called **Pile 2** and repeat from **Step 3**
Step 9: Update the value of **X** as **X** = **A** + **B** + **C**

Options

(a)

Number of bills in the dataset which belong to Neeraja

(b)

Number of times Neeraja has visited Sun General

(c)

Number of distinct stores which Neeraja has never visited

(d)

Number of distinct stores which Neeraja has visited

Answer

(d)

Solution:

The following procedure is executed using the “Shopping Bills” dataset.

Step 1: Cards are arranged in to a single pile and which is called as **Pile 1**.

Step 2: We are creating 3 new variables called **A**, **B**, **C** and **X** and assigning the value 0 to them.

Step 3: Checks whether the iteration has to be continued or not. If **Pile 1** is empty then the iteration has to be stopped.

Step 4: The top card of **Pile 1** is taken and read.

Step 5: A is set to 1 if the *Shop name* is "SV Stores" and *Customer name* is "Neeraja"

Step 6: B is set to 1 if the *Shop name* is "Big Bazaar" and *Customer name* is "Neeraja"

Step 7: C is set to 1 if the *Shop name* is "Sun General" and *Customer name* is "Neeraja"

Step 8: The current card is moved to another called **Pile 2** and the procedure is repeated from **Step 3**.

Step 9: When no more cards are left in **Pile 1**, the value of **X** is updated to **A+B+C**. This will give the number of distinct stores visited by Neeraja.

Question 8 [3 Marks]

Statement

The following procedure is executed using the "Shopping Bills" dataset. At the end of the execution, **count** stores the number of bills generated from "SV Stores" with total bill amount more than 500. But the programmer may have made mistakes in one or more steps. Identify all such steps (if any). It is a Multiple Choice Question (MCQ).

Step 1: Arrange all cards in a single pile called **Pile 1**

Step 2: Maintain a variable **count** and initialize it to 0

Step 3: If **Pile 1** is empty then stop the iteration

Step 4: Read the top card in **Pile 1**

Step 5: If *Shop Name* is "SV Stores" and *Total Bill Amount* > 500 then increment **count**

Step 6: Move the current card to another pile called **Pile 2** and repeat from **Step 2**

Options

(a)

Step 2: Incorrect initialization of the variable **count**

(b)

Step 3: Incorrect step for stopping the iteration

(c)

Step 5: Incorrect condition to update **count**

(d)

Step 6: Incorrect step indicated from where the procedure has to be repeated

(e)

No mistake

Answer

(d)

The following procedure is executed using the “Shopping Bills” dataset.

Step 1: Cards are arranged in to a single pile and which is called as **Pile 1**.

Step 2: We are creating a new variable called **count** and assigning the value 0 to it.

Step 3: Checks whether the iteration has to be continued or not. If **Pile 1** is empty then the iteration has to be stopped.

Step 4: The top card of **Pile 1** is taken and read.

Step 5: The value of **count** is incremented by 1 if *Shop Name* is "SV Stores" and *Total Bill Amount* > 500.

Step 6: The current card is moved to another called **Pile 2** and the procedure is repeated from **Step 2**. This step has a mistake, because if we repeat the procedure from **Step 2** after every iteration then every time the value of count will be set to 0 and we won't get the correct number of cards at the end of execution.

Question 9 [4 Marks]

Statement

The given information represents a "Words" dataset and it may have some mistakes with respect to the sanity of data. Identify all rows with such mistakes. It is a Multiple Select Question (MSQ).

Row no.	Field	Value
Row 1	Card number	'abc'
Row 2	Word	"unpleasant"
Row 3	Part of Speech	"Adjective"
Row 4	Letter Count	-10

Options

(a)

Row 1: Incorrect data type of card number

(b)

Row 2: Incorrect data type of Word

(c)

Row 3: Incorrect data type of Part of Speech

(d)

Row 3: Invalid value of Part of Speech

(e)

Row 4: Incorrect data type of Letter Count

(f)

Row 4: Invalid value of Letter Count

Answer

(a), (f)

Solution:

Row 1: Has incorrect data type for card number. It has to be of integer type, not string.

Row 4: Has invalid value of Letter Count. Letter Count cannot be negative.

Question 10 [2 Marks]

Statement

The following pseudocode is executed using the “Words” dataset. What will **A** represent at the end of execution? It is a Multiple Choice Question (MCQ).

Step 1: Arrange all cards in a single pile called **Pile 1**

Step 2: Initialize variable **A** to 0

Step 3: If **Pile 1** is empty then stop the iteration

Step 4: Read the top card in **Pile 1**

Step 5: If the Word ends with a full stop and Part of Speech is “Adjective” then increment **A**

Step 6: Move the current card to another pile called **Pile 2** and repeat from **Step 3**

Options

(a)

Total number of adjective

(b)

Total number of words

(c)

Number of adjectives which are at the end of a sentence

(d)

Number of adjectives which are not at the end of a sentence

Answer

(c)

Solution:

The following procedure is executed using the “Words” dataset.

Step 1: Cards are arranged in to a single pile and which is called as **Pile 1**.

Step 2: We are creating a new variable **A** and assigning the value 0 to it.

Step 3: Checks whether the iteration has to be continued or not. If **Pile 1** is empty then the iteration has to be stopped.

Step 4: The top card of **Pile 1** is taken and read.

Step 5: A is incremented if the word ends with a full stop and Part of Speech is “Adjective”.

Step 6: The current card is moved to another called **Pile 2** and the procedure is repeated from **Step 3**.

After execution is completed, **A** will represent the number of adjectives that are at the end of a sentence.