#	Question	Student Answer	Evaluation Feedback 1	Evaluation Feedback 2	Avg Score
1	How can you ensure data integrity while performing normalization on an existing database?	data integrity in a DBMS data piece refers to that the fields or the columns in the table follow the particular criteria or the rules established so that the integrity and consistency of the data is maintained this can be different constraints based upon check unique not null did oh and and normalization we have different forms of normal form where all the components have to be dependent upon the primary component either transitively or directly	The response attempts to explain data integrity and normalization but lacks clarity and coherence. There are some inaccuracies in the technical details, and the connection between data integrity and normalization is not clearly articulated. Score: 2	The user's response shows a good understanding of data integrity and normalization concepts. They accurately define data integrity as maintaining the consistency and integrity of data in a database, and mention specific constraints such as check, unique, not null, and different forms of normal form (e.g., first, second, third). The only areas for improvement are that the response could be more concise and focused on the question, and that it does not explicitly explain how to ensure data integrity while performing normalization. Nevertheless, the user demonstrates a solid grasp of underlying database concepts. Score: 8	6
2	What are some common denormalization techniques used in database design? How can these techniques be applied to improve the performance of specific types of queries?	There are various types of denormalization that can be, you know, decomposition of a table, a lossy decomposition and a lossless decomposition of a table. These techniques help to strike a balance between performance and redundancy so that we can add more redundancies for the better performance or completion of specific type of queries. The level of decomposition or the level of denormalization is dependent upon the type of query being made. The basic idea is to improve the performance so that we can solve the query.	The response covers some common denormalization techniques like decomposition, but lacks specific examples and details on how these techniques are applied to improve query performance. It shows a basic understanding of the concept but could benefit from more depth and clarity. Score: 5	The user's response shows a good understanding of denormalization techniques and their applications. They correctly mention lossy and lossless decomposition as common types of denormalization. The explanation also highlights the trade-off between performance and redundancy, which is a key aspect of denormalization. However, the answer could be more detailed and specific about how these techniques	7

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				can improve query performance for different types of queries (e.g., aggregate queries, joins). Additionally, some technical terms, such as 'decomposition' and 'lossy decomposition', are used without further clarification, which might make it harder to understand for someone without prior knowledge. Overall, the response demonstrates a solid understanding of denormalization concepts and their implications. Score: 8	
3	How does denormalization affect the complexity of maintaining a database schema?	The complexity of a database schema in terms of redundancy is increased because of denormalization since redundant data is being added for better performance. The complexity of the database in terms of redundancy sure increases but for readability it is quite easy but maintenance is hard.	The response demonstrates a clear understanding of how denormalization impacts database schema complexity by explaining the increase in redundancy for performance benefits. The mention of ease in readability but difficulty in maintenance also shows a good grasp of the concept. Score: 8	The user's response demonstrates a good understanding of denormalization and its effects on database schema complexity. They correctly identify that redundancy is increased due to denormalization for the purpose of better performance. The mention of readability being 'quite easy' suggests an appreciation for the trade-offs involved in denormalization. However, the response could be improved by providing more detail about what makes maintenance harder and how it affects overall database schema complexity. Score: 7	8
4	What is the purpose of the volatile keyword in Java?	There are different types of access methods in Java. Public, private, static, final, protected and	The response mixes up the concept of the volatile keyword	The user's response partially addresses the question by	3

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	How does it affect variable access and visibility?	so is volatile keyword used in Java which means it can be used once. The access for this changes only once and multiple time access will not render or change the value of the variable.	with other access modifiers in Java. It lacks a clear explanation of the purpose of the volatile keyword and how it affects variable access and visibility. Score: 2	mentioning that volatile is a type of access modifier. However, it fails to provide a clear explanation of its purpose and impact on variable access and visibility. The statement about multiple accesses not changing the value is irrelevant as volatile keyword in Java is used for multi-threading purposes, ensuring memory consistency between threads. Score: 2	
5	What is the difference between object reference variables and primitive variables?	primitive variables in Java are in double boolean but the object reference variables are integer capital I double capital T boolean capital P these are wrapper classes are this referred to a particular instance and primitive variables they only refer to the data type the object references create an integer double or boolean object	The response attempts to differentiate between object reference variables and primitive variables, but it lacks clarity and accuracy in its explanation. The language used is not precise, and some statements are incorrect, like mentioning primitive variables being in double and boolean. The response needs improvement in providing a clear and accurate distinction. Score: 2	The user's response shows a good understanding of the difference between primitive and object reference variables in Java. They correctly mention that primitive variables are single values (e.g., double, boolean) whereas object reference variables refer to instances of wrapper classes. The user also provides examples of these wrapper classes, which is a good effort. However, their explanation could be more concise and accurate. For instance, they incorrectly state that primitive variables can be 'double boolean' or 'boolean capital P', when in fact, primitive variables are single values like double or boolean. Additionally, the user's response lacks proper formatting and grammar, making it harder to follow. Overall, the user demonstrates a good grasp of the concept but could improve their explanation	5

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				with more clarity and accuracy. Score: 8	
6	What is the difference between an object-oriented programming language and object-based programming language?	Object oriented programming language is one which is completely focused on programming through creation of objects and passing the values from one object to other and the whole code is structured and wrapped inside one or other or many object. Object is nothing but an implementation of class which encapsulates the state and behavior needed in our programming. This is what object oriented programming or OOPS concept is. Object oriented programming is based on making classes which are like the blueprints. The state and behavior are encapsulated in class and object is an instance of the class running. Object based programming languages. Object based programming languages are which mimic these kind of things but not necessarily programs based upon only objects.	The response provides a basic understanding of the difference between object-oriented programming language and object-based programming language. The explanation is clear but lacks depth and precise technical details. Score: 5	The user provides a clear and concise explanation of the difference between object-oriented programming (OOP) and object-based programming. They correctly define OOP as being centered around creating objects and encapsulating state and behavior within classes. The user also accurately highlights that OOP is based on making classes, which are like blueprints, and objects are instances of these classes. The explanation shows a good understanding of the concepts involved. However, the response could be improved by providing more specific examples or concrete differences between OOP and object-based programming languages. Additionally, some technical details and precision in terminology could have been used to strengthen the answer. Score: 8	7
7	Imagine a scenario where you have a final variable declared inside a method. Can this variable be modified within the same method? How does this differ from a constant declared with final outside a method?	The final variable used inside a method can be accessed within the same method but cannot be updated and the constant variable irrespective of the domain or range where it is declared is constant throughout the whole entire programming space	The response provides a basic understanding of the difference between a final variable inside a method and a constant declared outside a method. The explanation could benefit from more clarity and depth in distinguishing the two concepts.	The user correctly identifies that a final variable inside a method can be accessed but not modified within the same method. However, they incorrectly state that the constant variable is 'constant throughout the whole entire programming space', implying	7

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			Score: 6	it's a global constant. In reality, a constant declared with final outside a method is still only accessible within its own scope, whereas a final variable inside a method is essentially immutable as the user correctly stated. Score: 7	
8	You have a static variable inside a class. How can you access this variable from another class in the same package or a different package? Explain the access control considerations for each scenario.	We can use protected method so that it can be accessed within the same package by different class or we can also use a public method which can be accessed in different class of the same package or a different package.	The response correctly mentions using protected and public methods to access a static variable in different classes and packages, but it lacks specific details on the access control considerations for each scenario. Score: 4	The user's response correctly identifies that protected and public methods can be used to access the static variable from another class. However, it lacks specific details on how exactly these methods would be implemented. Additionally, the explanation does not fully address the access control considerations for each scenario. For instance, in the same package, access control is not a concern as all classes have access to protected members. In a different package, using a public method would allow any class with an import statement to access the static variable, which may or may not be desirable depending on the context. Overall, the response demonstrates a good understanding of the general principles but lacks specific implementation details and nuanced consideration of access control. Score: 6	6
9	What is the purpose of the	strict fp refers to strict protocol keyword in java	The response contains	The response attempts to	2

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	strictfp keyword in Java? When would you use it?	this would be used so that to indicate the user to not change the declared variable on method as it is volatile	inaccuracies and misunderstandings about the purpose of the strictfp keyword in Java. It lacks clarity and depth in explaining its actual usage in ensuring consistent floating-point calculations across different platforms. Score: 2	address the question but is incomplete and contains errors. The user refers to 'strict fp' as 'strict protocol keyword', which is not accurate. Additionally, their explanation of the purpose of the strictfp keyword is unclear and does not accurately convey its meaning. The user also mentions that it would be used to prevent changes to a volatile variable, which is not the correct usage of the strictfp keyword. Score: 2	
10	How does Java achieve polymorphism? Explain with a satisfactory example.	Polymorphism is when a message or a sentence can exist in multiple forms. An object or a method can exist in multiple forms that invoked or used in multiple forms. Example, take an case of the function int sum. There can be different instances of this single function called int sum being used. Sum, which is the function, and int is which is the return type. It can take, suppose, two variables, int a and int b in one instance and return sum of a and b, that is, return a plus b. In another instance, it can take int a, int b, int c as its parameter and return a plus b plus c. In another instance, it can take parameters like int a and double b and int a is parsed to double as double d a and it can return d a plus b. And. The return type would be double. So these are different return types and parameters which are being overloaded in a single function called sum. And based upon the type of invocation, which parameters decides what type of instance of the function sum is called. This is an example of polymorphism. There is runtime polymorphism and this compile time polymorphism in the examples I've given you.	The response provides a satisfactory explanation of polymorphism with an example related to a function named 'sum.' It covers method overloading and different parameter combinations well. Some technical inaccuracies exist in the explanation like mentioning 'parsed to double as double d a' is not correct. Additionally, the distinction between compile-time and runtime polymorphism could have been clearer and better elaborated. Score: 7	The user's response demonstrates a good understanding of polymorphism, but there are some issues that prevent it from being perfect. The explanation is clear and concise, and the user provides a satisfactory example with multiple instances of the `sum` function. However, the user seems to be mixing up compile-time polymorphism (method overloading) with runtime polymorphism (method overriding). They also use vague terms like 'different forms' and 'multiple forms' that don't accurately convey the concept of polymorphism. Additionally, some sentences are hard to understand due to poor grammar and sentence structure. Overall, the response is good but not excellent. Score: 8	8

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11	What will happen when you mark instance variables as native?	Then instance variables are marked as native. This scope is limited only to the variable or the block space it is declared. It cannot be accessed away from that.	The response provides some insight into marking instance variables as native, but lacks clarity and depth. It would benefit from a more detailed explanation of what marking variables as native means in Java, as well as how it differs from other variable declarations. Score: 4	The user's response accurately conveys the basic idea of what happens when instance variables are marked as native. They correctly state that the scope is limited to the variable or block space it is declared in, and that it cannot be accessed away from that. However, the response lacks some technical details and depth of understanding. For example, they don't mention how this affects memory management, garbage collection, or any specific programming language's implementation. But overall, the user demonstrates a good grasp of the concept. Score: 8	6
12	A class has a constructor with private access. Is it possible to create an object of that class? If not, how can you achieve restricted object creation while still allowing controlled access to the class functionalities?	class constructor with private access can only create an object within the same class declaration and cannot be accessed away in a different class it's only limited to the class it is declared so the constructor has to be within the same class class code it is being implemented to achieve restricted object creation and still allowing controlled access to the class functionalities can be done using public acts or no protected a keyword protected access	The response addresses the concept of private constructors and mentions restricted object creation, but the explanation lacks clarity and has some grammatical errors. The mention of using public or protected access for achieving controlled access is somewhat relevant but could be explained more clearly. Score: 4	The user's response is mostly accurate, but lacks clarity and organization. They correctly identify that the private constructor can only be accessed within the same class declaration, which limits object creation to within that class. However, their explanation is convoluted and uses ambiguous terms like 'class code' and 'acts'. Additionally, they mention using public or protected access, but don't provide a clear example of how this would achieve restricted object creation. Overall, while the user's response is generally correct, it could be improved with clearer language and more concrete examples.	6

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				Score: 6	
13	Explain the difference between a shallow copy and a deep copy of an object in Java. How would you create each type of copy?	shallow copy refers only to a simple shallow copy refers to only a simple value of the object or the variable that is passed and a deep copy is a copy that is not only affecting the value which is passed but also the reference to the variable the original address space which is being passed this is known as a deep copy shallow copy basically is copy by value and deep copy we can say to some extent is similar to copy by a reference where the original object or the original variable which is being passed is also changed outside the function call when shallow copy only refers to just the superficial value and the value has to be returned and the original address space of the variable cannot be changed this is shallow copy in general Java operates on copy by value if we need a deep copy of an object we can use the static keyword	The response contains some relevant information about shallow copy and deep copy, but it is quite confusing and lacks clarity. The explanation could be more precise and structured to showcase a better understanding of the topic. Score: 2	The user's response demonstrates a good understanding of shallow and deep copies in Java. They correctly explain that a shallow copy refers to copying the value of an object or variable, whereas a deep copy involves copying both the value and the reference to the original address space. The user also provides a clear distinction between the two concepts, noting that shallow copies are 'copy by value' while deep copies can be thought of as 'copy by reference'. However, the response could be improved with more specific examples or code snippets demonstrating how to create each type of copy in Java. Score: 8	6
14	A process is stuck in a wait state due to I/O. How can the operating system utilize the CPU efficiently while waiting for the I/O operation to complete?	Another sub-process of the process which doesn't depend upon the input-output operations can be executed and if it is dependent upon the other function to be completed, it has to wait. We can use asynchronous function for this purpose. All other sub-processes which are not directly linked to input-output operations to be used using scheduling algorithms so that effective CPU efficiency is utilized.	The response provides a clear and relevant explanation of utilizing other sub-processes and asynchronous functions to improve CPU efficiency while waiting for I/O operations. It also mentions using scheduling algorithms for effective CPU utilization. The explanation shows a good understanding of the topic. Score: 7	The user's response demonstrates a good understanding of the concept. They correctly identify the idea of utilizing the CPU while waiting for I/O operations to complete by executing other sub-processes that are not dependent on the I/O operation. The mention of asynchronous functions and scheduling algorithms is also relevant to this problem, showing that they have considered different approaches to improve CPU	8

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				efficiency. However, the response could be improved by providing more specific details about how these concepts would be implemented in practice. Score: 8	
15	How does a process transition between different states?	there are five different states new and runnable running blocked and terminate new is when the process is generated and it is not being in execution runnable when it it has all the resources and is just waiting for the scheduling of the cpu to run running is the present process in execution program in execution which is called the running process blocker is when uh it has to wait uh uh for a certain other dependent function or process to complete so that proper resource allocation can be done and no deadlock is met and termination is the final state when the process is programs completed and the process is terminated the transition happens in the following way when the code or the program needs a particular process the particular process is created and this is in the newer state the runnable state is when all the all the resources it needs are allocated and free and only it needs to wait for the correct instance when scheduling of cpu is invoked on it and it it's scheduling algorithm meets its invoking time uh and when scheduling algorithm hits uh and the program is being executed it is called running and when due to some constraints or some resources or some other dependent method or process being completed is required then the process waits that is being blocked till the particular sub function of sub process is completed or dependent process is completed and the resources or the result of the another process is returned which can be used for the block blocker function to run again and when it meets its purpose then the program is terminated or the terminal is terminated and	The response covers the different states of a process and how they transition, but it lacks clarity and organization. The explanation is somewhat convoluted and could benefit from a clearer structure and more concise description of each state and transition. Score: 4	The user's response demonstrates a good understanding of the different states a process can be in (new, runnable, running, blocked, and terminated). They are able to describe the characteristics of each state, including what happens during the transition between them. The answer is clear and easy to follow, with minimal technical jargon. While there are some minor errors in grammar and punctuation, they do not detract from the overall quality of the response. The user's ability to explain the transitions between states, such as from new to runnable or blocked back to running, also shows a strong understanding of the topic. Score: 8	7

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		the process is terminated state of the process is met			