

Practice Assignment

Module 3	
Sr. No.	Questions
1	In a banking system, customers are categorised into different tiers based on their account balance. Describe how you would use conditional statements to assign customers to these tiers. How could this implementation be improved using a "switch" statement?
2	Imagine you're creating a program to simulate a traffic signal. Discuss how you would use loops to control the timing of the traffic signal's different states (red, green, and yellow). Which type of loop would be most suitable for this scenario, and why?
3	You're developing a game where players can explore a virtual world with various zones. Each zone has different creatures and resources. Describe how you would use loops to iterate through the zones, allowing players to interact with the creatures and gather resources.
4	Arrays and ArrayLists are commonly used to store collections of data. Explain the main differences between these two data structures. Provide an example situation where using an array would be advantageous, and another situation where using an ArrayList would be more suitable.

5	In a school management system, you need to store information about students' grades for multiple subjects. Discuss how you would use arrays to create a structure to store this data efficiently. How could you handle situations where the number of subjects varies for each student?
6	Maps and Sets are essential collections in programming. Describe the key differences between a Map and a Set. Provide an example scenario where a Map would be used to solve a problem, and another scenario where a Set would be more appropriate.
7	You're building a dictionary application that stores words along with their definitions. Explain how you could use a Map to implement this dictionary, ensuring that each word is associated with a unique definition.
8	Handling exceptions and errors is crucial for maintaining the stability and reliability of software applications. Describe the purpose of a try-catch block and how it helps in managing exceptions. Provide an example scenario where you would use try-catch to handle a specific exception type.
9	In a file processing application, there's a risk of encountering errors when reading or writing files. Discuss how you would use a try-catch-finally block to ensure that resources are properly released even in the presence of exceptions.
10	Scenario: You're developing a calculator application that performs various mathematical operations. Explain how you would handle potential division by zero errors using

	exception handling techniques.
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