

Java Constructors Practice Worksheet

Question 1: The Video Game Character

Create a class called GameCharacter.

- Each character has a name (String) and health (int).
- Write a default constructor that sets the name to "Unknown" and health to 100.
- Write a parameterized constructor that takes a name and health as arguments.
- Write a method takeDamage(int damage) that reduces health. If health goes below 0, set it to 0.
- Write a method printStatus() that prints the character's name and health.

In the main method:

1. Create one character using the default constructor.
2. Create another character using the parameterized constructor.
3. Call takeDamage() and print their status.

Question 2: The Bank Account Challenge

Create a class called BankAccount.

- Each account has an accountHolder (String) and balance (double).
- The default constructor should set accountHolder to "Anonymous" and balance to 0.0.
- The parameterized constructor should take the accountHolder's name and starting balance.
- Write a method deposit(double amount) that increases the balance.
- Write a method withdraw(double amount) that decreases the balance only if there's enough money (use an if check).
- Write a method printAccount() to print the accountHolder and balance.

In the main method:

1. Create one account using the default constructor.
2. Create another account using the parameterized constructor.
3. Perform some deposits and withdrawals, then print the results.

Question 3: The Dice Roller Game

Create a class called DiceGame.

- Each game has a playerName (String) and numberOfRolls (int).
- The default constructor should set playerName = "Guest" and numberOfRolls = 1.
- The parameterized constructor should set both values.
- Write a method playGame() that:
 - Rolls a die (Math.random()) between 1–6 for the number of rolls.
 - Prints each roll.
 - Calculates the total score.
 - If the total score is more than 15, print "You win!", otherwise print "You lose!".

In the main method:

1. Create one game with the default constructor.
2. Create another game with the parameterized constructor.
3. Call playGame() on both.