

***Introduction to Java Programming and Data
Structures 13th edition Liang Solutions Manual***

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Solutions for UML Class Diagrams

Chapter 9

Exercise 9.1: Rectangle

Rectangle	
width: double height: double	The width of this rectangle (default 1). The height of this rectangle (default 1).
Rectangle() Rectangle(width: double, height: double) getArea(): double getPerimeter(): double	Constructs a default rectangle. Constructs a rectangle with the specified width and height. Returns the area of this rectangle. Returns the perimeter of this rectangle.

Exercise 9.2: Stock

Stock	
symbol: String name: String previousClosingPrice: double currentPrice: double	The symbol of this stock. The name of this stock. The previous closing price of this stock. The current price of this stock.
Stock(symbol: String, name: String) getChangePercent(): double	Constructs a stock with a specified symbol and a name. Returns the percentage of change of this stock.

Exercise 9.6: Stopwatch

StopWatch	
-startTime: long -endTime: long	get methods for all data fields are provided and omitted for brevity.
+StopWatch() +start(): void +stop(): void +getElapsdTime(): long	
	Constructs a StopWatch object.
	Starts the watch.
	Stops the watch.
	Returns the elapsed time for the stop watch in milliseconds.

Exercise 9.7: Account

Account	
-id: int	The ID of this account (default 0).
-balance: double	The balance of this account (default 0).
- <u>annualInterestRate</u> : double	The annual interest rate of this account (default 0).
-dateCreated: java.util.Date	The date when this account was created.
+Account()	Constructs a default account.
+Account(id: int, balance: double)	Constructs an account with the specified ID and balance.
+getId(): int	Returns the ID of this account.
+getBalance(): double	Returns the balance of this account.
+ <u>getAnnualInterestRate</u> (): double	Returns the interest rate of this account
+ <u>getMonthlyInterestRate</u> (): double	Returns the monthly interest rate of this account
+getDateCreated(): java.util.Date	Returns the date when this account was created.
+setId(id: int): void	Sets a new ID of this account.
+ <u>setAnnualInterestRate</u> (annualInterestRate: double): void	Sets a new interest rate for this account.
+getMonthlyInterest(): double	Returns the monthly interest of this account.
+withdraw(amount: double): void	Withdraws the specified amount from this account.
+deposit(amount: double): void	Deposits the specified amount to this account.

Exercise 9.8: Fan

Fan	
+ <u>SLOW</u> = 1	Constant.
+ <u>MEDIUM</u> = 2	Constant.
+ <u>FAST</u> = 3	Constant.
-speed: int	The speed of this fan (default 1).
-on: boolean	Indicates whether the fan is on (default false).
-radius: double	The radius of this fan (default 5).
-color: String	The color of this fan (default white).
+Fan()	Constructs a fan with default values.
+getSpeed(): int	Returns the speed of this fan.
+setSpeed(speed: int): void	Sets a new speed for this fan.
+isOn(): boolean	Returns true if this fan is on.
+setOn(on: boolean): void	Sets this fan on to true or false.
+getRadius(): double	Returns the radius of this fan.
+setRadius(radius: double): void	Sets a new radius for this fan.
+getColor(): String	Returns the color of this fan.
+setColor(color: String): void	Sets a new color for this fan.
+toString(): String	Returns a string representation for this fan.

Exercise 9.9: RegularPolygon