

Solutions for UML Class Diagrams

Chapter 8

Exercise 8.2: Stock

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

Exercise 8.8: Fan

Fan	
<u>+SLOW = 1</u>	Constant.
<u>+MEDIUM = 2</u>	Constant.
<u>+FAST = 3</u>	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 8.10: QuadraticEquation

QuadraticEquation	get methods for all data fields are provided and omitted for brevity.
-a: double -b: double -c: double	Three coefficients for the equation.
+QuadraticEquation(a: double, b: double, c: double)	Constructs a QuadraticEquation with the specified coefficients.
+getDiscriminant(): double	Returns the discriminant of this equation.
+getRoot1(): double	Returns the first root of this equation.
+getRoot2(): double	Returns the second root of this equation.

Exercise 8.14: Stopwatch

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

Chapter 10

Exercise 10.4: MyPoint

MyPoint	
-x: double	x-coordinate of this point.
-y: double	y-coordinate of this point.
+MyPoint()	Constructs a Point object at (0, 0).
+MyPoint(x: double, y: double)	Constructs an object with specified x and y values.
+getX(): double	Returns x value in this object.
+getY(): double	Returns y value in this object.
+distance(secondPoint: MyPoint): double	Returns the distance from this point to another point.
+distance(p1: Point, p2: MyPoint): double	Returns the distance between two points.

Exercise 10.8: Tax

Tax
-filingStatus: int
-brackets: int[][]
-rates: double[]
-taxableIncome: double
+Tax()
+Tax(filingStatus: int, brackets: int[], rates: double[], taxableIncome: double)
+getFilingStatus(): int
+setFilingStatus(filingStatus: int): void
+getBrackets(): int[][]
+setBrackets(brackets: int[][]): void
+getRates(): double[]
+setRates(rates: double[]): void
+getTaxableIncome(): double
+setTaxableIncome(taxableIncome: double): void
+getTax(): double

Exercise 10.12: MyRectangle2D

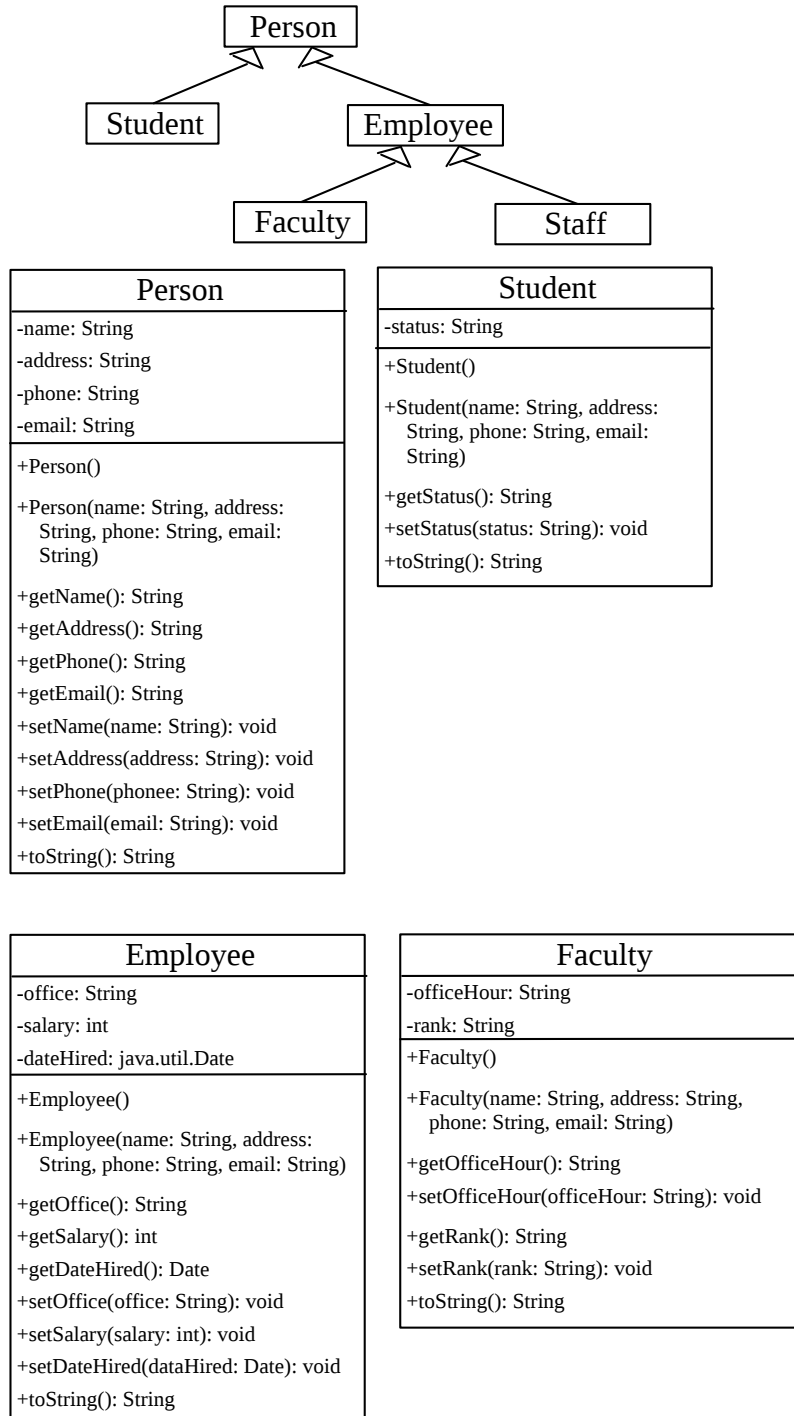
MyRectangle2D
-x: double -y: double -width: double -height: double
+MyRectangle2D() +MyRectangle2D(x: double, y: double, width: double, height: double) +getX(): double +setX(x: double): void +getY(): double +setY(y: double): void +getWidth(): double +setWidth(width: double): void +getHeight(): double +setHeight(height: double): void +getRadius(): double +getPerimeter(): double +getArea(): double +contains(x: double, y: double): boolean +contains(r: Rectangle2D): boolean +overlaps(r: Rectangle2D): boolean

Exercise 10.14: MyDate

MyDate	
-year: int	The year for the date.
-month: int	The month for the date.
-day: int	The day for the date.
+MyDate()	Constructs MyDate for the current date.
+MyDate(elapsedTime: long)	Constructs MyDate with a specified elapsed time in milliseconds.
+getYear(): int	Returns the year for the date.
+getMonth(): int	Returns the month for the date.
+getDay(): int	Returns the day for the date.
+setDate(elapsedTime: long): void	Sets a new date using the elapsed time.

Chapter 11

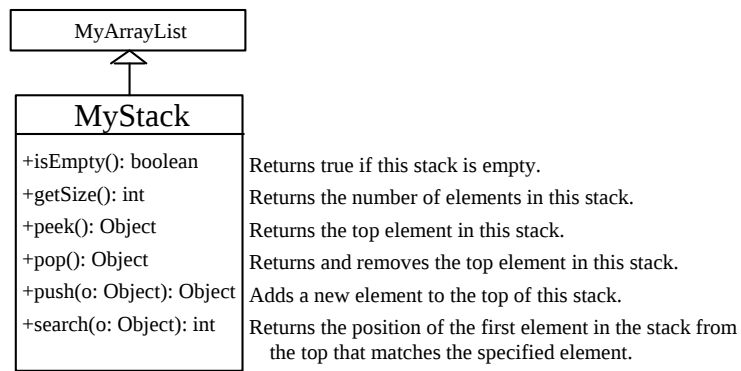
Exercise 11.2: Person, Student, Staff, Employee



Staff
-title: String
+Staff() +Staff(name: String, address: String, phone: String, email: String) +getTitle(): String +setTitle(title: String): void +toString(): String

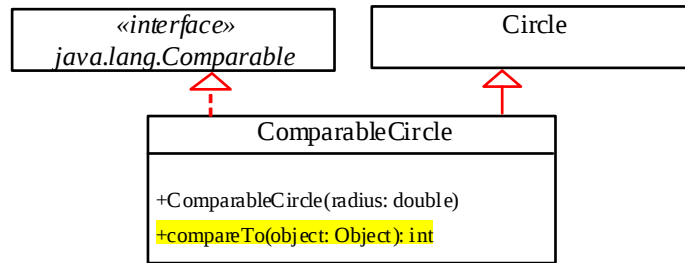
MyDate
-year: int -month: int -day: int
+Faculty() +getYear(): int +getMonth(): int +getDay(): int +setYear(year: int): void +setMonth(month: int): void +setDay(day: int): void +toString(): String

Exercise 11.10: MyStack



Chapter 15

Exercise 15.8: ComparableCircle



Exercise 15.12: Rectangle

