

# Classes in AssistX

## User

Attributes	Methods
- userId: int	+ register(): boolean
- username: String	+ login(): boolean
- email: String	+ logout(): void
- password: String	+ updateProfile(): boolean
- phoneNumber: String	+ raiseQuery(): Query
- registrationDate: Date	- validateCredentials(): boolean

## Admin

Attributes	Methods
- adminId: int	+ login(): boolean
- username: String	+ viewDashboard(): Dashboard
- email: String	+ handleEscalatedQuery(): void
- password: String	+ generateReport(): Report
- accessLevel: String	+ manageUsers(): void
- department: String	+ updateKnowledgeBase(): boolean

## Query

Attributes	Methods
- queryId: int	+ submitQuery(): boolean
- userId: int	+ getStatus(): String
- queryText: String	+ updateStatus(): void
- category: String	# calculatePriority(): String
- priority: String	- validateQuery(): boolean
- status: String	
- timestamp: DateTime	
- isEscalated: boolean	

## AI Agent

Attributes	Methods
- agentId: int	+ classifyQuery(): String
- modelVersion: String	+ generateResponse(): Response
- accuracyScore: float	+ analyzesentiment(): String
- trainingDataset: String	+ detectIntent(): String
- lastUpdated: DateTime	- preprocessQuery(): String
	- loadModel(): void

## Response

Attributes	Methods
- responseId: int	+ sendResponse(): boolean
- queryId: int	+ formatResponse(): String
- responseText: String	+ getConfidenceScore(): float
- isAutoGenerated: boolean	- validateResponse(): boolean
- timestamp: DateTime	
- confidenceScore: float	

## Session

Attributes	Methods
- sessionId: String	+ createSession(): String
- userId: int	+ validateSession(): boolean
- loginTime: DateTime	+ terminateSession(): void
- lastActivity: DateTime	+ updateActivity(): void
- isActive: boolean	- generateSessionId(): String
- ipAddress: String	

## KnowledgeBase

Attributes	Methods
- kblId: int	+ searchKnowledge(): List<Article>
- title: String	+ addArticle(): boolean
- content: String	+ updateArticle(): boolean
- category: String	+ deleteArticle(): boolean
- keywords: List<String>	- indexContent(): void
- lastUpdated: DateTime	

## Dashboard

Attributes	Methods
- dashboardId: int	+ displayMetrics(): void
- adminId: int	+ generateAnalytics(): Report
- totalQueries: int	+ getEscalatedQueries(): List<Query>
- resolvedQueries: int	+ exportData(): boolean
- pendingQueries: int	- calculateMetrics(): void
- escalatedQueries: int	

## EscalationQueue

Attributes	Methods
- queueId: int	+ addToQueue(): boolean
- queryList: List<Query>	+ removeFromQueue(): boolean
- priorityLevel: String	+ assignToAdmin(): boolean
- assignedAdmin: int	+ getPendingQueries(): List<Query>
- createdAt: DateTime	- sortByPriority(): void

## Report

Attributes	Methods
- reportId: int	+ generateReport(): boolean
- reportType: String	+ exportToPDF(): boolean
- generatedBy: int	+ exportToExcel(): boolean
- dateGenerated: DateTime	- formatData(): void
- content: String	

## Visibility Modifiers Explained:

- **+ Public:** Accessible from anywhere
- **- Private:** Accessible only within the same class
- **# Protected:** Accessible within the same class and its subclasses