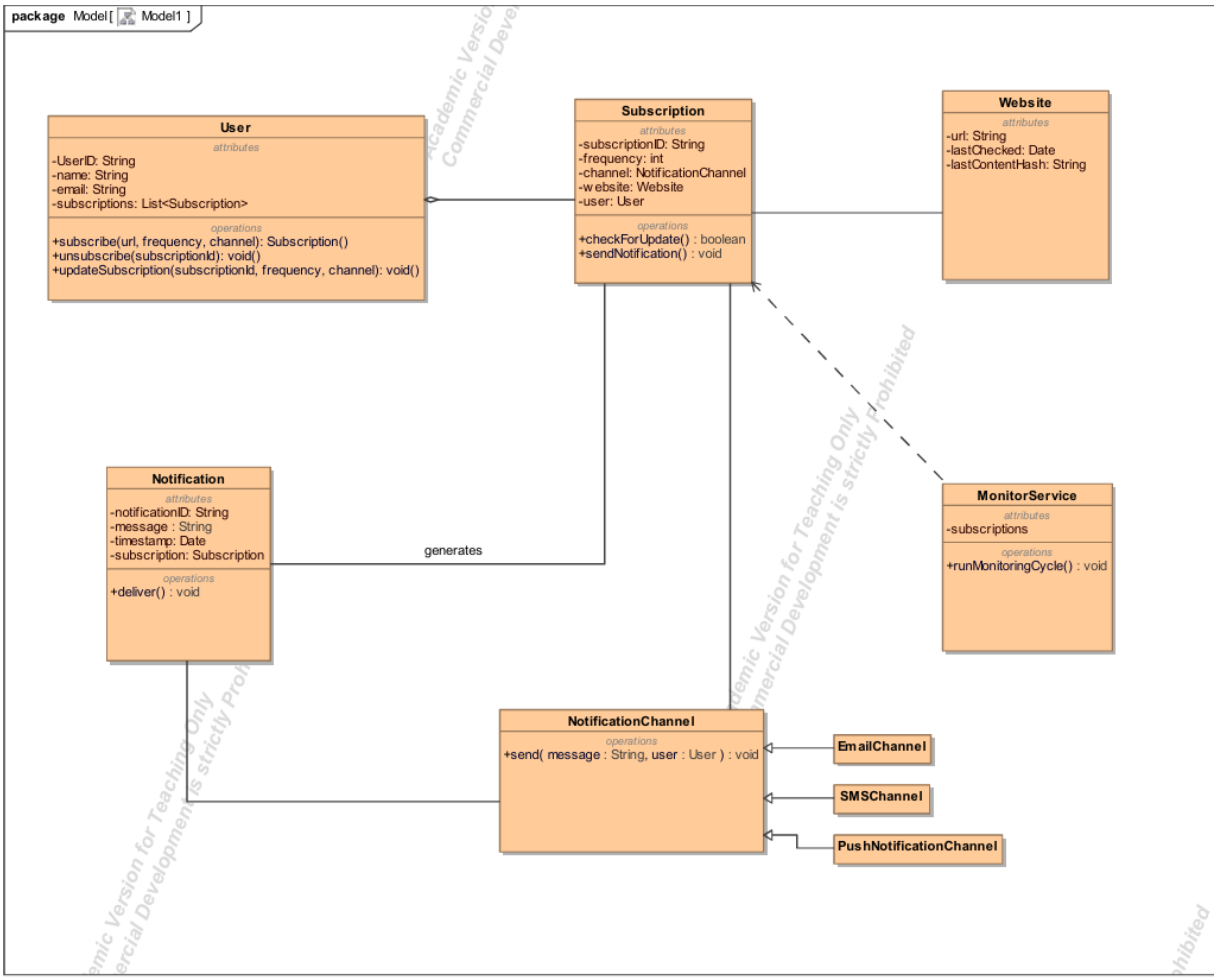
package Model [Model1]
User
attributes
-UserID: String
-name: String
-email: String
-subscriptions: List<Subscription>
operations
+subscribe(url, frequency, channel): Subscription()
+unsubscribe(subscriptionId): void()
+updateSubscription(subscriptionId, frequency, channel): void()
Subscription
attributes
-subscriptionID: String
-frequency: int
-channel: NotificationChannel
-website: Website
-user: User
operations
+checkForUpdate() : boolean
+sendNotification() : void
Website
attributes
-url: String
-lastChecked: Date
-lastContentHash: String
Notification
attributes
-notificationID: String
-message : String
-timestamp: Date
-subscription: Subscription
operations
+deliver() : void
generates
MonitorService
attributes
-subscriptions
operations
+runMonitoringCycle() : void
NotificationChannel
operations
+send(message : String, user : User) : void
EmailChannel
SMSChannel
PushNotificationChannel

AUFGABE 2)

Finding the Responsible Class for a Method

To find the responsible class for a method, we use the Information Expert principle from GRASP. This principle suggests assigning responsibility to the class that has the information needed to fulfill the responsibility.

Steps to Find the Responsible Class for a Method:

1. Identify the Method Responsibility: Clearly state what the method should do.
2. Determine the Required Information: Identify the information required to accomplish this responsibility.
3. Locate the Class with the Information: Find the class that has or has access to this information.
4. Assign the Method: Assign the method to this class

Finding the Responsible Class for Object Creation

To find the responsible class for creating an object, we use the Creator principle from GRASP. This principle suggests that a class should be responsible for creating an object if one or more of the following conditions apply:

1. Aggregates the Objects: Contains or manages instances of the object.
2. Contains the Objects: Logically contains instances of the object.
3. Records Instances: Keeps track of instances of the object.
4. Closely Uses the Objects: Uses instances of the object frequently.
5. Has the Initializing Data: Has the information required to initialize the object.

Steps to Find the Responsible Class for Object Creation:

1. Identify the Object to be Created: Clearly define the object that needs to be created.
2. Analyze the Relationships: Determine which class aggregates, contains, records, uses, or has the initializing data for the object.
3. Assign the Creation Responsibility: Assign the responsibility to the appropriate class.

AUFGABE 3)

Design Principles

- **Controller**: Assign responsibility to a class that represents the system or handles user input/events.
- **Information Expert**: Assign responsibility to the class that has the necessary information to perform it

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Class	Responsibilities	Collaborators

User	- Subscribe to a website- Modify or cancel a subscription	Subscription, Website, NotificationChannel
Subscription	- Store frequency and channel- Link user and website	User, Website, Notification
Website	- Store URL and last checked content- Provide content comparison	Subscription, MonitorService
Notification	- Create message when website is updated- Deliver via chosen channel	Subscription, NotificationChannel
NotificationChannel (and subclasses)	- Define send() method- Deliver notification through proper medium	Notification
MonitorService	- Run periodic monitoring- Detect changes- Generate and send notifications	Website, Subscription, Notification