Task Scheduling for ElderCare Robot

# 1. Sleep Alarm

Objective: Wake the elder up at a scheduled time.  
Steps:  
1. Capture wake-up time (e.g., 'Wake me up at 7 PM').  
2. Set the alarm for the specified time.  
3. Periodically check the system time and trigger the alarm at the right moment.  
Considerations: Make sure the alarm is loud enough to wake the elder, and allow for recurring alarms.

# 2. Notifications for Family

Objective: Notify the elder's family about key events.  
Steps:  
1. Define notification types (medication, sleep, emergency).  
2. Trigger notifications based on event occurrence.  
3. Send notifications via SMS, email, or push notifications.  
Considerations: Ensure recipients receive relevant notifications at the right time.

# 3. Wake Word Detection

Objective: Activate the rover upon hearing a wake word.  
Steps:  
1. Implement wake word detection.  
2. Respond to subsequent voice commands.  
3. Provide feedback (audio or visual) when the system is listening.  
Considerations: Avoid false positives and ensure the system is responsive.

# 4. Emergency Call

Objective: Make emergency calls or send alerts.  
Steps:  
1. Recognize the emergency command.  
2. Trigger an emergency call or SMS.  
3. Send follow-up notifications to caregivers.  
Considerations: Ensure fast and reliable emergency notifications.

# 5. Navigation

Objective: Navigate the rover to a designated location.  
Steps:  
1. Use sensors for obstacle detection.  
2. Plan a path to the destination.  
3. Move and control the rover’s motors.  
Considerations: Ensure safe navigation with minimal power usage.

# 6. Search for Elder

Objective: Locate the elder using facial recognition.  
Steps:  
1. Scan the environment using the rover’s camera.  
2. Use facial recognition to identify the elder.  
3. Approach the elder and provide assistance.  
Considerations: Ensure accuracy in recognizing the elder’s face.