### **Activity One: Breaking User Stories into Tasks & Estimating Effort**

### **Task Breakdown for Task Assignment**

User Story: *"As a user, I want to assign tasks to team members so that everyone knows their responsibilities."*

#### **1️⃣ Frontend Development**

* **Design UI for Task Assignment** (1-2 hours)
  + Add an "Assign" button in the task list
  + Create a dropdown to select team members
  + Display assigned user next to task
* **Implement Task Assignment in Frontend** (2-3 hours)
  + Capture user selection (assignee)
  + Send assignment request to backend via API
  + Update UI to reflect the assigned user
  + Show success/error message

#### **2️⃣ Backend Development**

* **Create API Endpoint for Task Assignment** (2-3 hours)
  + Implement POST /assign-task API in Express/Django
  + Validate request data (task ID, assignee ID)
  + Check if the task exists and user has permission
* **Update Database with Assigned User** (1-2 hours)
  + Modify tasks table: set assignee\_id
  + Log the change in an audit table (optional)
* **Send Notification to Assigned User** (1-2 hours)
  + Create a notification entry (You have been assigned a new task!)
  + Implement WebSocket or email notification

#### **3️⃣ Testing & Debugging**

* **Write Unit Tests for Backend API** (2-3 hours)
  + Test valid and invalid assignments
  + Check unauthorized access cases
* **Manually Test UI and API Integration** (1-2 hours)
  + Verify UI updates after task assignment
  + Ensure assigned user gets notified
* **Fix Bugs and Optimize Code** (1-2 hours)
  + Debug UI issues (if assignment doesn’t reflect)
  + Improve API error handling

#### **4️⃣ Deployment & Documentation**

* **Deploy Updated Backend to Server** (1 hour)
  + Push changes to GitHub/GitLab
  + Redeploy backend with API changes
* **Update API Documentation** (1 hour)
  + Document POST /assign-task usage
  + Add example request/response

### **Activity Two: Develop Class Diagrams**

#### **Core Classes:**

* User (Attributes: user\_id, name, email, password, role)
* Task (Attributes: task\_id, title, description, status, priority, deadline)
* Comment (Attributes: comment\_id, task\_id, user\_id, content, timestamp)
* Notification (Attributes: notif\_id, user\_id, message, status)
* FileUpload (Attributes: file\_id, task\_id, user\_id, filename, url)

1. User selects a task → clicks "Assign"
2. System updates DB & notifies assigned user
3. Assigned user gets real-time notification.