

A demonstration related to project management with Gantt charts

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Abstract

This paper accompanies a demonstration related to project management with Gantt charts.

The given information goes from setting up the project, defining the resources, defining the different interlinked tasks (preferable more than just a linear task flow) and the links between them, defining a baseline, following up the project, looking at the critical path, etc.

The used example is *the organisation of a one day conference with speakers that have to be booked, rooms that have to be organized, guests that have to be invited, etc.*

1. Analysis

The assignment we want to complete is the following.

1.1 Course Example Description

You are organizing a **One-Day Conference** with multiple international speakers. Tasks include:

- Booking a venue,
- Coordinating speaker logistics (invitations, travel, hotel),
- Marketing and promotion,
- Website setup,
- Registration,
- Catering and printed materials,
- Day-of-event logistics.

Tip: This project has enough complexity to demonstrate dependencies, parallel tasks, baselining, critical path analysis, and progress tracking.

1.2 Suggested Course Steps

Here's how you can structure your project:

1.2.1 Setting Up the Project

- Create a new project in GanttProject
- Set project start date, calendar, and basic info

1.2.2 Defining Tasks

Introduce tasks such as:

- Define theme
- Book venue
- Invite & confirm speakers
- Prepare marketing materials
- Website setup & registration

- Arrange catering
- Print materials
- Event day

Tip: Emphasize that tasks may:

- Run in parallel (e.g., website + marketing),
- Be dependent (e.g., confirmation needed before travel booking).

1.2.3 Linking Tasks

- Use finish-to-start dependencies
- Add more complex links (e.g., multiple predecessors for printing and event execution)

1.2.4 Assigning Resources

- Create roles: Project Manager, Speaker Liaison, Web Dev, etc.
- Assign these to relevant tasks

1.2.5 Setting a Baseline

- Once the plan is stable, define a baseline
- Show how to compare baseline vs actual

1.2.6 Tracking Progress

- Mark % completion as project proceeds
- Discuss updating durations and shifting deadlines

1.2.7 Analyzing the Critical Path

- Highlight critical tasks and how delays impact the project
- Use GanttProject's visualization tools

1.2.8 Scenario Adjustments

- Simulate speaker cancellation or venue delay
- Adjust project accordingly and analyze ripple effects

2 Step-by-Step with GanttProject

2.1 Create a New Project

- **Goal:** Show how to initialize a project.
- **Steps:**
 - Open **GanttProject**.
 - Go to **File** → **New**.
 - Set project name: *International One-Day Conference*.
 - Choose a **start date** (today or the next Monday, for consistency).

2.2 Define the Work Breakdown Structure (WBS)

- **Goal:** Create a hierarchical task structure for clarity and manageability.
- **Steps:**
 - Add top-level phases:

- * **Planning**
- * **Promotion**
- * **Logistics**
- * **Execution**

- Under each phase, add the relevant subtasks.

Phase	Task
Planning	Define theme
	Invite speakers
	Confirm speakers
	Finalize agenda
Promotion	Prepare marketing materials
	Launch website
	Open registration
Logistics	Book venue
	Arrange catering
	Book travel/hotel
	Print materials
Execution	Event day

Tip: Emphasize consistency in task names (verbs + nouns) for readability and structure.

2.3 Define Task Durations and Start Dates

- **Goal:** Demonstrate task scheduling using estimated durations.
- **Steps:**
 - Set estimated durations for each task, based on typical effort.
 - Leave some start dates flexible, GanttProject will calculate them automatically based on dependencies.

Proposed Task Durations by Category

Phase	Task	Suggested Duration
Planning	Define theme	2 days
	Invite speakers	5 days
	Confirm speakers	4 days
	Finalize agenda	3 days
Promotion	Prepare marketing materials	4 days
	Launch website	2 days
	Open registration	1 day
Logistics	Book venue	3 days
	Arrange catering	2 days
	Book travel/hotel	3 days
	Print materials	2 days
Execution	Event day	1 day

Tip: Emphasize that durations refer to **working time**, not necessarily calendar days. For example, a 2-day task could be completed in a week depending on resource availability and dependencies.

2.4 Full Task Dependencies with Types

- **Goal:** Define task relationships to sequence activities correctly.
- **Steps:**
 1. **Select the task to link from** Click on the first (predecessor) task — the one that must be completed (or started) first.
 2. **Click and drag to the task to link to** This is the dependent (successor) task — the one that follows.
 3. **(Optional) Change the dependency type**
 - Double-click on the task to link to.
 - In the **Predecessors** dialog, **Type** field, choose:
 - * **Finish-Start** – default
 - * **Finish-Finish**
 - * **Start-Start**
 - * **Start-Finish**
 4. **Repeat for all other dependencies** Refer to the full list of dependencies with types (provided earlier) to complete the network.
- **Dependencies:**
 - *Finish-to-Start* (FS, default: task B starts when task A finishes)
 - *Finish-to-Finish* (FF, task B finishes when task A finishes)
 - *Start-to-Start* (SS, task B can start when task A starts)
 - *Start-to-Finish* (SF, rare; B finishes when A starts)

Planning Phase

Task	Depends on	Type	Reason
Invite speakers	Define theme	FS	Theme must be decided before invitations
Confirm speakers	Invite speakers	FS	Must wait for invitations
Finalize agenda	Confirm speakers	FS	Agenda depends on confirmed speakers

Promotion Phase

Task	Depends on	Type	Reason
Prepare marketing	Finalize agenda	FS	Marketing needs accurate agenda
Launch website	Prepare marketing	FS	Website uses promo materials
Open registration	Launch website	FS	Registration goes live on website

Logistics Phase

Task	Depends on	Type	Reason
Book venue	Define theme	FS	Venue should match the event theme
Arrange catering	Book venue	FS	Venue often provides catering or affects logistics
Book travel/hotel	Book venue	FS	Travel is tied to location
Book travel/hotel	Confirm speakers	FS	Can't book travel without confirmed guests
Print materials	Open registration	FS	Some materials depend on registration info
Print materials	Finalize agenda	FS	Schedule and content go in printouts

Execution Phase

Task	Depends on	Type	Reason
Event day	Print materials	FS	Materials must be ready
Event day	Book travel/hotel	FS	Participants must be on-site
Event day	Arrange catering	FS	Catering setup precedes event
Event day	Open registration	FS	Registration must be completed before execution

Optional Optimization Suggestions:

- **Prepare marketing** \leftarrow *Start-to-Start* with *Finalize agenda* If the agenda is only partially needed, you could start marketing early with SS.
- **Print materials** \leftarrow *Finish-to-Finish* with *Open registration* Could allow print deadline to match the registration closing.

Tip:

- **Parallel Tasks:** Tasks with no dependencies can start at the same time.
- **Converging Tasks:** Multiple tasks can point to one (e.g., several dependencies feeding into “*Event day*”).
- **Avoid Circular Dependencies:** GanttProject will warn you if a loop is created.

2.5 Define Resources

- **Goal:** Assign specific team members to tasks for better responsibility tracking and workload visibility.
- Steps:**

1. Open the Resource Roles Dialog

- Go to **Project** \rightarrow **Properties** \rightarrow **Resource roles**
- Define the following roles:
 - **Project Manager**
 - **Marketing Team**
 - **Web Developer**
 - **Speaker Coordinator**
 - **Logistics Coordinator**

2. Add Named Resources

- Go to **Resources Chart**
- Add individual team members and assign each a role:

Name	Role
Alice Dubois	Project Manager
Mark Rivera	Marketing Team
Nina Zhang	Web Developer
Thomas Müller	Speaker Coordinator
Lena Okafor	Logistics Coordinator

3. Assign People to Tasks

- Open the **Task Properties** window for each task (double-click a task)
- Go to the **Resources** tab and select the responsible person
- Or drag-and-drop names onto the task bars in the Gantt chart

Task Assignments by Person

Task	Assigned To
Define theme	Alice Dubois
Invite speakers	Thomas Müller
Confirm speakers	Thomas Müller
Finalize agenda	Alice Dubois
Prepare marketing	Mark Rivera
Launch website	Nina Zhang
Open registration	Nina Zhang
Book venue	Lena Okafor
Arrange catering	Lena Okafor
Book travel/hotel	Lena Okafor
Print materials	Mark Rivera
Event day	All (coordinated by Alice Dubois)

Tip: You can assign multiple people to a task if it's a team effort — e.g., “Event day” can include all team members for on-site roles.

Bonus: Workload Balancing Tips

- Use **Resources Chart** to see how tasks overlap for each person.
- Avoid assigning **high-effort tasks** to the same person during overlapping time frames.
- Consider **splitting tasks** or adjusting durations if someone is overbooked.

2.6 Set a Baseline

- **Goal:** Lock in your initial project plan for future comparison.
- **Steps:**
 - Go to **Baselines** → **Add baseline**.

Tip: Baselining helps track deviations from the plan, supporting accountability and reporting.

2.7 Track Progress

- **Goal:** Teach progress tracking and adjustments.
- **Steps:**
 - Update % **complete** (e.g., “*Invite speakers*” = 50%).
 - Adjust actual duration if work takes more or less time than expected.

Tip: Show how the Gantt chart **visually reflects** progress using progress bars.

2.8 Analyze the Critical Path

- **Goal:** Identify the tasks that directly impact the project end date.
- **Steps:**
 - Go to **Show critical path**.
 - GanttProject highlights the **critical path**.

2.9 Simulate Changes

- **Goal:** Show flexibility and impact of real-world changes.
- **Examples:**
 - A **speaker cancels** → reschedule *Confirm speakers*.
 - **Venue booking is delayed** → affects *Arrange catering* and *Finalize agenda*.
 - **Late registration opening** → delays *Print materials*.

2.10 Export & Share

- **Goal:** Show how to communicate plans and progress.
- **Steps:**
 - Go to **File** → **Export**:
 - * Export Gantt chart as **PNG** or **PDF**.
 - * Export full project to **HTML** for sharing.
 - Share **resource assignments** and **status reports**.

Optional Extras

- **Import/Export** to/from Microsoft Project.
- Create **custom printouts** with filters (e.g., only upcoming tasks).
- Add **cost estimates** and track budgets (advanced use).