LEARNING BOX OF UNPLUGGED ACTIVITIES

Scheduling Shifts in a Hospitality or Tourism Business

This unplugged activity introduces learners to the challenges of scheduling staff shifts in hospitality and tourism businesses such as hotels, restaurants, and seasonal services. Participants are given employee profiles (availability, roles, working hours limits) and business needs (peak hours, required staff per role). Using cards and simple grids, they create fair and efficient weekly schedules. The activity builds problem-solving and planning skills through computational thinking without using digital tools.

Target Group

- ☐ Low-skilled adults with low digital competences
- ☐ Low-skilled adults with limited formal education or qualifications
- ☑ Low-skilled adults with low participation in lifelong learning / training opportunities

Learning Objectives

- Understand the basic principles of staff scheduling
- Identify constraints such as availability, roles, and legal working limits
- Develop fair and balanced shift plans
- Improve decision-making in complex, real-life scenarios
- Apply computational thinking to workforce organization

Competence Areas

a) Innovation Competences

- ☐ Creativity
- ☐ Critical thinking
- ☐ Problem solving
- ☐ Communication

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Theme

Workforce planning and staff management

Duration

90 minutes

Level

Intermediate

Computational Thinking Steps Used

☑ Decomposition
☐ Pattern recognition
☑ Abstraction
☑ Algorithmic thinking

Methodological Approach

☑ Gamification
☑ Challenge-Based Learning
☑ Collaborative learning
☑ Experiential learning

☐ Collaboration

b) Information Literacy Competences

☐ Ability to access, understand, and critically analyse information
☐ Interpretation of digital and visual content
☐ Awareness of media influence and biases

c) Life and Career Competences

☑ Flexibility and adaptability
☑ Initiative and autonomy
☑ Sociability and intercultural competence
☑ Productivity
☑ Leadership and responsibility

Learning Outcomes

By the end of the activity, participants will be able to:

- Break down scheduling problems into manageable constraints
- Recognize patterns in staffing needs (e.g., peak tourist hours, weekends)
- Simplify complex scheduling decisions by focusing on key factors
- Create a fair and functional shift schedule
- Explain their reasoning and decision-making process

Notes

- Use printed employee cards (availability, role, hours) and a weekly schedule grid
- Include realistic constraints (e.g., maximum working hours, rest time)
- Introduce scenarios such as high season vs. low season
- Encourage discussion about fairness and workload balance
- Increase difficulty by adding unexpected changes (e.g., sick leave, sudden demand increase)

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Scheduling Shifts in a Hospitality or Tourism Business

Step 1: Decomposition of Scheduling Constraints

Participants are given employee profile cards (including availability, roles such as waiter/receptionist/cleaner, and maximum working hours) along with business requirement cards (e.g., number of staff needed per shift, peak hours, opening days).

They are asked to:

- Identify and list all constraints, such as:
  - Staff availability (days and hours)
  - Required roles per shift
  - Legal or practical limits (e.g., maximum hours, rest time)
- Break down the weekly schedule into smaller units (days and shifts: morning, afternoon, evening)
- Match initial staff possibilities to shifts without finalizing decisions

Facilitator support:

- Ask guiding questions like: “What must be covered no matter what?”, “Who can work when?”
- Encourage participants to write or highlight key constraints for clarity

This step helps participants structure a complex scheduling problem into manageable elements

Step 2: Abstraction and Prioritization

Participants focus on the most important factors to simplify the scheduling process.

They are asked to:

- Prioritize critical elements such as:
  - Ensuring all essential roles are covered in each shift
  - Respecting staff availability and legal limits
- Ignore less important details (e.g., personal preferences that do not affect operations)
- Identify patterns in staffing needs, such as:
  - More staff required during evenings or weekends

- Fewer staff needed during quiet periods

Facilitator support:

- Prompt reflection: “What is essential for the business to run?”, “What can be flexible?”
- Help participants see that simplifying the problem makes it easier to solve

This step helps participants reduce complexity and focus on key decision-making factors

Step 3: Shift Assignment Strategy (Algorithmic Thinking)

Participants develop a step-by-step procedure to assign shifts and create a complete weekly schedule.

They should:

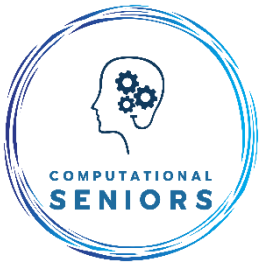
- Define clear rules, such as:
  - “Assign critical roles (e.g., receptionist, chef) first”
  - “Ensure no employee exceeds maximum hours”
  - “Distribute shifts fairly among staff”
- Follow a structured process, for example:
  1. Fill the busiest shifts first
  2. Assign staff to required roles
  3. Complete remaining shifts with available staff
  4. Check fairness and adjust if needed

Finally, participants:

- Create a visual weekly schedule using a grid
- Present their solution to the group
- Explain how they handled constraints, fairness, and efficiency
- Compare different scheduling strategies and discuss improvements

Facilitator support:

- Introduce challenges (e.g., “One employee is suddenly unavailable—what do you change?”)
- Encourage reflection on fairness and workload balance



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This step helps participants develop logical, repeatable procedures for solving real-world scheduling problems.

Facilitator Guidance

Before the activity

Begin by discussing the importance of fair staff scheduling in hotels, restaurants, cafés, and other tourism businesses. Ask participants what factors managers should consider when preparing work schedules, such as employee availability, workload, customer demand, or legal working hours. Explain that balancing these constraints is similar to solving a complex puzzle.

Scheduling Shifts in a Hospitality or Tourism Business

During the activity

Encourage participants to explain the reasoning behind their scheduling decisions. Ask questions such as: "Does every shift have enough staff?", "Is the workload distributed fairly?", or "What would happen if an employee became unavailable?" If groups complete the task quickly, introduce an unexpected event (e.g., sick leave or increased tourist demand) and ask them to revise their schedules while maintaining fairness.

After the activity

Invite groups to compare their schedules and discuss the different strategies they used to balance employee needs with business requirements. Highlight that there may be several valid solutions and that scheduling often requires continuous adjustment. Reinforce how decomposition, abstraction, and algorithmic thinking contribute to efficient workforce planning.

EMPLOYEE PROFILE CARD

RECEPTIONIST



Maria

Receptionist

Availability

Mon – Fri | 08:00 – 20:00

Working Hours Limit

Max 8 hrs/day · 40 hrs/week

- Fluent in English and Spanish
- Cannot work weekends
- Prefers morning shift

AVAILABILITY: Weekdays only · SHIFT: Morning / Afternoon

EMPLOYEE PROFILE CARD

WAITER



Kostas

Waiter

Availability

Tue – Sun | 12:00 – 24:00

Working Hours Limit

Max 8 hrs/day · 40 hrs/week

- Available afternoons and evenings
- Day off: Mondays
- Experienced in high-season service

AVAILABILITY: Tue–Sun · SHIFT: Afternoon / Evening

EMPLOYEE PROFILE CARD

HOUSEKEEPER



Elena

Housekeeper

Availability

Mon – Sat | 07:00 – 15:00

Working Hours Limit

Max 6 hrs/day · 30 hrs/week

- Part-time contract
- Available mornings only
- Day off: Sundays

AVAILABILITY: Mon–Sat · SHIFT: Morning only · PART-TIME

EMPLOYEE PROFILE CARD

CHEF



Yiannis

Chef

Availability

Wed – Sun | 10:00 – 22:00

Working Hours Limit

Max 8 hrs/day · 40 hrs/week

- Days off: Mon & Tue
- Required for lunch & dinner service
- Lead cook – must be present at peak times

AVAILABILITY: Wed–Sun · SHIFT: Midday / Evening

EMPLOYEE PROFILE CARD

WAITER



Sofia

Waiter

Availability

Mon – Sun | 08:00 – 22:00

Working Hours Limit

Max 8 hrs/day · 40 hrs/week

- Flexible availability
- Can cover weekends
- Student – prefers short shifts

AVAILABILITY: Full week · SHIFT: Flexible · PREFERS SHORT SHIFTS

EMPLOYEE PROFILE CARD

SECURITY



Petros

Security / Night Guard

Availability

Thu – Mon | 22:00 – 08:00

Working Hours Limit

Max 8 hrs/day · 40 hrs/week

- Night shifts only
- Days off: Tue & Wed
- Certified security guard

AVAILABILITY: Thu–Mon · SHIFT: Night only

EMPLOYEE PROFILE CARD

RECEPTIONIST



Ioanna

Receptionist

Availability

Mon – Sun | 14:00 – 24:00

Working Hours Limit

Max 8 hrs/day · 40 hrs/week

- Available afternoons and evenings
- Can cover weekends
- Speaks French and Greek

AVAILABILITY: Full week · SHIFT: Afternoon / Evening

BUSINESS REQUIREMENT CARD

MORNING



Morning Shift Requirements

07:00 – 15:00

Staff Required per Shift:

- 1 Receptionist — check-ins and guest inquiries
- 2 Housekeepers — room cleaning and preparation
- 1 Waiter — breakfast service

NOTE: Peak check-out period — full coverage essential

SHIFT: Morning · PRIORITY: High

BUSINESS REQUIREMENT CARD

AFTERNOON

Afternoon Shift Requirements

15:00 – 22:00

Staff Required per Shift:

- 1 Receptionist — guest services and check-ins
- 1 Chef — dinner preparation and service
- 2 Waiters — lunch and dinner service

NOTE: Busiest service period — kitchen and dining room both active

SHIFT: Afternoon · PRIORITY: Highest

BUSINESS REQUIREMENT CARD

NIGHT

🌙 Evening / Night Shift Requirements

22:00 – 08:00

Staff Required per Shift:

- 1 Receptionist or Night Duty Staff — late check-ins
- 1 Security Guard — premises safety
- Optional: 1 Waiter (for late bar service)

NOTE: Skeleton crew — security and guest availability are essential

SHIFT: Night · PRIORITY: Medium

BUSINESS REQUIREMENT CARD

WEEKEND

📈 Weekend & Peak Hour Needs

Saturday & Sunday

Staff Required per Shift:

- All roles require +1 additional staff member
- Chef and 2 Waiters mandatory for both lunch & dinner
- Receptionist must be on duty the full day

NOTE: Occupancy rises 40% on weekends — plan accordingly

TYPE: Peak period · PRIORITY: Critical

CONSTRAINT / SCENARIO CARD

RULES

⚖️ Legal & Fairness Constraints

- No employee may work more than 8 hours in a single shift
- Minimum 11 hours rest between two shifts (EU Working Time Directive)
- Maximum 40 working hours per week per full-time employee
- Part-time staff (e.g. Elena) capped at 30 hours/week
- Every employee must have at least 1 rest day per week

These constraints cannot be broken — apply them before assigning any shift

TYPE: Hard Constraint · PRIORITY: Apply First

CONSTRAINT / SCENARIO CARD

CHALLENGE

🔄 Unexpected Events — Sick Leave

- Scenario: Yiannis (Chef) calls in sick on Saturday
- Dinner service cannot be cancelled — guests are booked
- No other chef is available
- Consider: Can Sofia or Kostas cover kitchen prep?
- What is the minimum viable staffing for that evening?

❓ **How do you adjust the schedule? Who covers? What gets dropped?**

TYPE: Dynamic Challenge · THINK: Algorithmic adjustment

SCENARIO

📊 Low Season vs. High Season

- High Season (June–August): Hotel at 90% capacity
- Low Season (November–February): Hotel at 30% capacity
- High season: All shifts require full staffing
- Low season: Reduce night and afternoon staffing by 30–50%
- Consider: Who gets reduced hours? How do you stay fair?

❓ **Build two versions of the weekly schedule — one per season**

TYPE: Scenario · THINK: Pattern Recognition + Abstraction

PLANNING TOOL

GRID

Weekly Schedule Grid

Fill in employee names for each shift slot below

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Morning 07–15							
Afternoon 15–22							
Night 22–08							

TIP: Assign critical roles (Receptionist, Chef) first. Then fill remaining slots. Check fairness and total hours.

REFERENCE CARD

ROLES

Staff Roles at a Glance

Use this card to remember what each role requires

Receptionist	Guest check-in/out, phone, information desk — must be present during all guest-facing hours
Waiter	Food and beverage service — required during all meal service periods (breakfast, lunch, dinner)
Housekeeper	Room cleaning and preparation — mainly morning shifts, before noon check-in
Chef	Meal preparation and kitchen management — essential for lunch and dinner service
Security	Premises monitoring — mainly night shift; may also cover quiet afternoon periods

REFERENCE: Keep this card visible throughout the activity