## Moodle Homework Planner – Full stack website

## Problem

Many students don’t receive email notifications when instructors upload new assignments or tasks on Moodle. This creates confusion and missed deadlines, especially for students taking more than five courses, as it becomes difficult to manage all upcoming tasks.

### Solution

A smart planner web app connected to the university’s Moodle database via API. It helps students automatically track homework, assignments, and deadlines in real time, with classification, planning tools, and collaborative features.

### Core Features

#### Automatic Task Management

* Connects to Moodle using the API
* Automatically inserts or deletes tasks when they’re added/removed from Moodle
* No need for manual tracking

#### Instructor Moderation

* Instructors are added as moderators
* Can view student workload statistics
* Can validate, adjust, or comment on task data

#### Task Classification using ML

* Each task has 4 key features:
  + Due date
  + Grading percentage
  + Course points (Haifa University’s credit system)
  + Necessary / Optional
* A supervised machine learning model classifies tasks as:
  + Urgent
  + Non-urgent / Upcoming
* This helps students prioritize effectively the upcoming homework load.

#### Smart Planning View

* Students can view their planner in Daily, Weekly, or Monthly modes
* View workload by course or type
* Color-coded urgency based on ML classification

#### Lecture Review Section

* Students can pin lectures they want to revisit
* Add notes like: “Slide 40 — need to review the proof”
* Upload related PDFs or images to each lecture

#### Partner-Based Homework Mode

* Students can work in partner mode
* Shared task cells:

In pair Homework cells (with partners) have different colors.

* + Color-coded updates
  + Real-time progress tracking
  + Every partner's progress will be visible to his partner, and to the lecturer which can grade differently each one of them based on how much workload each one made. (very helpful since during those 3 years half the partners only attached their IDs to the final work)
* After 1 month:
  + Students without partners are auto-matched randomly (no excuses anymore)

#### Partner Match Page

* A form for students to choose their preferred partner
* Deadline: 1 month to choose (First month of the semester, or after your current partner drops from the course)
* Afterward, system matches remaining students automatically

#### Study Timer

* A Pomodoro-style study timer for productivity
* Modes:
  + Group / Partner / Solo
* Background lofi music included for focus

### User Authentication

* Use university email login / sign up
* Makes it secure + easy to access

**1. Users Table**

* **Purpose:** Store all users (admins, students, lecturers).
* **Fields:**
  + id (PK)
  + birth\_date
  + gender
  + role (admin/student/lecturer)
* **Relationships:**
  + One user can have many **courses** (students enrolled in courses, lecturers teaching courses).
  + One user can have many **homework submissions**.

**2. Courses Table**

* **Purpose:** Store all courses.
* **Fields:**
  + id (PK)
  + course\_name
  + lecturer\_id (FK → Users)
  + syllabus
* **Relationships:**
  + One course has many **homework**.
  + One course can have many **classes**.

**3. Homework Table**

* **Purpose:** Store all homework assigned in courses.
* **Fields:**
  + id (PK)
  + course\_id (FK → Courses)
  + due\_date
  + description
* **Relationships:**
  + One homework can have many **grades**.
  + One homework can have many **partners** (students working together).
  + One homework can have many **files**.

**4. Files Table**

* **Purpose:** Store uploaded files related to homework or classes.
* **Fields:**
  + id (PK)
  + file\_content (or file URL)
  + homework\_id (nullable FK → Homework)
  + class\_id (nullable FK → Classes)

**5. Grades Table**

* **Purpose:** Store grades for homework/exams.
* **Fields:**
  + id (PK)
  + student\_id (FK → Users)
  + homework\_id (nullable FK → Homework)
  + exam\_id (nullable FK → Exams)
  + grade

**6. Partners Table**

* **Purpose:** Store partner relationships for homework.
* **Fields:**
  + homework\_id (FK → Homework)
  + student1\_id (FK → Users)
  + student2\_id (FK → Users)

**7. Classes Table**

* **Purpose:** Store class sessions.
* **Fields:**
  + id (PK)
  + course\_id (FK → Courses)
  + room

**8. Exams Table**

* **Purpose:** Store exams for courses.
* **Fields:**
  + id (PK)
  + course\_id (FK → Courses)
  + due\_date

**9. Study Progress Table**

* **Purpose:** Track daily and monthly study progress.
* **Fields:**
  + id (PK)
  + student\_id (FK → Users)
  + date (day being tracked)
  + hours\_studied
  + tasks\_completed (summary of what was done that day)
  + month\_summary (optional text or computed from daily entries)