**Lebanese University Faculty of Science II**

Course Code: I3308

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# **Plan A**

**Drive Directory Link:**

<https://drive.google.com/drive/folders/1lrBFSrivOS9-n-uCV2Y7zi-RHhzBZQBT?usp=drive_link>

**AI Agents Workflow for Automated Assignment Solving**

***Description:*** This research tool will take an assignment and a reference course and solve the assignment based on the keywords mentioned in the assignment and take as a reference what was mentioned in the course, for example, if the assignment is about web development and the course didn’t mention the backend part of the web, then in the assignment backend can be mentioned but not as a key point or a subject, but as a complementary idea if it was necessary.

1. **File Intake & Preprocessing Agent**
   * ***Input:*** Assignment file and one or more course files in pdf format, the user can prompt an extra requirement not mentioned in the assignment.
   * ***Process***: Scans and validates the course material and the assignment to extract keywords, topics, and key concepts from the course material, and identifies the structure and requirements of the assignment.
   * ***Output***: Assignment subject, tasks, format, and course keywords.
2. **Web Research & Knowledge Enhancement Agent**
   * ***Input***: Assignment subject, tasks, format, and course keywords.
   * ***Process***: Searches the web for missing or supplementary information based on extracted keywords, then verifies the credibility of sources and extracts relevant content. Also, organize gathered information for easy reference in the next step.
   * ***Output***: Research result, and assignment format.
3. **Contextual Answer Generation Agent**
   * ***Input***: Research result, and assignment format.
   * ***Process***: Matches assignment questions with relevant course material and web research results to generate comprehensive answers using both sources. Ensures responses align with assignment requirements.
   * ***Output***: Assignment answers, and format.
4. **Final Review & Formatting Agen**
   * ***Input***: Assignment answers, and format.
   * ***Process***: Ensures coherence, correctness, and academic integrity, then formats responses according to assignment guidelines. Finally, check for plagiarism and grammar before generating the final output.
   * ***Output***: A Word document of the solved assignment based on the format guidelines and the course topic keywords.