Object Oriented Programming - Project Description & Marking Scheme (50%)

For this programming assignment, the use of AI tools as an aid is permissible within the following constraints:

1. Guidance & Research: AI can be consulted for understanding complex programming concepts, seeking explanations of syntax, or finding solutions to generic errors.
2. Code Generation: While AI can suggest snippets or structures, the bulk of the code logic must be crafted and understood by the student. Any AI-generated code segment should be clearly commented and annotated within the submission.
3. Testing & Debugging: AI-driven testing tools or debuggers can be employed to identify potential bugs or performance issues.
4. Documentation: AI can assist in formatting or refining the documentation, but the content must reflect the student's understanding of their code.
5. Explicit Disclosure: Any section of the assignment, whether it be code, documentation, or both, that was influenced or generated by AI must be clearly disclosed in your submission. This includes providing specific prompts or questions posed to the AI tool.
6. Originality & Understanding: While tools and assistance are available, it's essential that the core logic, flow, and functionality of the assignment are the product of the student's original thought and comprehension. Simply patching together AI-generated solutions without a clear understanding violates the essence of this exercise.

Project Description

The 2030 Agenda for Sustainable Development outlines 17 Sustainable Development Goals (SDG's) calling on United Nations Member states to take action, to end poverty and other deprivations, improve health and education, reduce inequality and spur economic growth while tackling climate change and preserving our oceans and forests.

You can learn more about the SGD's here and by watching this video.

Your task is to build a prototype of an application which would support the achievement of one of the UN SDG's.

- Working in teams of 3 people you will build a fully functional prototype for your app using java
- The app must consist of 3 distinct sections
- Each member of the team will take responsibility for the development of one of these sections
- All sections should then be combined in one complete seamless package
- In the circumstance where a group has less than 3 members, each member still takes only one section each
- Each section should contain:
    - More than 3 classes
    - 3 or more distinct functions or features
    - Data input and output
    - Dynamic interfaces using text and images
    - More than 1 form requiring user input

Deliverables

Checkpoint 1 (Project Proposal & Class Diagram) – Week 6

- One submission per group
- 10 marks out of 100

This submission should be in the form of a single word document or PDF containing:

1. A one-page project proposal outlining the overarching project idea, the three key sections of the app, the functionality to be contained within each section, and the name of the team member responsible for each sections development.
2. A complete class diagram outlining the classes required for the app and the data members and methods contained within each class.

Checkpoint 2 (User Interface) – Week 9

- One submission per group
- 20 marks out of 100

This submission should be in the form of a zipped folder which contains:

- one complete netbeans project with all sections connected to a main landing page. All user interfaces should be complete and navigable but functionality is not necessary at this point. For example, if the app contains a form the buttons and fields necessary for completion of the form should be included but need not work fully at this point. All necessary navigation should be included and fully functional at this point.
- A .txt file containing the github link to your groups project repository showing all project collaborators – this should be the link used throughout the entire project

Checkpoint 3 (Individual Sections) – Week 11

- Individual submission of work
- 30 marks out of 100
- All 30 marks are for the Individual Submission, there is no group mark for this deliverable

This submission should be in the form of a zipped folder which contains:

- A single Netbeans project containing a complete working section of the app demonstrating the use of the core concepts of Instantiable Classes and Arrays of Objects/ArrayLists.
- A .txt file containing the github link to your personal project repository

Final Submission (Full Prototype with file storage) – Monday of Week 13

- Only one submission per Group
- 40 marks out of 100
- This submission should be in the form of a zipped folder which contains:
    - A single netbeans project containing all sections of the app with all functionality completed demonstrating the use of all module concepts.
- A .txt file containing the github link to your groups project repository showing all project collaborators

Project Presentation – Week 13

- Project Submissions will be assessed during presentations in Week 12
- Any student who does not attend the presentation will receive a mark of 0
- Students who miss the presentation with approved personal circumstances will present the project individually at a later date – the remaining group members will present as scheduled

Marking Scheme

Topic	Grade Item	Marks	Criteria
Project Proposal & Class Diagram (10 marks)	Sections/Functionality	4	3 sections, clearly assigned to individual team members with ample distinct interactive functionality
	Diagram Syntax/Structure	2	Well executed syntax with few or no errors.
	Diagram Associations & Details	2	9 or more clearly defined Classes with associations including proposed data members and methods
	Inheritance	2	At least one well defined instance of inheritance
GUI (20 marks)	Navigability	6	Single Netbeans Project, Connecting main menu, all screens connected
	All Sections & Screens Included	8	All required screens are included in the project
	Design Consistency	6	There is a consistency of design throughout all screens
Individual Section Core Concepts (30 marks)	Instantiable Classes	10	Three or more instantiable class, complete and adhering to good programming practice and naming conventions
	Data Structure	10	Use of one or more Arrays of Objects or ArrayLists. Correctly declared, Created and Used
	Data Structure Manipulation	10	Full functionality on the data structure. (Add, Display, Search, Delete)
Group Submission Prog.Concepts (15 marks)	File Reading & Writing	5	At least two instances of Reading and Writing to a File.
	Inheritance & Polymorphism	5	At least one example of inheritance and of polymorphism in the project as a whole.
	GUI Functionality	5	Functionality fully operational from the GUI
Overall Application (25 marks)	Run from Play	5	Application launches correctly when play button is pressed in Netbeans
	Error Free	5	Free of all logic and syntax errors
	Completeness	5	Functionality completed to a full and high standard
	Requirements	5	Content and functionality relevant to sections
	Innovation	5	Evidence of innovative ideas and functionality