Addis Ababa Science and Technology University
Compiled by: Kassahun T.
Advanced Programming (30%)

Guidelines: *Each project is to be done by a group of students as assigned to the specific project.* **The projects are to be implemented by java programming language and the database part is using SQL**. *Each project work carries documentation in the form of a project report to be submitted in printed form - A4 size with soft binding.*

The project report structure is:

- *Title*
- *Objective: (The objective describes the goal of the project work.)*
- *Theory: (The theory is formal design comprising descriptions, essential mathematics, formulas, derivations, etc.)*
- *related work and Design: (The design part comprises flow-charts, algorithms, tables, diagrams etc.)*
- *methods and Implementation: (The implementation is description of functional modules of code, hierarchical relationship, coding with built-in documentation, list of system requirements, like compilers, operating system, etc.)*
- *Debugging-Test-run: (The Test-run and result part of the report contains detailed method of testing, assuring that the code is fool-proof and fully debugged.)*
- *Results analysis (if any): (The Analysis part should discuss other aspects, like complexity of algorithms in terms of average and worst-case complexity for time and space, robustness of the approach used, finer technical details, etc.)*
- *Conclusion and Future Improvements: (The conclusion and future aspect should summarize the project in brief, what improvements can be possible which could not be considered due to time limits, limitations (if any in the design and implementation), various applications of this design, etc.)*

The **report and slide** *should have a front cover in the standard form, generally used for* **seminar/dissertation**, **giving project title, class year, name of student, guide, name of Institution, year, and month & year of submission, all in standard acceptable formats.**

N.B. Plagiarism (Copying from Colleagues) and artificial content will be detected through software analysis.

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List of the project:

Project 1(G1): **Water Resource Management for AASTU**

- *Develop a system to monitor and manage water resources in AASTU regions. Include features like water level monitoring, usage analysis, and alerts for water scarcity or contamination.*
- *Group member*

ETS1410/14
ETS1421/14
ETS1413/14
ETS1420/14
ETS1419/14
ETS1440/14

Project 2(G2): **Education Enhancement Platform**

- *Develop an online platform that provides educational resources and tools for students in underserved communities. Include features like video lectures, practice exercises, and progress tracking to upload assignment and to see your result.*
- *Group Member*

ETS1704/14
ETS1703/14
ETS1725/14
ETS1739/14
ETS1740/14
ETS1760/14
ETS1789/14

Project 3(G3): **Clearance Management System for AASTU students**

- *This project simplifies and automate the clearance process, reducing administrative burden and improving transparency for students. It can also help identify bottlenecks and enhance the overall efficiency of the clearance process.*
- *Group member*

ETS1495/14
ETS1507/14
ETS1522/14
ETS1518/14
ETS1523/14
ETS1526/14

Project 4(G4): **Public Transportation Management for Addis city**

- *Build a system to optimize public transportation routes and schedules based on demand. Include features like real-time vehicle tracking, passenger information, and route optimization algorithms.*
- *Group Member*

ETS1531/14
ETS1534/14
ETS1533/14
ETS1544/14
ETS1554/14
ETS1560/14

Project 5 (G5): Waste Management Application for AASTU

- *Create an application that enables communities to manage waste effectively. Implement features like waste collection scheduling, recycling information, and reporting mechanisms for illegal dumping.*
- *Group Member*

ETS1581/14
ETS1585/14
ETS1576/14
ETS1588/14
ETS1609/14
ETS1625/14

Project 6(G6): **ID card Replacement (Appointment) system for AASTU students**

- *simplify the process of replacing lost or damaged ID cards for students.*
- *AASTU can streamline the process for students and reduce the administrative burden associated with issuing replacement ID cards. It improves efficiency, provides transparency, and enhances the overall student experience.*
- *Group Member*

ETS1632/14
ETS1639/14
ETS1644/14
ETS1641/14
ETS1655/14
ETS1660/14
ETS1665/14

Project 7(G7): **Payroll management system for AASTU community**

- *community can automate and streamline the payroll processes for faculty, staff, and other employees.*
- *automate payroll processes, reduce manual errors, and improve the overall efficiency of payroll management for the university community. It enhances accuracy, streamlines reporting, and ensures timely and accurate salary payments to employees.*
- *Group Member*

ETS1448/14
ETS1453/14
ETS1452/14
ETS1465/14
ETS1474/14
ETS1496/14

Project 8 (G8): **Class scheduling management system for AASTU**

- *require collaboration with stakeholders to understand their specific requirements and workflows. It's also important to continuously gather feedback and iterate on the system to meet the evolving needs of the institution.*
- *Enable students to browse available courses and enroll in them.*
- *Maintain a database of classrooms and lecture halls, including capacity and availability.*
- *Generate reports on course enrollment, teacher workload, classroom utilization, etc.*
- *Automatically generate class schedules based on course offerings, teacher availability, and room availability.*

Group member:

ETS1673/14
ETS1680/14
ETS1682/14
ETS1683/14
ETS1685/14
ETS1697/14
ETS1701/14