

**Diploma in Information Technology**  
**System Development Techniques**  
**Instruction for CA3 Individual Assignment**  
**July 2023 Semester**

**Assessment**

**100 Marks.** (This assignment constitutes to **30%** while the class presentation constitutes to 10% of the overall assessment. Total marks for this assessment is 100 marks.)

**Rationale of Group Project**

The rationale of the group project is to enable collaborative learning with your peers and learning to work as a team, which is commonplace in workplace environment. Students learn to apply theories taught in class and textbooks to real world situations.

In line with this objective, students are not allowed to reuse old assignments, or submit projects from previous semesters or copy largely from sources, particularly from the internet.

**Forming Group**

Students are to form groups of 4-5 students per group. As this a group project, each member is expected to put in his/her fair share of the effort into the project. It is essential that groups manage their group effectively to complete this project.

Students should resolve group dynamics issue and may seek the mediation through the lecturer as early as possible. Last minute mediation will not be entertained. Students may request for peer evaluation as a final resort if all mediation fails.

Finally, the lecturer reserves the right to assign a mark to an individual student different from the rest of the group if that student is deemed not to have put in his/her fair share of effort into the project.

**Case Study:**

Digital transformation is the process of using digital technologies to create new — or modify existing — business processes, culture, and customer experiences to meet changing business and market requirements. This reimagining of business in the digital age is digital transformation.

In fact, digital transformation is changing the way business gets done and, in some cases, creating entirely new classes of businesses. With digital transformation, companies are taking a step back and revisiting everything they do, from internal systems to customer interactions both online and in person. They're asking big questions like "Can we change

our processes in a way that will enable better decision-making, game-changing efficiencies, or a better customer experience with more personalisation?”

Now we're firmly entrenched in the digital age, and businesses of all sorts are creating clever, effective, and disruptive ways of leveraging technology. Netflix is a great example. It started out as a mail order service and disrupted the brick-and-mortar video rental business. Then digital innovations made wide-scale streaming video possible. Today, Netflix takes on traditional broadcast and cable television networks and production studios all at once by offering a growing library of on-demand content at ultracompetitive prices.

Digitisation gave Netflix the ability not only to stream video content directly to customers, but also to gain unprecedented insight into viewing habits and preferences. It uses that data to inform everything from the design of its user experience to the development of first-run shows and movies at in-house studios. That's digital transformation in action: taking advantage of available technologies to inform how a business runs.

Read more in full details at <https://www.salesforce.com/ap/products/platform/what-is-digital-transformation/>.

### **The group task:**

"The Digital Transformation Journey of a Retail Company: Enhancing Customer Experiences and Driving Sales."

Pick a retail or food & beverage company as the case study for your group project. Your objective is to explore how a traditional brick-and-mortar retail company can successfully transformed its operations to thrive in the digital landscape.

The scope could explore the challenges they faced, such as changing consumer behavior and increasing competition from online retailers. The research project would then document down the various process and procedures that the team learnt in the System Development Technique module to highlight the strategies and technologies they implemented, such as leveraging data analytics to understand customer preferences, adopting e-commerce platforms, and integrating omnichannel experiences. The research project could showcase how this transformation led to improved customer experiences, increased sales, and sustained growth in the digital era.

Your group is to write a research report with words not exceeding 6000 words and generate any kinds of illustrations/diagrams/prototypes where necessary. The group is to satisfy the following pointers:

1. Referring to the case study, pick a retail or food & beverage company as your target research company. Explore how the traditional brick-and-mortar retail company can successfully transformed its operations to thrive in the digital landscape.

Research and if possible, approach similar companies to conduct simple interview to understand the business needs.

Based on the interviews, capture the vision, and produce a **System Vision Document**.

2. Based on the interview and the System Vision Document produced, identify the System Requirements of the new system to be developed. The system requirements should include all the activities the new system must perform or support and the constraints that the new system must meet. Do take note to include both the functional and non-functional requirements.

List the functional requirements in form of User Stories. Each team should have at least **TEN(10)** possible User Stories.

3. Deriving from Question 2, develop and submit the following UML diagrams/documents based on the User Stories created
  - a) Use case diagram
  - b) Use case description table based on the listed use case
  - c) Sequence diagram (Interaction Diagram)
4. In addition, provide the following diagrams/documents to illustrate how the entire system is being designed and developed
  - a) Design Class diagram
  - b) Package diagram
  - c) CRUD table that shows the connection between use cases, users and data
5. Discuss and elaborate the System Development Life Cycle (SDLC) approach that you will adopt in developing this system.
6. Describe how you will perform the User Acceptance Test.

7. Generate a well-design presentation slide that summaries point 1 to 6.

Side note: The presentation slide will be used for the actual presentation.

For all pointers, you are required to relate and reference to the case study. Also, it is recommended that your explanation/illustration are as detailed as possible.

An assessment marks allocation for this research report can be found in the appendix of this assignment. Do note that the appendix is a guideline on how the group's research report will be evaluated.

### **Assessment Marks Allocation**

<b>Component Assessed</b>	<b>Marks Allocation</b>
Point 1 (System Vision Document)	10
Point 2 (Requirements & User Stories)	20
Point 3 (UML Documents)	30
Point 4 (UML Documents)	20
Point 5 (SDLC Approach)	5
Point 6 (UAT)	10
Point 7 (Group Presentation Slides)	5
Total	100

### **Assessment Topics**

Topics 1 to 16

### **Instructions**

#### Report Format

1. All assignment files are to be submitted separately with file name, institution name, the module name, the semester and year and date of submission.
2. The report should have a cover page, content page, introduction, write-up on the task, conclusion, references and appendices
3. The cover page should include:
  - i. Institution name (and institution logo) the programme
  - ii. Module name, semester and year
  - iii. Date of submission
  - iv. Student's name and student ID numbers

4. Each question should be a separate section
5. The references should be presented in Harvard format and should have at least **THREE (3)** references.
6. Students should keep a copy of assignment submitted.

#### Report Word Limit

Not exceeding 6000 words

#### Report Font and Spacing

Font: Arial or Calibri, black coloured

Font size: 12 and 1 ½ or double spacing.

#### Penalty Marks for Late Submission

By one day: 20% to be deducted from total marks.

More than one day: submission will NOT be graded.

#### **Important Dates of CA3 Assignment**

**CA3 Individual Assignment Deadline: 14 August 2023, 11.59 am**

**Zip all assignment file. Submit your assignment via Canvas. All assignment files must be submitted in order to be graded.**

#### Lecturer Contact

You should contact your lecturer via your SIM email whenever you have any issue about your project.

#### Plagiarism and Collusion

The submitted report must show evidence that this is students' own work. No marks will be awarded if there are no workings or reasonable explanations. Please be reminded that plagiarism and collusion is a serious offence, and all cases will be referred to the administration. Grades will be withheld if the submission is suspected for plagiarism or collusion till investigations are completed.

#### Submitting Assignment

All assignment files are to be uploaded with your team number, institution name, the module name and CA3. Example "team\_no\_sim\_sdt\_ca3".

Students should keep a copy of assignment submitted.