MONASH University
Information Technology

# FIT2090 Business Information Systems and Processes
## Assignment 1 (20%)
## Submission Deadline: 13 Sep 2021, 5:00 PM (AEST)
## Group Assignment (two students from the same tutorial)

**Learning Objectives**

- By completing this assignment, students will be able to (a) create a business process model based on a given problem and (b) document and communicate a business process using standard notations of the process modelling techniques.

**Group Assignment:**

- This assignment promotes students' collaborations working in pairs. Students must form their paired grouping within the same tutorial, the latest being the end of week 5. You will choose your group via the Assignment One Groups (see Moodle Assessments page).
- Every student in the group is required to participate and contribute to the assignment actively. These would be used as a basis for marks adjustment for the assignment's final score (if necessary). At the end of the assignment, all students must complete their Peer Assessment (to be made available in Moodle) confidentially and individually. Failure to complete the assignment peer assessment by the due date might result in a lower mark for the final score.

**Submission Requirements**

- You are required to submit the assignment via Moodle as an MS Word or PDF formatted document. The file names should include the Unit Code, assignment number and your Group ID number, following either of these formats:

  FIT2090A1_GroupID.docx OR FIT2090A1_GroupID.pdf

- Only one of the group members will submit the assignment for the group.

**Late Submissions:**

- Late submissions will be penalised, as stated in the submission link in Moodle.

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**Scenario**[1]

Sanitised Air Mattress (SAM) is a specialised mattress company that leases mattresses of different sizes for patients in several hospitals and medical centres. Due to the specific medical conditions of each patient, sometimes the standard mattresses provided in hospitals and medical centres are not suitable for some patients, e.g. the standard mattresses could be too small, too hard, too soft, etc. The patient can hire these sanitised air mattresses for the duration required to achieve better comfortability and even for medical needs. There are three categories of mattresses available, namely *Basic, Economy,* and *Deluxe*. For each client, i.e. the

[1] The narration is compiled based on the interviews with various key persons in the process. There could be some information missing due to the limitations in information gathering. For the purpose of business process modelling, you have to make reasonable assumptions when necessary.

hospital/medical centre, there is a contact person for mattress ordering – also known as requestor. A requestor can make an order on behalf of the patient, through phone or by email. When the requestor places an order, SAM delivers the mattress to the designated ward in the hospital/medical centre. The drivers will unpack and inflate the mattress for the patients. At the end of the rental period (i.e. when a mattress is no longer needed), the requestor will inform SAM to collect the mattress from the its current location. These mattresses will then be sanitised (e.g. cleaned, sterilised, disinfected), repacked and stored in SAM's storeroom, ready for its next use.

Currently, SAM uses a simple rental management system to manage and record all orders. The current rental management system records the product information, client details, client's order requirements, delivery and collections information. As a result of a recent increase in demand for their mattresses, SAM requires a more effective system to manage their rental processes. Therefore, the Chief Executive Officer (CEO) and owner of SAM has hired your business consulting firm to analyse their current business processes and propose a more effective rental management system. A priority of the proposed system should be improved efficiency in the day-to-day business operations.

The current rental process is as follows. When a patient needs a specialised mattress, the requestor can either call or email SAM's clerk to inform them about the requirements of the mattress. Either way, the clerk first checks the existence of the client and Patient Unique Identifier (PUID) by entering the PUID into the system. If this is a new client or a new patient, the clerk will add their information to the Client master data and the Patient master data, respectively. Then, the clerk will retrieve the patient information, mattress type/size needed, etc., from the database. The clerk will then retrieve the delivery details from the database and lodge the order.

When an order is successfully lodged, the system generates a reference number saved in the Order event data. The requestor could use the reference number later, e.g. to check for the order status, details of charges, etc. Then, the clerk will retrieve a list of mattresses that meet the requirement from the Mattress master data. The clerk will schedule for delivery and inform SAM's drivers. Using the deliver-collect tracking system, drivers examine the mattress, ensuring it is in good condition before delivery. The deliver-collect tracking system is a mobile application that can scan the QR code on a mattress and record its status, e.g. good to deliver, delivered, collected, sanitised, stored, damaged, etc. The deliver-collect tracking system is a separate system from the central computer system used by the clerk. Sometimes it could be a data mismatch, e.g. status not updated from the tracking system, and the drivers or the clerk need to update them manually. Once it is examined, the drivers deliver the mattress to the designated hospital address.

When the mattress is no longer needed, the requestor will inform SAM's clerk, and the collection process is carried out by a driver, similar to the delivery process.

Finally, the clerk sends the invoice to the client's accountant. Then, the accountant pays the mattress rental fees via EFTPOS, BPAY, or credit card, and sends a copy of the invoice to the patient. The clerk will update the payment information in the Order event data.

If the patient claims from their health insurance, the clerk will collect information about the insurance and send an invoice to their insurance company.

**Task I (13%)**

Based on the descriptions given above, complete the following tasks:

1. Prepare a table of entities and activities. (2 marks)
2. Draw a context diagram. (2 marks)
3. Draw a physical data flow diagram (DFD). (2 marks)
4. Prepare an annotated table of entities and activities. On this table, indicate the groupings, bubble numbers and bubble titles to be used in preparing a level 0 logical DFD. (1 mark)
5. Draw a level 0 logical DFD. (2 marks)
6. Draw a System Flowchart. (3 marks)
7. The overall presentation of your business process model, including completeness, correctness and consistency of the diagrams. (1 mark)

* State your assumptions when necessary.

**Task II (7%)**

Base on the abovementioned scenario:

1. Discuss how organisations could use business information systems (BIS) to achieve their business goals. (1 mark)
2. Critique and discuss the aspects that are inefficient and/or ineffective in the current business process. (2 marks)
3. Propose a new business process model, justify how the business process is improved. Discuss the business information systems that can be used in this case. (2 marks)
4. Include at least two references[2] and cite them in the body of your response. Use the American Psychological Association (APA) style of referencing (https://guides.lib.monash.edu/citing-referencing/apa). (1 mark)
5. Overall presentations, e.g., writing structure, flow, subheadings, paragraph construct and linkage, general grammar. The part should be approximately 600 words (+/- 10%) in length. (1 mark)

[2] The references may include published peer-reviewed academic articles, e.g. journals, conference articles, books, book chapters, or websites and newspaper articles. They should be as current and substantive as possible.

**Assessment Criteria**

*Marking rubric will be provided in Moodle.*

| Tasks | Marks | Descriptions |
|---|---|---|
| **Part I** | **13** | |
| 1 | 2 | Identify entities correctly.<br>Activities: Complete and in the correct sequence. |
| 2 | 2 | Correctly identify the system/process.<br>Correctly identify the data flows.<br>Correctly identify the entities. |
| 3 | 2 | Identify the correct entities.<br>Identify the correct data flow.<br>Identify the correct data store. |
| 4 | 1 | Correct annotated table of entities & activities.<br>Details of the groupings (logical groupings make sense).<br>Indicate bubble numbers and bubble titles that would be used in a level 0 logical DFD. |
| 5 | 2 | Correct processes/activities as per groupings in Task 4.<br>Correct flow.<br>Correct data store. |
| 6 | 3 | Correct entities.<br>Correct events depicted in respective entities.<br>Correct flow.<br>Correct use of notation. |
| 7 | 1 | Completeness.<br>Correctness.<br>Well presented.<br>The consistency of tables, diagrams.<br>State your assumptions when necessary. |
| **Part II** | **7** | |
| 1 | 1 | Completeness of arguments.<br>Correctness of arguments.<br>The richness of arguments.<br>Clarity of expression.<br>Use of appropriate references to support arguments. |
| 2 | 2 | |
| 3 | 2 | |
| 4 | 1 | At least two references, correct in-text citations, and APA style. |
| 5 | 1 | The overall presentation word limit is 600 words. |