MAKERERE UNIVERSITY

**SCHOOL OF COMPUTING & INFORMATICS TECHNOLOGY**

# SEMESTER II 2017/2018

**IST 1204: Systems Analysis and Design (Requirements Modelling Tutorial)**

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**DATE: 11/02/2020 Hand in date: N/A**

**INSTRUCTIONS:**

* Read the case study below carefully and answer the questions.

Personal Trainer, Inc., owns and operates fitness centers in a number of Nairobi constituencies. The centers have done well, and the company is planning an international expansion by opening a new “supercenter” in the East African region. Personal Trainer’s president, Okello, hired an IT consultant, Susan Njeri, to help develop an information system for the new facility. During the project, Susan will work closely with Gray Jowi, who will manage the new operation.

**Background**

During requirements modeling for the new system, Susan Njeri met with fitness center managers at several Personal Trainer locations. She conducted a series of interviews, reviewed company records, observed business operations, analyzed the BumbleBee accounting software, and studied a sample of sales and billing transactions. Susan’s objective was to develop a list of system requirements for the proposed system.

**Fact-Finding Summary**

A typical center has 100–300 members, with two membership levels: full and limited. Full members have access to all activities. Limited members are restricted to activities they have selected, but they can participate in other activities by paying a usage fee. All members have charge privileges. Charges for merchandise and services are recorded on a charge slip, which is signed by the member. At the end of each day, cash sales and charges are entered into the BumbleBee accounting software, which runs on a computer workstation at each location.

Daily cash receipts are deposited in a local bank and credited to the corporate Personal Trainer account. The BumbleBee program produces a daily activity report with a listing of all sales transactions. At the end of the month, the local manager uses BumbleBee to transmit an accounts receivable summary to the Personal Trainer headquarters in Westlands, where member statements are prepared and mailed. Members mail their payments to the Personal Trainer headquarters, where the payment is applied to the member account.

The BumbleBee program stores basic member information, but does not include information about member preferences, activities, and history.

Currently, the BumbleBee program produces one local report (the daily activity report) and three reports that are prepared at the headquarters location: a monthly member sales report, an exception report for inactive members and late payers, and a quarterly profit and loss report that shows a breakdown of revenue and costs for each separate activity.

During the interviews, Susan received a number of “wish list” comments from local managers and staff members. For example, many managers wanted more analytical features so they could spot trends and experiment with what-if scenarios for special promotions and discounts. The most frequent complaint was that managers wanted more frequent information about the profitability of the business activities at their centers.

To enhance their business, managers wanted to offer a computerized activity and wellness log, a personal coach service, and e-mail communication with members. Managers also wanted better ways to manage information about part-time instructors and staff. Several staff members suggested a redesign for the charge slips or scannable ID cards.

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**Questions:**

1. List the system requirements, with examples for each category. Review the

information that Susan gathered, and assume that she will add her own ideas to

achieve more effective outputs, inputs, processes, performance, and controls.

1. Are there scalability issues that Susan should consider? What are they?
2. If Susan wants to conduct a survey of current or prospective members to obtain

their input, what type of sampling should she use? Why?

1. Draw an FDD that shows the main operations described in the fact statement.