STID3053 CONFIDENTIAL

UUM
Universiti Utara Malaysia

FINAL EXAM
SECOND SEMESTER SESSION 2011/2012

COURSE CODE / NAME : STID3053/ DECISION SUPPORT SYSTEM
DATE : 19 JUNE 2012 (TUESDAY)
TIME : 2.30 – 5.00 P.M. (2 ½ HOURS)
VENUE : TE

INSTRUCTION :
1. This question booklet contains TWELVE (12) printed pages excluding the cover page.
2. Answer ALL questions in the space provided.
3. You are NOT ALLOWED to remove the exam paper from the examination hall.

MATRIC NO : ____________________________ (with word)
( with number )
IDENTIFICATION CARD NO : ____________________________
LECTURER : ____________________________
GROUP :  \[ \] TABLE NO : ____________________________

DO NOT OPEN THIS EXAMINATION PAPER UNTIL INSTRUCTED

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SECTION A : STRUCTURED QUESTIONS (80 MARKS)

1. Simon (1977) describe THREE (3) types of decisions. Distinguished between structured, semi-structured and unstructured decision types that are supported by decision support system (DSS).

(3 marks)

2. You are considering buying a brand new hand phone for your grandmother who have sight problem and can just understand the basic function of hand phone. There are various models available in the market and you are facing difficulties in making decisions. Analyze and briefly explain your activities to make decision using the Simon’s four phase model.

(8 marks)
3. Elzan Company supplies CDs for Northern Malaysia region. They are having a problem with their inventory where they are unable to determine their exact outgoing product for every year as the booking and delivery order of their CDs keep changing.

   a. If the company planned to have an inventory system, what will be the performance measure to evaluate and analyze their system before they implement the system in their company, elaborate your answer?

      (4 marks)

   b. Determine the suitable model used by Elzan Company to develop their system and briefly explain the model.

      (4 marks)

   c. List THREE (3) benefits of the models.

      (3 marks)
4. A DSS can be used by a single user on a PC or can be Web-based for use by many people at several locations. Describe Five (5) DSS characteristics and capabilities. (5 marks)

5. There are 4 categories of DSS models, identify and briefly explain Two (2) categories and provide One (1) example of each. (4 marks)
6. You are planning of spending your semester holiday doing extreme sports with your friends. Adrenaline Extreme Company provides some packages for a group of minimum of 2 to maximum of 100 people at a time. For every package, every person can experience all Master Course but if you would like to add other interest, you have to pay extra RM 50 for every course you chose. Considering the following information:

<table>
<thead>
<tr>
<th>Package A (390/Person)</th>
<th>Package B (490/Person)</th>
<th>Package C (590/Person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-10 person</td>
<td>2-10 person</td>
<td>2-10 person</td>
</tr>
<tr>
<td>3D4N stay</td>
<td>4D5N stay</td>
<td>5D6N stay</td>
</tr>
<tr>
<td>Master Course</td>
<td>Master Course</td>
<td>Master Course</td>
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<tr>
<td>Canoeing</td>
<td>Jungle Trekking</td>
<td>Dive</td>
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<tr>
<td>Round Island</td>
<td>Canoeing</td>
<td>Jet Skiing</td>
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<tr>
<td>Snorkle</td>
<td>Round Island</td>
<td>Round Island</td>
</tr>
<tr>
<td>Other interest</td>
<td>Snorkle</td>
<td>Other interest</td>
</tr>
<tr>
<td>Rock Climbing</td>
<td>Other interest</td>
<td>Rock Climbing</td>
</tr>
<tr>
<td>Water Rafting</td>
<td>Water Rafting</td>
<td>Water Rafting</td>
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<td>Skydiveing</td>
<td>Skydiveing</td>
<td>Skydiveing</td>
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<tr>
<td>Dive</td>
<td>Dive</td>
<td>Dive</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Package D (350/Person)</th>
<th>Package E (450/Person)</th>
<th>Package F (550/Person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-100 person</td>
<td>11-100 person</td>
<td>11-100 person</td>
</tr>
<tr>
<td>3D4N stay</td>
<td>4D5N stay</td>
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<tr>
<td>Dive</td>
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<td>Dive</td>
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</tbody>
</table>

a. Draw an influence diagram of the following situation; during public holiday, there will be many bookings and company’s sale will increase. If many people taking the package, all master courses will be conducted, but the other interest course will not necessarily be conducted. (4 marks)
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b. Draw a decision table considering if you are going with 5 person, you will take Package B and add rock climbing and water rafting and if you are going with 15 person, you will take Package D and add rock climbing, water rafting and dive. Provide the total charge that you have to pay.

(4 marks)

7. Determine the differences between Static Analysis and Dynamic Analysis.

(4 marks)
8. Project manager always have to make a decision and control the project team well. List FIVE (5) skills of a good project manager. (5 marks)

9. Why Software Selection is a complex process? Provide FIVE (5) reasons of why it becomes complex. (5 marks)

10. GSS can provide support to meeting participants to improve the productivity and effectiveness of meetings by speeding up the decision making process or by improving the quality of the results.
   
   a. Determine FOUR (4) characteristic of groupwork. (4 marks)
b. Give **TWO (2) examples of process gains** and **TWO (2) examples of process losses in groupwork.**

(4 marks)

c. In Nominal Group Technique (NGT) there is a sequence of activities in decision making process. Determine and briefly explain the activities.

(6 marks)
11. Define the following term:

a. Data:

b. Information:

c. Knowledge:

d. Business Intelligence (BI):

12. Data warehouse provide ready access to critical data and insulates operation databases from ad hoc processing. State THREE (3) benefits of data warehousing in company.
13. Match the data warehouse component with its meaning.

*(6 marks)*

**Large physical database**
- Database for transaction processing systems that use data warehouse concept to provide clean data.

**Logical data warehouse**
- In some cases an additional database is built containing data from the data warehouse which are organized to support multidimensional analysis.

**Data Marts**
- Data, metadata and the processing logic used to scrub data are gathered into a physical database.

**Operational data stores**
- Front-end software, which allows users to access and analyze data in the warehouse.

**Multidimensional database**
- Contains all metadata, business rules and processing logic used to scrub, organize, package, and preprocess the data.

**Application : EIS, DSS, OLAP etc.**
- Lower-cost, scaled down version of a data warehouse. Two types: replicated (dependant) data marts and stand-alone data marts.
SECTION B : CASE STUDY (20 MARKS)

CASE – Printing Company

1. Desh Printing Company started their operation in February 2007. After about 5 years of operation, the number of customer keep increasing forcing them to hire more workers. Desh grown from a small simple printing shop to a big high end shop that provide variety of services. Besides the normal printing, the company also provide the advance printing such as printing of banners, flyers, business card, posters, paperbag, sticker, flagline, letterhead and wobbler.

Desh Printing Company also accept online printing request for books and all other materials. In 2012, they had opened another 2 branches and provide the same service for every branch. They find out that the potential of their printing shop to go further is very high. They can now distribute the task to their branches and they can chanel the task according to the request area. This can minimize the delivery cost while increase their profit.

Desh manager planned to give a loyalty card for their customer to enjoy great discount besides having them to stick with their company. Now the company are facing problems with managing their staff, salary arrangement, managing their sources (ink, paper, ect.) and workload distribution between branches. They also wanted to concentrate on giving the best services to customer and having them to come back for the printing because there are other company who run the same business as they did and now they are competing among each other.

If you are Desh manager, discuss how DSS integrated with other appropriate MSS information system, intelligent systems, sensor and other technologies that can help to make significant impact on the printing shop operation. You are encouraged to explain on the relationship between DSS with other MSS, technologies advance and examples that can help the company to increase their business and management.

(10 marks)
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Answer:
2. Design a data warehouse star schema structure for Desh Printing Shop case. Describe how the proposed data warehousing in terms of business analytics be used to solve the problems and issues mention above. Your answer should include business analytics and data warehouse structure.

Answer: