**University of Johannesburg**
**Academy of Computer Science & Software Engineering**
**IFM2A10**: Informatics 2A – Database Design
Practical Assignment 7 (Due: 12 April 2016 @ 12h30)

## Assignment

TakeItAll Inc is a wholesaler company that has just oppened up for business. They sell all kinds of technology devices at their store, ranging from graphics cards to fully kitted gaming motherboards. In order to help them develop the information system needed for their sales operations, they have hired you to design their database.

They currently keep a wide variety of products at their warehouse. The usual information stored for each product include name, manufacturer and price etc..

Apart from keeping track of their products, they would like you to also keep track of the purchases made by their clients. Purchases made by clients are shown in invoices which list all the products bought by the client, and the quantities of each product. The price at which a product was bought should also be recorded at the time of purchase of the products.

TakeItAll has two types of employees that they would like to keep track of in their new information system. Namely sales agents and product managers. Each employee can either be a sales agent or product manager and not both. All of TakeItAll's sales agents are evaluated by the number of invoices they process per month. Therefore, for all invoices made for clients, they have asked you to have a way to keep track of which sales agent assisted the client.

Each product manager is in charge of a single category of technology products that are offered by TakeItAll (such as Cameras, Kitchen Appliences, Toys etc.). Therefore, they have asked you to keep track of the product category that each product manager manages.

As this information system is new, TakeItAll would like you to suggest attributes for each of the tables you create in line with the discussion above.

## Questions

1. Illustrate a **conceptual design** of the database by means of an **Extended** Entity Relationship Diagram (EER).
    a. You may use any tool to draw the ER diagram. No hand drawn diagrams will be accepted.
2. Implement the designed database using **Microsoft Access.**
    a. Implement all tables
    b. Save all SQL statements
3. Enter data to show your database is appropriately designed. You may enter the data directly into Microsoft Access
    a. At least 5 records in each table

You must upload all designs and illustrations, along with your database, to EVE. Digital illustrations must be either in PDF or image format. Paper submissions will not be accepted.

## Mark Allocation

| **Question 1 – EEER Diagram** | **0 – 2** | **3 – 6** | **7 – 10** |
|---|---|---|---|
| Entities formed | Wrong or no appropriate entities added | Most entities defined | All entities defined |
| Entity relationships | No or some relationships shown | Most relationships shown with correct attributes | Most relationships shown with correct attributes and correct multiplicity |
| Specialisation Hierarchy | No or some inheritance relationships shown | Most inheritance relationships shown with correct notation.<br>Most subtype discriminators shown with correct notation. | • Correct inheritance relationships shown with correct notation.<br>• Correct subtype discriminators shown with correct notation. |
| Attributes | Some correct attributes assigned to entities | Most necessary attributes assigned to new entity | All necessary attributes assigned and keys assigned |
| **Question 2 – MS Access Implementation** | **0 – 2** | **3 – 6** | **7 – 10** |
| Entities and relationships implemented | No connection between implementation and conceptual design | Entities and relationships implemented correctly according to conceptual design | All entities and relationships implemented correctly |
| **Question 3 – Minimum Data Requirements** | **0 – 2** | **3 – 9** | **10** |
| Data in MS Access Database | Few, but close to no data | Some data entered, but not all data requested | Minimum data requirements fully met |

**Total: 60 Mark**