**INSTITUTE OF TECHNOLOGY**
**TALLAGHT**
**Bachelor of Science (Honours)**
**Bachelor of Science**

**IT Management**
**Computing**

**Full Time and ACCS**

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**Semester** Seven : January 2015

# Interactive Media Design

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***Internal Examiners***
Mr Ben Walsh

***External Examiners***
Mr Nigel Whyte

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| **Day** | **Saturday** |
| **Date** | **10/01/2015** |
| **Time** | **15.30-17.30** |

## Instructions to Candidates

**This examination paper contains Four questions.**

**Read all questions carefully before starting.**

**Answer Question 1 and TWO other Questions (from questions 2,3, and 4).**

**Start answers to each question on a new page.**

**Question 1 (Compulsory) [40 marks]**

(i) We can combine value encoding objects to add more value to our visualisation. Listed below are three occasions in particular. Give an example of ANY TWO of these using a diagram to aid your answer;

a. **Combining boxes and lines** to display distributions through time
b. **Combining bars and lines** for ranked contributions to the whole
c. **Combining bars and points** for uncluttered comparisons

**[10 marks]**

(ii) Matthias Shapiro identifies three steps for creating an effective visualisation. List and describe these steps using a suitable example to demonstrate your understanding.

**[10 marks]**

(iii) Discuss ANY FOUR of the following rules and principles in relation to good UI design;

a. 7±2 Principle
b. Satisficing
c. 80/20 Rule (The Pareto principle)
d. Fitts' Law
e. Inverted Pyramid

**[10 marks]**

(iv) Design a table that will display the units sold for three products (product A, B and C) and a set of three sales channels (web, retailer and phone). You will have three columns; one for units sold, one for products and one for sales channels.
Create a table to help your readers easily compare sales through the various channels for each product.

Note, you can use any sales values as the table structure is important not the actual sales values.

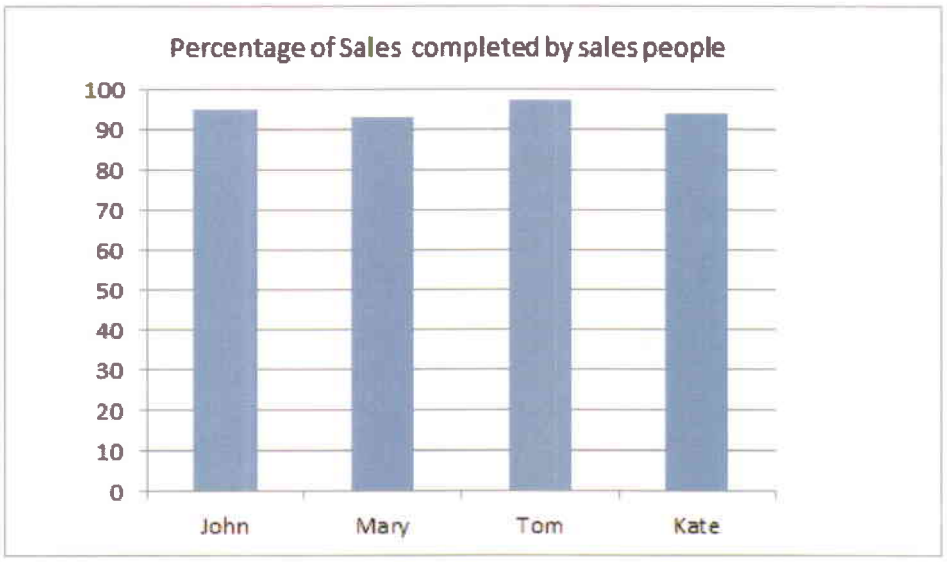
**[7 marks]**

If you wanted to add a fourth column to enhance comparisons, what could that column be? Include this is your table also.

**[3 marks]**

**Question 2 [30 marks]**

(i) The following bar chart makes it difficult to compare the sales values for each of the sales people (John 95%, Mary 93%, Tom 97% and Kate 94%). Name, describe and draw an alternative chart that would make this comparison much easier.




**[12 marks]**

(ii) ABC College is interested in understanding the distribution of student results within each grade and how each result compares to the average. Name and draw a suitable graph that helps visualise this college request. Also, explain why your choice is suitable at visualizing this type of scenario.

**[12 marks]**

(iii) What extra component (or variation of this graph) could be introduced to show the breakdown of results by individual grade into each quartile? (i.e. 25%, 50%, 75% and 100%). Use a diagram to aid your answer.

**[6 marks]**

**Question 3 [30 marks]**

(i) The list below identifies six features of how dashboards will be used and by whom. Discuss these features in relation to how dashboards should be designed, in particular listing the items of consideration within each feature;

1. Update Frequency
2. User Expertise
3. Audience Size
4. Technology Platform
5. Screen Type
6. Data Type

**[18 marks]**

(ii) Bullet Graphs and Sparklines offer a powerful mechanism in displaying information, particularly on dashboards. Discuss both graphs in terms of their features and benefits, using a diagram to aid your answer.

**[12 marks]**

**Question 4 [30 marks]**

(i) User Interface Design patterns are solutions to recurring problems. Discuss the following common design patterns, giving a suitable example of each;

a. Lazy Registration
b. Progressive Disclosure
c. Forgiving Format
d. Clear Primary Actions

**[12 marks]**

(ii) Heuristic evaluation is a good method of identifying both major and minor problems with an interface. Both heuristic evaluation and user testing can miss some problems, so it is best to employ both of these evaluation methods. Jakob Nielsen identifies ten "Usability Heuristics for User Interface Design". Discuss ANY SIX of these and give an appropriate example of each in relation to screen design.

**[18 marks]**