Faculty Content Development Scheme – Enriched Content

Subject Matter Expert: Benjamin Gan, Practice Associate Professor of Information Systems, School of Information Systems
Project: Object Oriented Programming Animations (OOP animations)
Funding and Project Management: Centre for Teaching and Learning

Synopsis:

Ben teaches IS200 and IS201 Object-Oriented Application Development. The course aims to equip students with the fundamental concepts of IS system realization and problem-solving skills. As it is essential to learn Java programming as an implementation tool of OOAD, Ben uses analogies in car assembly to illustrate difficult concepts in this subject. These analogies have been developed into animated stories and make learning come alive.

Design consideration:

Sequences of animation clips have been built to teach the following OO concepts:

- Classes and Objects
- Encapsulation
- Inheritance
- Polymorphism

These animated stories are not designed for self-paced learning. Instead they are to be shown in the classroom followed by explanations and elaborations by the instructor. For this reason, they are strictly presentational. There are no review questions, practice exercises or related resources incorporated. However, students’ understanding is assessed through the applications they developed based on these OO concepts.

Example: **Encapsulation** is the concept of hiding the implementation details of a class and allowing access to the class through a public interface. To illustrate this concept, animation clips show the difference between product information in a customer brochure and the detailed manufacturing specifications that are hidden from the customer. Eventually the customer gets the car that he wants but with the details “encapsulated”.

Feedback:

An online survey has been administered this term and **26 students** responded.

Generally, more than 70% of the respondents agree that the animations have good visual resolution and audio clarity although they are less certain about the lengths.

More than 70% of the students say that the animations have encouraged them to reflect on the subject matter as well as increase their understanding of the concepts learnt. However, it is also observed that only 57% feel that the animations have helped them to retain the concepts better. It may be necessary to find out if concept retention is improved by integrating more in depth explanations or practice questions into the animated stories. This is especially helpful to students when viewing or reviewing these animations on their own time.

On the whole, 73% of the students feel that the scenarios used in these animations are appropriate to the learning of OO concepts and skill. More than 80% would like to see more of such animations in the future.