UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
School of Electrical and Information Engineering
ELEN7045 – SD Methodologies, Analysis and Design

Design with CRC Cards

Class - Rresponsibility - Collaborators Cards

CRC Cards provide a quick, low-investment and collaborative way to design and model objects in an Object-Oriented system. CRC Cards are written on index cards, divided into 3 sections, as in the template below. An example of a complete CRC Card is also given below.

Class	
Responsibilities	**Collaborators**

Figure 1: CRC Card Template

EventMessageHandler	
• Duplicate event? • Map to domain model • Persist model • Call domain event handler	DuplicateEventQuery ModelPersister DomainEventHandler

Figure 2: Completed CRC Card

Class Exercise

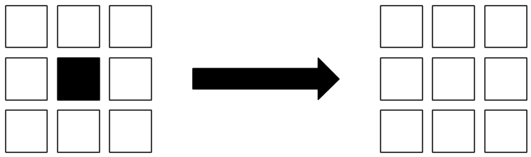
In your groups, design an Object-Oriented implementation of Conway's Game of Life (description and rules below). Pay particular attention to the roles and responsibilities within the system when you design your implementation.

Conway's Game of Life

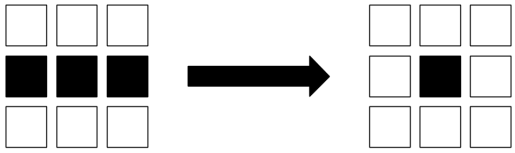
> “ The Game of Life, also known simply as Life, is a cellular automaton devised by the British mathematician John Horton Conway in 1970. The "game" is a zero-player game, meaning that its evolution is determined by its initial state, requiring no further input. One interacts with the Game of Life by creating an initial configuration and observing how it evolves. ”
>
> — *Wikipedia*

The Rules

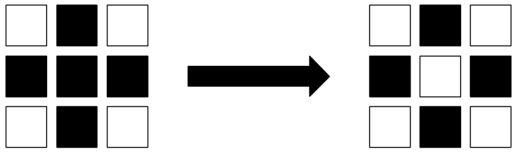
- Any live cell with fewer than two live neighbours dies, as if caused by under-popularion



- Any live cell with two or three live neighbours lives on to the next generation



- Any live cell with more than three live neighbours dies, as if by overcrowding



- Any dead cell with exactly three live neighbours becomes a live cell, as if by reproduction