UNIVERSITY OF JOHANNESBURG

FACULTY OF SCIENCE

COMPUTER SCIENCE 1A **SAMPLE DESIGN**

Problem Description

The Utopian Department of Health has contracted you to develop an SRI (Susceptible, Recovered, Infected) based epidemic modelling software system to better prepare for such situations in the aftermath of "The Event". An SRI model consists of modelling the random motion of people who are classified as being either susceptible to infection, recovered from infection, or infected. The entire design, including UML, must model movement function. (Academy Of Computer Sciences and Software Engineering)

Input & Output

Input	
Input Description	*Mechanism*
intEnviroSize	Function Param
arrEnviro	Function Param
Output	
Output Description	*Stream (optional)*
Game Environment	Standard Output Stream

Data Format

Identifier	*Data Type*	*Description*
randMove	int	Random Movement Direction
row	int	Enviro row
col	int	Enviro col

Pseudo Code

```
For each row
  For each column
    If element[row][col] == Empty
      randMove ←random num between 1 and 9

do
  do
      switch (randMove)
       case 1:
              move up left
       case 2:
              move up
       case 3:
              move up right
       case 4:
              move left
       case 5:
              do nothing
       case 6:
              move right
       case 7:
              move down left
       case 8:
              move down
       case 9:
              move down right
      end switch

  while !isInRange
while there is element destination


    End if
  End for
End for
```

UML Activity Diagram