**SCHOOL OF COMPUTING**

**ST1507 Data Structures and Algorithms (AI)**

**Third Lab Submission Worksheet**

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| **Instructions:**   1. Submit this at BlackBoard under “Lab Submissions-> Third Lab Submission” dropbox 2. Name your file “**Name\_StudentID.docx**”   (for example ‘JohnTan\_12345.docx”) |

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| **Class** | DAAA/03 |

# Lab Three - Task Submission 1

### Task 1: Converting a decimal number to binary

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| def binary2(n):      if n==0:          return ''      else:          return str(binary2(n//2))+str(n%2)  print(binary2(1))  print(binary2(2))  print(binary2(3))  print(binary2(4))  print(binary2(9)) |

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# Lab Three - Task Submission 2

### Task 6: Drawing the Van Koch snowflake

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| import turtle  # Main program  tur = turtle.Turtle()  # is like a pen  scr = turtle.Screen()  # is like a canvas  tur.speed('fastest')  # how fast the turtle goes  # Setting the screen dimensions  w, h = 500, 500  scr.screensize(w, h)  # Canvas dimensions  scr.setup(w+100, h+100)  # Window dimension  def vankoch(tur, sets=3, line\_length=10):      if sets >0:          vankoch(tur, sets-1, line\_length)          tur.forward(line\_length)          tur.left(45)          vankoch(tur, sets-1, line\_length)          tur.forward(line\_length)          tur.left(270)          vankoch(tur, sets-1, line\_length)          tur.forward(line\_length)          tur.left(45)          vankoch(tur, sets-1, line\_length)          tur.forward(line\_length)          tur.penup()          tur.backward(line\_length)          tur.pendown()  vankoch(tur, sets=3, line\_length=10)  scr.exitonclick() |

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