The Tourist Problem:
(Review of TP Activity 2)
Video 5.5

Hon Wai Leong
Department of Computer Science
National University of Singapore

Email, FB: leonghw@comp.nus.edu.sg

Experience the fun of problem solving

Hon Wai Leong, SoC, NUS

TP Activity #2:

Bus Scheduling via Graph Colouring

(8 minutes)

Have you finished this Activity and have your answers ready?
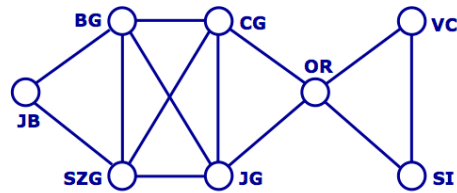
IF NOT, STOP THE VIDEO HERE, GO FINISH IT FIRST.

TP Activity 2: (10 minutes) [Graph Colouring]

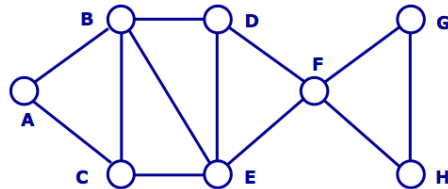**The Tourist Problem**   Your Name: _____

The tourist problem instance in the lecture can be modeled with the following conflict graph.
Two possible colorings of the graph are given in the lecture.

Q1: Give a *different* way to colour the vertices of the graph on the left. How many colours?
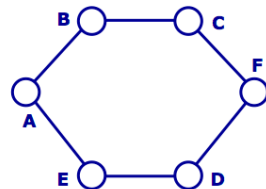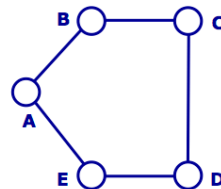

Q1: # colors: _____

Q2: What about this one?

Q2: # colors: _____

Q3: Try coloring the following graphs with the minimum number of colors.

Q3(a): # colors: _____   **Q3(b): # colors:** _____

Review of Activity #2

❑ **Is Graph Colouring fun?**

  ❖ **Did you *really* used different colours?**

  ❖ **Else, what did you use?**

❑ **Is it much easier and MORE FUN?**

  ❖ **All the tedious parts are GONE. Now, it's FUN!**

  ❖ **Even a 6-year old can do it.**

❑ **Minimizing the # of colours may be hard**

  ❖ **Hard for the 6 year old?**

  ❖ **Hard for you?**

  ❖ **Actually, also hard for the experts.**

Review of Activity #2

❑ **How many colours was did you use (Q1)?**

  ❖ _____

❑ **What about the graph in Q2?**

  ❖ _____ **(what is the difference?)**

Hon Wai Leong, SoC, NUS

Review of Activity #2

❑ **What about the *cycles* in Q3?**

❖ **Q2(a): C_6 (a cycle of length 6)?**

❖ **Q2(b): C_5 (a cycle of length 5)?**

❖ **What else can you say?**

❖ **What about C_{1000}**

❖ **What about C_{2001}**

(End of Video 5.5)

If you want to contact me,

Email: leonghw@comp.nus.edu.sg

School of Computing