

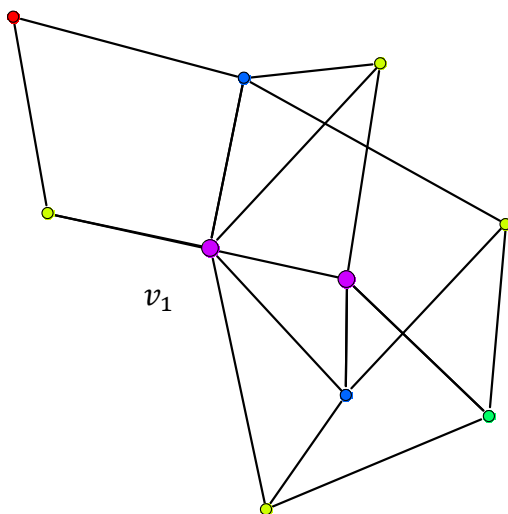
Distributed Data Management

Sheet 7 (until 10.06.2010)

(35 points)

I. For the following graph, please compute:

1. The diameter (2 points)
2. The average node degree (2 points)
3. The cluster coefficient of node v_1 (3 points)
4. The degree of connectedness (k of k -connectedness) (2 points)
5. The bisection width (2 points)



2. Briefly answer:

- a. What is preferential attachment? (2 points)
 - b. Which properties does a small-world graph have? (2 points)
 - c. What are hubs? (2 points)
3. Provide an estimate for the average cluster coefficient C_{avg} for a Watts-Strogatz graph with $p = 1$, depending on k and n . (6 points)

4. For the following graphs, try to guess which **generation model** was used and also **guess** roughly (!) the **parameters** which might have been used (i.e. $g_{n,p}$; $g_{WS_{n,k,p}}$; $g_{ba_{n,m}}$) (2 points each)

