University of Messina
Master Degree in Enginering and Computer Science
Advanced Algorithms and Computational Methods
Module A
2023/2024

Assignment no. 3

Community detection algorithm

– Issue date: 08 January 2024

– Deadline (strict): 15 January 2024 at 23:59 CET

– How to submit: via email at **gfiumara@unime.it**, subject: Assignment no. 3 Student name/surname. Use the university email account, if already active. Introduce yourself in the email body

– What to submit: the Python code (exclusively in .py.txt format)

– Marks: Up to 3

What to do

1. Initial condition: the Karate Club network

2. Compute the edge betweenness and rank the values in descending order; compute the modularity of the network

3. Remove the edge ranking the top value

4. Redo steps 2 and 3 until the network has no more edges

5. Plot the modularity as a function of the number of edges removed. Plot the network corresponding at the maximum modularity