Edge Betweenness (U)

# Group 1

|  |  |  |
| --- | --- | --- |
| BA | Bahorel | Bahorel, member, Friends of the ABC |
| BK | Paris baker | Baker, visited by Gavroche |
| BO | Bossuet | Bossuet (Lesgle), member, Friends of the ABC |
| BU | Mme Burgon | Mme Burgon (aka Bougon), new concierge at the Gorbeau tenement |
| CM | Combeferre | Combeferre, member, Friends of the ABC |
| CO | Cosette | Cosette, daughter of Fantine |
| CP | Card player | Man playing cards with Grantaire |
| CR | Courfeyrac | Courfeyrac, member, Friends of the ABC |
| CW | Concierge, Verrerie | Concierge, rue de la Verrerie |
| DN | Dandy | Dandy near the barricade |
| DR | Drunk coachman | Drunk Auvergnat coachman |
| EN | Enjolras | Enjolras, chief of Friends of the ABC |
| FE | Feuilly | Feuilly, member, Friends of the ABC |
| GA | Gavroche | Gavroche, son of the Thénardiers |
| GB | Gibolette | Gibolette, servant in Corinth Inn |
| GL | Poor girl | Poor girl, helped by Gavroche |
| GN | Gardener | Gardener, encountered by Mabeuf |
| GS | Secondhand dealer | Secondhand dealer from whom Gavroche 'borrows' a pistol |
| GT | Grantaire | Grantaire, Friends of the ABC skeptic |
| GV | Government troops | Government troops |
| HL | Mme Hucheloup | Mme Hucheloup, keeper of Corinth Inn |
| JA | Javert | Javert, police officer |
| JO | Joly | Joly, member Friends of the ABC |
| JP | Prouvaire | Prouvaire, member Friends of the ABC |
| MA | Marius | Marius |
| ML | Matelotte | Matelotte, a servant at the Corinth Inn |
| MM | M. Mabeuf | M. Mabeuf, warden of St. Sulpice, bibliophile |
| NA | Navet | Navet, friend of Gavroche |
| PL | Mother Plutarch | Mother Plutarch, housekeeper of M. Mabeuf |
| RP | Ragpicker | Ragpicker |
| SI | Sergeant, Imprimérie | Sergeant at the Imprimérie Royale post |
| TC | Three concierges | Three concierges, met by Gvaroche |
| TG | Théodule | Lieutenant Théodule Gillenormand, grandnephew of Gillenormand |
| TS | Toussaint | Toussaint, servant of Valjean at Rue Plumet |

# Group 2

|  |  |  |
| --- | --- | --- |
| BB | Babet | Babet, member, Patron-Minette |
| BJ | Brujon | Brujon, criminal, associate of Patron-Minette |
| EP | Eponine | Eponine, daughter of the Thénardiers |
| GF | Guard, La Force | Guard, La Force prison |
| GU | Gueulemer | Gueulemer, member of Patron-Minette |
| JV | Jean Valjean | Jean Valjean |
| MO | Montparnasse | Montparnasse, member of Patron-Minette |
| PC | Porter, barricade | Porter shot at the barricade by Le Cabuc |
| PS | Porter, r. de l'Ouest | Porter, rue de l'Ouest |
| QU | Claquesous | Claquesous, member of Patron-Minette,aka Le Cabuc |
| TH | Thénardier | Thénardier, innkeeper in Montfermeil, aka Jondrette |

# Group 3

|  |  |  |
| --- | --- | --- |
| BF | Babet's girlfriend | Babet's girlfriend |
| BG | Paris barber | Barber encountered by Gavroche |
| BQ | Basque | Basque, manservant to Gillenormand |
| GI | M. Gillenormand | M. Gillenormand, Marius's grandfather |
| MG | Mlle Gillenormand | Mlle Gillenormand, unmarried daughter of Gillenormand |
| MN | Magnon | Magnon, servant of Gillenormand |
| OS | Old soldier | Old soldier at barbershop |
| TM | Mme Thénardier | Madame Thénardier, wife of Thénardier |
| XA | Older child | Older Child, son of Thénardier, raised by Magnon |
| XB | Younger child | Younger Child, son of Thénardier, raised by Magnon |

# Group 4

|  |  |  |
| --- | --- | --- |
| MU | Minister of agriculture | Minister of agriculture |
| MW | Minister's wife | Minister of agriculture's wife |

Fast Greedy (U&W)

# Group 1

|  |  |  |
| --- | --- | --- |
| BG | Paris barber | Barber encountered by Gavroche |
| BK | Paris baker | Baker, visited by Gavroche |
| BQ | Basque | Basque, manservant to Gillenormand |
| DN | Dandy | Dandy near the barricade |
| DR | Drunk coachman | Drunk Auvergnat coachman |
| GA | Gavroche | Gavroche, son of the Thénardiers |
| GI | M. Gillenormand | M. Gillenormand, Marius's grandfather |
| GL | Poor girl | Poor girl, helped by Gavroche |
| GS | Secondhand dealer | Secondhand dealer from whom Gavroche 'borrows' a pistol |
| MG | Mlle Gillenormand | Mlle Gillenormand, unmarried daughter of Gillenormand |
| OS | Old soldier | Old soldier at barbershop |
| RP | Ragpicker | Ragpicker |
| SI | Sergeant, Imprimérie | Sergeant at the Imprimérie Royale post |
| TC | Three concierges | Three concierges, met by Gvaroche |
| XA | Older child | Older Child, son of Thénardier, raised by Magnon |
| XB | Younger child | Younger Child, son of Thénardier, raised by Magnon |

# Group 2

|  |  |  |
| --- | --- | --- |
| BA | Bahorel | Bahorel, member, Friends of the ABC |
| BO | Bossuet | Bossuet (Lesgle), member, Friends of the ABC |
| CM | Combeferre | Combeferre, member, Friends of the ABC |
| CP | Card player | Man playing cards with Grantaire |
| CR | Courfeyrac | Courfeyrac, member, Friends of the ABC |
| CW | Concierge, Verrerie | Concierge, rue de la Verrerie |
| EN | Enjolras | Enjolras, chief of Friends of the ABC |
| FE | Feuilly | Feuilly, member, Friends of the ABC |
| GB | Gibolette | Gibolette, servant in Corinth Inn |
| GN | Gardener | Gardener, encountered by Mabeuf |
| GT | Grantaire | Grantaire, Friends of the ABC skeptic |
| GV | Government troops | Government troops |
| HL | Mme Hucheloup | Mme Hucheloup, keeper of Corinth Inn |
| JO | Joly | Joly, member Friends of the ABC |
| JP | Prouvaire | Prouvaire, member Friends of the ABC |
| ML | Matelotte | Matelotte, a servant at the Corinth Inn |
| MM | M. Mabeuf | M. Mabeuf, warden of St. Sulpice, bibliophile |
| NA | Navet | Navet, friend of Gavroche |
| PL | Mother Plutarch | Mother Plutarch, housekeeper of M. Mabeuf |

# Group 3

|  |  |  |
| --- | --- | --- |
| BU | Mme Burgon | Mme Burgon (aka Bougon), new concierge at the Gorbeau tenement |
| CO | Cosette | Cosette, daughter of Fantine |
| JA | Javert | Javert, police officer |
| JV | Jean Valjean | Jean Valjean |
| MA | Marius | Marius |
| PS | Porter, r. de l'Ouest | Porter, rue de l'Ouest |
| TG | Théodule | Lieutenant Théodule Gillenormand, grandnephew of Gillenormand |
| TS | Toussaint | Toussaint, servant of Valjean at Rue Plumet |

# Group 4

|  |  |  |
| --- | --- | --- |
| BB | Babet | Babet, member, Patron-Minette |
| BF | Babet's girlfriend | Babet's girlfriend |
| BJ | Brujon | Brujon, criminal, associate of Patron-Minette |
| EP | Eponine | Eponine, daughter of the Thénardiers |
| GF | Guard, La Force | Guard, La Force prison |
| GU | Gueulemer | Gueulemer, member of Patron-Minette |
| MN | Magnon | Magnon, servant of Gillenormand |
| MO | Montparnasse | Montparnasse, member of Patron-Minette |
| PC | Porter, barricade | Porter shot at the barricade by Le Cabuc |
| QU | Claquesous | Claquesous, member of Patron-Minette,aka Le Cabuc |
| TH | Thénardier | Thénardier, innkeeper in Montfermeil, aka Jondrette |
| TM | Mme Thénardier | Madame Thénardier, wife of Thénardier |

# Group 5

|  |  |  |
| --- | --- | --- |
| MU | Minister of agriculture | Minister of agriculture |
| MW | Minister's wife | Minister of agriculture's wife |

Spin Glass (200 spins, U&W)

# Group 1

|  |  |  |
| --- | --- | --- |
| BB | Babet | Babet, member, Patron-Minette |
| BF | Babet's girlfriend | Babet's girlfriend |
| BJ | Brujon | Brujon, criminal, associate of Patron-Minette |
| GF | Guard, La Force | Guard, La Force prison |
| GU | Gueulemer | Gueulemer, member of Patron-Minette |
| MO | Montparnasse | Montparnasse, member of Patron-Minette |
| PC | Porter, barricade | Porter shot at the barricade by Le Cabuc |
| QU | Claquesous | Claquesous, member of Patron-Minette,aka Le Cabuc |
| TH | Thénardier | Thénardier, innkeeper in Montfermeil, aka Jondrette |

# Group 2

|  |  |  |
| --- | --- | --- |
| BA | Bahorel | Bahorel, member, Friends of the ABC |
| BO | Bossuet | Bossuet (Lesgle), member, Friends of the ABC |
| CM | Combeferre | Combeferre, member, Friends of the ABC |
| CP | Card player | Man playing cards with Grantaire |
| CR | Courfeyrac | Courfeyrac, member, Friends of the ABC |
| CW | Concierge, Verrerie | Concierge, rue de la Verrerie |
| EN | Enjolras | Enjolras, chief of Friends of the ABC |
| FE | Feuilly | Feuilly, member, Friends of the ABC |
| GT | Grantaire | Grantaire, Friends of the ABC skeptic |
| GV | Government troops | Government troops |
| JO | Joly | Joly, member Friends of the ABC |
| JP | Prouvaire | Prouvaire, member Friends of the ABC |
| NA | Navet | Navet, friend of Gavroche |

# Group 3

|  |  |  |
| --- | --- | --- |
| BG | Paris barber | Barber encountered by Gavroche |
| BK | Paris baker | Baker, visited by Gavroche |
| BQ | Basque | Basque, manservant to Gillenormand |
| DN | Dandy | Dandy near the barricade |
| DR | Drunk coachman | Drunk Auvergnat coachman |
| GA | Gavroche | Gavroche, son of the Thénardiers |
| GI | M. Gillenormand | M. Gillenormand, Marius's grandfather |
| GL | Poor girl | Poor girl, helped by Gavroche |
| GS | Secondhand dealer | Secondhand dealer from whom Gavroche 'borrows' a pistol |
| MG | Mlle Gillenormand | Mlle Gillenormand, unmarried daughter of Gillenormand |
| MN | Magnon | Magnon, servant of Gillenormand |
| OS | Old soldier | Old soldier at barbershop |
| RP | Ragpicker | Ragpicker |
| SI | Sergeant, Imprimérie | Sergeant at the Imprimérie Royale post |
| TC | Three concierges | Three concierges, met by Gvaroche |
| TM | Mme Thénardier | Madame Thénardier, wife of Thénardier |
| XA | Older child | Older Child, son of Thénardier, raised by Magnon |
| XB | Younger child | Younger Child, son of Thénardier, raised by Magnon |

# Group 4

|  |  |  |
| --- | --- | --- |
| GB | Gibolette | Gibolette, servant in Corinth Inn |
| HL | Mme Hucheloup | Mme Hucheloup, keeper of Corinth Inn |
| ML | Matelotte | Matelotte, a servant at the Corinth Inn |

# Group 5

|  |  |  |
| --- | --- | --- |
| BU | Mme Burgon | Mme Burgon (aka Bougon), new concierge at the Gorbeau tenement |
| CO | Cosette | Cosette, daughter of Fantine |
| EP | Eponine | Eponine, daughter of the Thénardiers |
| JA | Javert | Javert, police officer |
| JV | Jean Valjean | Jean Valjean |
| MA | Marius | Marius |
| PS | Porter, r. de l'Ouest | Porter, rue de l'Ouest |
| TG | Théodule | Lieutenant Théodule Gillenormand, grandnephew of Gillenormand |
| TS | Toussaint | Toussaint, servant of Valjean at Rue Plumet |

# Group 6

|  |  |  |
| --- | --- | --- |
| GN | Gardener | Gardener, encountered by Mabeuf |
| MM | M. Mabeuf | M. Mabeuf, warden of St. Sulpice, bibliophile |
| MU | Minister of agriculture | Minister of agriculture |
| MW | Minister's wife | Minister of agriculture's wife |
| PL | Mother Plutarch | Mother Plutarch, housekeeper of M. Mabeuf |

Multi-level modularity/Optimal community, U&W

# Group 1

|  |  |  |
| --- | --- | --- |
| BB | Babet | Babet, member, Patron-Minette |
| BJ | Brujon | Brujon, criminal, associate of Patron-Minette |
| GF | Guard, La Force | Guard, La Force prison |
| GU | Gueulemer | Gueulemer, member of Patron-Minette |
| MO | Montparnasse | Montparnasse, member of Patron-Minette |
| PC | Porter, barricade | Porter shot at the barricade by Le Cabuc |
| QU | Claquesous | Claquesous, member of Patron-Minette,aka Le Cabuc |
| TH | Thénardier | Thénardier, innkeeper in Montfermeil, aka Jondrette |

# Group 2

|  |  |  |
| --- | --- | --- |
| BU | Mme Burgon | Mme Burgon (aka Bougon), new concierge at the Gorbeau tenement |
| CO | Cosette | Cosette, daughter of Fantine |
| EP | Eponine | Eponine, daughter of the Thénardiers |
| JA | Javert | Javert, police officer |
| JV | Jean Valjean | Jean Valjean |
| MA | Marius | Marius |
| PS | Porter, r. de l'Ouest | Porter, rue de l'Ouest |
| TG | Théodule | Lieutenant Théodule Gillenormand, grandnephew of Gillenormand |
| TS | Toussaint | Toussaint, servant of Valjean at Rue Plumet |

# Group 3

|  |  |  |
| --- | --- | --- |
| BA | Bahorel | Bahorel, member, Friends of the ABC |
| BO | Bossuet | Bossuet (Lesgle), member, Friends of the ABC |
| CM | Combeferre | Combeferre, member, Friends of the ABC |
| CP | Card player | Man playing cards with Grantaire |
| CR | Courfeyrac | Courfeyrac, member, Friends of the ABC |
| CW | Concierge, Verrerie | Concierge, rue de la Verrerie |
| EN | Enjolras | Enjolras, chief of Friends of the ABC |
| FE | Feuilly | Feuilly, member, Friends of the ABC |
| GT | Grantaire | Grantaire, Friends of the ABC skeptic |
| GV | Government troops | Government troops |
| JO | Joly | Joly, member Friends of the ABC |
| JP | Prouvaire | Prouvaire, member Friends of the ABC |
| NA | Navet | Navet, friend of Gavroche |

# Group 4

|  |  |  |
| --- | --- | --- |
| BF | Babet's girlfriend | Babet's girlfriend |
| BG | Paris barber | Barber encountered by Gavroche |
| BK | Paris baker | Baker, visited by Gavroche |
| BQ | Basque | Basque, manservant to Gillenormand |
| DN | Dandy | Dandy near the barricade |
| DR | Drunk coachman | Drunk Auvergnat coachman |
| GA | Gavroche | Gavroche, son of the Thénardiers |
| GI | M. Gillenormand | M. Gillenormand, Marius's grandfather |
| GL | Poor girl | Poor girl, helped by Gavroche |
| GS | Secondhand dealer | Secondhand dealer from whom Gavroche 'borrows' a pistol |
| MG | Mlle Gillenormand | Mlle Gillenormand, unmarried daughter of Gillenormand |
| MN | Magnon | Magnon, servant of Gillenormand |
| OS | Old soldier | Old soldier at barbershop |
| RP | Ragpicker | Ragpicker |
| SI | Sergeant, Imprimérie | Sergeant at the Imprimérie Royale post |
| TC | Three concierges | Three concierges, met by Gvaroche |
| TM | Mme Thénardier | Madame Thénardier, wife of Thénardier |
| XA | Older child | Older Child, son of Thénardier, raised by Magnon |
| XB | Younger child | Younger Child, son of Thénardier, raised by Magnon |

# Group 5

|  |  |  |
| --- | --- | --- |
| GN | Gardener | Gardener, encountered by Mabeuf |
| MM | M. Mabeuf | M. Mabeuf, warden of St. Sulpice, bibliophile |
| MU | Minister of agriculture | Minister of agriculture |
| MW | Minister's wife | Minister of agriculture's wife |
| PL | Mother Plutarch | Mother Plutarch, housekeeper of M. Mabeuf |

# Group 6

|  |  |  |
| --- | --- | --- |
| GB | Gibolette | Gibolette, servant in Corinth Inn |
| HL | Mme Hucheloup | Mme Hucheloup, keeper of Corinth Inn |
| ML | Matelotte | Matelotte, a servant at the Corinth Inn |