

LAMPIRAN 1
RELASI HASIL OPERASI *JOIN ON AGE*

Male Name	Male Age	Female Name	Male Age	Degree
Amien	53	Megawati	old	0.6
Amien	53	Suciwati	old	0.6
Boediono	middle age	Hafidz	medium young	0.629582333333
Boediono	middle age	Khafifah	middle age	1
Boediono	middle age	Ratu	middle age	1
Boediono	middle age	Siti	about 50	0.292539
Boediono	middle age	Sri	about 50	0.292539
Boediono	middle age	Tere	36	0.2
Boediono	middle age	Wanda	39	0.8
Hatta	medium young	Hafidz	medium young	1
Hatta	medium young	Khafifah	middle age	0.629582333333
Hatta	medium young	Ratu	middle age	0.629582333333
Hatta	medium young	Tere	36	1
Hatta	medium young	Wanda	39	0.333333333333
Hidayat	49	Khafifah	middle age	0.2
Hidayat	49	Ratu	middle age	0.2
Hidayat	49	Siti	about 50	0.5
Hidayat	49	Sri	about 50	0.5
Jusuf	old	Megawati	old	1
Jusuf	old	Meutia	54	0.8
Jusuf	old	Siti	about 50	0.2924045
Jusuf	old	Sri	about 50	0.2924045
Jusuf	old	Suciwati	old	1
Prabowo	about 50	Khafifah	middle age	0.292539
Prabowo	about 50	Megawati	old	0.2924045
Prabowo	about 50	Ratu	middle age	0.292539
Prabowo	about 50	Siti	about 50	1

Prabowo	about 50	Sri	about 50	1
Prabowo	about 50	Suciwati	old	0.2924045
Susilo	old	Megawati	old	1
Susilo	old	Meutia	54	0.8
Susilo	old	Siti	about 50	0.2924045
Susilo	old	Sri	about 50	0.2924045
Susilo	old	Suciwati	old	1
Sutrisno	middle age	Hafidz	medium young	0.629582333333
Sutrisno	middle age	Khafifah	middle age	1
Sutrisno	middle age	Ratu	middle age	1
Sutrisno	middle age	Siti	about 50	0.292539
Sutrisno	middle age	Sri	about 50	0.292539
Sutrisno	middle age	Tere	36	0.2
Sutrisno	middle age	Wanda	39	0.8
Tifatul	38	Hafidz	medium young	0.666666666667
Tifatul	38	Khafifah	middle age	0.6
Tifatul	38	Ratu	middle age	0.6
Wiranto	about 50	Khafifah	middle age	0.292539
Wiranto	about 50	Megawati	old	0.2924045
Wiranto	about 50	Ratu	middle age	0.292539
Wiranto	about 50	Siti	about 50	1
Wiranto	about 50	Sri	about 50	1
Wiranto	about 50	Suciwati	old	0.2924045



LAMPIRAN 2

RELASI HASIL OPERASI *JOIN ON INCOME*

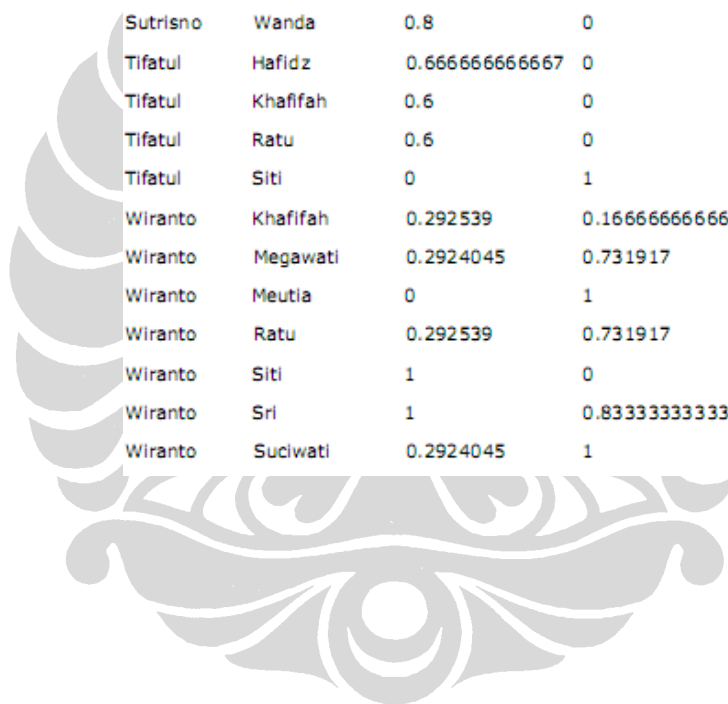
Male Name	Male Income	Female Name	Female Income	Degree
Amien	medium low	Hafidz	35	0.4
Amien	medium low	Tere	medium low	1
Amien	medium low	Wanda	medium low	1
Boediono	about 60K	Megawati	high	0.2924045
Boediono	about 60K	Meutia	about 60K	1
Boediono	about 60K	Ratu	high	0.2924045
Boediono	about 60K	Suciwati	medium high	1
Hatta	17	Tere	medium low	0.8
Hatta	17	Wanda	medium low	0.8
Hidayat	about 40K	Siti	about 40K	1
Jusuf	high	Megawati	high	1
Jusuf	high	Meutia	about 60K	0.2924045
Jusuf	high	Ratu	high	1
Jusuf	high	Sri	63	0.6
Jusuf	high	Suciwati	medium high	0.731917
Prabowo	66	Megawati	high	1
Prabowo	66	Ratu	high	1
Prabowo	66	Suciwati	medium high	0.333333333333
Susilo	about 60K	Megawati	high	0.2924045
Susilo	about 60K	Meutia	about 60K	1
Susilo	about 60K	Ratu	high	0.2924045
Susilo	about 60K	Suciwati	medium high	1
Sutrisno	63	Megawati	high	0.6
Sutrisno	63	Ratu	high	0.6
Sutrisno	63	Sri	63	1
Sutrisno	63	Suciwati	medium high	0.833333333333
Tifatul	about 40K	Siti	about 40K	1
Wiranto	medium high	Khaffah	45	0.166666666667
Wiranto	medium high	Megawati	high	0.731917
Wiranto	medium high	Meutia	about 60K	1
Wiranto	medium high	Ratu	high	0.731917
Wiranto	medium high	Sri	63	0.833333333333
Wiranto	medium high	Suciwati	medium high	1

LAMPIRAN 3

RELASI HASIL OPERASI *STANDARD UNION*

Male Name	Female Name	deg Age	deg Income	Degree
Amien	Hafidz	0	0.4	0.4
Amien	Megawati	0.6	0	0.6
Amien	Suclwati	0.6	0	0.6
Amien	Tere	0	1	1
Amien	Wanda	0	1	1
Boediono	Hafidz	0.629582333333	0	0.629582333333
Boediono	Khafifah	1	0	1
Boediono	Megawati	0	0.2924045	0.2924045
Boediono	Meutia	0	1	1
Boediono	Ratu	1	0.2924045	1
Boediono	Siti	0.292539	0	0.292539
Boediono	Sri	0.292539	0	0.292539
Boediono	Suclwati	0	1	1
Boediono	Tere	0.2	0	0.2
Boediono	Wanda	0.8	0	0.8
Hatta	Hafidz	1	0	1
Hatta	Khafifah	0.629582333333	0	0.629582333333
Hatta	Ratu	0.629582333333	0	0.629582333333
Hatta	Tere	1	0.8	1
Hatta	Wanda	0.333333333333	0.8	0.8
Hidayat	Khafifah	0.2	0	0.2
Hidayat	Ratu	0.2	0	0.2
Hidayat	Siti	0.5	1	1
Hidayat	Sri	0.5	0	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	0.8
Jusuf	Ratu	0	1	1
Jusuf	Siti	0.2924045	0	0.2924045
Jusuf	Sri	0.2924045	0.6	0.6
Jusuf	Suclwati	1	0.731917	1
Prabowo	Khafifah	0.292539	0	0.292539
Prabowo	Megawati	0.2924045	1	1
Prabowo	Ratu	0.292539	1	1
Prabowo	Siti	1	0	1
Prabowo	Sri	1	0	1
Prabowo	Suclwati	0.2924045	0.333333333333	0.333333333333
Susilo	Megawati	1	0.2924045	1
Susilo	Meutia	0.8	1	1

Susilo	Ratu	0	0.2924045	0.2924045
Susilo	Siti	0.2924045	0	0.2924045
Susilo	Sri	0.2924045	0	0.2924045
Susilo	Suciwati	1	1	1
Sutrisno	Hafidz	0.6295823333333	0	0.6295823333333
Sutrisno	Khafifah	1	0	1
Sutrisno	Megawati	0	0.6	0.6
Sutrisno	Ratu	1	0.6	1
Sutrisno	Siti	0.292539	0	0.292539
Sutrisno	Sri	0.292539	1	1
Sutrisno	Suciwati	0	0.8333333333333	0.8333333333333
Sutrisno	Tere	0.2	0	0.2
Sutrisno	Wanda	0.8	0	0.8
Tifatul	Hafidz	0.6666666666667	0	0.6666666666667
Tifatul	Khafifah	0.6	0	0.6
Tifatul	Ratu	0.6	0	0.6
Tifatul	Siti	0	1	1
Wiranto	Khafifah	0.292539	0.1666666666667	0.292539
Wiranto	Megawati	0.2924045	0.731917	0.731917
Wiranto	Meutia	0	1	1
Wiranto	Ratu	0.292539	0.731917	0.731917
Wiranto	Siti	1	0	1
Wiranto	Sri	1	0.8333333333333	1
Wiranto	Suciwati	0.2924045	1	1



LAMPIRAN 4
RELASI HASIL OPERASI ALGEBRAIC SUM

Male Name	Female Name	deg Age	deg Income	Degree
Amien	Hafidz	0	0.4	0.4
Amien	Megawati	0.6	0	0.6
Amien	Suciwati	0.6	0	0.6
Amien	Tere	0	1	1
Amien	Wanda	0	1	1
Boediono	Hafidz	0.629582333333	0	0.629582333333
Boediono	Khafifah	1	0	1
Boediono	Megawati	0	0.2924045	0.2924045
Boediono	Meutia	0	1	1
Boediono	Ratu	1	0.2924045	1
Boediono	Siti	0.292539	0	0.292539
Boediono	Sri	0.292539	0	0.292539
Boediono	Suciwati	0	1	1
Boediono	Tere	0.2	0	0.2
Boediono	Wanda	0.8	0	0.8
Hatta	Hafidz	1	0	1
Hatta	Khafifah	0.629582333333	0	0.629582333333
Hatta	Ratu	0.629582333333	0	0.629582333333
Hatta	Tere	1	0.8	1
Hatta	Wanda	0.333333333333	0.8	0.866666666667
Hidayat	Khafifah	0.2	0	0.2
Hidayat	Ratu	0.2	0	0.2
Hidayat	Siti	0.5	1	1
Hidayat	Sri	0.5	0	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	0.8584809
Jusuf	Ratu	0	1	1
Jusuf	Siti	0.2924045	0	0.2924045
Jusuf	Sri	0.2924045	0.6	0.7169618
Jusuf	Suciwati	1	0.731917	1
Prabowo	Khafifah	0.292539	0	0.292539
Prabowo	Megawati	0.2924045	1	1
Prabowo	Ratu	0.292539	1	1
Prabowo	Siti	1	0	1
Prabowo	Sri	1	0	1

Prabowo	Suciwati	0.2924045	0.3333333333333	0.5282696666667
Susilo	Megawati	1	0.2924045	1
Susilo	Meutia	0.8	1	1
Susilo	Ratu	0	0.2924045	0.2924045
Susilo	Siti	0.2924045	0	0.2924045
Susilo	Sri	0.2924045	0	0.2924045
Susilo	Suciwati	1	1	1
Sutrisno	Hafidz	0.6295823333333	0	0.6295823333333
Sutrisno	Khafifah	1	0	1
Sutrisno	Megawati	0	0.6	0.6
Sutrisno	Ratu	1	0.6	1
Sutrisno	Siti	0.292539	0	0.292539
Sutrisno	Sri	0.292539	1	1
Sutrisno	Suciwati	0	0.8333333333333	0.8333333333333
Sutrisno	Tere	0.2	0	0.2
Sutrisno	Wanda	0.8	0	0.8
Tifatul	Hafidz	0.6666666666667	0	0.6666666666667
Tifatul	Khafifah	0.6	0	0.6
Tifatul	Ratu	0.6	0	0.6
Tifatul	Siti	0	1	1
Wiranto	Khafifah	0.292539	0.1666666666667	0.4104491666667
Wiranto	Megawati	0.2924045	0.731917	0.810305675574
Wiranto	Meutia	0	1	1
Wiranto	Ratu	0.292539	0.731917	0.810341732737
Wiranto	Siti	1	0	1
Wiranto	Sri	1	0.8333333333333	1
Wiranto	Suciwati	0.2924045	1	1



LAMPIRAN 5
RELASI HASIL OPERASI *BOUNDED SUM*

Male Name	Female Name	deg Age	deg Income	Degree
Amien	Hafidz	0	0.4	0.4
Amien	Megawati	0.6	0	0.6
Amien	Suciwati	0.6	0	0.6
Amien	Tere	0	1	1
Amien	Wanda	0	1	1
Boediono	Hafidz	0.629582333333	0	0.629582333333
Boediono	Khafifah	1	0	1
Boediono	Megawati	0	0.2924045	0.2924045
Boediono	Meutia	0	1	1
Boediono	Ratu	1	0.2924045	1
Boediono	Siti	0.292539	0	0.292539
Boediono	Sri	0.292539	0	0.292539
Boediono	Suciwati	0	1	1
Boediono	Tere	0.2	0	0.2
Boediono	Wanda	0.8	0	0.8
Hatta	Hafidz	1	0	1
Hatta	Khafifah	0.629582333333	0	0.629582333333
Hatta	Ratu	0.629582333333	0	0.629582333333
Hatta	Tere	1	0.8	1
Hatta	Wanda	0.333333333333	0.8	1
Hidayat	Khafifah	0.2	0	0.2
Hidayat	Ratu	0.2	0	0.2
Hidayat	Siti	0.5	1	1
Hidayat	Sri	0.5	0	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	1
Jusuf	Ratu	0	1	1
Jusuf	Siti	0.2924045	0	0.2924045
Jusuf	Sri	0.2924045	0.6	0.8924045
Jusuf	Suciwati	1	0.731917	1
Prabowo	Khafifah	0.292539	0	0.292539
Prabowo	Megawati	0.2924045	1	1

Prabowo	Ratu	0.292539	1	1
Prabowo	Siti	1	0	1
Prabowo	Sri	1	0	1
Prabowo	Suciwati	0.2924045	0.3333333333333333	0.6257378333333333
Susilo	Megawati	1	0.2924045	1
Susilo	Meutia	0.8	1	1
Susilo	Ratu	0	0.2924045	0.2924045
Susilo	Siti	0.2924045	0	0.2924045
Susilo	Sri	0.2924045	0	0.2924045
Susilo	Suciwati	1	1	1
Sutrisno	Hafidz	0.6295823333333333	0	0.6295823333333333
Sutrisno	Khafifah	1	0	1
Sutrisno	Megawati	0	0.6	0.6
Sutrisno	Ratu	1	0.6	1
Sutrisno	Siti	0.292539	0	0.292539
Sutrisno	Sri	0.292539	1	1
Sutrisno	Suciwati	0	0.8333333333333333	0.8333333333333333
Sutrisno	Tere	0.2	0	0.2
Sutrisno	Wanda	0.8	0	0.8
Tifatul	Hafidz	0.6666666666666667	0	0.6666666666666667
Tifatul	Khafifah	0.6	0	0.6
Tifatul	Ratu	0.6	0	0.6
Tifatul	Siti	0	1	1
Wiranto	Khafifah	0.292539	0.1666666666666667	0.4592056666666667
Wiranto	Megawati	0.2924045	0.731917	1
Wiranto	Meutia	0	1	1
Wiranto	Ratu	0.292539	0.731917	1
Wiranto	Siti	1	0	1
Wiranto	Sri	1	0.8333333333333333	1
Wiranto	Suciwati	0.2924045	1	1

LAMPIRAN 6
RELASI HASIL OPERASI *DRASTIC SUM*

Male Name	Female Name	deg Age	deg Income	Degree
Amien	Megawati	0.6	0	0.6
Amien	Suciwati	0.6	0	0.6
Amien	Tere	0	1	1
Amien	Wanda	0	1	1
Boediono	Hafidz	0.629582333333	0	0.629582333333
Boediono	Khafifah	1	0	1
Boediono	Megawati	0	0.2924045	0.2924045
Boediono	Meutia	0	1	1
Boediono	Ratu	1	0.2924045	1
Boediono	Siti	0.292539	0	0.292539
Boediono	Sri	0.292539	0	0.292539
Boediono	Suciwati	0	1	1
Boediono	Tere	0.2	0	0.2
Boediono	Wanda	0.8	0	0.8
Hatta	Hafidz	1	0	1
Hatta	Khafifah	0.629582333333	0	0.629582333333
Hatta	Ratu	0.629582333333	0	0.629582333333
Hatta	Tere	1	0.8	1
Hatta	Wanda	0.333333333333	0.8	1
Hidayat	Khafifah	0.2	0	0.2
Hidayat	Ratu	0.2	0	0.2
Hidayat	Siti	0.5	1	1
Hidayat	Sri	0.5	0	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	1
Jusuf	Ratu	0	1	1
Jusuf	Siti	0.2924045	0	0.2924045
Jusuf	Sri	0.2924045	0.6	1
Jusuf	Suciwati	1	0.731917	1

Prabowo	Khafifah	0.292539	0	0.292539
Prabowo	Megawati	0.2924045	1	1
Prabowo	Ratu	0.292539	1	1
Prabowo	Siti	1	0	1
Prabowo	Sri	1	0	1
Prabowo	Suciwati	0.2924045	0.333333333333	1
Susilo	Megawati	1	0.2924045	1
Susilo	Meutia	0.8	1	1
Susilo	Ratu	0	0.2924045	0.2924045
Susilo	Siti	0.2924045	0	0.2924045
Susilo	Sri	0.2924045	0	0.2924045
Susilo	Suciwati	1	1	1
Sutrisno	Hafidz	0.629582333333	0	0.629582333333
Sutrisno	Khafifah	1	0	1
Sutrisno	Megawati	0	0.6	0.6
Sutrisno	Ratu	1	0.6	1
Sutrisno	Siti	0.292539	0	0.292539
Sutrisno	Sri	0.292539	1	1
Sutrisno	Suciwati	0	0.833333333333	0.833333333333
Sutrisno	Tere	0.2	0	0.2
Sutrisno	Wanda	0.8	0	0.8
Tifatul	Hafidz	0.666666666667	0	0.666666666667
Tifatul	Khafifah	0.6	0	0.6
Tifatul	Ratu	0.6	0	0.6
Tifatul	Siti	0	1	1
Wiranto	Khafifah	0.292539	0.166666666667	1
Wiranto	Megawati	0.2924045	0.731917	1
Wiranto	Meutia	0	1	1
Wiranto	Ratu	0.292539	0.731917	1
Wiranto	Siti	1	0	1
Wiranto	Sri	1	0.833333333333	1
Wiranto	Suciwati	0.2924045	1	1

LAMPIRAN 7
RELASI HASIL OPERASI *STANDARD INTERSECTION*

Male Name	Female Name	deg Age	deg Income	Degree
Boediono	Ratu	1	0.2924045	0.2924045
Hatta	Tere	1	0.8	0.8
Hatta	Wanda	0.3333333333333333	0.8	0.3333333333333333
Hidayat	Siti	0.5	1	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	0.2924045
Jusuf	Sri	0.2924045	0.6	0.2924045
Jusuf	Suciwati	1	0.731917	0.731917
Prabowo	Megawati	0.2924045	1	0.2924045
Prabowo	Ratu	0.292539	1	0.292539
Prabowo	Suciwati	0.2924045	0.3333333333333333	0.2924045
Susilo	Megawati	1	0.2924045	0.2924045
Susilo	Meutia	0.8	1	0.8
Susilo	Suciwati	1	1	1
Sutrisno	Ratu	1	0.6	0.6
Sutrisno	Sri	0.292539	1	0.292539
Wiranto	Khafifah	0.292539	0.1666666666666667	0.1666666666666667
Wiranto	Megawati	0.2924045	0.731917	0.2924045
Wiranto	Ratu	0.292539	0.731917	0.292539
Wiranto	Sri	1	0.8333333333333333	0.8333333333333333
Wiranto	Suciwati	0.2924045	1	0.2924045

LAMPIRAN 8
RELASI HASIL OPERASI ALGEBRAIC PRODUCT

Male Name	Female Name	deg Age	deg Income	Degree
Boediono	Ratu	1	0.2924045	0.2924045
Hatta	Tere	1	0.8	0.8
Hatta	Wanda	0.3333333333333333	0.8	0.2666666666667
Hidayat	Siti	0.5	1	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	0.2339236
Jusuf	Sri	0.2924045	0.6	0.1754427
Jusuf	Suciwati	1	0.731917	0.731917
Prabowo	Megawati	0.2924045	1	0.2924045
Prabowo	Ratu	0.292539	1	0.292539
Prabowo	Suciwati	0.2924045	0.3333333333333333	0.0974681666667
Susilo	Megawati	1	0.2924045	0.2924045
Susilo	Meutia	0.8	1	0.8
Susilo	Suciwati	1	1	1
Sutrisno	Ratu	1	0.6	0.6
Sutrisno	Sri	0.292539	1	0.292539
Wiranto	Khafifah	0.292539	0.1666666666667	0.0487565
Wiranto	Megawati	0.2924045	0.731917	0.214015824427
Wiranto	Ratu	0.292539	0.731917	0.214114267263
Wiranto	Sri	1	0.8333333333333333	0.8333333333333333
Wiranto	Suciwati	0.2924045	1	0.2924045

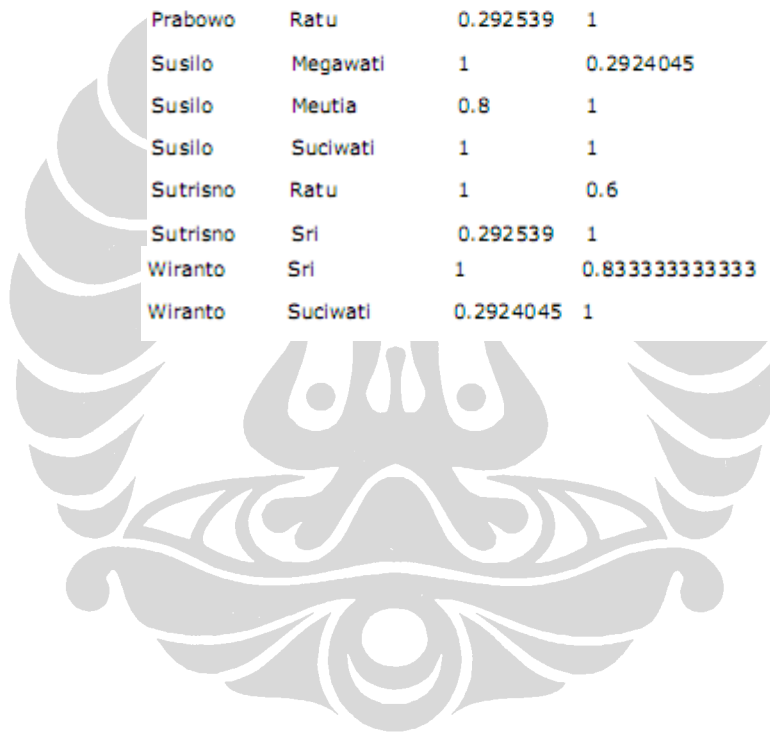
LAMPIRAN 9
RELASI HASIL OPERASI *BOUNDED PRODUCT*

Male Name	Female Name	deg Age	deg Income	Degree
Boediono	Ratu	1	0.2924045	0.2924045
Hatta	Tere	1	0.8	0.8
Hatta	Wanda	0.3333333333333333	0.8	0.1333333333333333
Hidayat	Siti	0.5	1	0.5
Jusuf	Megawati	1	1	1
Jusuf	Meutia	0.8	0.2924045	0.0924045
Jusuf	Suciwati	1	0.731917	0.731917
Prabowo	Megawati	0.2924045	1	0.2924045
Prabowo	Ratu	0.292539	1	0.292539
Susilo	Megawati	1	0.2924045	0.2924045
Susilo	Meutia	0.8	1	0.8
Susilo	Suciwati	1	1	1
Sutrisno	Ratu	1	0.6	0.6
Sutrisno	Sri	0.292539	1	0.292539
Wiranto	Megawati	0.2924045	0.731917	0.0243215
Wiranto	Ratu	0.292539	0.731917	0.024456
Wiranto	Sri	1	0.8333333333333333	0.8333333333333333
Wiranto	Suciwati	0.2924045	1	0.2924045



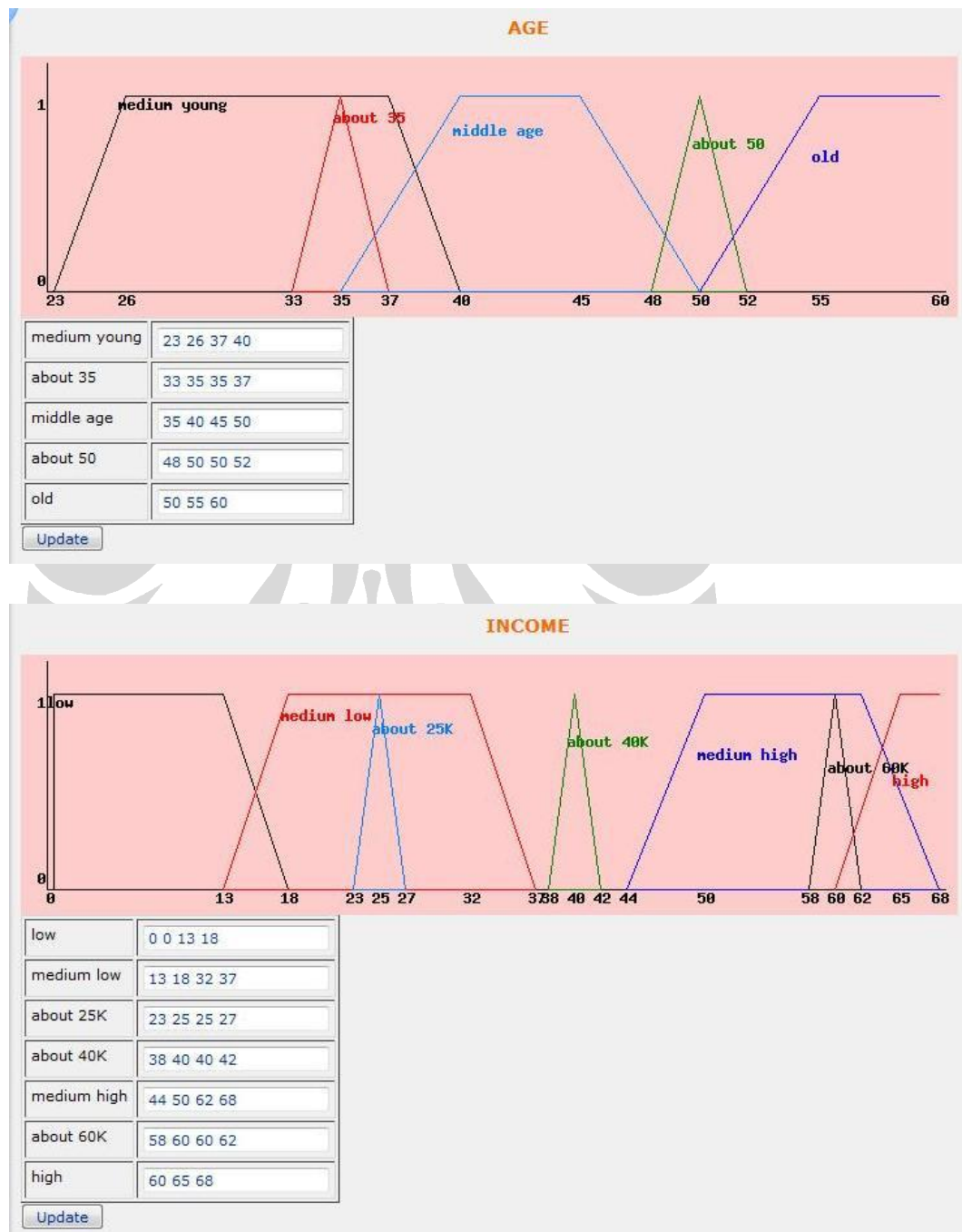
LAMPIRAN 10
RELASI HASIL OPERASI DRASTIC PRODUCT

Male Name	Female Name	deg Age	deg Income	Degree
Boediono	Ratu	1	0.2924045	0.2924045
Hatta	Tere	1	0.8	0.8
Hidayat	Siti	0.5	1	0.5
Jusuf	Megawati	1	1	1
Jusuf	Suciwati	1	0.731917	0.731917
Prabowo	Megawati	0.2924045	1	0.2924045
Prabowo	Ratu	0.292539	1	0.292539
Susilo	Megawati	1	0.2924045	0.2924045
Susilo	Meutia	0.8	1	0.8
Susilo	Suciwati	1	1	1
Sutrisno	Ratu	1	0.6	0.6
Sutrisno	Sri	0.292539	1	0.292539
Wiranto	Sri	1	0.833333333333	0.833333333333
Wiranto	Suciwati	0.2924045	1	0.2924045



LAMPIRAN 11

ANTAR MUKA MEMBERSHIP FUNCTION AGE DAN INCOME



LAMPIRAN 12

ANTAR MUKA MENAMBAH DAN MELIHAT DATA

ADD DATA

Name :

Gender : Male
 Female

Age : Crisp

Fuzzy medium young ▼

Income : Crisp

Fuzzy low ▼

VIEW DATA

MALE

ID	Name	Age	Income
4	Budi	about 35	about 40K
2	JK	middle age	about 25K
3	Pro	about 50	about 60K
1	SBY	medium young	low
5	Win	old	high

FEMALE

ID	Name	Age	Income
1	Ann	about 35	about 60K
2	Bravo	medium young	medium high
3	Charlie	middle age	high
4	Delta	about 50	low
5	Evra	36	medium low

LAMPIRAN 13

ANTAR MUKA MEMBERIKAN *QUERY*

DEFINE QUERY

SELECT * FROM MALE WHERE

Age :		Income :
<div style="border: 1px solid gray; padding: 5px; min-height: 100px;">medium young about 35 middle age about 50 old</div>	AND OR	<div style="border: 1px solid gray; padding: 5px; min-height: 100px;">low medium low about 25K about 40K medium high about 60K high</div>

SELECT * FROM FEMALE WHERE

Age :		Income :
<div style="border: 1px solid gray; padding: 5px; min-height: 100px;">medium young about 35 middle age about 50 old</div>	AND OR	<div style="border: 1px solid gray; padding: 5px; min-height: 100px;">low medium low about 25K about 40K medium high about 60K high</div>

Options :

Male Only
 Female Only

LAMPIRAN 14

PROSEDUR PENENTUAN *SATISFACTION DEGREE*

```

/* -----
// Prosedur Penentuan Satisfaction Degree
// Mendapatkan satisfaction degree dari dua nilai
// $cf1 dan $cf2 adalah jenis nilai 1 dan nilai 2,
// -- bernilai 'c' untuk crisp dan 'f' untuk fuzzy --
// $val1 dan $val2 adalah nilai 1 dan nilai 2
// -- berupa nilai tunggal untuk crisp dan string yg dipisahkan space untuk fuzzy --
----- */
public function getMaxDegree($cf1, $cf2, $val1, $val2)
{
    // Kasus1. Kedua nilai adalah crisp.
    if ($cf1==$cf2 && $cf1=='c')
    {
        // Jika nilainya sama, maka degree adalah 1. Jika tidak, degree 0
        $y = ($val1==$val2) ? 1 : 0;
        return $y;
    }

    // Kasus2. Kedua nilai adalah fuzzy
    elseif ($cf1==$cf2 && $cf1=='f')
    {
        // jika membership function sama, maka degree adalah 1.
        if($val1==$val2)
        {
            return 1;
        }
        // jika membership function tidak sama
        else
        {
            $v1 = explode(" ", $val1);
            $v2 = explode(" ", $val2);
            $arr3 = array_merge($v1,$v2);
            $min = min($arr3);
            $max = max($arr3);
            $x = $min;
            $eval = arrav(0);

```

```

$eval = array(0);
// mencari nilai maksimum dari dua daerah irisan
for ($i=0 ; $x<=$max ; $i++)
{
    $x += ($i*0.00000001);
    $y1 = $this->getDegree($x, $val1);
    $y2 = $this->getDegree($x, $val2);
    if ($y1 > 0 && $y2 > 0 && abs($y1-$y2) < 0.01)
        array_push($eval,$y1,$y2);
}
return max($eval);
}
}
// Kasus3. Kombinasi crisp dan fuzzy
elseif ($cf1!=$cf2 && !empty($cf1) && !empty($cf2))
{
    // jika jenis nilai 1 adalah crisp
    if ($cf1=='c')
    {
        return $this->getDegree($val1,$val2);
    }
    // jika jika jenis nilai 2 adalah crisp
    elseif ($cf2=='c')
    {
        return $this->getDegree($val2,$val1);
    }
    else
        return -2;
}
else
    return -3;
}
// akhir dari getMaxDegree($cf1, $cf2, $val1, $val2)

```



LAMPIRAN 15

PROSEDUR STANDARD UNION

```
// menentukan degree untuk operasi standard union
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $arr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);

        $deg_age[$idx] = $arr41[$i][$j];

        // menentukan degree berdasarkan income
        $arr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);

        $deg_income[$idx] = $arr42[$i][$j];

        // operasi standard union
        $deg_comp[$idx] = max($deg_age[$idx], $deg_income[$idx]);

        $idx++;
    }
}
// end: iterasi
```



LAMPIRAN 16

PROSEDUR ALGEBRAIC SUM

```

// menentukan degree untuk operasi algebraic sum
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $arr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);
        $deg_age[$idx] = $arr41[$i][$j];

        // menentukan degree berdasarkan income
        $arr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);
        $deg_income[$idx] = $arr42[$i][$j];

        // algebraic sum
        $deg_comp[$idx] = $deg_age[$idx]+$deg_income[$idx] - $deg_age[$idx]*$deg_income[$idx];

        $idx++;
    }
}
// akhir iterasi

```



LAMPIRAN 17

PROSEDUR *BOUNDED SUM*

```

// menentukan degree untuk operasi bounded sum
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $arr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);
        $deg_age[$idx] = $arr41[$i][$j];

        // menentukan degree berdasarkan income
        $arr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);
        $deg_income[$idx] = $arr42[$i][$j];

        // operasi bounded sum
        $deg_comp[$idx] = min(1, $deg_age[$idx]+$deg_income[$idx]);

        $idx++;
    }
}
// akhir iterasi

```



LAMPIRAN 18

PROSEDUR *DRASTIC SUM*

```

// menentukan degree untuk operasi drastic sum
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $arr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);
        $deg_age[$idx] = $arr41[$i][$j];

        // menentukan degree berdasarkan income
        $arr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);
        $deg_income[$idx] = $arr42[$i][$j];

        // operasi drastic sum
        if($deg_income[$idx]==0){
            $deg_comp[$idx] = $deg_age[$idx];
        }
        elseif($deg_age[$idx]==0){
            $deg_comp[$idx] = $deg_income[$idx];
        }
        else{
            $deg_comp[$idx] = 1;
        }
        $idx++;
    }
}
// end: iterasi

```


LAMPIRAN 19

PROSEDUR STANDARD INTERSECTION

```
// menentukan degree untuk operasi standard intersection
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $sarr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);
        $deg_age[$idx] = $sarr41[$i][$j];

        // menentukan degree berdasarkan income
        $sarr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);
        $deg_income[$idx] = $sarr42[$i][$j];

        // operasi standard intersection
        $deg_comp[$idx] = min($deg_age[$idx], $deg_income[$idx]);

        $idx++;
    }
}
// akhir iterasi
```

LAMPIRAN 20

PROSEDUR ALGEBRAIC PRODUCT

```

// menentukan degree untuk operasi algebraic product
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $sarr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                            $data2->age_opt[$j],
                                            $data1->age[$i],
                                            $data2->age[$j]);

        $deg_age[$idx] = $sarr41[$i][$j];

        // menentukan degree berdasarkan income
        $sarr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                            $data2->income_opt[$j],
                                            $data1->income[$i],
                                            $data2->income[$j]);

        $deg_income[$idx] = $sarr42[$i][$j];

        // operasi algebraic product
        $deg_comp[$idx] = $deg_age[$idx]*$deg_income[$idx];

        $idx++;
    }
}
// akhir iterasi

```

LAMPIRAN 21

PROSEDUR *BOUNDED PRODUCT*

```

// menentukan degree untuk operasi bounded product
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $sarr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);

        $deg_age[$idx] = $sarr41[$i][$j];

        // menentukan degree berdasarkan income
        $sarr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);

        $deg_income[$idx] = $sarr42[$i][$j];

        // operasi bounded product
        $deg_comp[$idx] = max(0, $deg_age[$idx] + $deg_income[$idx] - 1);

        $idx++;
    }
}
// end: iterasi

```



LAMPIRAN 22

PROSEDUR *DRASTIC PRODUCT*

```

// menentukan degree untuk operasi drastic product
$idx = 0;
for ($i=0 ; $i<count($data1->id) ; $i++)
{
    for ($j=0 ; $j<count($data2->id) ; $j++)
    {
        // menentukan degree berdasarkan age
        $arr41[$i][$j] = $mf2->getMaxDegree($data1->age_opt[$i],
                                           $data2->age_opt[$j],
                                           $data1->age[$i],
                                           $data2->age[$j]);
        $deg_age[$idx] = $arr41[$i][$j];

        // menentukan degree berdasarkan income
        $arr42[$i][$j] = $mf2->getMaxDegree($data1->income_opt[$i],
                                           $data2->income_opt[$j],
                                           $data1->income[$i],
                                           $data2->income[$j]);
        $deg_income[$idx] = $arr42[$i][$j];

        // operasi drastic product
        if($deg_income[$idx]==1){
            $deg_comp[$idx] = $deg_age[$idx];
        }
        elseif($deg_age[$idx]==1){
            $deg_comp[$idx] = $deg_income[$idx];
        }
        else{
            $deg_comp[$idx] = 0;
        }
    }
    $idx++;
}
// end: iterasi

```