Nama : Alaa Illiyya
NPM : 140810170008
Kelas : B

Program Studi S-1 Teknik Informatika
Fakultas Matematika dan Ilmu Pengetahuan Alam
Universitas Padjadjaran

D10G.4205 & D10K.0400601 – Analisis Algoritma (Analog)

Worksheet 01

Dengan Algoritma Gale-Shapley, cari himpunan stable-matching yang sesuai dengan preference-lists berikut ini. Gunakan processor terhebat yang Anda miliki (otak) untuk mengikuti algoritma G-S dan uraikan outputnya untuk setiap loop hingga menghasilkan stable-matching.

Men's Preferences Profile

	0th	1st	2nd	3rd	4th
Victor	Bertha	Amy	Diane	Erika	Clare
Wyatt	Diane	Bertha	Amy	Clare	Erika
Xavier	Bertha	Erika	Clare	Diane	Amy
Yancey	Amy	Diane	Clare	Bertha	Erika
Zeus	Bertha	Diane	Amy	Erika	Clare

Women's Preferences Profile

	0th	1st	2nd	3rd	4th
Amy	Zeus	Victor	Wyatt	Yancey	Xavier
Bertha	Xavier	Wyatt	Yancey	Victor	Zeus
Clare	Wyatt	Xavier	Yancey	Zeus	Victor
Diane	Victor	Zeus	Yancey	Xavier	Wyatt
Erika	Yancey	Wyatt	Zeus	Xavier	Victor

Initially all $m \in M$ and $w \in W$ are free
While there is a man m who is free and hasn't proposed to every woman
    Choose such a man m
    Let w be the highest-ranked woman in m's preference list
      to whom m has not yet proposed
    If w is free then
      (m, w) become engaged
    Else w is currently engaged to m'
      If w prefers m' to m then
        m remains free
      Else w prefers m to m'
        (m, w) become engaged
        m' becomes free
      Endif
    Endif
Endwhile
Return the set S of engaged pairs

1. ~~(victor,bertha)~~
2. ~~(wyatt,diane)~~
   (wyatt)
3. **(xavier,bertha)** -> bertha (xavier>victor) (bertha prefer xavier daripada victor, sehingga victor-bertha gagal (**nomor 1**))
4. ~~(yancey,amy)~~
5. ~~(zeus,bertha)~~ -> bertha (xavier>zeus) (bertha prefer xavier daripada zeus, sehingga zeus-bertha gagal)
   (zeus)
6. **(victor,amy)** -> amy (victor>yancey) (amy prefer victor daripada yancey, sehingga yancey-amy gagal (**nomor 4**)
7. ~~(yancey,diane)~~ -> diane (yancey>wyatt) (diane prefer yancey daripada wyatt, sehingga wyatt-diane gagal (**nomor 2**)
   (yancey)
8. **(zeus,diane)** -> diane (zeus>yancey) (diane prefer zeus daripada yancey, sehingga yancey-diane gagal (**nomor 7**))
9. ~~(wyatt,amy)~~ -> amy (victor>wyatt) (amy prefer victor daripada wyatt, sehingga wyatt-amy gagal)
   (wyatt)
10. ~~(yancey,clare)~~
    (yancey)
11. **(wyatt,clare)** -> clare (wyatt>yancey) (clare prefer wyatt daripada yancey, sehingga yancey-clare gagal (**nomor 10**))
12. ~~(yancey,bertha)~~ -> bertha (xavier>yancey) (bertha prefer xavier daripada yancey, sehingga yancey-bertha gagal)
    (yancey)
13. **(yancey,erika)**

    Hasil :
    (xavier,bertha)
    (victor,amy)
    (zeus,diane)
    (wyatt,clare)
    (yancey,erika)