Ahmad Faaiz A

140810180023

Worksheet1 – Analog

**SOAL**

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

Men’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 |

Women’s Preferences Profile

**JAWAB:**

**Step 1**

1. Victor -> Bertha
2. Wyatt -> Dianne
3. Xavier -> Bertha, Victor free
4. Yancey -> Amy
5. Zeus -> Bertha, Zeus remains free

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

**Output:**

{(Wyatt, Dianne),(Xavier, Bertha),(Yancey, Amy)}

Free: Victor, Zeus, Clare, Erika

**Belum** menghasilkan Stable-Mathing

**Step 2**

1. Victor -> Amy, Yancey free
2. Yancey -> Diane, Wyatt free
3. Zeus -> Diane, Yancey free

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

**Output:**

{(Victor, Amy),(Xavier, Bertha),(Zeus, Diane)}

Free: Wyatt, Yancey, Clare, Erika

**Belum** menghasilkan Stable-Mathing

**Step 3**

1. Wyatt -> Bertha, Wyatt remains free
2. Yancey -> Clare

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

**Output:**

{(Victor, Amy),(Xavier, Bertha),(Yancey, Clare),(Zeus, Diane)}

Free: Wyatt, Erika

**Belum** menghasilkan Stable-Mathing

**Step 4**

1. Wyatt -> Amy, Wyatt remains free

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

**Output:**

{(Victor, Amy),(Xavier, Bertha),(Yancey, Clare),(Zeus, Diane)}

Free: Wyatt, Erika

**Belum** menghasilkan Stable-Mathing

**Step 5**

1. Wyatt -> Clare, Yancey free
2. Yancey -> Bertha, Yancey remains free

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

**Output:**

{(Victor, Amy),(Wyatt, Clare),(Xavier, Bertha),(Zeus, Diane)}

Free: Yancey, Erika

**Belum** menghasilkan Stable-Mathing

**Step 6**

1. Yancey -> Erika

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 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 |

**Output:**

{(Victor, Amy), (Wyatt, Clare), (Xavier, Bertha), (Yancey, Erika), (Zeus, Diane)}

Free: -

**Sudah menghasilkan Stable-Matching**