1. Разработать программу для расчета медианы Кемени и выполнить вычисления в соответствии с вариантом задания.

|  |
| --- |
| Вариант 3 |
|  |
|  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| № эксперта | Мнение эксперта | | | | |
| 1 | а2 | а5 | а1 | а3 | а4 |
| 2 | а1 | а3 | а5 | а2 | а4 |
| 3 | а3 | а4 | а5 | а1 | а2 |
| 4 | а1 | а2 | а5 | а3 | а4 |
| 5 | а4 | а2 | а3 | а1 | а5 |

1. Определение Кемени на множестве имеющихся ранжировок.
   1. Построим матрицы бинарных отношений:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Эксп №1 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 1 | 0 | 0 | 1 |
| а2 | 0 | 1 | 0 | 0 | 0 |
| а3 | 1 | 1 | 1 | 0 | 1 |
| а4 | 1 | 1 | 1 | 1 | 1 |
| а5 | 0 | 1 | 0 | 0 | 1 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
| Эксп №2 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 0 | 0 | 0 | 0 |
| а2 | 1 | 1 | 1 | 0 | 1 |
| а3 | 1 | 0 | 1 | 0 | 0 |
| а4 | 1 | 1 | 1 | 1 | 1 |
| а5 | 1 | 0 | 1 | 0 | 1 |
|  |  |  |  |  |  |
| Эксп №3 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 0 | 1 | 1 | 1 |
| а2 | 1 | 1 | 1 | 1 | 1 |
| а3 | 0 | 0 | 1 | 0 | 0 |
| а4 | 0 | 0 | 1 | 1 | 0 |
| а5 | 0 | 0 | 1 | 1 | 1 |
|  |  |  |  |  |  |
| Эксп №4 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 0 | 0 | 0 | 0 |
| а2 | 1 | 1 | 0 | 0 | 0 |
| а3 | 1 | 1 | 1 | 0 | 1 |
| а4 | 1 | 1 | 1 | 1 | 1 |
| а5 | 1 | 1 | 0 | 0 | 1 |
|  |  |  |  |  |  |
| Эксп №5 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 1 | 1 | 1 | 0 |
| а2 | 0 | 1 | 0 | 1 | 0 |
| а3 | 0 | 1 | 1 | 1 | 0 |
| а4 | 0 | 0 | 0 | 1 | 0 |
| а5 | 1 | 1 | 1 | 1 | 1 |

* 1. Вычисляем попарные расстояния между имеющимися ранжировками, строим матрицу расстояний

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1-2 |  |  |  |  |  | 2-3 |  |  |  |  |  |
|  | 0 | 1 | 0 | 0 | 1 |  | 0 | 0 | 1 | 1 | 1 |
|  | 1 | 0 | 1 | 0 | 1 |  | 0 | 0 | 0 | 1 | 0 |
|  | 0 | 1 | 0 | 0 | 1 |  | 1 | 0 | 0 | 0 | 0 |
|  | 0 | 0 | 0 | 0 | 0 |  | 1 | 1 | 0 | 0 | 1 |
|  | 1 | 1 | 1 | 0 | 0 |  | 1 | 0 | 0 | 1 | 0 |
|  | 10 |  |  |  |  |  | 10 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 1-3 |  |  |  |  |  | 2-4 |  |  |  |  |  |
|  | 0 | 1 | 1 | 1 | 0 |  | 0 | 0 | 0 | 0 | 0 |
|  | 1 | 0 | 1 | 1 | 1 |  | 0 | 0 | 1 | 0 | 1 |
|  | 1 | 1 | 0 | 0 | 1 |  | 0 | 1 | 0 | 0 | 1 |
|  | 1 | 1 | 0 | 0 | 1 |  | 0 | 0 | 0 | 0 | 0 |
|  | 0 | 1 | 1 | 1 | 0 |  | 0 | 1 | 1 | 0 | 0 |
|  | 16 |  |  |  |  |  | 6 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 1-4 |  |  |  |  |  | 2-5 |  |  |  |  |  |
|  | 0 | 1 | 0 | 0 | 1 |  | 0 | 1 | 1 | 1 | 0 |
|  | 1 | 0 | 0 | 0 | 0 |  | 1 | 0 | 1 | 1 | 1 |
|  | 0 | 0 | 0 | 0 | 0 |  | 1 | 1 | 0 | 1 | 0 |
|  | 0 | 0 | 0 | 0 | 0 |  | 1 | 1 | 1 | 0 | 1 |
|  | 1 | 0 | 0 | 0 | 0 |  | 0 | 1 | 0 | 1 | 0 |
|  | 4 |  |  |  |  |  | 16 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 1-5 |  |  |  |  |  | 3-4 |  |  |  |  |  |
|  | 0 | 0 | 1 | 1 | 1 |  | 0 | 0 | 1 | 1 | 1 |
|  | 0 | 0 | 0 | 1 | 0 |  | 0 | 0 | 1 | 1 | 1 |
|  | 1 | 0 | 0 | 1 | 1 |  | 1 | 1 | 0 | 0 | 1 |
|  | 1 | 1 | 1 | 0 | 1 |  | 1 | 1 | 0 | 0 | 1 |
|  | 1 | 0 | 1 | 1 | 0 |  | 1 | 1 | 1 | 1 | 0 |
|  | 14 |  |  |  |  |  | 16 |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |
| 4-5 |  |  |  |  |  | 3-5 |  |  |  |  |  |
|  | 0 | 1 | 1 | 1 | 0 |  | 0 | 1 | 0 | 0 | 1 |
|  | 1 | 0 | 0 | 1 | 0 |  | 1 | 0 | 1 | 0 | 1 |
|  | 1 | 0 | 0 | 1 | 1 |  | 0 | 1 | 0 | 1 | 0 |
|  | 1 | 1 | 1 | 0 | 1 |  | 0 | 0 | 1 | 0 | 0 |
|  | 0 | 0 | 1 | 1 | 0 |  | 1 | 1 | 0 | 0 | 0 |
|  | 14 |  |  |  |  |  | 10 |  |  |  |  |

Матрица расстояний:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | э1 | э2 | э3 | э4 | э5 |  |
| э1 | 0 | 10 | 16 | 4 | 14 | 44 |
| э2 | 10 | 0 | 10 | 6 | 16 | 42 |
| э3 | 16 | 10 | 0 | 16 | 10 | 52 |
| э4 | 4 | 6 | 16 | 0 | 14 | 40 |
| э5 | 14 | 16 | 10 | 14 | 0 | 54 |

Прав эксперт №4

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| э4 | 4 | 6 | 16 | 0 | 14 | 40 |

1. Определение Кемени на множестве возможных ранжировок.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| № эксперта | Мнение эксперта | | | | |
| 1 | а2 | а5 | а1 | а3 | а4 |
| 2 | а1 | а3 | а5 | а2 | а4 |
| 3 | а3 | а4 | а5 | а1 | а2 |
| 4 | а1 | а2 | а5 | а3 | а4 |
| 5 | а4 | а2 | а3 | а1 | а5 |

2.1 Построим матрицу векторов предпочтений

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Векторы прдпчтнй | а1 | а2 | а3 | а4 | а5 |
| П1 | 2 | 0 | 3 | 4 | 1 |
| П2 | 0 | 3 | 1 | 4 | 2 |
| П3 | 3 | 4 | 0 | 1 | 2 |
| П4 | 0 | 1 | 3 | 4 | 2 |
| П5 | 3 | 1 | 2 | 0 | 4 |

2.2 По векторам предпочтений построим матрицу потерь

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Матрица потерь | 1 | 2 | 3 | 4 | 5 |
| а1 | 8 | 7 | 6 | 7 | 12 |
| а2 | 9 | 6 | 7 | 8 | 11 |
| а3 | 9 | 6 | 5 | 6 | 11 |
| а4 | 13 | 10 | 9 | 8 | 7 |
| а5 | 11 | 6 | 3 | 6 | 9 |

2.3 Решим оптимизационную задачу

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Эксперт 1 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 1 | 0 | 0 |  |
| а2 | 1 | 0 | 0 | 0 | 0 |  |
| а3 | 0 | 0 | 0 | 1 | 0 |  |
| а4 | 0 | 0 | 0 | 0 | 1 |  |
| а5 | 0 | 1 | 0 | 0 | 0 | 34 |
|  |  |  |  |  |  |  |
| Эксперт 2 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 1 | 0 | 0 | 0 | 0 |  |
| а2 | 0 | 0 | 0 | 1 | 0 |  |
| а3 | 0 | 1 | 0 | 0 | 0 |  |
| а4 | 0 | 0 | 0 | 0 | 1 |  |
| а5 | 0 | 0 | 1 | 0 | 0 | 32 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Эксперт 3 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 0 | 1 | 0 |  |
| а2 | 0 | 0 | 0 | 0 | 1 |  |
| а3 | 1 | 0 | 0 | 0 | 0 |  |
| а4 | 0 | 1 | 0 | 0 | 0 |  |
| а5 | 0 | 0 | 1 | 0 | 0 | 40 |
|  |  |  |  |  |  |  |
| Эксперт 4 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 1 | 0 | 0 | 0 | 0 |  |
| а2 | 0 | 1 | 0 | 0 | 0 |  |
| а3 | 0 | 0 | 0 | 1 | 0 |  |
| а4 | 0 | 0 | 0 | 0 | 1 |  |
| а5 | 0 | 0 | 1 | 0 | 0 | 30 |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Эксперт 5 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 0 | 1 | 0 |  |
| а2 | 0 | 1 | 0 | 0 | 0 |  |
| а3 | 0 | 0 | 1 | 0 | 0 |  |
| а4 | 1 | 0 | 0 | 0 | 0 |  |
| а5 | 0 | 0 | 0 | 0 | 1 | 40 |

По методу медианы Кемени прав эксперт №4

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 4 | а1 | а2 | а5 | а3 | а4 |

30

1. Сформулировать задачу по тематике магистерской диссертации (бакалаврского диплома), требующую решения на основе метода экспертных оценок. Решение задачи (мнение экспертов) должно выражаться ранжировкой вариантов (расстановкой вариантов решения в ряд по степени предпочтительности). Вариантов решения должно быть не менее пяти.

Проблемы вымирания животных

1. Тюлени
2. Киты
3. Дельфины
4. Касатки
5. Морские ежи

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| № ЭКСПЕРТА | МНЕНИЕ ЭКСПЕРТА | | | | |  |
| 1 | а3 | а2 | а4 | а1 | а5 | Батулев |
| 2 | а3 | а4 | а1 | а2 | а5 | Восканян |
| 3 | а2 | а3 | а5 | а1 | а4 | Денисенко |
| 4 | а1 | а2 | а3 | а4 | а5 | Эксперт 1 |
| 5 | а5 | а4 | а3 | а2 | а1 | Эксперт 2 |

Матрицы бинарных отношений:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Эксп 1 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 1 | 1 | 1 | 0 |
| а2 | 0 | 1 | 1 | 0 | 0 |
| а3 | 0 | 0 | 1 | 0 | 0 |
| а4 | 0 | 1 | 1 | 1 | 0 |
| а5 | 1 | 1 | 1 | 1 | 1 |
|  |  |  |  |  |  |
| Эксп2 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 0 | 1 | 1 | 0 |
| а2 | 1 | 1 | 1 | 1 | 0 |
| а3 | 0 | 0 | 1 | 0 | 0 |
| а4 | 0 | 0 | 1 | 1 | 0 |
| а5 | 1 | 1 | 1 | 1 | 1 |
|  |  |  |  |  |  |
| Эксп 3 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 1 | 1 | 0 | 1 |
| а2 | 0 | 1 | 0 | 0 | 0 |
| а3 | 0 | 1 | 1 | 0 | 0 |
| а4 | 1 | 1 | 1 | 1 | 1 |
| а5 | 0 | 1 | 1 | 0 | 1 |
|  |  |  |  |  |  |
| Эксп 4 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 0 | 0 | 0 | 0 |
| а2 | 1 | 1 | 0 | 0 | 0 |
| а3 | 1 | 1 | 1 | 0 | 0 |
| а4 | 1 | 1 | 1 | 1 | 0 |
| а5 | 1 | 1 | 1 | 1 | 1 |
|  |  |  |  |  |  |
| Эксп 5 | а1 | а2 | а3 | а4 | а5 |
| а1 | 1 | 1 | 1 | 1 | 1 |
| а2 | 0 | 1 | 1 | 1 | 1 |
| а3 | 0 | 0 | 1 | 1 | 1 |
| а4 | 0 | 0 | 0 | 1 | 1 |
| а5 | 0 | 0 | 0 | 0 | 1 |

Матрица расстояний:

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1-2 |  |  |  |  |  |  | 2-4 |  |  |  |  |  |  |
|  | 0 | 1 | 0 | 0 | 0 |  |  | 0 | 0 | 1 | 1 | 0 |  |
|  | 1 | 0 | 0 | 1 | 0 |  |  | 0 | 0 | 1 | 1 | 0 |  |
|  | 0 | 0 | 0 | 0 | 0 |  |  | 1 | 1 | 0 | 0 | 0 |  |
|  | 0 | 1 | 0 | 0 | 0 |  |  | 1 | 1 | 0 | 0 | 0 |  |
|  | 0 | 0 | 0 | 0 | 0 | 4 |  | 0 | 0 | 0 | 0 | 0 | 8 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1-3 |  |  |  |  |  |  | 2-5 |  |  |  |  |  |  |
|  | 0 | 0 | 0 | 1 | 1 |  |  | 0 | 1 | 0 | 0 | 1 |  |
|  | 0 | 0 | 1 | 0 | 0 |  |  | 1 | 0 | 0 | 0 | 1 |  |
|  | 0 | 1 | 0 | 0 | 0 |  |  | 0 | 0 | 0 | 1 | 1 |  |
|  | 1 | 0 | 0 | 0 | 1 |  |  | 0 | 0 | 1 | 0 | 1 |  |
|  | 1 | 0 | 0 | 1 | 0 | 8 |  | 1 | 1 | 1 | 1 | 0 | 12 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1-4 |  |  |  |  |  |  | 3-4 |  |  |  |  |  |  |
|  | 0 | 1 | 1 | 1 | 0 |  |  | 0 | 1 | 1 | 0 | 1 |  |
|  | 1 | 0 | 1 | 0 | 0 |  |  | 1 | 0 | 0 | 0 | 0 |  |
|  | 1 | 1 | 0 | 0 | 0 |  |  | 1 | 0 | 0 | 0 | 0 |  |
|  | 1 | 0 | 0 | 0 | 0 |  |  | 0 | 0 | 0 | 0 | 1 |  |
|  | 0 | 0 | 0 | 0 | 0 | 8 |  | 1 | 0 | 0 | 1 | 0 | 8 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1-5 |  |  |  |  |  |  | 3-5 |  |  |  |  |  |  |
|  | 0 | 0 | 0 | 0 | 1 |  |  | 0 | 0 | 0 | 1 | 0 |  |
|  | 0 | 0 | 0 | 1 | 1 |  |  | 0 | 0 | 1 | 1 | 1 |  |
|  | 0 | 0 | 0 | 1 | 1 |  |  | 0 | 1 | 0 | 1 | 1 |  |
|  | 0 | 1 | 1 | 0 | 1 |  |  | 1 | 1 | 1 | 0 | 0 |  |
|  | 1 | 1 | 1 | 1 | 0 | 12 |  | 0 | 1 | 1 | 0 | 0 | 12 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2-3 |  |  |  |  |  |  | 4-5 |  |  |  |  |  |  |
|  | 0 | 1 | 0 | 1 | 1 |  |  | 0 | 1 | 1 | 1 | 1 |  |
|  | 1 | 0 | 1 | 1 | 0 |  |  | 1 | 0 | 1 | 1 | 1 |  |
|  | 0 | 1 | 0 | 0 | 0 |  |  | 1 | 1 | 0 | 1 | 1 |  |
|  | 1 | 1 | 0 | 0 | 1 |  |  | 1 | 1 | 1 | 0 | 1 |  |
|  | 1 | 0 | 0 | 1 | 0 | 12 |  | 1 | 1 | 1 | 1 | 0 | 20 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | э1 | э2 | э3 | э4 | э5 |  |
| э1 | 0 | 4 | 8 | 8 | 12 | 32 |
| э2 | 4 | 0 | 12 | 8 | 12 | 36 |
| э3 | 8 | 12 | 0 | 8 | 12 | 40 |
| э4 | 8 | 8 | 8 | 0 | 20 | 44 |
| э5 | 12 | 12 | 12 | 20 | 0 | 56 |

Медиана Кемени - мнение первого эксперта: Батулев

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| э1 | 0 | 4 | 8 | 8 | 12 | 32 |

2. 2 Определение Кемени на множестве возможных ранжировок.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| № ЭКСПЕРТА | МНЕНИЕ ЭКСПЕРТА | | | | |  |
| 1 | а3 | а2 | а4 | а1 | а5 | Батулев |
| 2 | а3 | а4 | а1 | а2 | а5 | Восканян |
| 3 | а2 | а3 | а5 | а1 | а4 | Денисенко |
| 4 | а1 | а2 | а3 | а4 | а5 | Эксперт 1 |
| 5 | а5 | а4 | а3 | а2 | а1 | Эксперт 2 |

Вектора предпочтений:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ВЕКТОР ПРЕДПОЧТЕНИЙ | а1 | а2 | а3 | а4 | а5 |
| П1 | 3 | 1 | 0 | 2 | 4 |
| П2 | 2 | 3 | 0 | 1 | 4 |
| П3 | 3 | 0 | 1 | 4 | 2 |
| П4 | 0 | 1 | 2 | 3 | 4 |
| П5 | 4 | 3 | 2 | 1 | 0 |

Строим матрицу потерь.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| МАТРИЦА ПОТЕРЬ | 1 | 2 | 3 | 4 | 5 |
| а1 | 12 | 9 | 6 | 5 | 8 |
| а2 | 8 | 5 | 6 | 7 | 12 |
| а3 | 5 | 4 | 5 | 10 | 15 |
| а4 | 11 | 6 | 5 | 6 | 9 |
| а5 | 14 | 11 | 8 | 7 | 6 |

Решаем оптимизационную задачу:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Эксп 1 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 0 | 1 | 0 | 26 |
| а2 | 0 | 1 | 0 | 0 | 0 |  |
| а3 | 1 | 0 | 0 | 0 | 0 |  |
| а4 | 0 | 0 | 1 | 0 | 0 |  |
| а5 | 0 | 0 | 0 | 0 | 1 |  |
|  |  |  |  |  |  |  |
| Эксп 2 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 1 | 0 | 0 | 30 |
| а2 | 0 | 0 | 0 | 1 | 0 |  |
| а3 | 1 | 0 | 0 | 0 | 0 |  |
| а4 | 0 | 1 | 0 | 0 | 0 |  |
| а5 | 0 | 0 | 0 | 0 | 1 |  |
|  |  |  |  |  |  |  |
| Эксп 3 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 0 | 1 | 0 | 34 |
| а2 | 1 | 0 | 0 | 0 | 0 |  |
| а3 | 0 | 1 | 0 | 0 | 0 |  |
| а4 | 0 | 0 | 0 | 0 | 1 |  |
| а5 | 0 | 0 | 1 | 0 | 0 |  |
|  |  |  |  |  |  |  |
| Эксп 4 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 1 | 0 | 0 | 0 | 0 | 34 |
| а2 | 0 | 1 | 0 | 0 | 0 |  |
| а3 | 0 | 0 | 1 | 0 | 0 |  |
| а4 | 0 | 0 | 0 | 1 | 0 |  |
| а5 | 0 | 0 | 0 | 0 | 1 |  |
|  |  |  |  |  |  |  |
| Эксп 5 | 1 | 2 | 3 | 4 | 5 |  |
| а1 | 0 | 0 | 0 | 0 | 1 | 40 |
| а2 | 0 | 0 | 0 | 1 | 0 |  |
| а3 | 0 | 0 | 1 | 0 | 0 |  |
| а4 | 0 | 1 | 0 | 0 | 0 |  |
| а5 | 1 | 0 | 0 | 0 | 0 |  |

Медиана Кемени мнение первого эксперта.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | а3 | а2 | а4 | а1 | а5 | Батулев |

1. Провести обработку результатов опроса и получить итоговую ранжировку тремя методами: по среднему арифметическому баллу, по медиане оценок, по медиане Кемени.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| a1 | 1 | 3 | 4 | 4 | 5 | 4 |
| a2 | 1 | 2 | 2 | 4 | 4 | 1,5 |
| a3 | 1 | 1 | 2 | 3 | 3 | 1,5 |
| a4 | 2 | 2 | 3 | 4 | 5 | 3 |
| a5 | 1 | 3 | 5 | 5 | 5 | 5 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a3 | a2 | a4 | a1 | a5 | Прав эксперт №1 | | | | | | | |
| a2 | a3 | a4 | a1 | a5 |  |  |  |  |  |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| а1 | а2 | а3 | а4 | а5 |
| 16,0 | 13,0 | 10,0 | 16,0 | 19,0 |
| 3,2 | 2,6 | 2,0 | 3,2 | 3,8 |
| 3,5 | 2,0 | 1,0 | 3,5 | 5,0 |
|  |  |  |  |  |
|  |  |  |  |  |
| а3 | а2 | а1 | а4 | а5 |
| а3 | а2 | а4 | а1 | а5 |
|  |  |  |  |  |
| Прав эксперт №1 | | | |  |

1. Проанализировать результаты и сравнить оценки, полученные разными методами, пояснить содержательный смысл решения.

В результате можно сделать вывод о том, что при обработке результатов опроса различными методами полученная ранжировка либо соответствует мнению 1-го эксперта, либо незначительно отличается от него.

Во всех случая вариант a3 занимает 1 место, а значит, что по мнению студентов, необходимо спасать дельфинов.