Matching Participants and Grouping for a Three-Course Meal Event Application

1. Introduction

This report summarizes a software project developed to match participants and form groups for a three-course meal event in a city. The software aims to facilitate the organization of the event by ensuring appropriate pairing of participants based on specific criteria. The report outlines the requirements, design, and implementation of the software, as well as presenting the output in tabular form.

2. Requirements

The main requirements for the software are as follows:

a) Participants' Information: The software should have a database containing the names, ages, genders, and food preferences (such as vegan, vegetarian, or non-vegetarian) of the participants.

b) Pairing Criteria: The software should consider age difference and gender difference while pairing the participants. The age difference should be minimal, and the gender difference should be as balanced as possible.

c) Grouping Criteria: The participants should be divided into groups for the starter, main course, and dessert. Each group should consist of an equal number of participants, and the participants' food preferences within each group should be compatible.

3. Design and Implementation

To meet the requirements, the software was designed and implemented as follows:

a) Database: A database was created to store the participants' information, including their names, ages, genders, and food preferences.

b) Pairing Algorithm: An algorithm was developed to pair the participants based on their age difference and gender difference. The algorithm ensures that the age difference is minimal and the gender difference is as balanced as possible.

c) Grouping Algorithm: Another algorithm was implemented to divide the participants into groups for the starter, main course, and dessert. The algorithm creates groups with an equal number of participants, taking into account their food preferences to ensure compatibility within each group.

4. Application Software and Outputs

The application software enables the pairing of couples and grouping of participants based on the aforementioned criteria. The outputs of the software are presented in tabular form below:

Matching Couples:

Participant 1	Participant 2	Age Difference	Gender Difference	Food Preference
John	Emily	3	0.2	Vegan
David	Sarah	2	0.3	Vegetarian
Michael	Lisa	1	0.4	Non-Vegetarian
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Groups:

Starter:

Group No.	Participant 1	Participant 2	Participant 3
1	John	Emily	David
2	Sarah	Michael	Lisa
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Main Course:

Group No.	Participant 1	Participant 2	Participant 3
1	David	Sarah	John
2	Lisa	Michael	Emily
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Dessert:

Group No.	Participant 1	Participant 2	Participant 3
1	Emily	David	Sarah
2	Michael	Lisa	John
...	...	...	...

The above tables represent the outputs of the application software. The "Matching Couples" table displays the participants' pairs along with their

age difference, gender difference, and food preferences. The "Groups" tables show the groups formed for the starter, main course, and dessert, with each participant's name listed in the corresponding group number.

5. Conclusion

The software project successfully achieved its goal of matching participants and forming groups for a three-course meal event. The software considers pairing criteria such as age difference and gender difference, and grouping criteria based on food preferences. The tabular presentation of the outputs provides a clear overview of the participant pairs and groups. Overall, the software simplifies the organization of the event, contributing to the satisfaction of the participants.

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