

Prefbot

Windows 10 desktop app

This program optimizes the distribution of items/tasks among people. Each person in a group orders the items/tasks according to his/her preferences. Then the program distributes the items/tasks among the people in the group in an optimal fashion.

The program is ideal for non-symmetrical games but could certainly have many other uses as well like distributing items among people.

Prefbot is controlled through a hamburger menu and this manual describes the different pages those menu choices lead to.

Persons

The Persons page contains the name of the persons that will be ordered to an item through their preferences. It contains three buttons and a dropdown, each described below:

Add: Opens a box where you can fill in a text. The text entered should be a person's name.

Save as list: Opens a box where you can fill in a text. A list is saved containing the persons on the page and given the name entered here.

Clear: Removes all persons on the page.

Use list: A dropdown containing all saved lists of persons. Selecting one means their content will be included as persons on the page. If there are persons on the page, the user will be presented with the choice of replacing them or adding any unique names from the list selected.

There is also a context menu for each person on the page which appears when pressing the person. There is always the Delete selection which simply removes the specific person from the page. If there are items available on the Items page there is also the selection Options. This selection contain a list of all items on the Items page. Each item has a checkbox and the user can here decide what items will be available to the person when making his/her priority list.

Items

The Items page contains the items that will be ordered by each person. It contains three buttons and a dropdown, each described below:

Add: Opens a box where you can fill in a text. The text entered should be the item.

Save as list: Opens a box where you can fill in a text. A list is saved containing the items on the page and given the name entered here.

Clear: Removes all items on the page.

Use list: A dropdown containing all saved lists of items. Selecting one means their content will be included as items on the page. If there are items on the page, the user will be presented with the choice of replacing them or adding any unique items from the list selected.

There is also a context menu for each item on the page which appears when pressing the item. It contains the Delete selection which simply removes the specific item from the page.

Run

When there is an equal number of persons as items and there is two or more of each the optimization is ready to go. Push Run. The program will randomly select a person and display the items available to him/her in a random order. The selected person is then expected to change the order of items according to his/her preferences. This is done by dragging the items up and down in the list. The topmost item is the most preferred. Then the person pushes OK and the process is repeated for each person. Pushing Cancel stops the process and returns to the Main screen.

Person lists

This selection opens a page with the name of all stored person lists. Click a list to open a context menu attached to the list containing a Delete and a Content choice. Selecting Delete will delete the list while the Content selection shows what persons are contained in the list.

Item lists

This selection opens a page with the name of all stored item lists. Click a list to open a context menu attached to the list containing a Delete and a Content choice. Selecting Delete will delete the list while the Content selection shows what items are contained in the list.

Help

This manual and the privacy policy can be found through this selection.

Settings

This selection brings you to the Settings. Here the algorithm used for the optimization can be selected. The algorithms are built upon ordering each item in each person's preference with an integer value where 1 stands for the most preferred, 2 for the second most preferred and so on. The algorithms then uses this value in different ways depending on algorithm selected:

Basic: This algorithm simply chooses the combination that gives the lowest value when adding all preference numbers. If several combinations are tied it chooses the combination where the

person with highest preference number have the lowest number, i.e. optimizes for the person worst off. If still tied it randomly chooses one.

Min(worst): This is optimization for the person worst off. It selects the combination of preferences where the person with the highest preference number have an as low number as possible. If tied it chooses the combination with lowest sum of all person's preferences. If still tied it randomly chooses one.

Max(equal): The algorithm picks the combination of preferences that minimizes the standard deviation of the preference numbers. If tied it chooses the combination with lowest sum of all person's preferences. If still tied it randomly chooses one.

Quadratic: This is exactly the Basic algorithm with one exception. When summing the preference numbers they are squared.

Results

When all persons have entered their preferences the chosen algorithm optimizes accordingly. A Results page appears displaying the persons and the item distributed to each person. There is also a number showing which preference number each person's assigned item has according to his/her preferences. Pushing Rerun brings the user back to the Persons page containing the persons/items used in the optimization. Pushing New return the user to an empty Persons page.