**Ari Palanjian**

**Data Structures and Algorithms II**

**Project 4**

**User's Manual**

**Setup and Compilation**

1. Download and unzip the submission from eLearning.

2. The submission includes:

* bin.cpp
* bin.hpp
* brute.cpp
* brute.hpp
* heuristic.cpp
* heuristic.hpp
* main.cpp
* Makefile
* maxHeap.hpp
* UMLDiagram.pdf
* UserManual.doc (This file)

3. Environment: This program has been tested in windows 11, WSL with ubuntu, and on the UWF linux server.

4. Compiling: This program includes a Makefile, at the command line enter make. The program produces a binary named main.

**Running the program**

1.The file items.txt must be in the same directory as main.cpp.

2.No user input is required with the program.

**Output**

Output will be presented in the console and will be similar to this:

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|Policy |Total Bins Used |

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

|Optimal Solution |6 |

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

|Online Solution | |

| First Fit |6 |

| Next Fit |7 |

| Best Fit |6 |

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

|Offline Solution | |

| First Fit |6 |

| Best Fit |6 |

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Optimal:

b1: 0.19 0.22 0.245 0.33

b2: 0.339 0.34

b3: 0.37 0.51

b4: 0.41 0.59

b5: 0.755

b6: 0.81

Online First Fit:

b1: 0.41 0.34 0.245

b2: 0.19 0.59 0.22

b3: 0.755

b4: 0.33 0.51

b5: 0.339 0.37

b6: 0.81

Online Next Fit:

b1: 0.41 0.34 0.245

b2: 0.19 0.59

b3: 0.755

b4: 0.33 0.22

b5: 0.51 0.339

b6: 0.81

b7: 0.37

Online Best Fit:

b1: 0.41 0.34 0.245

b2: 0.19 0.59 0.22

b3: 0.755

b4: 0.33 0.51

b5: 0.339 0.37

b6: 0.81

Offline First Fit:

b1: 0.81 0.19

b2: 0.755 0.245

b3: 0.59 0.41

b4: 0.51 0.37

b5: 0.34 0.339 0.22

b6: 0.33

Offline Best Fit:

b1: 0.81 0.19

b2: 0.755 0.245

b3: 0.59 0.41

b4: 0.51 0.37

b5: 0.34 0.339 0.22

b6: 0.33