Mini Project 2
Memory Allocation using Segmentation

I. Inputs :

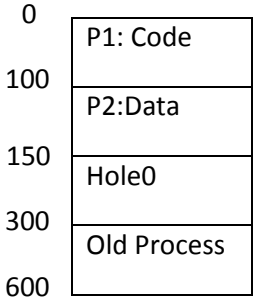
1- User inputs total memory size
2- User inputs holes starting address and size.
3- User inputs Processes one by one.
4- User inputs for each process
   a. Number of segments
   b. Name and size of each segment
      (Example: P1 : 3 segments ... Code: 50 , Data: 200, Stack:100)
5- User inputs the method of allocation (first fit or best fit).

II. Scenario to be done:

1- Allocate segments using allocation methodology.
2- If one segment or more of a process can not fit in any hole you should generate a message to state that this process does not fit.
3- De-Allocate a process (The user chooses a process to de-allocate, you should deallocate all segments of this process and consider their spaces holes to be used later and add to them to any neighboring holes)
4- Initial between holes spaces are considered old processes and user can choose to deallocate one of these old processes

III. Output:

Your output is a drawing representing memory allocation as shown in below figure



IV. BONUS:

1- Worst fit option
2- External compaction: shuffling memory contents to place all free memory (holes) together in one large block
3- Error checking on inputs
4- Any extra non required useful addition to the project

V. Other Notes:

1- You MUST deliver a Desktop application executable.
2- You MUST provide a GUI Layer.
3- A user can use the GUI to insert inputs without reading instructions (GUI must be user friendly)
4- There is no limitation on number of processes or holes or memory size
5- **Group Size : 6 Students Maximum**