**Lab. Assignment #3 Memory Management**

Class:CSC 305

Instructor: Jonathan Parziale

**Objective:** Write a C++ -program that will implement 4 Memory Management algorithms

**Algorithms:**

A) Best-Fit ( Fixed partition)

B) First-Fit

C) Next-Fit

D) Worst-Fit (Dynamic partitions)

Your program must do the following:

1. Program Input:

User will input to the program.

* + Main Memory information, including
    1. The Number of Memory partitions.
    2. The Size of each memory partition.
  + Process information (assign a unique identifier to each job)
    1. Number of processes
    2. Memory requirements for each process/job

1. For each algorithm, your program should have a common data structure (class or struct) that will represent the process/job, and should contain the following variables.

* Name of the process/ Process id (number or word)
* Process/job status (Run/Wait),
* Partition Name/ID the process/job was assigned to

You can create an array or list of the object to represent the job queue.

1. For each algorithm, your program should have a common data structure (class or struct) that will represent a memory partition and should have the following variables.
   * Partition Name/ID
   * A Bool, to represent if the partition being used, (is there a process already assigned to it
   * Process Name/Id that is assigned to it.

You can create an array or list of the object to represent the Main Memory.

**4**. Program output:

a**)** Initial memory allocation: Calculate and display a list of **initial** memory allocation, i.e which process was assigned to which partition, after the first round of allocation

b) Memory waste: Program will calculate and display the memory waste for each partition,

c. total waste for each algorithm.

e. A list of Processes in the waiting State(was not assigned to a partition).

**Deliver to black board:**

Note: You must use the values from the use case provided

1)All c++ source code from the program/programs

2)Screen shots of the output/results from each algorithm.

Tentative Deadline: 10/3

Possible Points:25