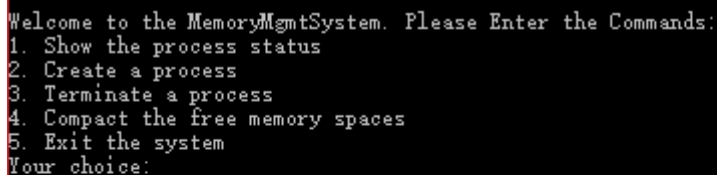


1. About the Executable File

Due to the mail system restriction, the executable file is currently named as “project2.txt” and needed to be renamed as “project2.exe”.

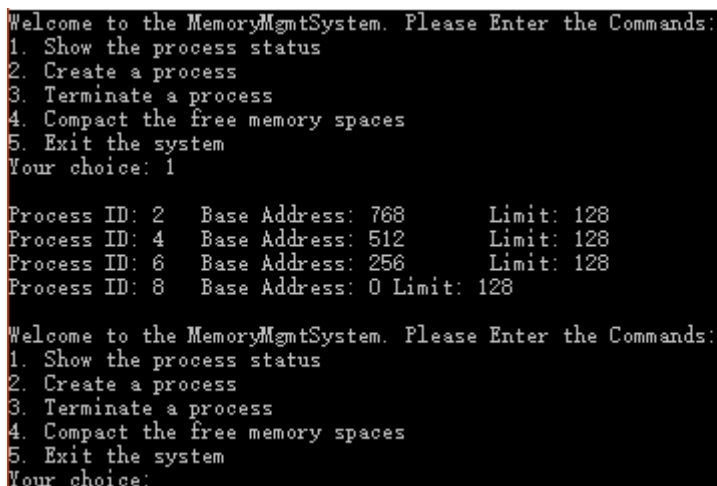
2. Execution

1. In this program, the total memory size is set to be 1024. Once you run the program, the main menu will be printed on the screen and you will be asked to choose what to do.



```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice:
```

2. You can only choose the actions listed in the menu by entering the number in the beginning.
- 2.1 If you choose to show the process status, the processes will be printed on the screen with ID, Base Address and Limit.



```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 1

Process ID: 2   Base Address: 768       Limit: 128
Process ID: 4   Base Address: 512       Limit: 128
Process ID: 6   Base Address: 256       Limit: 128
Process ID: 8   Base Address: 0 Limit: 128

Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice:
```

Or it will print “There is no process running”.

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 1
```

```
There is no process running!
```

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 2
```

2.2 If you choose to create a process, then you will be asked to enter the size of the process. And only an integer is acceptable for this input.

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 2
```

```
Please enter the size of the process:
```

Once you enter the size, the process will be created and the free memory spaces will be printed on the screen with the Base Address and Size.

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 2
```

```
Please enter the size of the process: 128
```

```
Process(ID: 2) has been created
```

```
Free Memory Space Base Address: 0      Size: 256
Free Memory Space Base Address: 512    Size: 128
```

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 2
```

If there is no big enough hole, it will try to compact the free memory spaces. And if there is still no big enough hole, no process will be created.

```

2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 2

Please enter the size of the process: 1024

No enough memory space!

Compacting the free memory spaces...

The memory spaces have been compacted

Free Memory Space Base Address: 0      Size: 512

No enough memory space!

Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice:

```

- 2.3 If you choose to terminate a process, the processes will be printed on the screen. Then you will be asked to choose which process to terminate by entering the process ID. Or you may enter -1 to go back to the main menu.

```

Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 3

Process ID: 1   Base Address: 896      Limit: 128
Process ID: 2   Base Address: 768      Limit: 128

Please choose which process to terminate (Enter -1 to go back): _

```

Once you enter the ID, the process will be terminated and the free memory spaces will be printed on the screen.

```

Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 3

Process ID: 1   Base Address: 896      Limit: 128
Process ID: 2   Base Address: 768      Limit: 128

Please choose which process to terminate (Enter -1 to go back): 2

Process(ID: 2) has been terminated

Free Memory Space Base Address: 0      Size: 896

Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice:

```

2.4 If you choose to compact the free memory spaces, the free memory spaces will be compacted and the compacted space will be printed on the screen.

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 4

The memory spaces have been compacted

Free Memory Space Base Address: 0      Size: 384

Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: _
```

Or it will print “There is no free memory”.

```
Welcome to the MemoryMgmtSystem. Please Enter the Commands:
1. Show the process status
2. Create a process
3. Terminate a process
4. Compact the free memory spaces
5. Exit the system
Your choice: 4

There is no free memory!
```