

A. List the main difference between fixed sized partitioning and paging.

Paging divides a program's virtual memory into fixed size blocks, the logical address is calculated by concatenating the page number bits and the page offset bits.

The fixed size partitioning divides memory into fixed size partitions, each partitions hold a process on physical address.

B. List two main differences between paging and segmentation

1. The size of a page is fixed and must be a power of 2, whereas in segmentation, the program is divided into variable size.

2. Paging have internal fragmentation, whereas segmentation suffer from external segmentation.

1.

i. The physical address of the start of shared memory in both process should be the same, but the printed address is the virtual address which is not the same.

ii. Virtual address.

```
ybzou@cs3233_vm:~/hw7$ ./lab7_consumer.out 10
The memory address of n is: 0x55df99049010
The memory address of the start of shared memory is: 0x7f7a30365008
The value is: 0.00000
The value is: 0.25000
The value is: 1.00000
The value is: 2.25000
The value is: 4.00000
The value is: 6.25000
The value is: 9.00000
The value is: 12.25000
The value is: 16.00000
The value is: 20.25000
```

```
ybzou@cs3233_vm:~/hw7$ gcc lab7_producer.c -o lab7_producer.out -lrt
ybzou@cs3233_vm:~/hw7$ ./lab7_producer.out 10
The memory address of n is: 0x55bc451ff010
The memory address of the start of shared memory is: 0x7ff508318008
```

2.

i. The address printed from the running program is the virtual address in running process. The address in elf file is the relative address stored in executable file.

```
48: 0000000000202010    4 OBJECT GLOBAL DEFAULT 23 n
```

```
48: 0000000000202010    4 OBJECT GLOBAL DEFAULT 23 n
```

ii. Relocatable object, According to the type is shared object file.

```
Type: DYN (Shared object file)
```