CSE 202 Midterm 2

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I. Question (Trees) (15 points)

Write a function that prints the numbers in the binary search tree in decreasing order.

```
void printDecreasingOrder()
```

II. Question (Trees) (15 points)

Write the method

```
int elementCount()
```

that returns the number of elements (including the interior nodes) in a B+ tree.

III. Question (Queue) (20 points)

Write the method

```
int minimum()
```

that returns the minimum element in a queue. Write the function for both array and linked list implementations. You are not allowed the use queue functions.

IV. Question (Queue) (15 points)

Write the method

```
void enlarge(int newSize)
```

that enlarges the queue to size **newSize**.

V. Question (Hashing) (20 points)

Write the method

```
void deleteAll(int X)
```

that deletes all elements having value **X**. Write the function for both array and linked list implementations. For array implementation assume that linear probing is used as the collision strategy.

VI. Question (Hashing) (15 points)

Write an hash function that maps an array implemented hash table into an hash value. Assume that the hash value of an hash table can be obtained first by summing up the key values of the elements in the hash table and then hashing the sum.

```
int hashFunction()
```

Assume that linear probing is used as the collision strategy.