

Assignment 01 (Due Date 30th September, 2020 11:59 PM)

Create following structures with required variables and functions. Write main function to test your structure?

1. Create structure Set (as discussed in class). Following functions are required:

- void **init** (const int SIZE)
- bool **add** (const int ELEMENT)
- bool **isExist** (const int ELEMENT)
- void **print**()
- **Set union** (const Set &set)
- **Set intersection** (const Set &set)
- **Set difference** (const Set &set) Google for definition of difference of two sets
- void **resize** (const int newSize)

2. [BONUS] Extend structure Set, include Universal set integer array as member variable and add following functions:

- Set **complement** ()
- bool **isSubset** (const Set &set)
- bool **isProperSubset** (const Set &set)

3. Create structure Bag similar to set except that Bag may have duplicate entries. Write following functions:

- void **init** (const int SIZE)
- void **add** (const int ELEMENT)
- bool **isExist** (const int ELEMENT) Just to check existence
- void **print**()
- **Bag merge** (const Bag &bag) Add all elements of two bags in new bag
- int **indexOf** (const int ELEMENT) Return index of element, otherwise -1
- void **resize** (const int newSize)
- bool **has**(const Bag &bag) Check if current bag has all elements of other bag