

**COMSATS University Islamabad**

**Attock Campus**

Lab Activity of Lab 10

Software Construction

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**Question**:

**Task 1:**

Write a java class that implements this interface.

**Task 2 :**

Provide an Implementation of getMode method that must fulfil the specification given in

Interface.

**Task 3:**

Write a spec for MyMode.getMode() in which the precondition and postcondition are

both different from Mode.getMode(), while ensuring that MyMode is a well-defined spec that

legally implements Mode.

**Answer**:

**public** **interface** mode {

/\*\*

\* Finds one of the most frequent integers in an array.

\* **@param** values array in which at least one value occurs more than once.

\* **@return** a number that appears most often in values

\*/

**public** **int** getMode(**int**[] vlaue);

}

**public** **class** MyMode **implements** mode {

/\*\*

\*

\* Finds one of the most frequent value in the data.

\* **@param** value two or more values cannot be repeated same number of times

\* **@return** maxValue a number that appears most of the time in data.

\*/

@Override

**public** **int** getMode(**int**[] value)

{

**int** maxValue = 0, maxCount = 0, i, j;

**for** (i = 0; i < value.length; ++i)

{

**int** count = 0;

**for** (j = 0; j < value.length; ++j)

{

**if** (value[j] == value[i])

++count;

}

**if** (count > maxCount)

{

maxCount = count;

maxValue = value[i];

}

}

**return** maxValue;

}

}