**Title**: Binary Search, find an element in the Array

**Precondition**: Binary Search array must be sorted

**Description**: Finding an element(X) in the array using Binary Search.

**Testing Category**: White Box Testing

**Test Array (V)**: [11, 14, 16, 19, 22, 26, 27, 29]

**Test Cases**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test Case no | Description | Test Data | Expected Result | Actual Result | Status(Pass/Fail) |
| 1 | Element at the Middle | Low=11,High=19,Mid=V[4],X=16 | Return Mid | Return Mid | Pass |
| 2 | Element after Middle | Low=16, High=26, Mid=V[4],X=22 | Update(low=mid+1) | Update(low=mid+1) | Pass |
| 3 | Element before Middle | Low=16, High=26, Mid=V[4],X=19 | Update(high=mid+1) | Update(high=mid+1) | Pass |
| 4 | Element below(minimum) range | Low=16, High=26, Mid=V[4],X=19 | Return -1(As high<low) | Return -1 | Pass |
| 5 | Element above(maximum) range | Low=16, High=26, Mid=V[4],X=19 | Return -1(As low>high) | Return -1 | Pass |
| 6 | Low=High | 5=5 | Mid=(Low+High)/2 | Mid=(Low+High)/2 | Pass |
| 7 | Low>High | 7>5 | Return -1 | Return -1 | Pass |
| 8 | Low<High | 5<7 | Mid=(Low+High)/2 | Mid=(Low+High)/2 | Pass |