**DIT635 - Structural Testing Activity**

1. **Draw a control-flow graph for the following method:  
   (A is an array, what is the element you are searching for)**

**public int search(String[] A, String what){  
 int index = 0;  
 if ((A.length == 1) && (A[0] == what)){  
 return 0;   
 } else if (A.length == 0){  
 return -1;  
 } else if (A.length > 1){  
 while(index < A.length){  
 if (A[index] == what){  
 return index;  
 } else  
 index++;**

**}  
}**

**}   
 return -1;  
}**

1. Write tests that provide statement, branch, and basic condition coverage over the code.

**DIT635 - Loop Testing Activity**

1. **Draw the control-flow graph for the following code:  
     
   1. public boolean binary\_search (Object key, Object[] T){  
   2. int mid;  
   3. int bott = 0;  
   4. int top = T.length - 1;  
   5. Boolean found = false;  
   6.  
   7. if(T[0] == key){  
   8. found = true;  
   9. }else{  
   10. found = false;  
   11. }  
   12.  
   13. while (bott <=top && !found){  
   14. mid = round((top + bott) / 2);  
   15. if(T[mid] == key){  
   16. found = true;  
   17. } else{  
   18. if (T [mid] < key ){  
   19. bott = mid + 1;  
   20. }else{  
   21. top = mid-1;  
   22. }  
   23. }  
   24. }  
   25. return found;  
   26.}**
2. **Write a test suite that achieves loop boundary coverage   
   (That exercises the loops:  
   - Zero times  
   - One time  
   - Two or more times)**