**Software Test Document**

**For**

**Programming Assignment 1**

**October 13, 2015**

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**Software Test Plan**

**Programming Assignment 1**

**Software Design Document**

**Programming Assignment 2**

**1.0 System Overview**  
  
 This program will demonstrate a decoder using a special implementation of a stack as a linked structure.

**2.0 Referenced Documents**

* Programming Assignment 1 Statement of Work.
* Dale, Nell and Teague, David, *C++ Plus Data Structures* 2nd ed. 2001.

**3.0 Test Procedures**

**3.1 Source File: Prog1Class.cpp, Prog1Class.h and Prog1Struct.h**

 3**.1.1 Function: 1. Decoder()**

**3.1.1.1 Purpose and Procedure**  
The constructor shall set the structure pointer to NULL.

**3.1.1.2 Inputs**

No input parameter passed.  
**3.1.1.3 Expected Output**  
All the components value shall be initialized to zero.

**3.1.1.4 Success Criteria**   
Initializes the values to ‘NULL’ to the Struct pointer as expected.

**3.2.2 Function:** ~Decoder()

**3.2.2.1 Purpose and Procedure**  
The destructor shall remove and delete all the instances of StackNode left in the stack.

**3.2.2.2 Inputs**

No inputs.  
**3.2.2.3 Expected Output**

Void functions doesn’t return any value  
**3.2.2.4 Success Criteria**   
The destructor shall remove and delete all the instances of StackNode left in the stack.

**3.2.3 Function: void Push(char ch)**

**3.2.3.1 Purpose and Procedure**  
This function dynamically create a structure of type **StackNode** store the character in the structure and "Push" the structure onto the stack.  
**3.2.3.2 Inputs**

This function shall have Character variable which has to be pushed into the stack as parameters.

**3.2.3.3 Expected Output**  
There is no return value for void.   
**3.2.3.4 Success Criteria**   
store the character parameter correctly in the structure and pushes into stack.

**3.2.4 Function:** char Pop()

**3.2.4.1 Purpose and Procedure**  
Function will Remove the top node from the stack, copy the character, from this node, delete the node and return the character. This function shall be private.  
**3.2.4.2 Inputs**

No inputs.  
**3.2.4.3 Expected Output**  
Returns the Character value.   
**3.2.4.4 Success Criteria**   
Returns the Popped Stack Character value correctly.

3**.2.5 Function: void Decode(char \*encMsg, char \*decMsg)**

**3.2.5.1 Purpose and Procedure**  
This Function will parse and decode the message stored in the character array encMsg using the stack functions and return the decoded message in the character array decMsg.  
**3.2.5.2 Inputs**

This function shall take two parameters:

1 a pointer to a character Encoder array.

2 a pointer to a character Decoder array.  
**3.2.5.3 Expected Output**  
 There is no return value for void function.  
**3.2.5.4 Success Criteria**   
Correctly decodes Data from the encoded Values.

**Appendices**

**Test Forms:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Tested** | **Inputs** | **Expected output** | **Actual output** | **Pass/Fail** |
| Push | Push(C)  Push(1) | C  1 | C  1 | Pass  Pass |
| Pop | Pop()  Pop() | 1  C | 1  C | Pass  Pass |
| Decode | Decode(encMsg, decMsg)  encMsg[20]= {1d211h1e1l1l1o1h21} | hello | hello | Pass |
| Decode | Decode(encMsg, decMsg)  encMsg[20]= {1e211G1O1O1A1A221D} | GOOD | GOOD | Pass |