|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | Combinations | | | | | | | | | | | | | | | |
| Causes | Values | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| SSID is Valid | Y/N | N | N | N | N | N | N | N | N | Y | Y | Y | Y | Y | Y | Y | Y |
| Password is correct | Y/N | N | N | N | N | Y | Y | Y | Y | N | N | N | N | Y | Y | Y | Y |
| IP Address entered is correct | Y/N | N | N | Y | Y | N | N | Y | Y | N | N | Y | Y | N | N | Y | Y |
| Pico is Connected to WIFI | Y/N | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | Combinations | | | | |
| Causes | Values | 1-8 | 9-12 | 13-14 | 15 | 16 |
| SSID is Valid | Y/N | N | Y | Y | Y | Y |
| Password is correct | Y/N | - | N | Y | Y | Y |
| IP Address entered is correct | Y/N | - | - | N | Y | Y |
| Pico is Connected to WIFI | Y/N | - | - | - | N | Y |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Effects | | | | |
| Effects | 1-8 | 9-12 | 13-14 | 15 | 16 |
| Can Access Server |  |  |  |  | O |
| Cannot Access Server | O | O | O | O |  |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Test Scenario | Test Case | Pre-conditions | Test Steps | Test Data | Expected Result | Actual Result | Pass/Fail |
| Check Access to Web Server | Check access with correct credentials | SSID1 is correct SSID2 is incorrect  Password1 is correct Password2 is incorrect  IP1 is valid IP2 is invalid  C1 is connected C2 is not connected | 1. Connect PicoW to Computer 2. Enter SSID and Password 3. Ensure IP is entered correctly 4. Ensure Pico is connected | SSID: SSID1  Password: Password1  IP: IP1  Connected: C1 | Connection must be successful | Connected | Pass |
| Check access with incorrect SSID | SSID: SSID2  Password: Password1  IP: IP1  Connected: C1 | Connection must be unsuccessful | Not connected | Fail |
| Check access with incorrect password | SSID:  SSID1  Password: Password2  IP: IP1  Connected: C1 |
| Check access with incorrect IP | SSID: SSID1  Password: Password1  IP: IP2  Connected: C1 |
| Check access with no connection | SSID: SSID1  Password: Password1  IP: IP1  Connected: C2 |

White Box Testing

Pseudocode

|  |  |
| --- | --- |
| 1.  2.  3.  4. | public method connection(Boolean SSID, Boolean Password, Boolean IP, Boolean connection {  if (SSID == False || Password == False || IP == False || connection == False) {  return error;  }  return success;  } |

Control Flow Graph

A screenshot of a game

Description automatically generated

Cyclomatic Complexity Calculation

Edges = 5  
Nodes = 5  
Components = 1

5 – 5 + 2(1) = 2

Basis Path Testing

Path 1: Start -> Check if the inputs are valid -> Yes -> Success

Path 2: Start -> Check if the inputs are valid -> No -> Error