Carson Roscoe January 18th, 2016

COMP4985 Test Document

Tests Summary

Screenshots and more information about specific tests can be found in the section below correlation to the section number column of any specific test.

Section #	Description	Test	Expected Output	Success
1	The program runs without crashing in Debug mode.	Run the program in debug mode.	The program does not crash upon starting.	Passed
2	The program runs without crashing in Release mode.	Run the program in release mode.	The program does not crash upon starting.	Passed
3	Changing the dropdown selection changes what mode the program is in. Changing modes should rearrange the UI layout to match. There are four modes.	Run the program and change the main dropdown to be all four different modes.	The program should display three different layouts, with the 3rd and 4th modes sharing identical layouts.	Passed
4	In Webhost name to IP mode, typing in an IP address should allow the user to resolve the webhosts main name, IP addresses and aliases.	Enter the webhost name milliways.bcit.ca in Webhost to IP mode and click resolve.	The main label should say “milliways.scas.bcit.ca” as the main webhost, “milliways.bcit.ca” as the only alias and the IP address 142.232.66.1.	Passed
5	In Webhost name to IP mode, writing an invalid input displays an error message.	Enter an invalid webhost name, such as “blank” in Webhost to IP mode and then click resolve.	The main label should display an error stating it failed to resolve an IP address.	Passed
6	In Webhost name to IP mode, writing the word “local” into the input box will resolve the hostname of your machine and your public IP address.	Enter “local” into the input box in Webhost name to IP mode and click resolve.	The main label should say your local machines name and your public IP address.	Passed
7	In IP to webhost mode, entering in a valid dotted IP address will resolve to a website.	Enter the IP “142.232.61.1” in IP to Webhost mode and click the resolve item.	The main host milliways.scas.bcit.ca	Passed

8	In the IP to webhost mode, entering an invalid IP address and clicking resolve will result in an error message being displayed.	We type an IP address which cannot exist (as the last number is 256, outside the range of an IP digit) into our edit box. After clicking resolve, we should see the error message.	The appropriate error message was displayed.	Passed
9	In port to service mode, entering a valid port and protocol will resolve to the name of the service running on that port under the given protocol.	In Port to Service mode enter number 22 into the port edit box and enter “tcp” into the protocol box, then click resolve.	The main label should display ssh.	Passed
10	In port to service mode, entering either an invalid port number or an invalid protocol name will result in an error message being displayed.	In Port to Service mode we enter 22 for the port and “udp” for the protocol.	The main label should display an error messaging stating it failed to resolve a service name.	Passed
11	In service to port mode, entering a valid service name along with the protocol it uses will resolve to the port that the service is being run on.	In Service to Port mode we enter “ssh” as the service name and “tcp” as the protocol.	The main label should display 22.	Passed
12	In service to port mode, entering an invalid name, invalid protocol or an invalid combination of the two will result in an error being displayed.	In Service to Port mode we enter “ssh” for the service name and “udp” as the protocol.	The main label should display an error stating it failed to resolve a port number.	Passed

Contents

Tests Summary 1
Legend ..... **Error! Bookmark not defined.**
Test 1) Program Runs in Debug Mode 4
Test 2) Program Runs in Release Mode 5
Test 3) Program Can Change Modes 6
Test 4) Webhost Name Resolves to IP 7
Test 5) Invalid Webhost Name Errors 8
Test 6) Webhost “local” Resolves to Users Public IP 9
Test 7) IP Address Resolves 10
Test 8) IP to Webhost errors 11
Test 9) Port & Protocol to Service Name Resolution 12
Test 10) Service Name Resolution Error 13
Test 11) Service Name & Protocol to Port Resolution 14
Test 12) Port Number Resolution Error 15

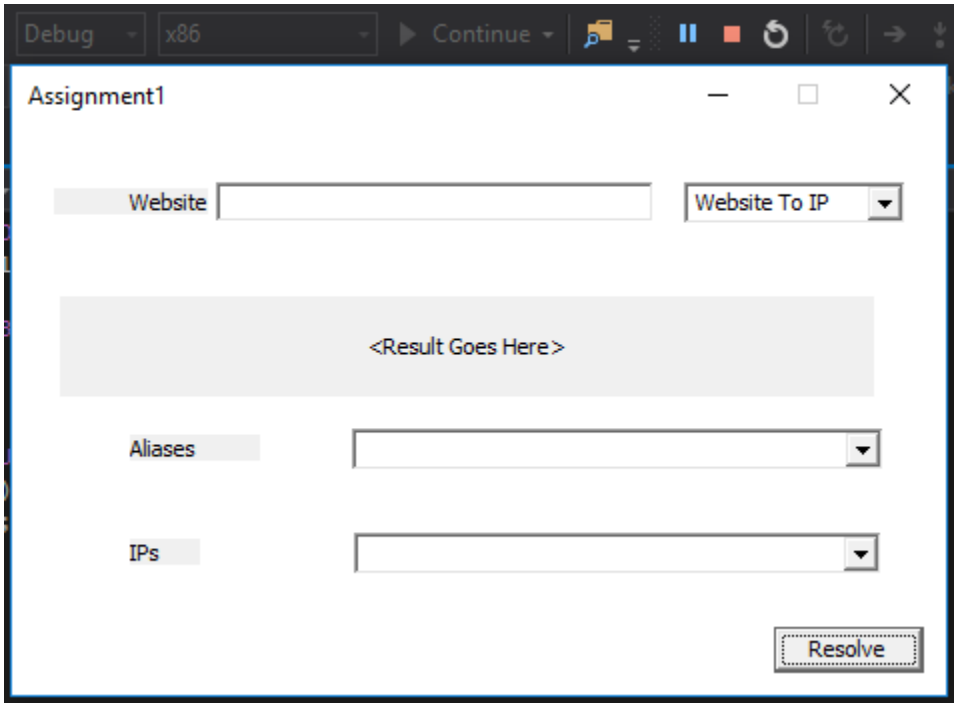
Test 1) Program Runs in Debug Mode

Test Explanation: The program runs without crashing. We test this in the screenshot below by simply starting the program and seeing if it crashes.

Expected Output: The program does not crash upon starting.

Result: **Passed**

FIGURE 1: Program Output, showing at the top left it is being run in debug mode.



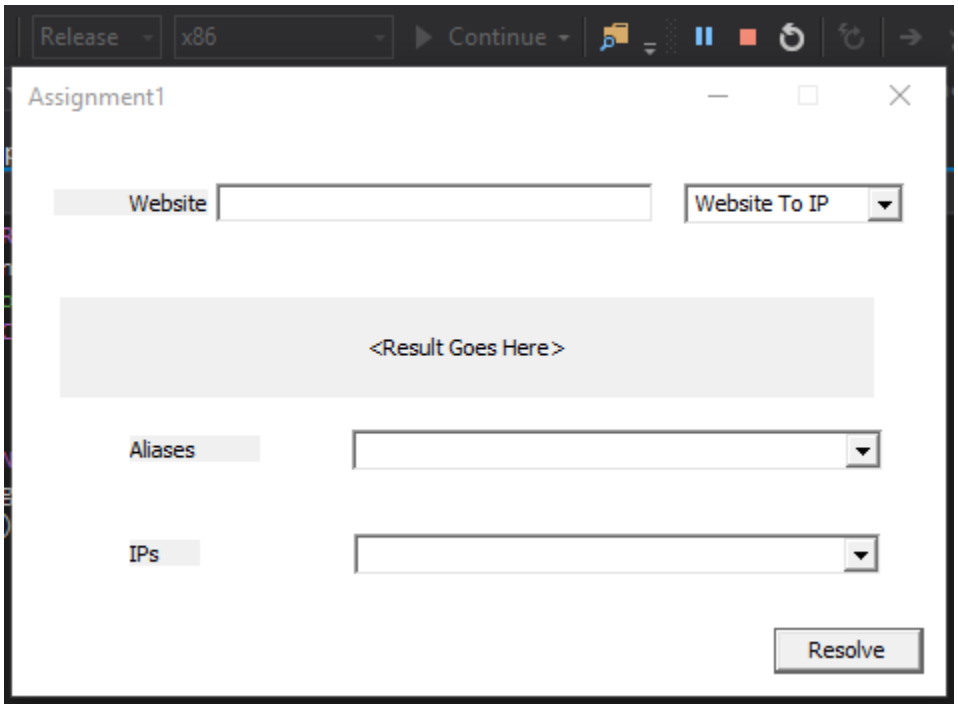
Test 2) Program Runs in Release Mode

Test Explanation: The program runs without crashing. We test this in the screenshot below by simply starting the program and seeing if it crashes. The reason this is separate than the debug mode test is due to there being multiple ways to link the Ws2_32 library. If the library is simply linked from the programs properties, it will not startup in release mode. It must be linked programmatically to run in release mode.

Expected Output: The program does not crash upon starting.

Result: **Passed**

FIGURE 2: Program Output, showing at the top left it is being run in release mode.



Test 3) Program Can Change Modes

Test Explanation: Changing the dropdown selection changes what mode the program is in. Changing modes should rearrange the UI layout to match. There are four modes. We test this by running the program and changing the main dropdown to be all four different modes.

Expected Output: The program should display three different layouts, with the 3rd and 4th modes sharing identical layouts.

Result: **Passed**

FIGURE 3a: Layout in Website To IP mode.

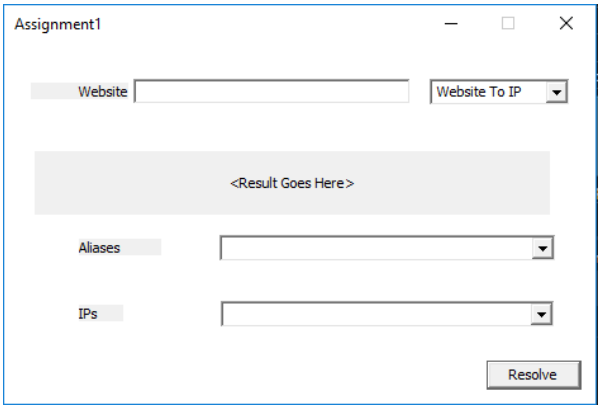


FIGURE 3b: Layout in IP To Website mode.

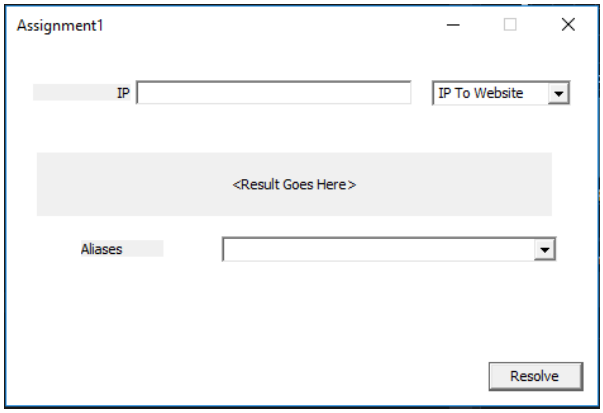


FIGURE 3c: Layout in Service To Port mode.

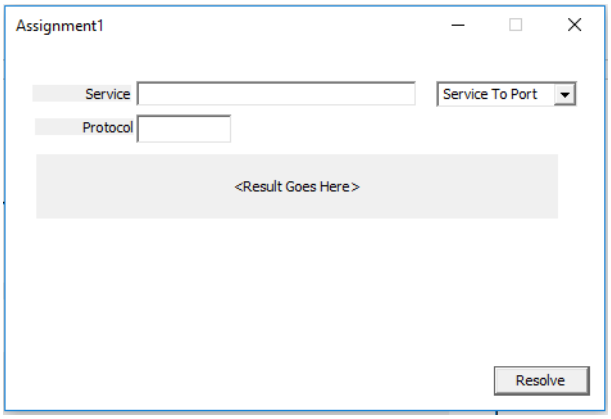
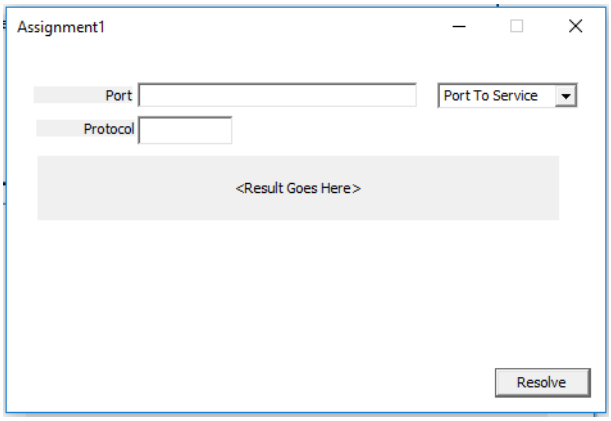


FIGURE 3d: Layout in Port To Service mode.



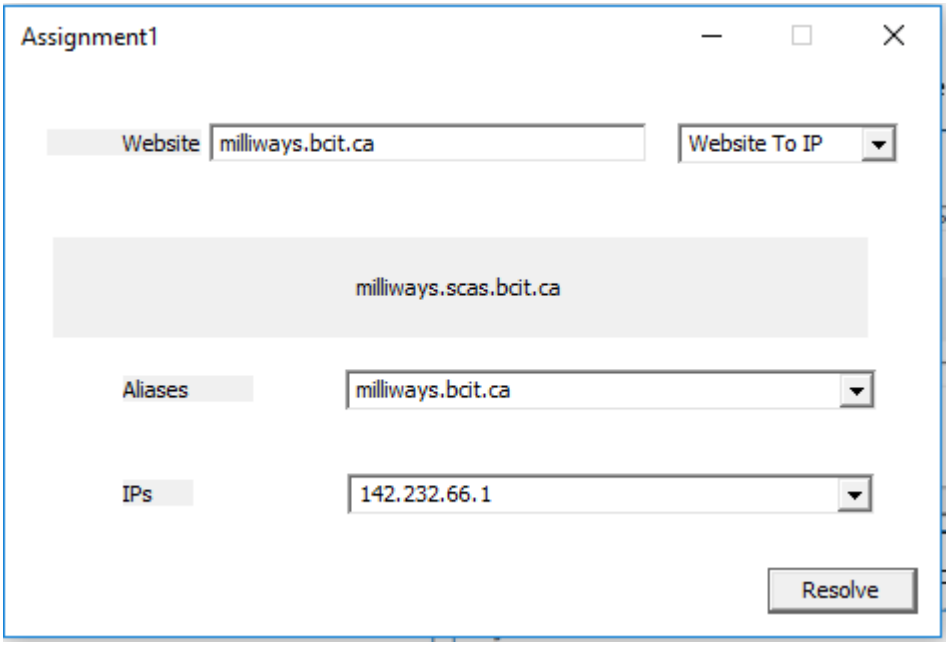
Test 4) Webhost Name Resolves to IP

Test Explanation: In Webhost name to IP mode, typing in an IP address should allow the user to resolve the webhosts main name, IP addresses and aliases. We can test this by entering the webhost name milliways.bcit.ca in Webhost to IP mode and click the resolve button.

Expected Output: The main label should say “milliways.scas.bcit.ca” as the main webhost, “milliways.bcit.ca” as the only alias and the IP address 142.232.66.1.

Result: **Passed**

FIGURE 4: Program output after resolving milliways.bcit.ca in Website To IP mode.



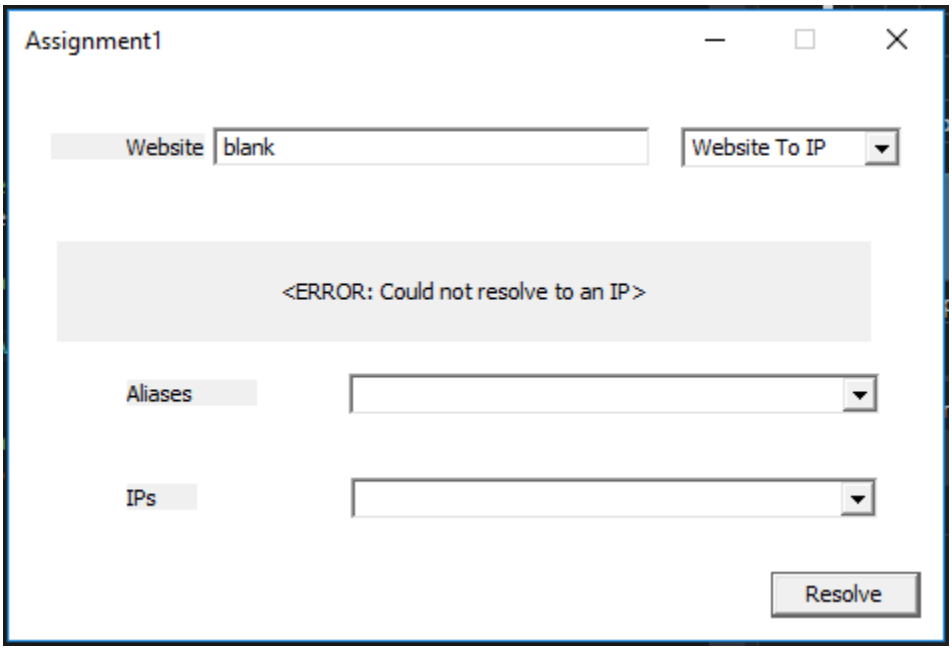
Test 5) Invalid Webhost Name Errors

Test Explanation: In Webhost name to IP mode, writing an invalid input displays an error message. We test this by entering an invalid webhost name, such as “blank” in Webhost to IP mode and then click resolve.

Expected Output: The main label should display an error stating it failed to resolve an IP address.

Result: **Passed**

FIGURE 5: Program output displaying an error when resolving an invalid website hostname.



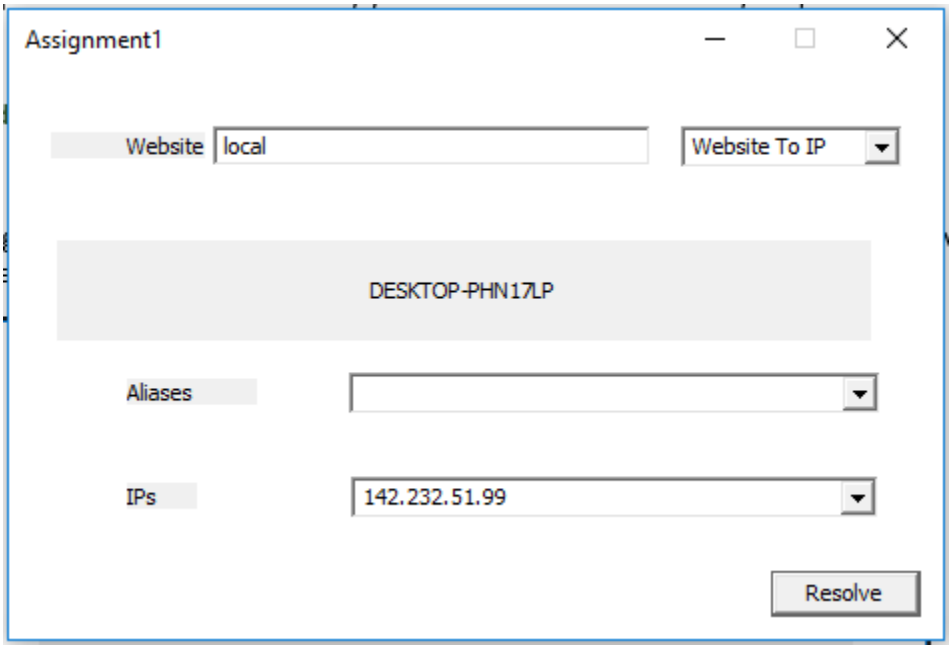
Test 6) Webhost “local” Resolves to Users Public IP

Test Explanation: In Webhost name to IP mode, writing the word “local” into the input box will resolve the hostname of your machine and your public IP address. We test this by entering “local” into the input box in Webhost Name to IP mode and click the resolve button.

Expected Output: The main label should say your local machines name and your public IP address.

Result: **Passed**

FIGURE 6: Program outputs the local computer name and the computers public IP upon resolving the webhost name “local”



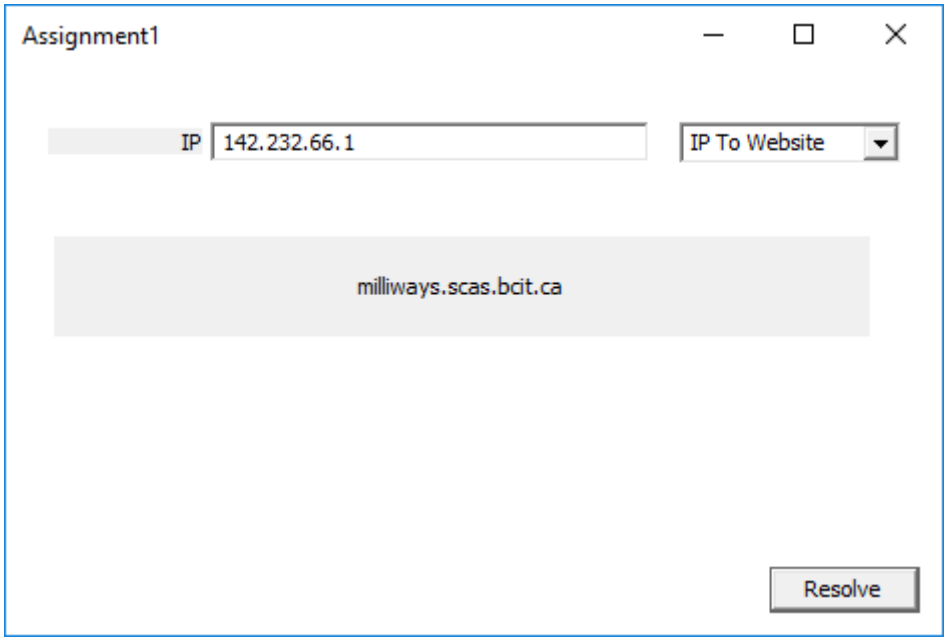
Test 7) IP Address Resolves

Test Explanation: In IP to webhost mode, entering in a valid dotted IP address will resolve to a website name. Test this in the screenshot below by entering the IP “142.232.61.1” in IP to Webhost mode and click the resolve button.

Expected Output: The webhost name displayed in the main label should be milliways.scas.bcit.ca.

Result: **Passed**

FIGURE 7: Program output



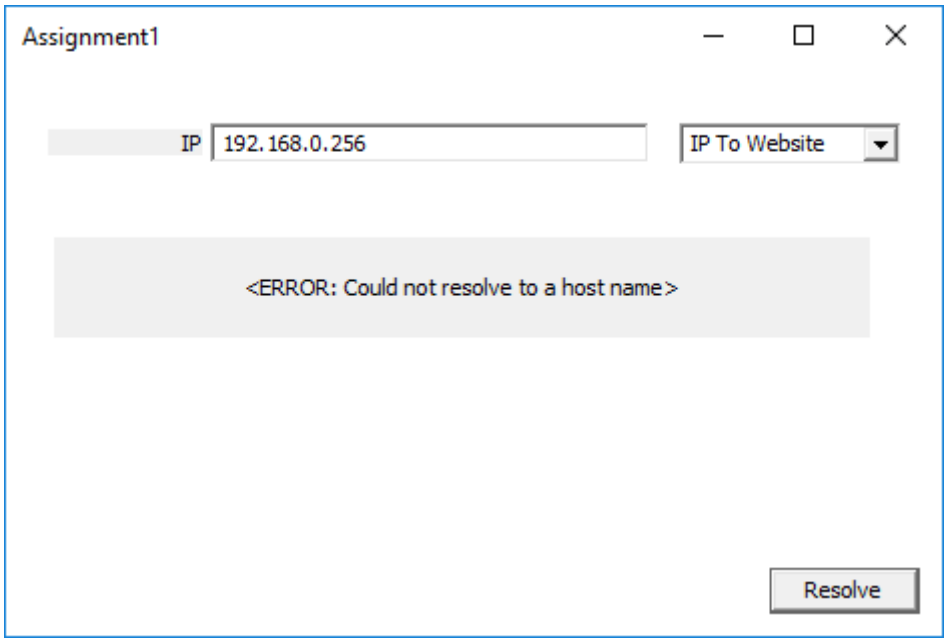
Test 8) IP to Webhost errors

Test Explanation: Entering an invalid IP address while in IP to Website mode will result in an error message being displayed stating that a host name could not be resolved. To test this in the screenshot below, we typed an IP address which cannot exist (as the last number is 256, outside the range of an IP digit) into our edit box. After clicking resolve, we should see the error message.

Expected Output: The appropriate error message was displayed.

Result: **Passed**

FIGURE 8: Program output after attempting to resolve an invalid IP address.



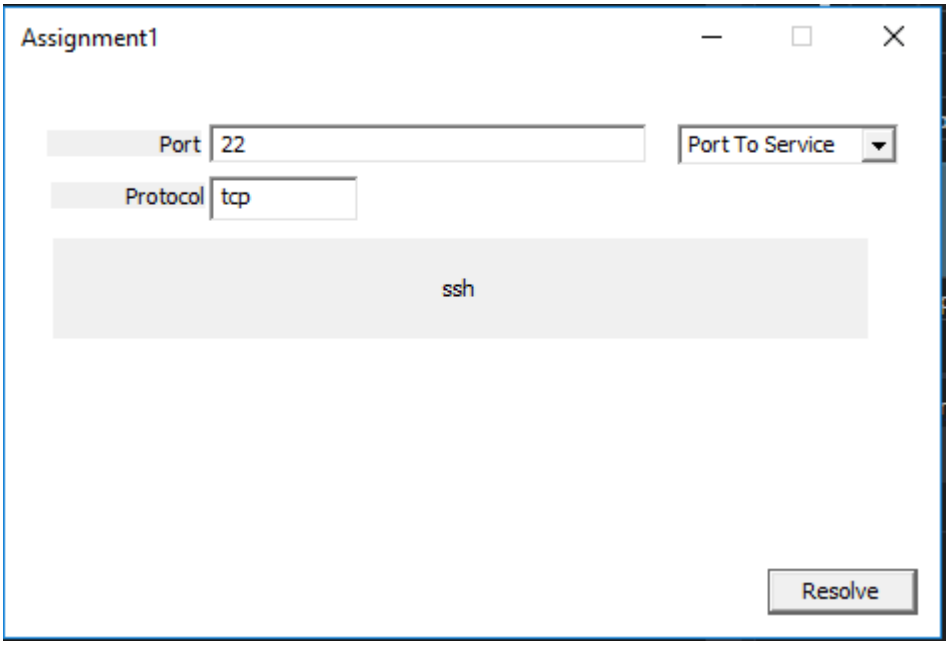
Test 9) Port & Protocol to Service Name Resolution

Test Explanation: In port to service mode, entering a valid port and protocol will resolve to the name of the service running on that port under the given protocol. We test this in Port to Service mode enter number 22 into the port edit box and enter “tcp” into the protocol box, then click resolve.

Expected Output: The main label should print the message “ssh”

Result: **Passed**

FIGURE 9: Program output



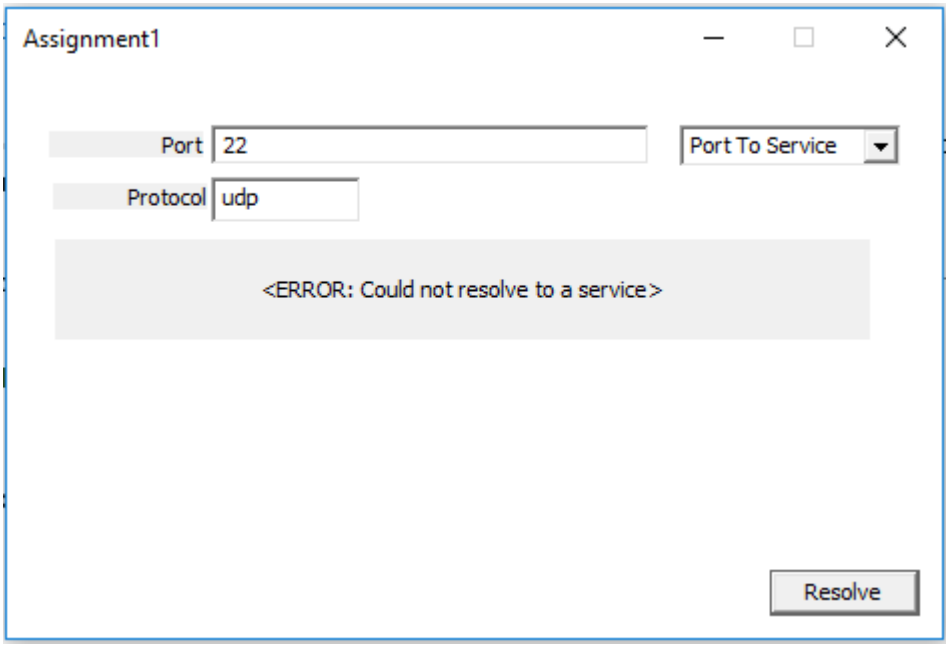
Test 10) Service Name Resolution Error

Test Explanation: In port to service mode, entering either an invalid port number or an invalid protocol name will result in an error message being displayed. We test this in the screenshot below by entering “22” as the port number and “udp” as the protocol.

Expected Output: An error message should be displayed in the main label stating it failed to resolve to a service name.

Result: **Passed**

FIGURE 10: Program output after attempting to resolve an invalid IP address.



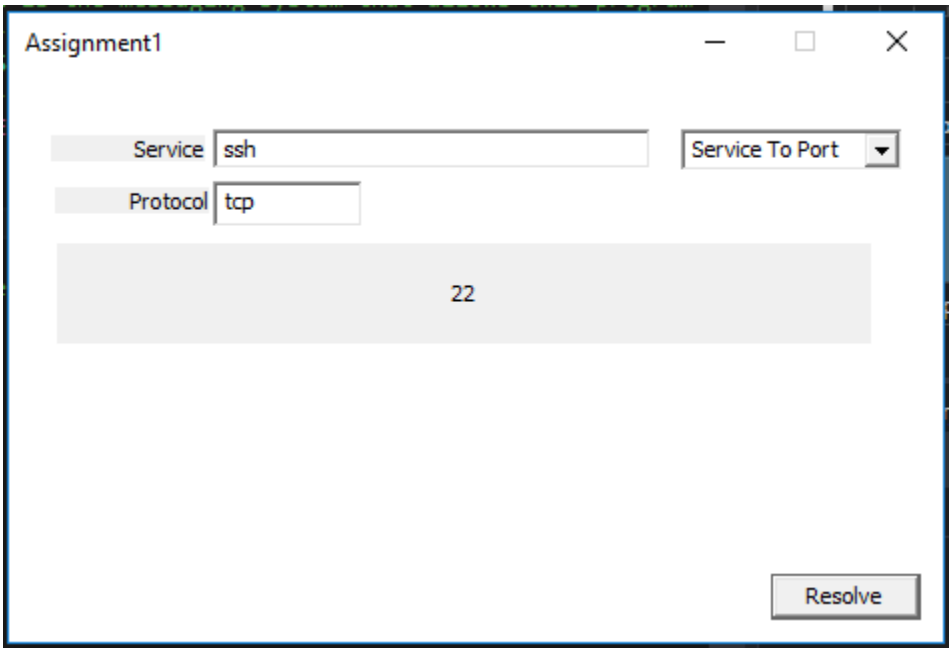
Test 11) Service Name & Protocol to Port Resolution

Test Explanation: In service to port mode, entering a valid service name along with the protocol it uses will resolve to the port that the service is being run on. We test this by in Service to Port mode we enter “ssh” as the service name and “tcp” as the protocol.

Expected Output: The main label should display 22

Result: **Passed**

FIGURE 10: Program output after resolving for a port number.



Test 12) Port Number Resolution Error

Test Explanation: In service to port mode, entering an invalid name, invalid protocol or an invalid combination of the two will result in an error being displayed. We test this by, in Service to Port mode, entering “ssh” for the service name and “udp” as the protocol. Afterwards we click the resolve button.

Expected Output: The main label should display an error message stating it failed to resolve to a port number.

Result: **Passed**

FIGURE 10: Program output failing to resolve a port number.