

**Name of Experiment:** Network Details

**Exp No:** MC9

**Background:** Student should have basic knowledge of C#.

**Summary:** Network Speed, Interface name, Interface state, Interface type and Characteristics are few things which we would like to know about the network through which we are connected.

**Learning Objective:** This experiment displays, most of the details about the network, and student now get to know how they will handle the different network services using these details.

**Target Platforms:** This experiment is tested on Windows Emulator and Nokia Lumia 800.

**Procedure:**

Step 1. Repeat steps [1-4] as in experiment no MC1[Refer Hello World].

Step 2. Add Reference to Microsoft.Phone.Net.NetworkInformation.

Step 3. Call the test\_Loaded method inside the MainPage constructor.

Step 4. Define the body of test\_Loaded method[Refer Source code section].

Step 5. Override the method IsNetworkAvailable and CellularMobileOperator.

Step 6. Save all the changes made to the project by pressing Ctrl+ Shift +S or Save all icon on the menu bar palette.

Step 7. Deploy the application by pressing debug option from the menu bar or F5.

Step 8. By this way, we are able to deploy this experiment on the Windows Emulator.

\*Note –For deploying the experiment on Windows Phone [Refer Deployment of the WP7 application on the Target Device]

Source Code	Comments
<pre> <b>MainPage.xaml</b>  &lt;!--LayoutRoot is the root grid where all page content is placed--&gt; &lt;Grid x:Name="LayoutRoot" ShowGridLines="True" Background="Transparent" Height="768" Width="480"&gt;   &lt;Grid.RowDefinitions&gt;     &lt;RowDefinition Height="168"/&gt;     &lt;RowDefinition Height="600*"/&gt;   &lt;/Grid.RowDefinitions&gt;    &lt;!--TitlePanel contains the name of the application and page title--&gt;   &lt;StackPanel x:Name="TitlePanel" Margin="12,17,0,8"&gt;     &lt;TextBlock x:Name="ExperimentTitle" Text="Exp No MC9" TextAlignment="Right" Style="{StaticResource PhoneTextNormalStyle}"/&gt;     &lt;TextBlock x:Name="ApplicationTitle" Text="Mobile Computing" Style="{StaticResource PhoneTextNormalStyle}"/&gt;     &lt;TextBlock x:Name="PageTitle" Text="Network Info" Margin="9,-7,0,0" Style="{StaticResource PhoneTextTitle1Style}"/&gt;   &lt;/StackPanel&gt;    &lt;!--ContentPanel - place additional content here--&gt;    &lt;Grid x:Name="ContentPanel" Grid.Row="1" Margin="12,20,12,0"&gt;&lt;/Grid&gt;    &lt;Grid ShowGridLines="False" Height="617" HorizontalAlignment="Left" Margin="12,0,0,0" Name="grid1" VerticalAlignment="Top" Width="468" Grid.Row="1"&gt;      &lt;Grid.RowDefinitions&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;       &lt;RowDefinition Height="Auto"/&gt;     &lt;/Grid.RowDefinitions&gt;      &lt;Grid.ColumnDefinitions&gt;       &lt;ColumnDefinition Width="*"/&gt;       &lt;ColumnDefinition Width="*"/&gt;     &lt;/Grid.ColumnDefinitions&gt;      &lt;TextBlock x:Name="txt1" Margin="20" Height="30" Grid.Row="0" Grid.Column="0" Text="Network Available" /&gt;     &lt;TextBlock x:Name="tbNetwork" Margin="20" Height="30" Grid.Row="0" Grid.Column="1" /&gt;     &lt;TextBlock x:Name="txt2" Margin="20" Height="30" Grid.Row="1" Grid.Column="0" Text="Cellular Operator"/&gt; </pre>	<p>← Exp No MC9(Experiment Title)</p> <p>← Mobile Computing(Application Title)</p> <p>← Network Info(Page Title)</p>

```

        <TextBlock x:Name="tbOperator" Margin="20"
Height="30" Grid.Row="1" Grid.Column="1"/>
        <TextBlock x:Name="txt3" Margin="20"
Height="30" Grid.Row="2" Grid.Column="0" Text="Bandwidth"/>
        <TextBlock x:Name="tbBandwidth" Margin="20"
Height="30" Grid.Row="2" Grid.Column="1"/>
        <TextBlock x:Name="txt4" Margin="20"
Height="30" Grid.Row="3" Grid.Column="0"
Text="Characteristics"/>
        <TextBlock x:Name="tbCharacter" Margin="20"
Height="30" Grid.Row="3" Grid.Column="1"/>
        <TextBlock x:Name="txt5" Margin="20"
Height="30" Grid.Row="4" Grid.Column="0"
Text="Description"/>
        <TextBlock x:Name="tbDescription" Margin="20"
Height="30" Grid.Row="4" Grid.Column="1"/>
        <TextBlock x:Name="txt6" Margin="20"
Height="30" Grid.Row="5" Grid.Column="0" Text="Interface
Name"/>
        <TextBlock x:Name="tbInterName" Margin="20"
Height="30" Grid.Row="5" Grid.Column="1"/>
        <TextBlock x:Name="txt7" Margin="20"
Height="30" Grid.Row="6" Grid.Column="0" Text="Interface
State"/>
        <TextBlock x:Name="tbInterState" Margin="20"
Height="30" Grid.Row="6" Grid.Column="1"/>
        <TextBlock x:Name="txt8" Margin="20"
Height="30" Grid.Row="7" Grid.Column="0"
Text="InterSubtype"/>
        <TextBlock x:Name="tbInterSub" Margin="20"
Height="30" Grid.Row="7" Grid.Column="1"/>
        <TextBlock x:Name="txt9" Margin="20,0,0,10"
Height="30" Grid.Row="8" Text="Interface Type"/>
        <TextBlock x:Name="tbInterType"
Margin="20,0,0,10" Height="30" Grid.Row="8"
Grid.Column="1"/>

    </Grid>

</Grid>

```

### MainPage.xaml.cs

```

using System.Linq;
using System.Windows;
using Microsoft.Phone.Controls;
using Microsoft.Phone.Net.NetworkInformation;

namespace Network_Info
{
    public partial class MainPage : PhoneApplicationPage
    {
        public MainPage()
        {
            InitializeComponent();
            Loaded += new RoutedEventHandler(test_Loaded);
        }

        public void test_Loaded(object sender,
RoutedEventArgs e)

```

← Add Reference for  
Microsoft.Phone.Net.Network  
Information

```

    {
        if (NetworkInterface.GetIsNetworkAvailable())
        {
            tbNetwork.Text = IsNetworkAvailable.ToString();
            tbOperator.Text = CellularMobileOperator.ToString();

            var allNetworks = (new
NetworkInterfaceList()).ToList();
            for (var i = 0; i < allNetworks.Count; i++)
            {
                var network = allNetworks.ElementAt(i);
                tbBandwidth.Text = network.Bandwidth.ToString();
                tbCharacter.Text = network.Characteristics.ToString();
                tbDescription.Text = network.Description;
                tbInterName.Text = network.InterfaceName;
                tbInterState.Text = network.InterfaceState.ToString();
                tbInterSub.Text = network.InterfaceSubtype.ToString();
                tbInterType.Text = network.InterfaceType.ToString();

            }
        }
        else { MessageBox.Show("No Network"); }
    }
    public static bool IsNetworkAvailable { get { return
DeviceNetworkInformation.IsNetworkAvailable; } }

    public static string CellularMobileOperator { get { return
DeviceNetworkInformation.CellularMobileOperator.ToString();
} }

}
}

```

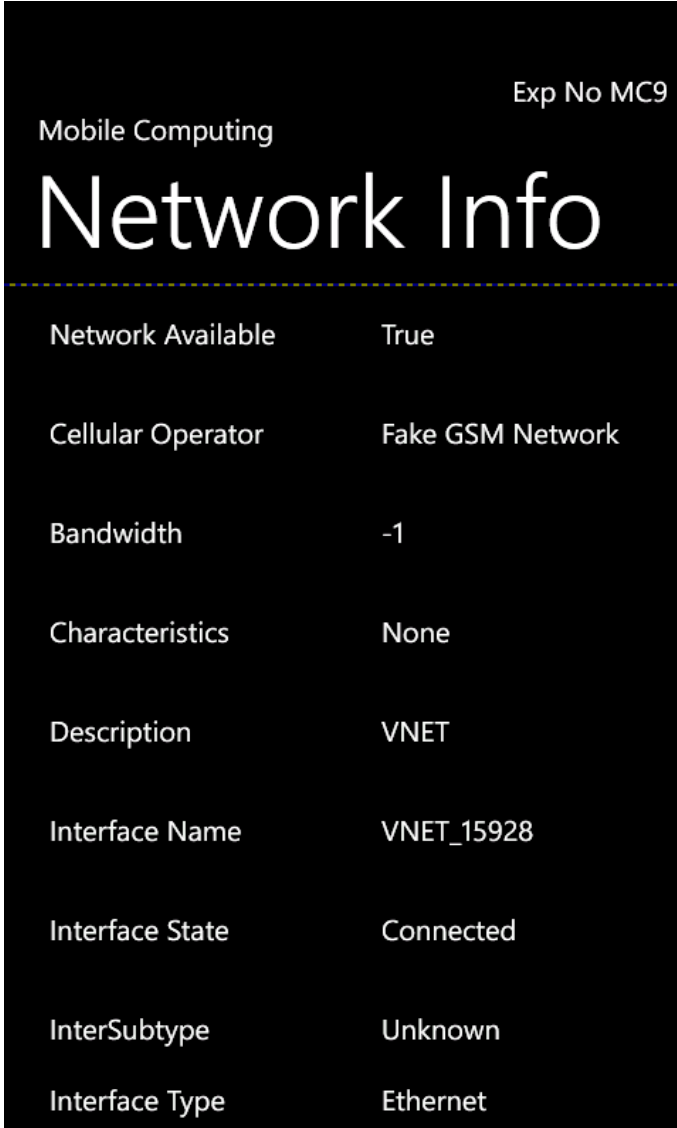
← check whether the GSM Network is Available.

← Display the Network Operator

← if Network is not available.

← overriding the methods

## Screenshots



The screenshot shows a mobile application interface with a black background and white text. At the top right, it says 'Exp No MC9'. Below that, 'Mobile Computing' is written. The main title 'Network Info' is prominently displayed in a large font. A dashed horizontal line separates the title from the data below. The data is presented in a list of key-value pairs:

Network Available	True
Cellular Operator	Fake GSM Network
Bandwidth	-1
Characteristics	None
Description	VNET
Interface Name	VNET_15928
Interface State	Connected
InterSubtype	Unknown
Interface Type	Ethernet

Fig no. 1 Network Information

**Observations:** It is observe that using this experiment, all network related characteristics would be explored.