

**Name of Experiment:** Display Coordinates(X, Y) for Touch Event.

**Exp No:** WP9

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

**Summary:** This experiment is related to Gesture Services using Gesture listener for single touch event on the mobile screen. It is very important to understand at which pixel coordinates we are tapping. This experiment is quite helpful in getting the exact pixel coordinate(x, y) value during touch/tap process.

**Learning Objective:** To learn the process of accessing the coordinates(x, y) for each touch/ tap on the screen.

**Target Platforms:** This application is tested on Windows Phone Emulator or Windows Phone (Lumia 800).

**Procedure:**

Step1. Repeat the steps [1-6] as in experiment no WP1 title “Hello World”.

Step2. Now, add reference -> Microsoft.Phone.Controls.Toolkit.[Refer fig. no 2,3]

Step3. Add `xmlns:toolkit="clr-namespace:Microsoft.Phone.Controls;assembly=Microsoft.Phone.Controls.Toolkit"` in the MainPage.xaml.

Step4. Now, inside the grid or stack panel call the toolkit tag as  
`<toolkit:GestureService.GestureListener><toolkit:GestureListener Tap="GestureListener_Tap"/> </toolkit:GestureService.GestureListener>`

Step5. Add the canvas tag `<Canvas x:Name="viewfinderCanvas" ><Canvas.Background> Now add Video Brush as <VideoBrush x:Name="videoBrush"/></CanvasBackground><TextBlock x:Name="focusBracket" Text="*" FontSize=48 Visibility="Collapsed"/></Canvas>`[Refer fig. on 1]

Step6. Now, define the body for Tap event GestureListener\_Tap .[Refer Source code section]

Step7. Save all changes, made to the experiment.

Step8. Press F5, for debugging the application on the Windows Phone Emulator. [Refer fig. no 4,5,6]

Source Code	Comments
<pre> <b>MainPage.xaml</b> &lt;phone: PhoneApplicati onPage   x: Class="WP9. MainPage"   xmlns="http://schemas.microsoft.com/winf/x/2006/xaml/presentation"   xmlns:x="http://schemas.microsoft.com/winf/x/2006/xaml"   xmlns:phone="clr- namespace: Microsoft. Phone. Control s; assembly=Microsoft. Phone"   xmlns:shell="clr- namespace: Microsoft. Phone. Shell ; assembly=Microsoft. Phone"   xmlns:toolkit="clr- namespace: Microsoft. Phone. Control s; assembly=Microsoft. Phone. Control s. Tool okit"   xmlns:d="http://schemas.microsoft.com/expressi on/bl end/2008"   xmlns:mc="http://schemas.openxml Formats. org/markup- compatibi lity/2006"   mc: Ignorabl e="d" d: Desi gnWid th="480" d: Desi gnHei ght="800"   FontFami ly="{Stati cResource PhoneFontFami lyNormal}"   FontSi ze="{Stati cResource PhoneFontSi zeNormal}"   Foreground="{Stati cResource PhoneForegroundBrush}"   SupportedOri entati ons="Portrai t" Ori entati on="Portrai tDown"   shell : SystemTray. IsVi si bl e="Fal se"&gt;    &lt;!--LayoutRoot is the root grid where all page content is placed--&gt;   &gt;   &lt;Grid x: Name="LayoutRoot" Background="Transparent"&gt;     &lt;Grid. RowDefi ni ti ons&gt;       &lt;RowDefi ni ti on Hei ght="640"/&gt;       &lt;RowDefi ni ti on Hei ght="480"/&gt;     &lt;/Grid. RowDefi ni ti ons&gt;      &lt;toolkit: GestureServi ce. GestureLi stener&gt;       &lt;toolkit: GestureLi stener         Tap="GestureLi stener_Tap"         Hol d="GestureLi stener_Hol d"/&gt;     &lt;/toolkit: GestureServi ce. GestureLi stener&gt;     &lt;Canvas x: Name="vi ewfi nderCanvas" Margi n="12, 0"&gt;       &lt;Canvas. Background&gt;         &lt;Vi deoBrush x: Name="vi deoBrush" /&gt;       &lt;/Canvas. Background&gt;       &lt;TextBl ock x: Name="focusBracket" Text="** FontSi ze="48" Vi si bi lity="Coll apsed" /&gt;     &lt;/Canvas&gt;     &lt;!--ContentPanel - place additi onal content here--&gt;     &lt;Grid x: Name="ContentPanel " Margi n="-1, 340, 25, 300" Grid. RowSpan="2"&gt;       &lt;TextBl ock Name="txtDebug" FontSi ze="20" Margi n="10, 422, 13, 15" /&gt;     &lt;/Grid&gt;    &lt;/Grid&gt;  &lt;/phone: PhoneApplicati onPage&gt; <b>MainPagexaml.cs</b> usi ng Microsoft. Phone. Control s; usi ng System. Wi ndows; usi ng System. Wi ndows. Control s; usi ng System; </pre>	<p>← Using Add reference</p> <p>← Using reference Microsoft.Phone.Co ntrol.Toolkit</p>

```

namespace WP9
{
    public partial class MainPage : PhoneApplicationPage
    {
        // Constructor
        public MainPage()
        {
            InitializeComponent();
            MessageBox.Show("Please Tap on the Screen to get the Pixel
Coordinates");
        }

        private void GestureListener_Tap(object sender,
Microsoft.Phone.Controls.GestureEventArgs e)
        {
            try
            {
                Point tapLocation = e.GetPosition(viewfinderCanvas);
                if (tapLocation != null)
                {
                    focusBracket.SetValue(Canvas.LeftProperty,
tapLocation.X);
                    focusBracket.SetValue(Canvas.TopProperty,
tapLocation.Y);

                    double tapX = tapLocation.X;
                    double tapY = tapLocation.Y;
                    focusBracket.Visibility = Visibility.Visible;

                    this.Dispatcher.BeginInvoke(delegate()
                    {
                        this.txtDebug.Text = string.Format("Tapping
Coordinates are X={0:N2}, Y={1:N2}", tapX, tapY);
                    });
                }
            }
            catch (Exception error){
                this.Dispatcher.BeginInvoke(delegate()
                {
                    txtDebug.Text = error.Message;
                });
            }
        }
    }
}

```

← MessageBox to show the message for user.

←GestureListener\_Tap event handler

← to get the coordinates(x, y) of the viewfindercanvas.

← display the coordinates value in terms of X, Y for each pixel on the screen.

←Exception message

## Screenshots



Fig. no1 UI design

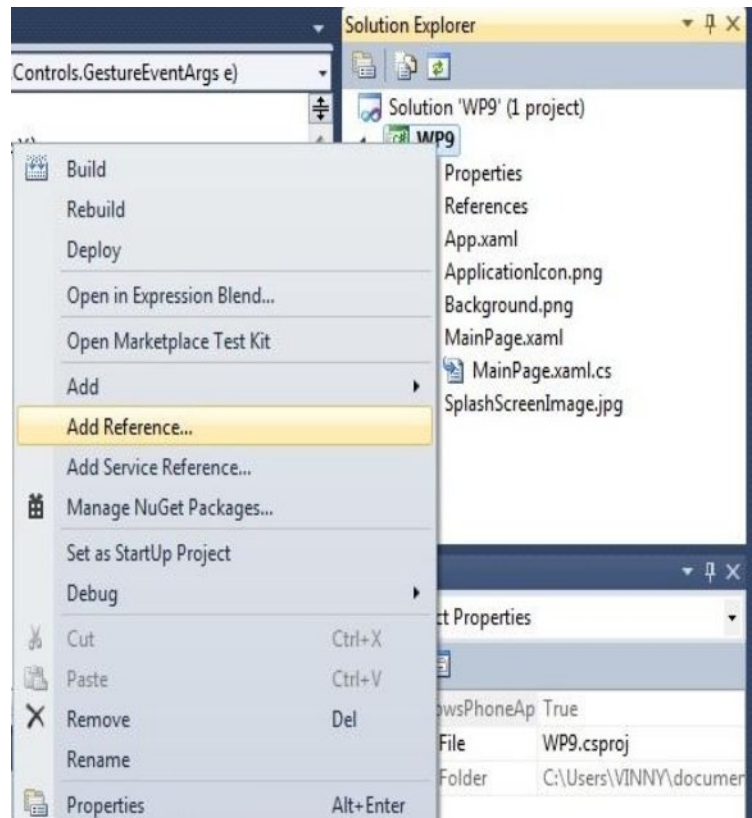


Fig. no 2 Adding reference

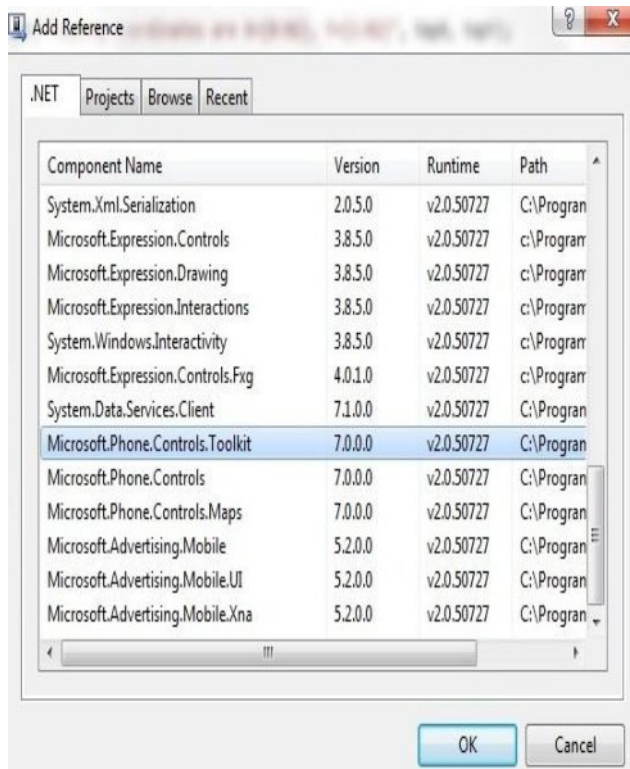


Fig. no 3 Adding Microsoft.Phone.Controls.Toolkit

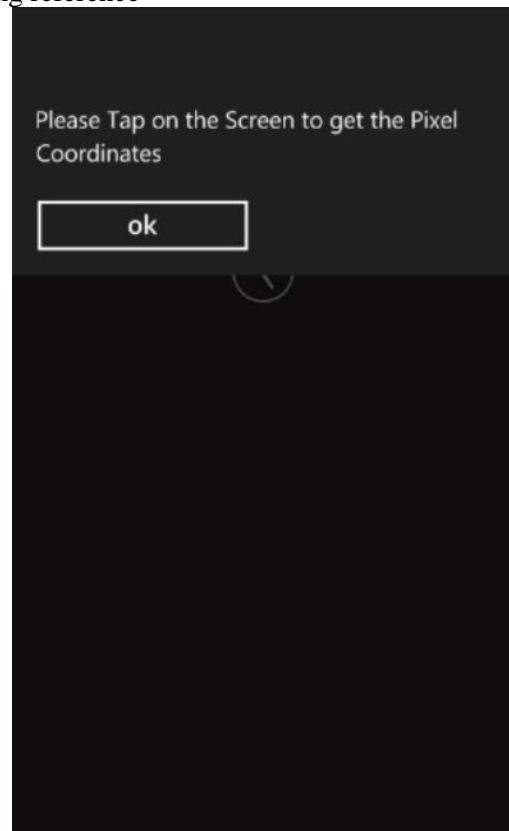


Fig. no 4 Running on Windows Emulator

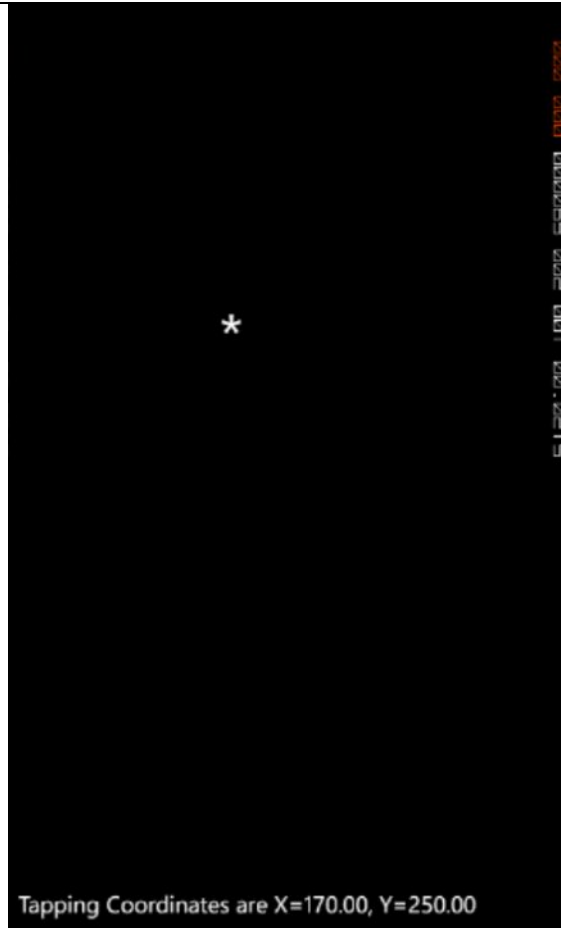


Fig. no 5 Display the Coordinates of the tap location

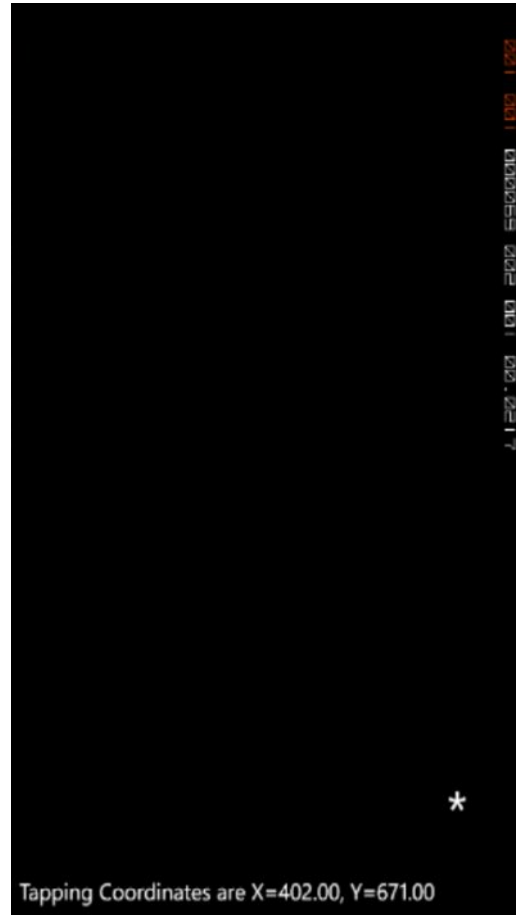


Fig. no 6 Display the Coordinates at other point

**Observations:** It is observed that this experiment is quite useful in the game development process.