Validation Cases for Android
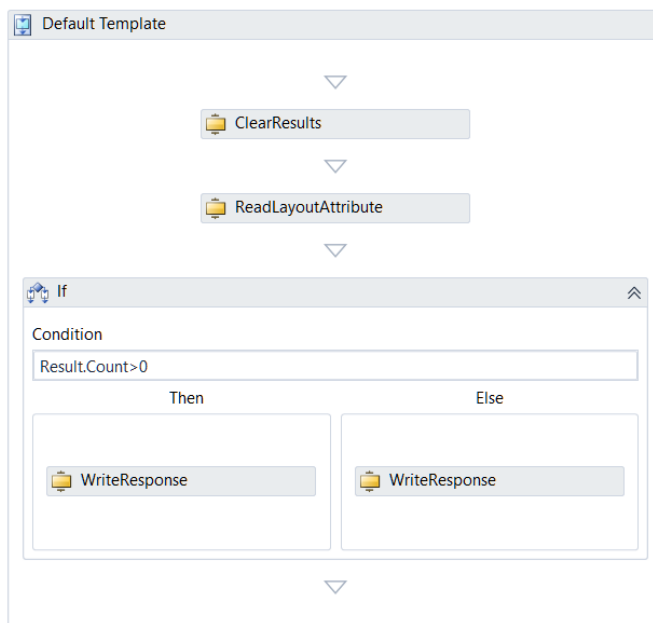
This document list the usability guidelines used by the Umetrix tool for validation purpose, details of the validation cases created for testing along with the validation XML. The <mark>highlighted</mark> text in validation XML are the main code patterns which we are looking into the mobile app to detect the presence of a guideline.

1. **First-time user has multiple sign-up options (e.g.,username / password and social sign-up facebook.com, google, twitter).** Users should be presented with multiple sign-up options, such as username / email and password, and social sign-up. Because, while some users may prefer the faster approach of social sign-up (e.g. via G+, Facebook or Twitter), others may prefer to keep their different social profiles separate, and others again may not even be consumers of social networks.

   Steps required to validate complete guideline: To validate the presence of this guideline we need to check the presence of three most popular social media logins i.e. Facebook, Google and Twitter.

   a) **Check presence of Facebook login button**: Below is screenshot of validation case to check the presence of Facebook button. As per [facebook guideline](#) to add a facebook in Android there a specific way to add a button "<com.facebook.login.widget.LoginButton />" in Activity XML. To write a validation case all we need to check the presence of this specific button XML.

Validation case XML generated which checks the presence of "com.facebook.login.widget.LoginButton" in XML

```
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
```

```xml
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:scg3="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="ControlIdList"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="CheckFacebookLogin"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22" Result="[ControlIdList]"
XPath="//com.facebook.login.widget.LoginButton" />
    <If Condition="[ControlIdList.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Facebook button present" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Facebook button not present" />
      </If.Else>
    </If>
  </Sequence>
</Activity>
```

b) **Check presence of twitter login button**: similar to above facebook button detection logic, we will look for twitter button XML i.e. "<com.twitter.sdk.android.core.identity.TwitterLoginButton />".

```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="ControlIdList"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22" Result="[ControlIdList]"
XPath="//com.twitter.sdk.android.core.identity.TwitterLoginButton" />
    <If Condition="[ControlIdList.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Twitter button is present" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Twitter button is not present" />
      </If.Else>
    </If>
  </Sequence>
```

```
</Activity>
```

c) **Check presence of Google login button:** similar to above facebook button detection logic, we will look for google button XML i.e. "<com.google.android.gms.common.SignInButton />".

```
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:scg3="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="ControlIdList"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Check Twitter Login Button"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22" Result="[ControlIdList]"
XPath="//com.google.android.gms.common.SignInButton" />
    <If Condition="[ControlIdList.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Google Sign In button present" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Google Sign In button not present" />
```
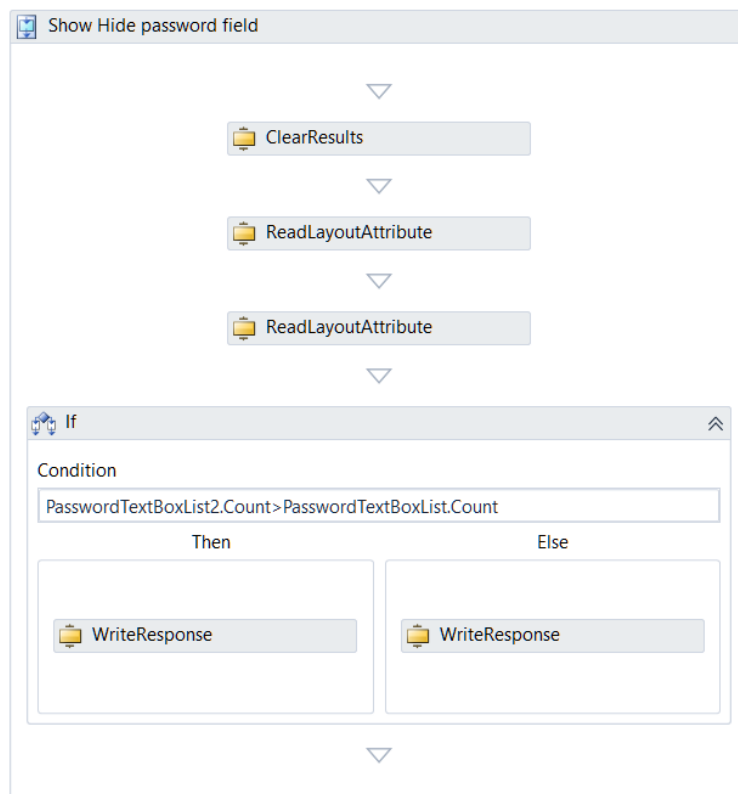
```
        </If.Else>
      </If>
    </Sequence>
</Activity>
```

2. **User can select to reveal or hide password as they type, during signup or sign-in.** Give users the option to quickly select a toggle control that reveals - or hides - their password as they type. This will reduce password input mistakes, during sign-up and sign-in.


```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"
```
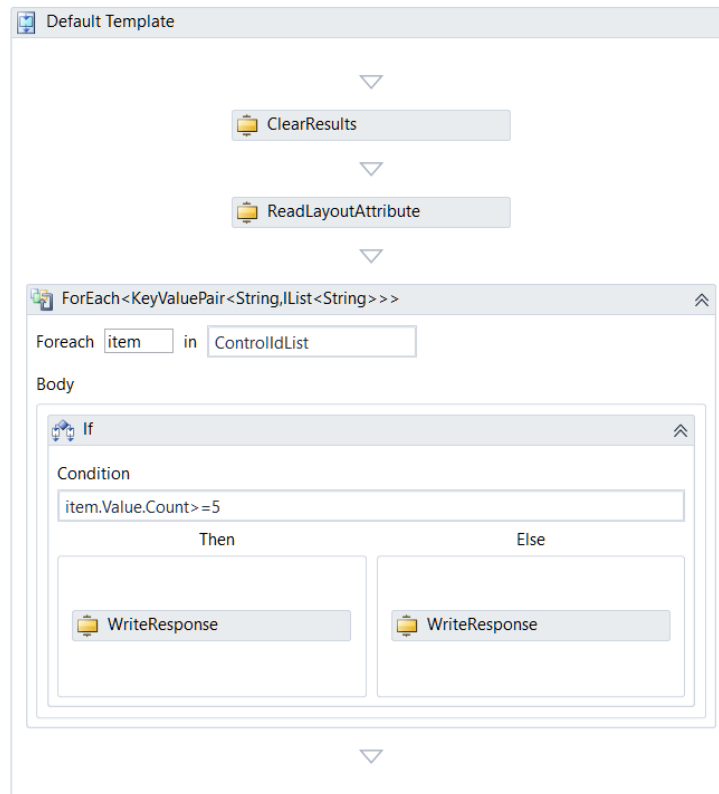
```xml
xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:scg3="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="PasswordTextBoxList"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
    <x:Property Name="PasswordTextBoxList2"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,553</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Show Hide password field"
sap:VirtualizedContainerService.HintSize="486,513">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22"
Result="[PasswordTextBoxList]"
XPath="//android.support.design.widget.TextInputLayout/EditText[@android:inpu
tType='textPassword']" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22"
Result="[PasswordTextBoxList2]"
XPath="//EditText[@android:inputType='textPassword']" />
    <If Condition="[PasswordTextBoxList.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <sap:WorkflowViewStateService.ViewState>
        <scg:Dictionary x:TypeArguments="x:String, x:Object">
          <x:Boolean x:Key="IsExpanded">True</x:Boolean>
          <x:Boolean x:Key="IsPinned">False</x:Boolean>
        </scg:Dictionary>
      </sap:WorkflowViewStateService.ViewState>
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText=" User is able to show/hide passwords" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="User will not be able to use show/hide
password option decorate password fields with
android.support.design.widget.TextInputLayout" />
      </If.Else>
    </If>
  </Sequence>
```

```
</Activity>
```

3. **Do not ask for too many inputs from user.**


```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System.Core"
```
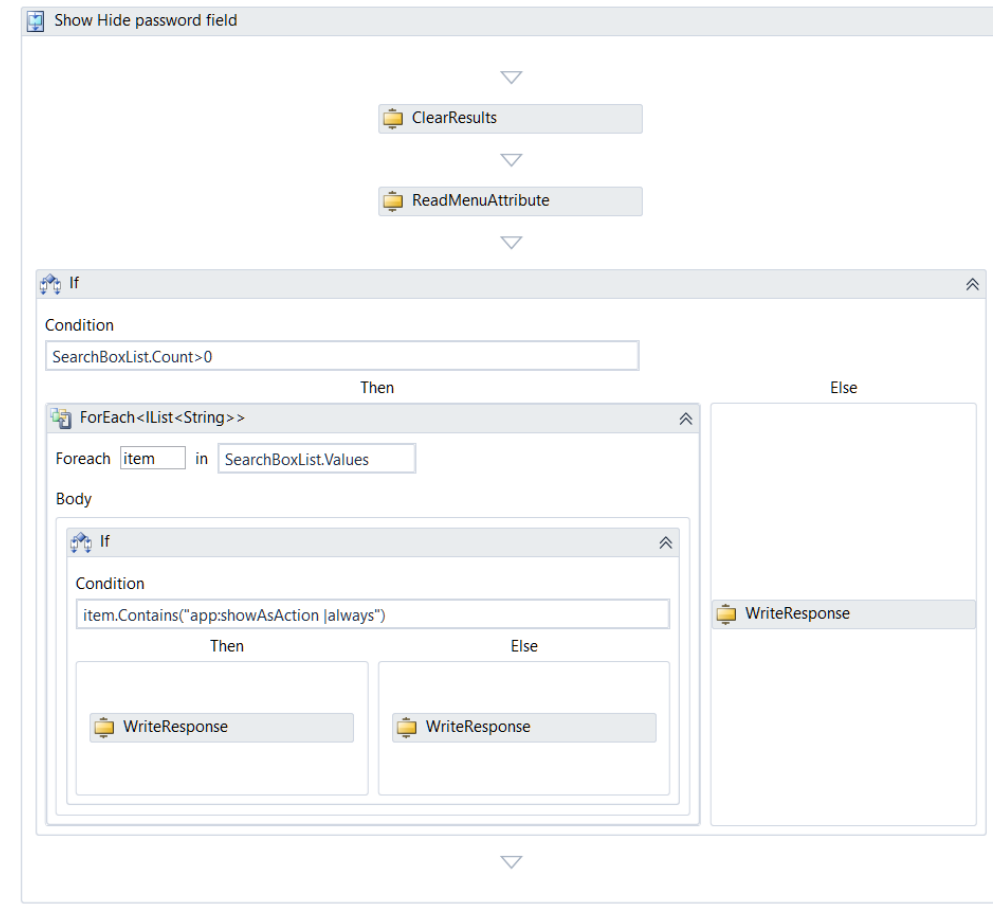
```xml
  xmlns:scg3="clr-namespace:System.Collections.Generic;assembly=System"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
   <x:Members>
     <x:Property Name="ControlIdList"
Type="InOutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
     <x:Property Name="argument1" Type="InArgument(x:String)" />
   </x:Members>

<sap:VirtualizedContainerService.HintSize>556,596</sap:VirtualizedContainerSe
rvice.HintSize>
   <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
   <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="516,556">
     <sap:WorkflowViewStateService.ViewState>
       <scg:Dictionary x:TypeArguments="x:String, x:Object">
         <x:Boolean x:Key="IsExpanded">True</x:Boolean>
       </scg:Dictionary>
     </sap:WorkflowViewStateService.ViewState>
     <a:ClearResults sap:VirtualizedContainerService.HintSize="494,22" />
     <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="494,22" Result="[ControlIdList]"
XPath="//EditText" />
     <ForEach x:TypeArguments="scg:KeyValuePair(x:String,
scg:IList(x:String))" sap:VirtualizedContainerService.HintSize="494,308"
Values="[ControlIdList]">
       <sap:WorkflowViewStateService.ViewState>
         <scg:Dictionary x:TypeArguments="x:String, x:Object">
           <x:Boolean x:Key="IsExpanded">True</x:Boolean>
           <x:Boolean x:Key="IsPinned">False</x:Boolean>
         </scg:Dictionary>
       </sap:WorkflowViewStateService.ViewState>
       <ActivityAction x:TypeArguments="scg:KeyValuePair(x:String,
scg:IList(x:String))">
         <ActivityAction.Argument>
           <DelegateInArgument x:TypeArguments="scg:KeyValuePair(x:String,
scg:IList(x:String))" Name="item" />
         </ActivityAction.Argument>
         <If Condition="[item.Value.Count&gt;=5]"
sap:VirtualizedContainerService.HintSize="464,203">
           <If.Then>
             <a:WriteResponse
sap:VirtualizedContainerService.HintSize="200,22" IsPassed="False"
ResponseText="[item.Key + &quot; contains more than 5 text boxes&quot;]" />
           </If.Then>
           <If.Else>
             <a:WriteResponse
sap:VirtualizedContainerService.HintSize="200,22" IsPassed="True"
ResponseText="[item.Key + &quot; contains less than 5 text boxes&quot;]" />
           </If.Else>
         </If>
       </ActivityAction>
     </ForEach>
   </Sequence>
</Activity>
```

4. **If the search tool is inside the navigation menu, place it at the very top of that menu.** Most people are used to search being in a prominent place such as the top of the screen; if they don't find it quickly, they may assume it does not exist on that site or in that app.
5. **The length of the search box should be the largest possible size that will fit on the screen.** This guideline replicates the more general one (see guideline 60) for resizing textboxes in forms. Refer to the discussion for that guideline.


```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"
```

```xml
xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:scg3="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="PasswordTextBoxList2"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
    <x:Property Name="SearchBoxList"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>781,699</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Show Hide password field"
sap:VirtualizedContainerService.HintSize="741,659">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="719,22" />
    <a:ReadMenuAttribute AttributesToRead="app:showAsAction"
sap:VirtualizedContainerService.HintSize="719,22" Result="[SearchBoxList]"
XPath="//item[@app:actionViewClass='android.support.v7.widget.SearchView']"
/>
    <If Condition="[SearchBoxList.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="719,411">
      <sap:WorkflowViewStateService.ViewState>
        <scg:Dictionary x:TypeArguments="x:String, x:Object">
          <x:Boolean x:Key="IsExpanded">True</x:Boolean>
          <x:Boolean x:Key="IsPinned">False</x:Boolean>
        </scg:Dictionary>
      </sap:WorkflowViewStateService.ViewState>
      <If.Then>
        <ForEach x:TypeArguments="scg:IList(x:String)"
sap:VirtualizedContainerService.HintSize="494,308"
Values="[SearchBoxList.Values]">
          <ActivityAction x:TypeArguments="scg:IList(x:String)">
            <ActivityAction.Argument>
              <DelegateInArgument x:TypeArguments="scg:IList(x:String)"
Name="item" />
            </ActivityAction.Argument>
            <If Condition="[item.Contains(&quot;app:showAsAction
|always&quot;)]" sap:VirtualizedContainerService.HintSize="464,203">
              <If.Then>
                <a:WriteResponse
sap:VirtualizedContainerService.HintSize="200,22" IsPassed="True"
ResponseText="Search box is present on top of the menu" />
              </If.Then>
              <If.Else
```

```xml
                    <a:WriteResponse
sap:VirtualizedContainerService.HintSize="200,22" IsPassed="False"
ResponseText="Search Box is not present on top of the menu" />
                </If.Else>
              </If>
            </ActivityAction>
          </ForEach>
      </If.Then>
      <If.Else>
          <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Not Applicable" />
      </If.Else>
    </If>
  </Sequence>
</Activity>
```
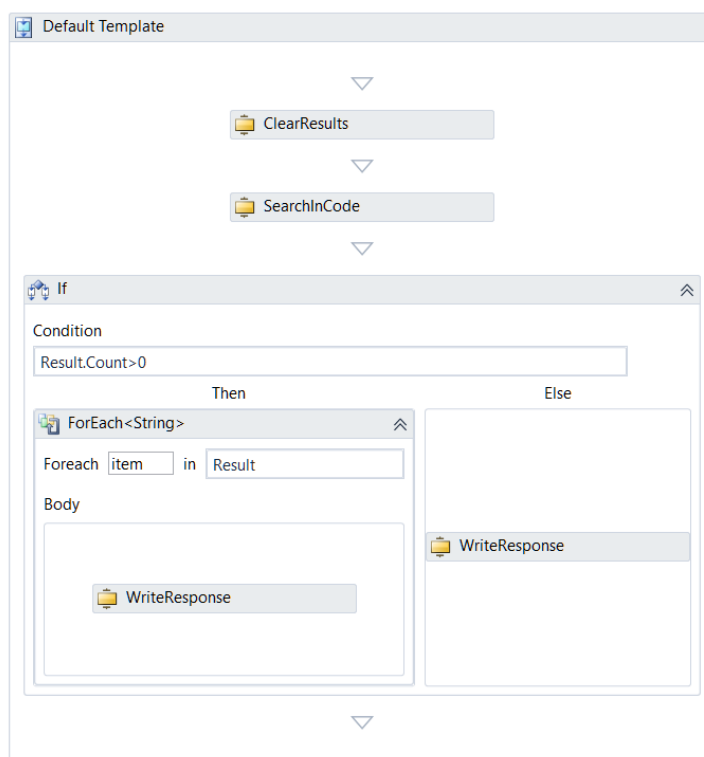
6. **User can easily filter search results. We often see mobile users become disoriented and lose sense of context.** When there are multiple search boxes, each of them implementing a different type of search, users may confuse one with the other. First, they may not even see all the search boxes at a time, and second, they may not read carefully the descriptions of any of them.


```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
```

```xml
  xmlns:s="clr-namespace:System;assembly=mscorlib"
  xmlns:s1="clr-namespace:System;assembly=System"
  xmlns:s2="clr-namespace:System;assembly=System.Core"
  xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
  xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
  xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
  xmlns:scg1="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
  xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System.Core"
  xmlns:scg3="clr-namespace:System.Collections.Generic;assembly=System"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="Result" Type="OutArgument(scg:IList(x:String))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>569,596</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="529,556">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="507,22" />
    <a:SearchInCode sap:VirtualizedContainerService.HintSize="507,22"
Result="[Result]" SearchText="setOnQueryTextListener(new
XX.OnQueryTextListener(){ \n getFilter().filter" />
    <If Condition="[Result.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="507,308">
      <If.Then>
        <ForEach x:TypeArguments="x:String"
sap:VirtualizedContainerService.HintSize="282,205" Values="[Result]">
          <ActivityAction x:TypeArguments="x:String">
            <ActivityAction.Argument>
              <DelegateInArgument x:TypeArguments="x:String" Name="item" />
            </ActivityAction.Argument>
            <a:WriteResponse
sap:VirtualizedContainerService.HintSize="200,22" IsPassed="True"
ResponseText="[&quot; Code is present which is required to filter search
results in file &quot; + item]" />
          </ActivityAction>
        </ForEach>
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="N/A  Code is not present which is required to
filter search results" />
      </If.Else>
    </If>
```
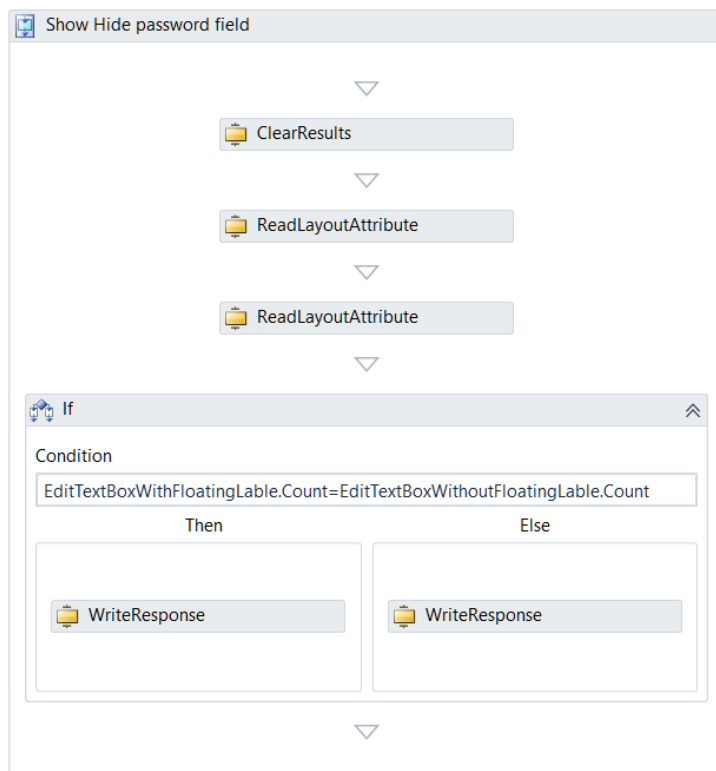
```
        </Sequence>
    </Activity>
```

7. **Form labels are either above form fields or are floating labels (in Android).** Form labels should be above form fields so that users can easily see what they are filling in and why. Form fields to the side greatly reduce the space available for the fields. Form field descriptions within the field disappear once text entry begins and if a user is then distracted they may not remember what they need to complete later. In Android, instead of putting form labels above fields, a floating inline label can be used, e.g. when a user engages with a text input field it causes the label to move and float above the field, so as to guide the user whilst entering data.


```
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"
```
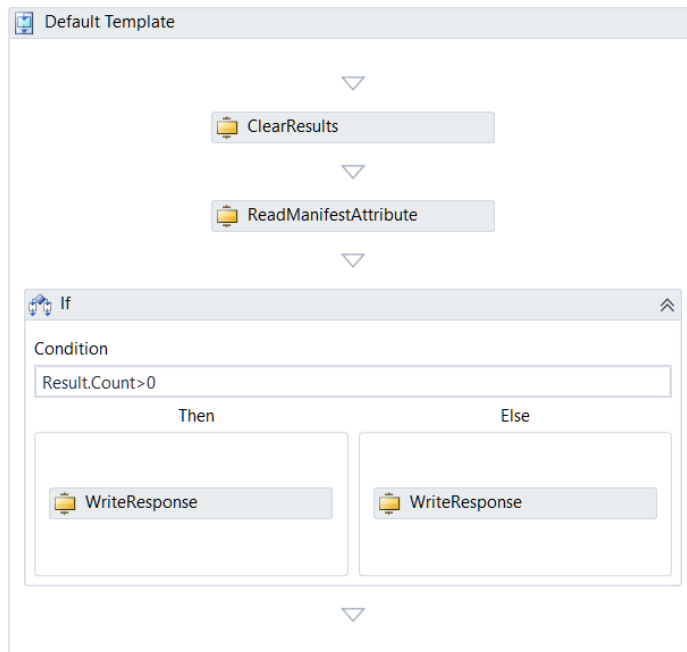
```xml
xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:scg3="clr-
namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="EditTextBoxWithFloatingLable"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
    <x:Property Name="EditTextBoxWithoutFloatingLable"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,553</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Show Hide password field"
sap:VirtualizedContainerService.HintSize="486,513">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22"
Result="[EditTextBoxWithFloatingLable]"
XPath="//android.support.design.widget.TextInputLayout/EditText" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22"
Result="[EditTextBoxWithoutFloatingLable]" XPath="//EditText" />
    <If
Condition="[EditTextBoxWithFloatingLable.Count=EditTextBoxWithoutFloatingLabl
e.Count]" sap:VirtualizedContainerService.HintSize="464,203">
      <sap:WorkflowViewStateService.ViewState>
        <scg:Dictionary x:TypeArguments="x:String, x:Object">
          <x:Boolean x:Key="IsExpanded">True</x:Boolean>
          <x:Boolean x:Key="IsPinned">False</x:Boolean>
        </scg:Dictionary>
      </sap:WorkflowViewStateService.ViewState>
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText=" All text box fields have floating lables" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Some of the fields are not decorated with
android.support.design.widget.TextInputLayout which is required to make them
a floating lable" />
      </If.Else>
    </If>
  </Sequence>
</Activity>
```

8. **When app crashes it re-starts and returns the user to the last screen used(to continue where they left off).** In the event of an app crash, ensure it restarts and returns its state to the last screen used, so that the user can continue where they left off - especially if their journey involved entering data and required effort. Don't require users to re-enter data.


```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="Result" Type="OutArgument(scg:IList(x:String))" />
  </x:Members>
```

```xml
<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadManifestAttribute AttributeToRead="android:alwaysRetainTaskState"
sap:VirtualizedContainerService.HintSize="464,22" Result="[Result]"
XPath="//activity[@android:alwaysRetainTaskState='true']" />
    <If Condition="[Result.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Your app is using
android:alwaysRetainTaskState" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Your app is not using
android:alwaysRetainTaskState" />
      </If.Else>
    </If>
  </Sequence>
</Activity>
```
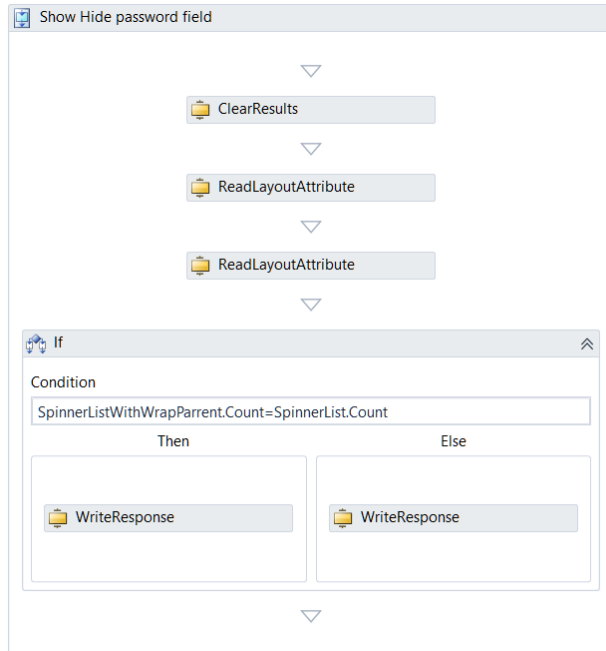
9. **Minimize scrolling in a drop-down box by using the whole screen to display long lists of options.**
   Unlike on Android and Windows Phone, on iOS drop-downs take only half the screen space. Scrolling through screens and screens of information in a tiny window is painful already; doing it in a window half the screen size is twice as painful. If you have a long list (for instance, US states, countries, years), instead of using a drop-down, consider displaying it in-situ or on a separate page.

```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:s3="clr-namespace:System;assembly=System.ServiceModel"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentation"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:scg3="clr-namespace:System.Collections.Generic;assembly=System.ServiceModel"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="SpinnerListWithWrapParrent"
Type="OutArgument(scg:Dictionary(x:String, scg:IList(x:String)))" />
    <x:Property Name="SpinnerList" Type="OutArgument(scg:Dictionary(x:String,
scg:IList(x:String)))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,553</sap:VirtualizedContainerService.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
```

```xml
  <Sequence DisplayName="Show Hide password field"
sap:VirtualizedContainerService.HintSize="486,513">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22"
Result="[SpinnerListWithWrapParrent]"
XPath="//Spinner[@android:layout_height='wrap_content']" />
    <a:ReadLayoutAttribute AttributesToRead="android:id"
sap:VirtualizedContainerService.HintSize="464,22" Result="[SpinnerList]"
XPath="//Spinner" />
    <If Condition="[SpinnerListWithWrapParrent.Count=SpinnerList.Count]"
sap:VirtualizedContainerService.HintSize="464,203">
      <sap:WorkflowViewStateService.ViewState>
        <scg:Dictionary x:TypeArguments="x:String, x:Object">
          <x:Boolean x:Key="IsExpanded">True</x:Boolean>
          <x:Boolean x:Key="IsPinned">False</x:Boolean>
        </scg:Dictionary>
      </sap:WorkflowViewStateService.ViewState>
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Spinner has wrap_parent property set, which is
required for drop down open in full view" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Spinner does not have wrap_parent property set
for height, which is required for drop down open in full view" />
      </If.Else>
    </If>
  </Sequence>
</Activity>
```
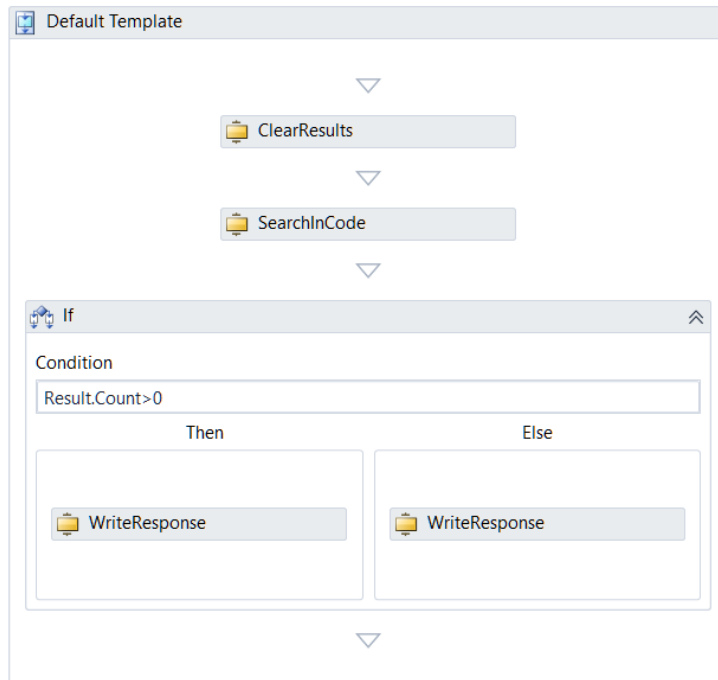
10. Breadcrumbs should be available to keep users informed, on the navigation

```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="Result" Type="OutArgument(scg:IList(x:String))" />
  </x:Members>

<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
```

```xml
          </scg:Dictionary>
      </sap:WorkflowViewStateService.ViewState>
      <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
      <a:SearchInCode sap:VirtualizedContainerService.HintSize="464,22"
Result="[Result]" SearchText="breadcrumb" />
      <If Condition="[Result.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
        <If.Then>
          <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Passed : Your code contains BreadCrumb" />
        </If.Then>
        <If.Else>
          <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Failed : BreadCrumbs are not present in your
app" />
        </If.Else>
      </If>
    </Sequence>
</Activity>
```

11. **Remove duplicate fields (email, password).** Some believe that it is necessary to ask users to enter twice fields such as email and password, to remove the possibility of an error. Research has shown that simply asking users to confirm that the email and password that they entered are correct is as effective in preventing errors as typing this information twice. And, it requires a lot less user effort. NN/g Guideline# 196

12. **Mobile app registration should not require going to bank branch and can be loaded from authorized app stores. The registration should be free of any SMS charges**.

```xml
<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="Result" Type="OutArgument(scg:IList(x:String))" />
  </x:Members>
```

```xml
<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:SearchInCode sap:VirtualizedContainerService.HintSize="464,22"
Result="[Result]" SearchText="SmsManager" />
    <If Condition="[Result.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="We have found that your app is using
SmsManager, probably you are using SMS for user registration" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Your app doesn't seems to be sending any SMS"
/>
      </If.Else>
    </If>
  </Sequence>
</Activity>


<Activity mc:Ignorable="sads sap" x:Class="Activity Builder"
 xmlns="http://schemas.microsoft.com/netfx/2009/xaml/activities"
 xmlns:a="clr-namespace:ActivityLibrary;assembly=ActivityLibrary"
 xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
 xmlns:mva="clr-
namespace:Microsoft.VisualBasic.Activities;assembly=System.Activities"
 xmlns:s="clr-namespace:System;assembly=mscorlib"
 xmlns:s1="clr-namespace:System;assembly=System"
 xmlns:s2="clr-namespace:System;assembly=System.Core"
 xmlns:sa="clr-namespace:System.Activities;assembly=System.Activities"

xmlns:sads="http://schemas.microsoft.com/netfx/2010/xaml/activities/debugger"

xmlns:sap="http://schemas.microsoft.com/netfx/2009/xaml/activities/presentati
on"
 xmlns:scg="clr-namespace:System.Collections.Generic;assembly=mscorlib"
 xmlns:scg1="clr-namespace:System.Collections.Generic;assembly=System.Core"
 xmlns:scg2="clr-namespace:System.Collections.Generic;assembly=System"
 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
  <x:Members>
    <x:Property Name="Result" Type="OutArgument(scg:IList(x:String))" />
  </x:Members>
```

```xml
<sap:VirtualizedContainerService.HintSize>526,491</sap:VirtualizedContainerSe
rvice.HintSize>
  <mva:VisualBasic.Settings>Assembly references and imported namespaces for
internal implementation</mva:VisualBasic.Settings>
  <Sequence DisplayName="Default Template"
sap:VirtualizedContainerService.HintSize="486,451">
    <sap:WorkflowViewStateService.ViewState>
      <scg:Dictionary x:TypeArguments="x:String, x:Object">
        <x:Boolean x:Key="IsExpanded">True</x:Boolean>
      </scg:Dictionary>
    </sap:WorkflowViewStateService.ViewState>
    <a:ClearResults sap:VirtualizedContainerService.HintSize="464,22" />
    <a:ReadManifestAttribute AttributeToRead="android:name"
sap:VirtualizedContainerService.HintSize="464,22" Result="[Result]"
XPath="//uses-permission[@android:name='android.permission.RECEIVE_SMS']" />
    <If Condition="[Result.Count&gt;0]"
sap:VirtualizedContainerService.HintSize="464,203">
      <If.Then>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="False" ResponseText="Your app seems to be receiving SMS" />
      </If.Then>
      <If.Else>
        <a:WriteResponse sap:VirtualizedContainerService.HintSize="200,22"
IsPassed="True" ResponseText="Your app doesn't seems to be receiving SMS" />
      </If.Else>
    </If>
  </Sequence>
</Activity>
```

13. // TODO