

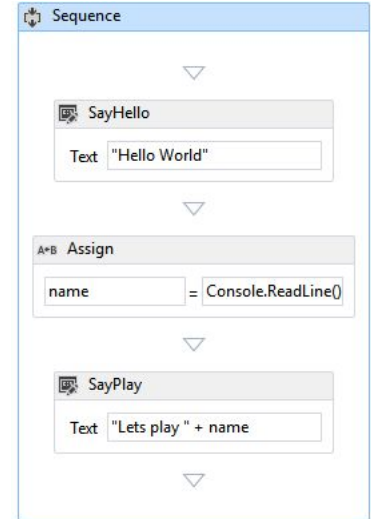
Windows Workflow Foundation

WF Overview

- WF provides tools for creating workflows
 - api
 - workflow runtime engine
 - designer

Workflow

- activity as the elemental unit
- workflow is in fact an activity consists of other activities

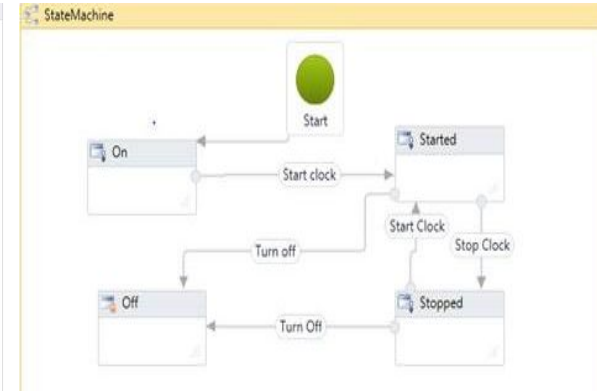
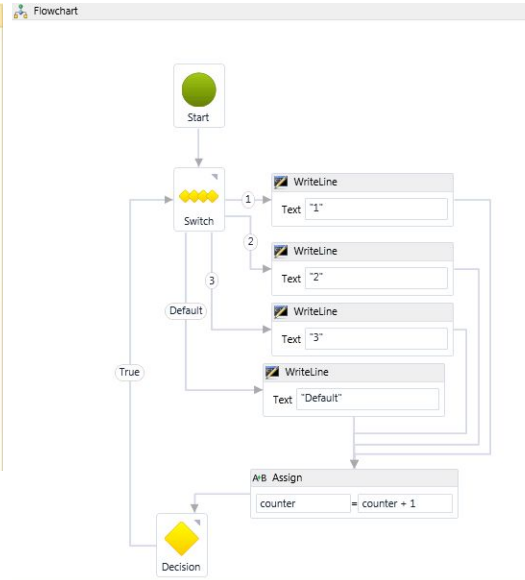
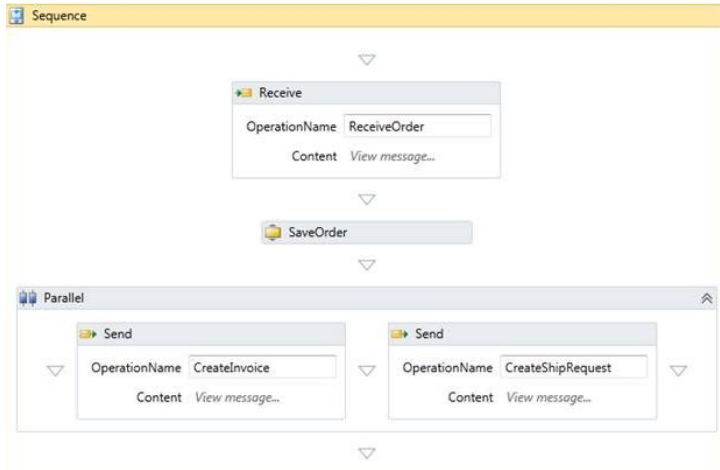


Activity

- performs a single action
- consists of a set of activities

Flow control

- Sequence
- Flowchart
- State machine

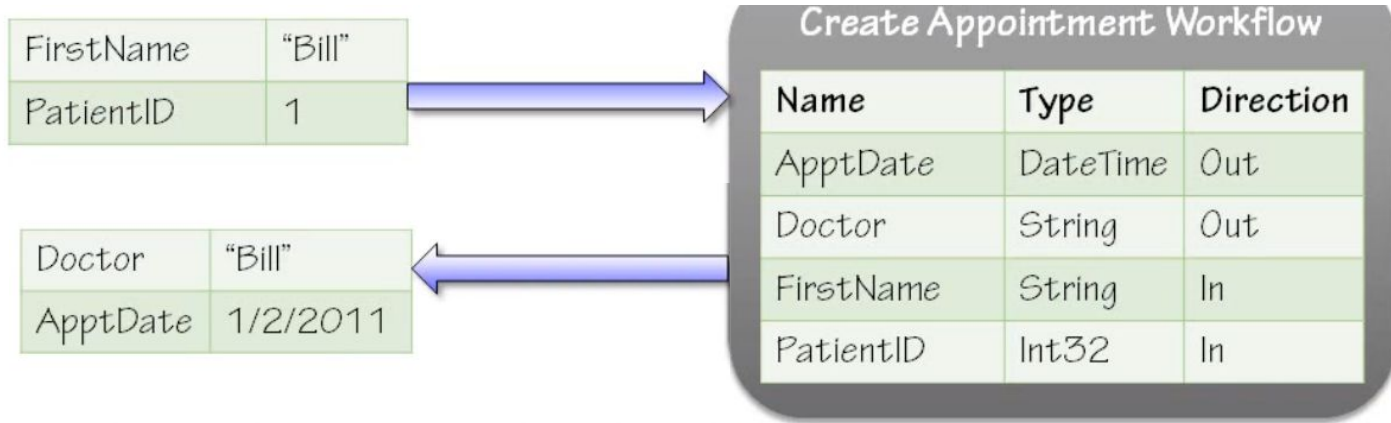


Executing workflows

- WorkflowInvoker
 - invoke workflow like a function
 - must run to completion - w/o delays or waiting events
 - provides synchronous and asynchronous invocation options
- WorkflowApplication
 - episodic workflows
 - lifecycle events like Completed, Aborted, Idle etc.
 - provides thread safe proxy to the workflow instance

Inputs, outputs

- input passed via Dictionary<string, object>
- key name must match argument name in workflow definition
- output arguments returned also in dictionary
 - WorkflowInvoker - return value from Invoke method
 - WorkflowApplication - arguments to the Completed action



Workflow Services

- WCF - based
- Send/SendReply - for sending messages
- Receive - for... receiving
- hosted via WorkflowServiceHost

WWF Advanced Features

- persistence -
 - WorkflowApplication: persist workflow instance's state by either **Persist** or **Unload**
 - WorkflowServiceHost: by associating an instance store

```
// wsh is an instance of WorkflowServiceHost class  
wsh.DurableInstancingOptions.InstanceStore = new SqlWorkflowInstanceStore();
```

```
<configuration>  
  <system.serviceModel>  
    <behaviors>  
      <serviceBehaviors>  
        <behavior name="myBehavior">  
          <SqlWorkflowInstanceStore connectionString="Data Source=myDatatbaseServer;Initial Catalog=myPersistenceDatabase">  
        </behavior>  
      </serviceBehaviors>  
    </behaviors>  
  </system.serviceModel>  
</configuration>
```

Sources

- <https://msdn.microsoft.com/en-us/library/ee342461.aspx>

Exercises

- <https://github.com/kapcabbage/wwf>

Thanks!