

Introduction to TCL Event Loop



8 August 2017



Training outline



Openbet
Competence
Category

TCL programming



Duration

30 mins



Badge

Event Looper





Our objectives for this training

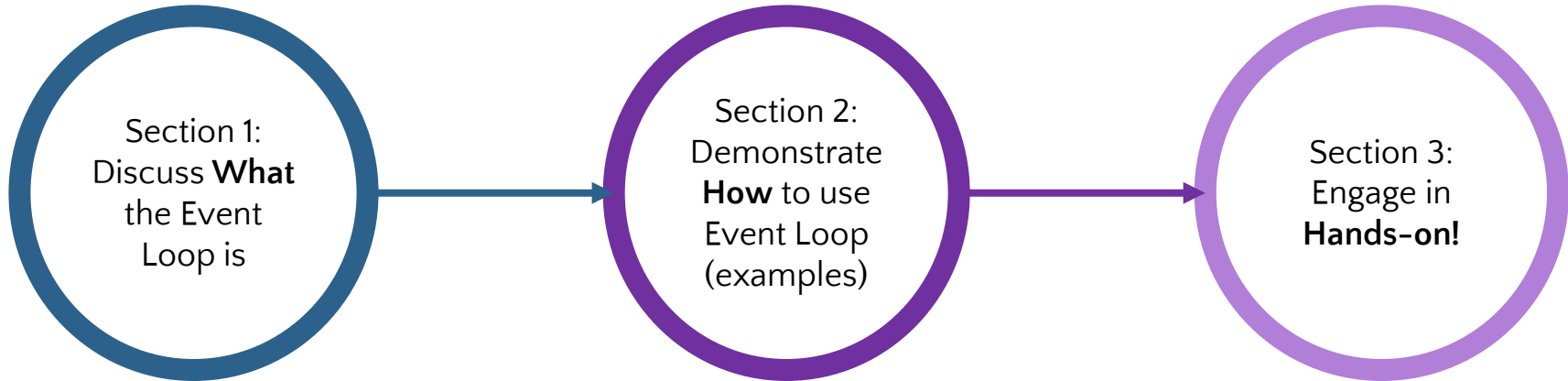
- **Describe** the concept of Event loop in TCL
- **Apply** the Event loop in exemplary scenarios of use



Hands-on Assessment: Configure and experiment with an Event loop code snippet



What we will be doing



1

What is the Event Loop?

*Software systems commonly need
to handle and respond to
asynchronously generated
external **Events**, at unpredictable
times*

“



Handling events

- Different approaches exist (e.g., *polling*)
- *Event-based programming* is an approach where systems dynamically *react* to events as these are generated.
- We will discuss how TCL operationalizes event-based programming, through the **Event loop**



Event Loop

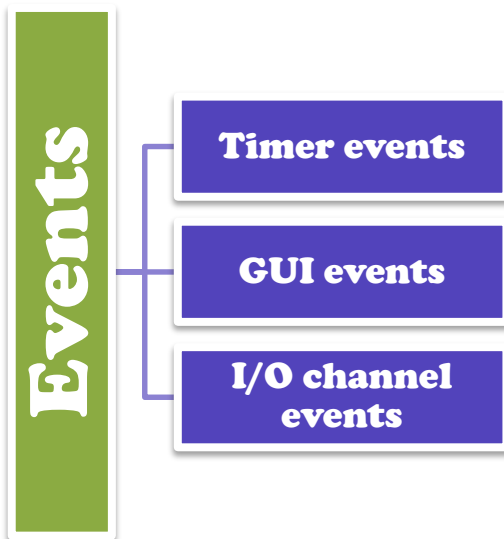
The Event Loop in TCL mainly involves two steps:

1. **Set up event handlers**, to capture and respond to external events
2. **Trigger the Event loop**, to begin capturing the events



Step 1: Setting up event handlers

Different types of handlers can be set up to capture and respond to external events





Step 2: Triggering the Event Loop

After setting up the Event handlers, the Event Loop needs to be triggered to begin capturing events.

- In Tk (or when using *wish*), the Event loop and event handling is triggered automatically
- In TCL, the Event loop has to be explicitly triggered through commands, such as **vwait**



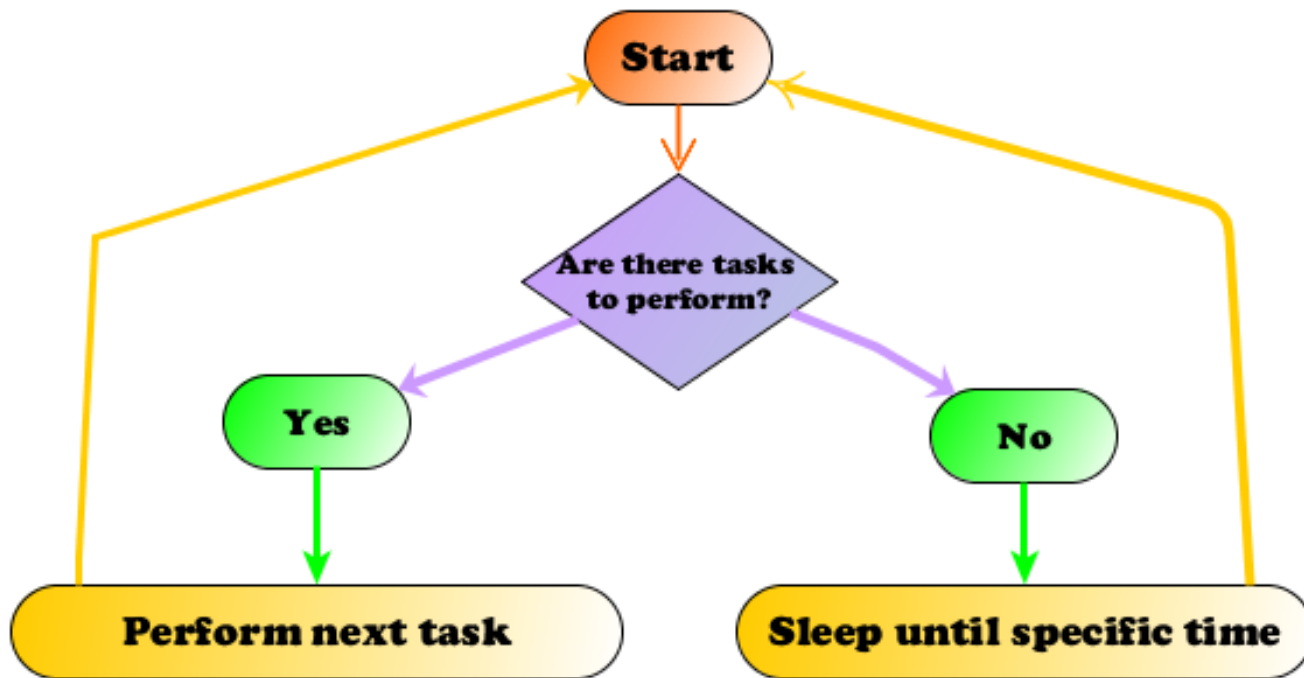
Step 2: Triggering the Event Loop

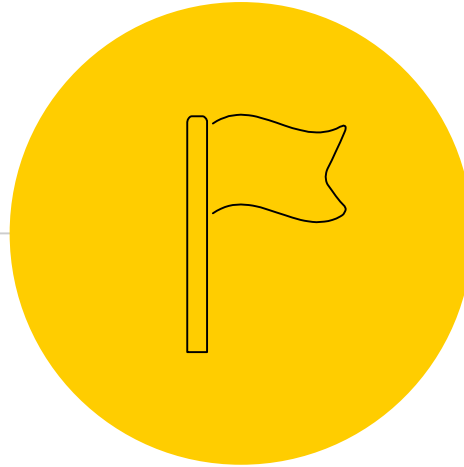
vwait *<variable>*

- This command triggers the Event loop and services events until the value of *<variable>* has been modified.



Flow of the Event Loop





Section 1

Q&A Pit-stop

2

How to use the Event Loop



Example # 1 – Socket I/ O events

In server-client systems, the server needs to be able to continuously receive and handle events from clients.

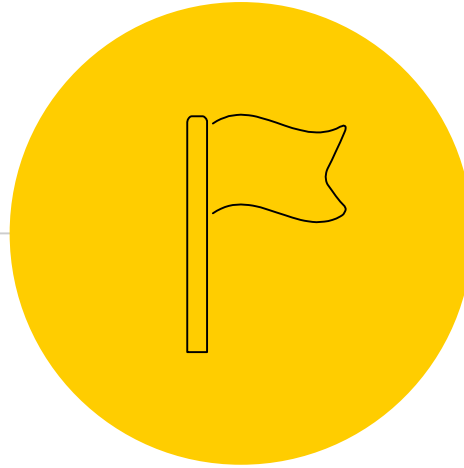




Example # 2 – User input events

*The Event loop can also be used to continuously handle **user input events** and change program variables according to the user choices.*





Section 2

Demos' Q&A Pit-stop

3

Engage in Hands-On!



Hands-on Exercise

- Please open the provided script files:
- “handson-server.tcl”
- “handson-client.tcl”



Training Wrap Up

- Please use this online form to provide your feedback on the training session: <https://goo.gl/forms/ROtc3gymfN7H69Fr1>
- You can find further documentation on the TCL Event loop:
 - <https://wiki.tcl.tk/1527> – *TCL Event Loop*
 - <http://wiki.tcl.tk/489> – *Event programming and relevance to TCL*
- The code snippets used in this training can be found at <https://github.com/ssergis/openbettraining/>