Assignment-5

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What is the difference between Tcl and tk?

Tcl is a general purpose multi-paradigm system programming language. It is a scripting language that aims at providing the ability for applications to communicate with each other. On the other hand, Tk is a cross platform widget toolkit used for building GUI in many languages. This tutorial covers various topics ranging from the basics of the Tcl/Tk to its scope in various applications.

What is the widgets?

The basic component of a Tk-based application is called a widget. A component is also sometimes called a window, since, in Tk, "window" and "widget" are often used interchangeably. Tk is a package that provides a rich set of graphical components for creating graphical applications with Tcl.

Tk provides a range of widgets ranging from basic GUI widgets like buttons and menus to data display widgets. The widgets are very configurable as they have default configurations making them easy to use.

Tk applications follow a widget hierarchy where any number of widgets may be placed within another widget, and those widgets within another widget. The main widget in a Tk program is referred to as the root widget and can be created by making a new instance of the TkRoot class

Write a short note on the following

a) Widget classes

1	Label	Widget for displaying single line of text.
2	Button	Widget that is clickable and triggers an action.
3	Entry	Widget used to accept a single line of text as input.
4	Message	Widget for displaying multiple lines of text.

	Text	
5	Widget for displaying and optionally edit multiple lines of text.	
	Toplevel	
6	Widget used to create a frame that is a new top level window.	

b) Widget names

```
button   .fred   -fg red -text "hi there"
   ^       ^     \_____________________/
   |       |               |
 class    new            options
```

command widget (-opt val -opt val ...)

Every widget has a unique name.

c) Widget creation

The name of a widget class is also the name of a conunand that will create an instance of the class, e.g. button . b creates an instance of a button and assign the name . b to it.

d) Widget properties

Widgets have a very large number of attributes - even a simple button has 37 attributes but many widgets share a common set of attributes: these include size, orientation, colour and appearance.

e) Widget hierarchies

The widget that make up an interface form a Tk uses a notation reminiscent of file system paths to represent this so that a fully heiarchy name determines the widget in the hiearchy.The is based in the 'top-level' exact position of the named level window', which is normally the main window, created at the time the Tk application starts by the Tk_Main function from the C code. This function sets up the main window, various then initiates the event loop by calling Tk Loop. This window is an image frame named., and each successive level in the frame is denoted by another dot.

Mega widgets include many complex widgets which is often required in some large scale Tk applications. The list of available mega widgets are as shown below −

Sr.No.	Widget & Description
	Dialog
1	Widget for displaying dialog boxes.
	Spinbox
2	Widget that allows users to choose numbers.
3	Combobox

		Widget that combines an entry with a list of choices available to the use.
4	Notebook	Tabbed widget that helps to switch between one of several pages, using an index tab.
5	Progressbar	Widget to provide visual feedback to the progress of a long operation like file upload.
6	Treeview	Widget to display and allow browsing through a hierarchy of items more in form of tree.
7	Scrollbar	Scrolling widgets without a text or canvas widgets.
8	Scale	Scale widget to choose a numeric value through sliders.