

Critical Thinking Questions 1-6 (pg. 275)

1. A GUI (Graphical User Interface) is a visual interface that allows users to interact with software through graphical elements like buttons, icons, and menus, rather than text commands.'
2. In an event-driven application, code is executed in response to events like user actions (e.g., clicks, keystrokes) or system triggers (e.g., timers, messages). The application waits for events in a loop and calls event handlers—specific functions—when an event occurs.
3. Yes, components (e.g., buttons, labels) can be placed directly into a frame or container, which manages their layout and display on the screen.
4. Yes, a label can respond to events if event listeners are attached to it. While labels typically display static text or images, they can be made interactive by adding event listeners (e.g., for clicks or mouse movements) depending on the GUI framework.
5. I think that a GUI needs to run on an event-dispatching thread to handle user interactions and updates efficiently. This thread manages events like clicks or keystrokes, ensuring that the GUI remains responsive. Running it on a dedicated thread prevents the interface from freezing during long-running tasks.
6. A label displays static text or images and is used for displaying information. A button, on the other hand, is interactive and can trigger actions or events when clicked or pressed. While labels are not usually interactive, buttons are designed to handle user input and perform functions.