Computer Programming
Section J&K, Fall 2020
Assignment 4

Due Date: Tuesday December 8, 2020
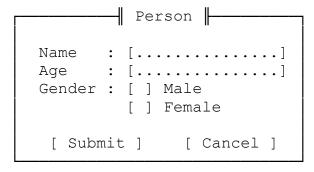
Text UI Library

Implement, using Object-oriented techniques involving inheritance and polymorphism, a Text UI library for drawing character based windows and components, satisfying the following characteristics:

- A **Window** has width, height, title and multiple components
- A **Label** is a **Component** that represents some text
- A **Text Field** is a component in which user can type text
- A **Button** is a component that represents an action for the user
- A **Radio Button Group** is a component that has multiple options but only one can be selected
- A **New Line** is a component that starts a new line on the window

In order to draw the window, Box characters (see Appendix) may be used, whereas the representation of each of the components is depicted in the following table.

Component	Representation
Label	`Label`
Text Field	`[.......................]`
Button	`[ Button ]`

Radio Button Group	`[ ] Option 1`
	`[x] Option 2`
	`[ ] Option 3`

An example window is illustrated as follows:

```
          ╢ Person ╟
 ┌──────────────────────────┐
 │                          │
 │  Name   : [..............]│
 │  Age    : [..............]│
 │  Gender : [ ] Male        │
 │           [ ] Female      │
 │                          │
 │   [ Submit ]    [ Cancel ]│
 └──────────────────────────┘
```

Appendix: Box Drawing Characters

Character	Extended ASCII Code (Decimal)	Extended ASCII Code (Hex)	Unicode UTF-8 (Hex)
┌	218	DA	250C
─	196	C4	2500
┐	191	BF	2510
│	179	B3	2502
╟	199	C7	255F
╢	182	B6	2562
└	192	C0	2514
┘	218	DA	2518