

Interactive Applications and Games in Python using Kivy

Module 1: GUI Basics

- GUI Basics – Building an Interface
- Basic interface — Hello World!
- Basic widgets — labels and buttons
- Layouts
- Embedding layouts
- PageLayout — swiping pages
- Our project — Comic Creator

Module 2: Graphics

- Graphics – the Canvas
- Understanding the canvas
- Drawing basic shapes
- Adding images, colors, and backgrounds
- Structuring graphic instructions
- Rotating, translating, and scaling the coordinate space
- Comic Creator: PushMatrix and PopMatrix

Module 3: Widget Events

- Widget Events – Binding Actions
- Attributes, ID, and root
- Basic widget events — dragging the stickman
- Localizing coordinates — adding stickmen
- Binding and unbinding events — sizing limbs and heads
- Binding events in the Kivy language
- Creating your own events — the magical properties
- Kivy and its properties

Module 4: User Experience

- Improving the User Experience
- ScreenManager — selecting colors for the figures
- Color control on the canvas — coloring figures
- StencilView — limiting the drawing space
- Scatter — multi-touching to drag, rotate, and scale
- Recording gestures — line, circle, and cross
- Recognizing gestures — drawing with the finger
- Behaviors — enhancing widget's functionality
- Style — decorating the interface
- Factory — replacing a vertex instruction

Module 5: An Interactive Multi-touch Game

- Invaders Revenge— an animated multi-touch game
- Atlas — An efficient management of images
- Boom — simple sound effects
- Ammo — simple animation
- Invader — transitions for animations
- Dock — automatic binding in the Kivy language
- Fleet — infinite concatenation of animations
- Scheduling events with the clock
- Shooter — multi-touch control
- Invasion — moving the shooter with the keyboard
- Combining animations with '+' and '&'

Module 6: Kivg Player

- Kivy Player — a TED Video Streamer
- Video — play, pause, and stop
- AsyncImage — creating a cover for the video
- Subtitles — tracking the video progression
- Control bar — adding buttons to control the video
- Slider — including a progression bar
- Animation — hiding a widget
- Kivy inspector — debugging interfaces
- ActionBar — a responsive bar
- LoadDialog — displaying a directory of files
- ScrollView — displaying a list of videos
- Search — query the TED Developer API