User Input

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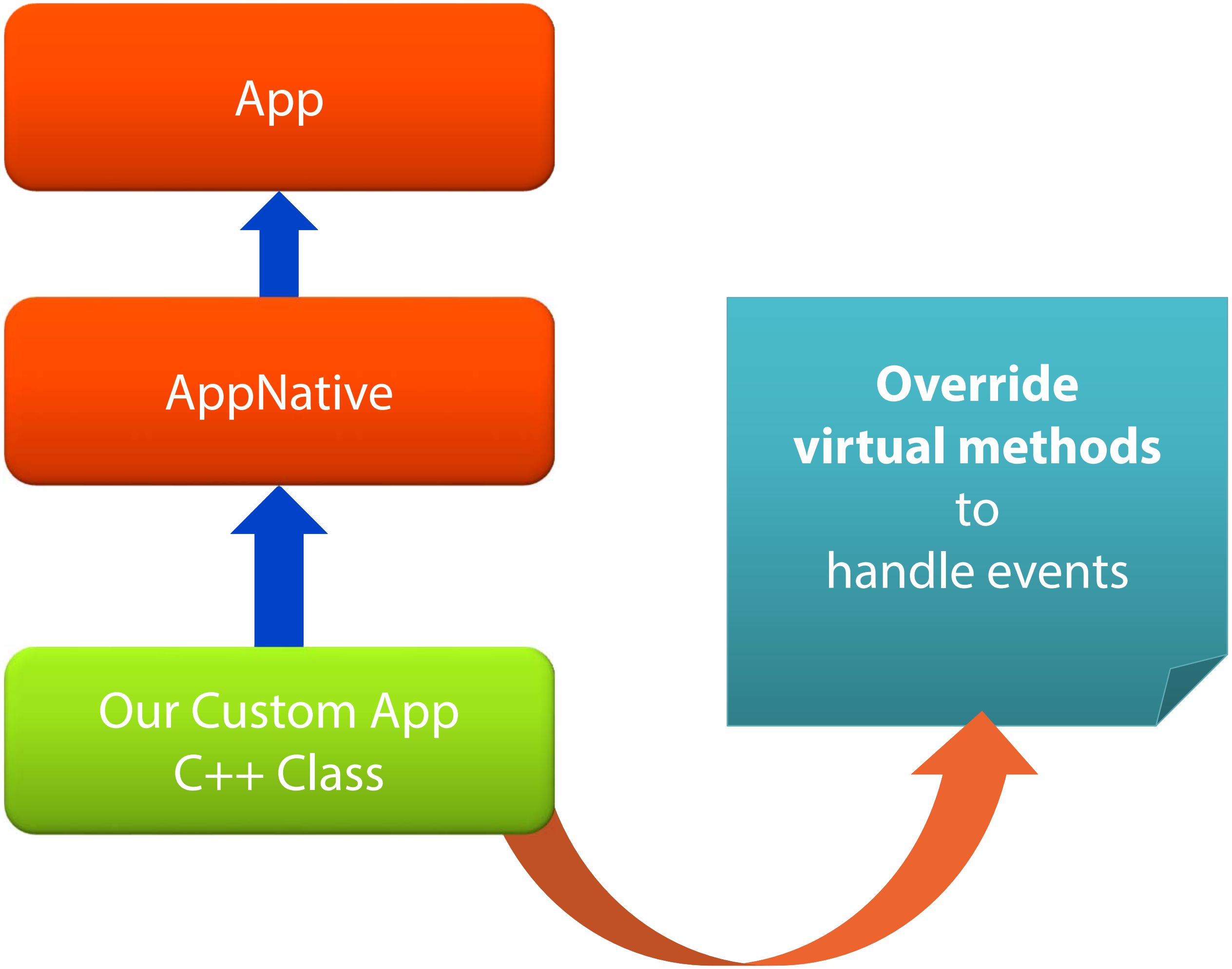
Topics

- **How to process input from user**
  - □ Keyboard
  - □ Mouse
- **Demo**

Event Handling in Cinder

Virtual Method Call

Event Handling in Cinder



App

AppNative

Our Custom App
C++ Class

Override
virtual methods
to
handle events

Keyboard Events

```
void keyDown( KeyEvent event )
```

A key has been pressed

Keyboard Events

```
void keyDown( KeyEvent event )
```

event.*getChar()*

Event Information

Keyboard Events

```
void keyDown( KeyEvent event )
```

isControlDown()
isAltDown()
...

Event Information

Keyboard Events

```
void keyUp( KeyEvent event )
```

A key has been released

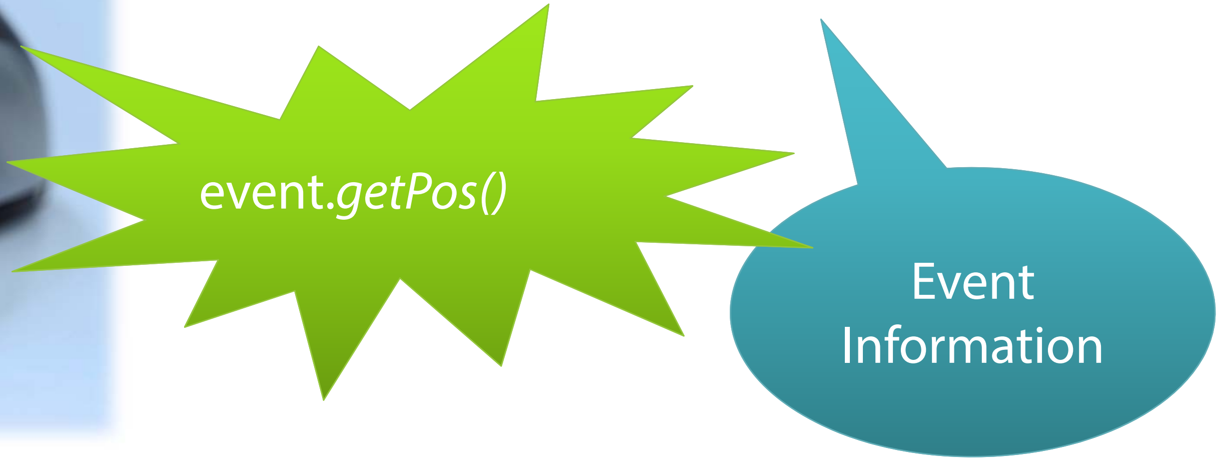
Mouse Events

```
void mouseDown( MouseEvent event )
```

A mouse button has been pressed

Mouse Events

```
void mouseDown( MouseEvent event )
```



event.*getPos()*

Event
Information

Mouse Events

```
void mouseDown( MouseEvent event )
```

isLeft()
isRight()
...

Event
Information

Mouse Events

```
void mouseUp( MouseEvent event )
```

A mouse button has been released

Mouse Events

```
void mouseMove( MouseEvent event )
```

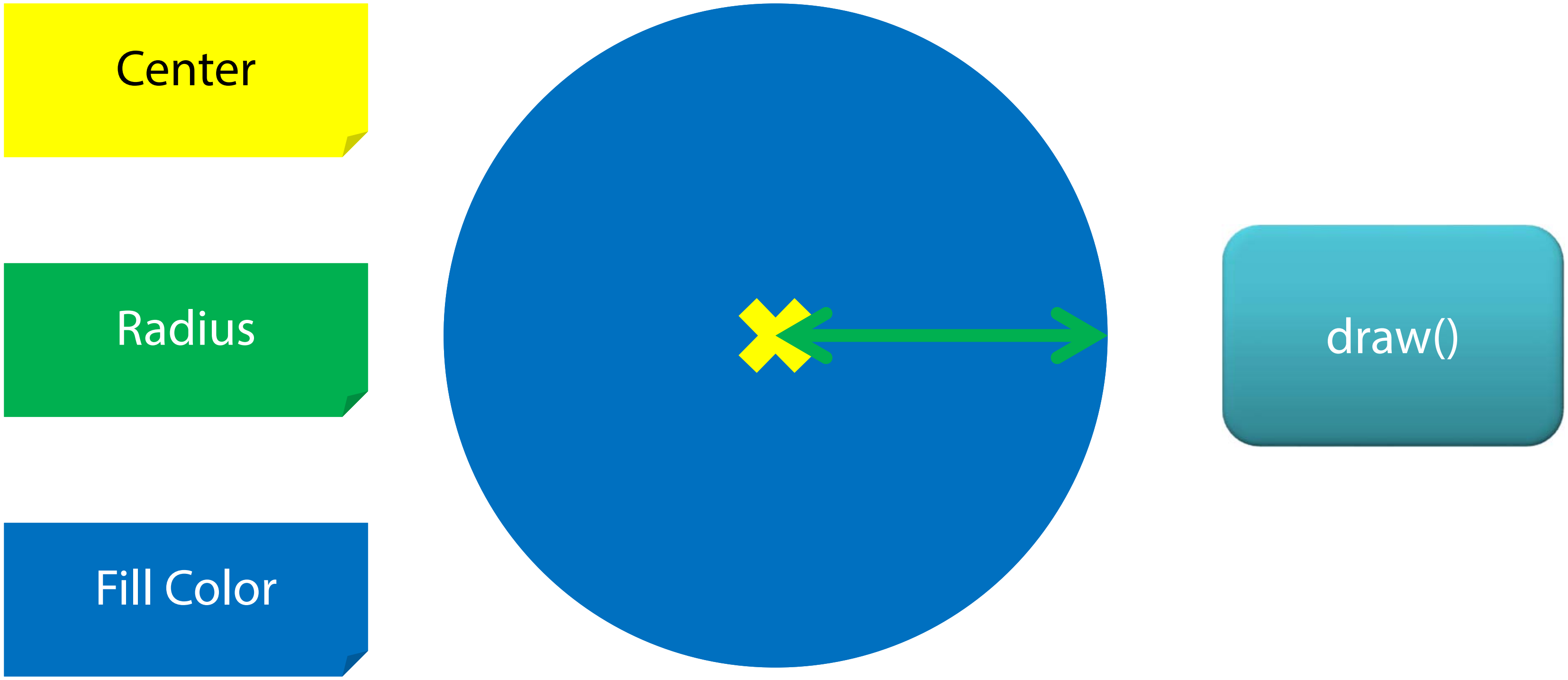
The mouse has been moved

Track mouse position

User Input Demo

User Input Event	Action
Left mouse button click	Paint a new circle
Right mouse button click	Delete most recent circle
[C] key pressed	Delete all circles (‘C’: *clear*)

A Circle Class



Center

Radius

Fill Color

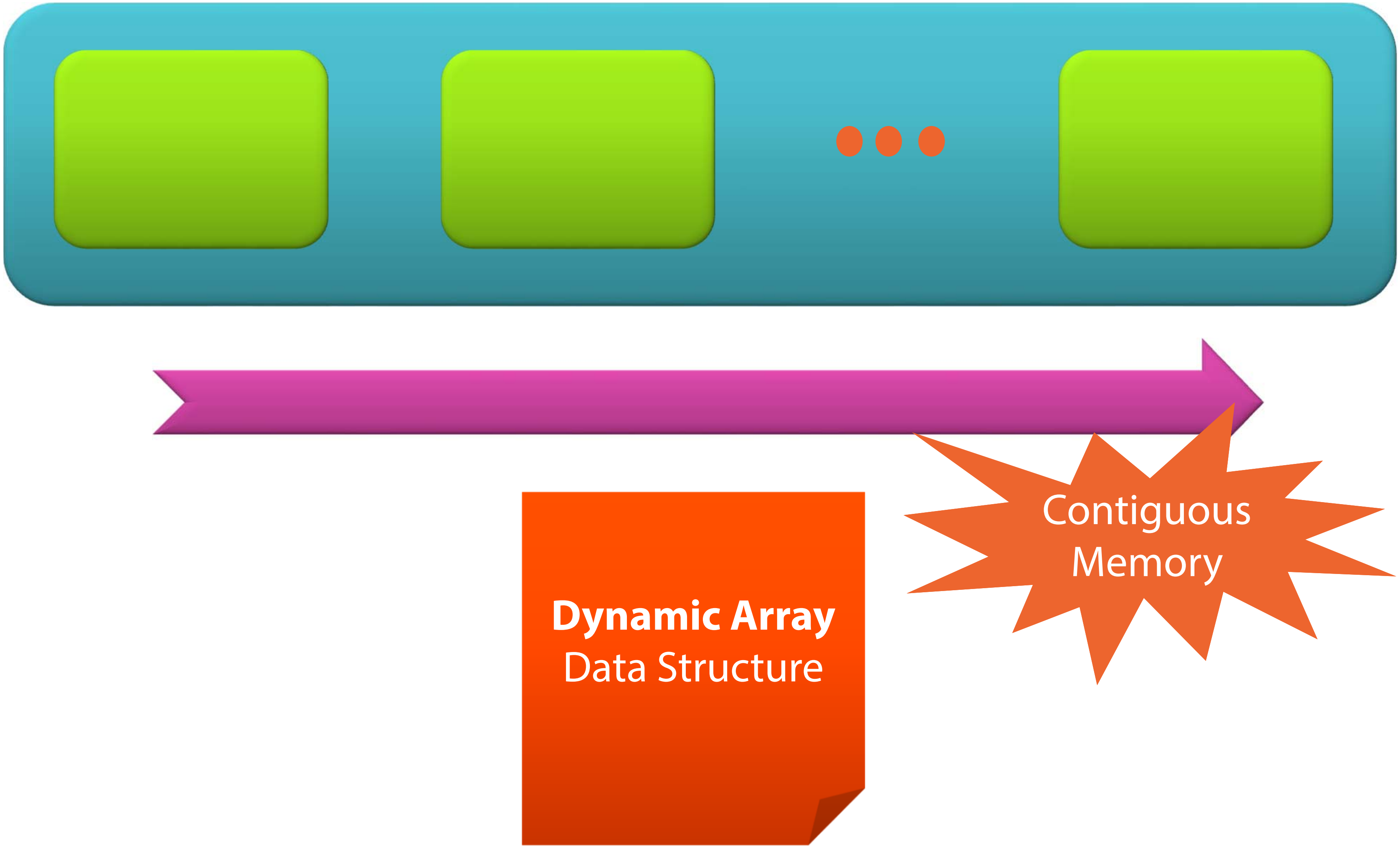
draw()

Where/How to Store Circles?

Use a **standard** container library

STL

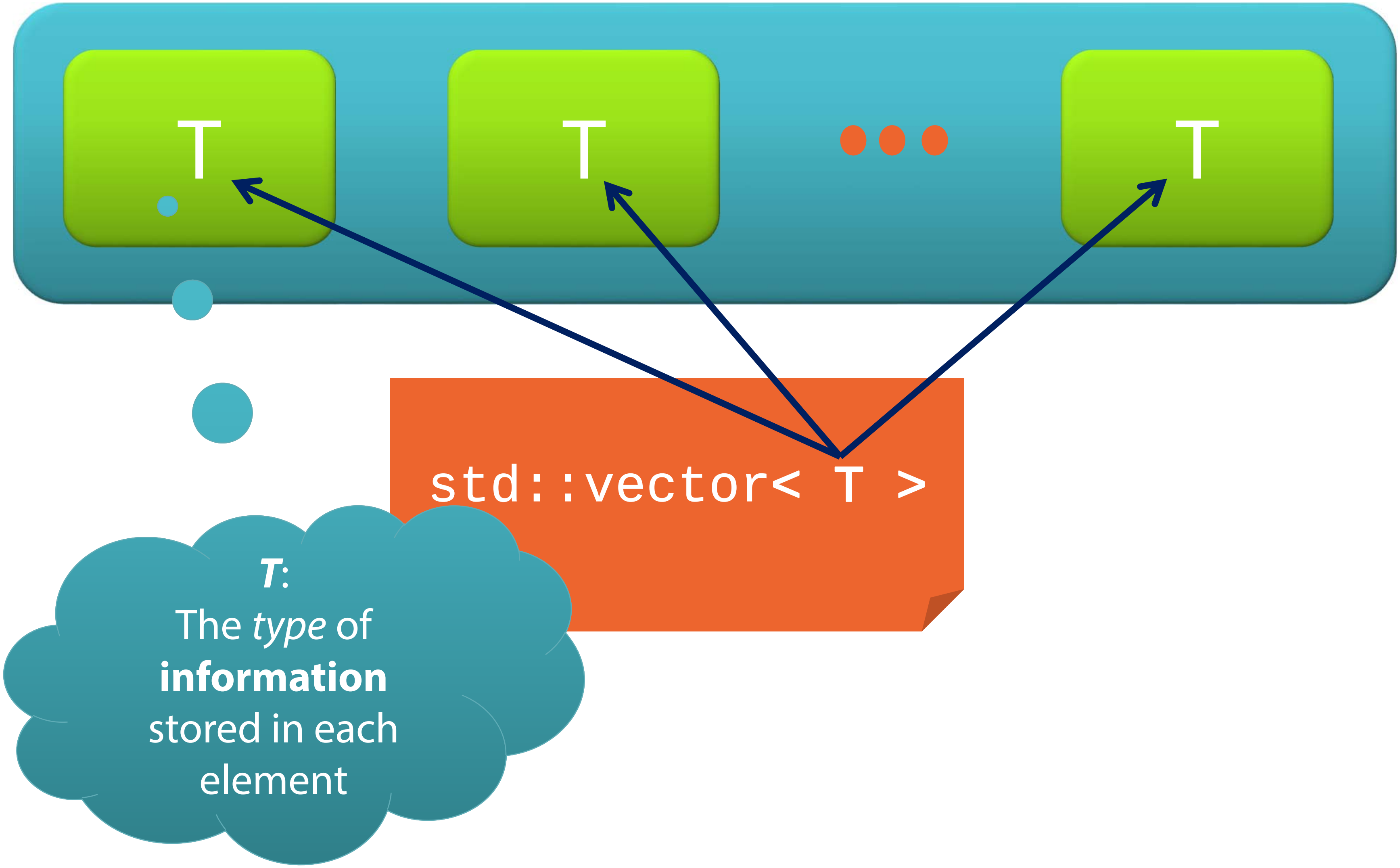
STL’s std::vector



Contiguous Memory

Dynamic Array Data Structure

STL’s std::vector



T:
The *type* of **information** stored in each element

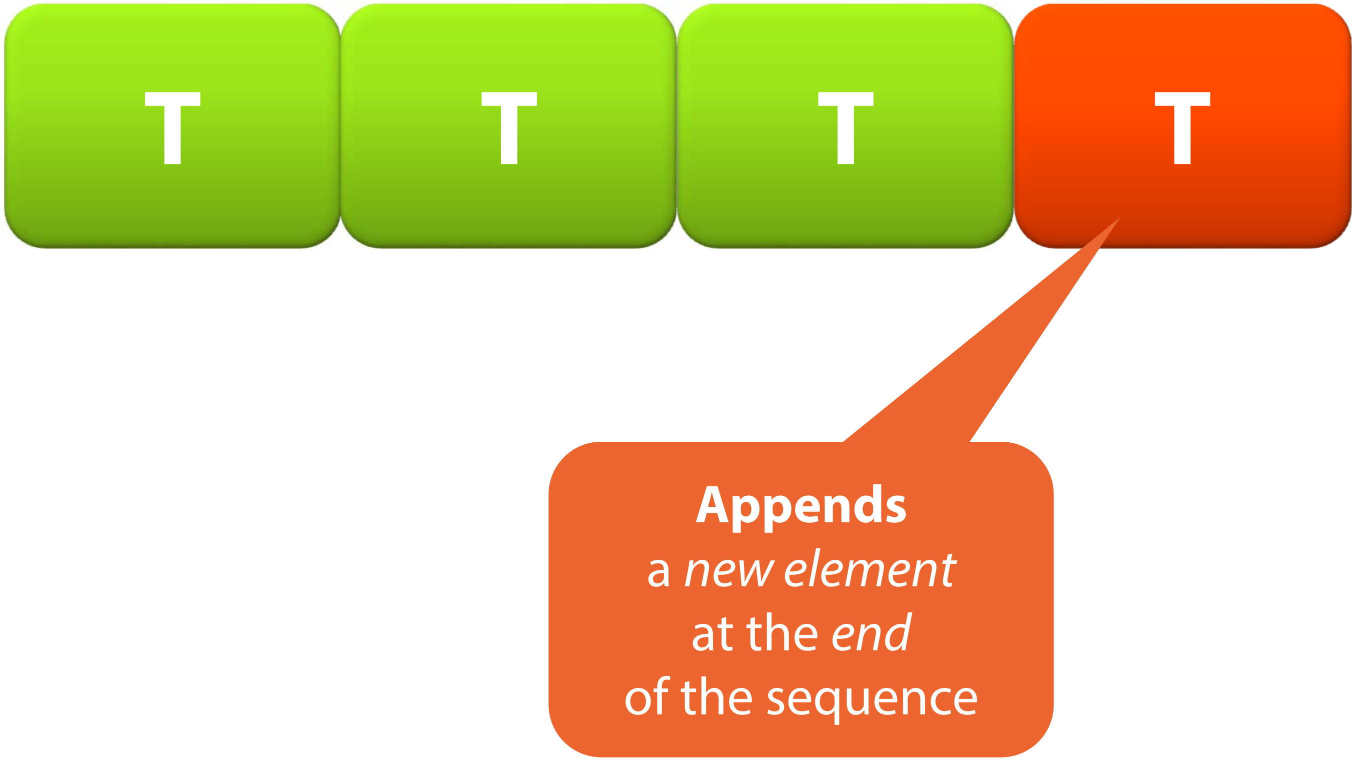
STL vector: Methods of Interest

push_back()

pop_back()

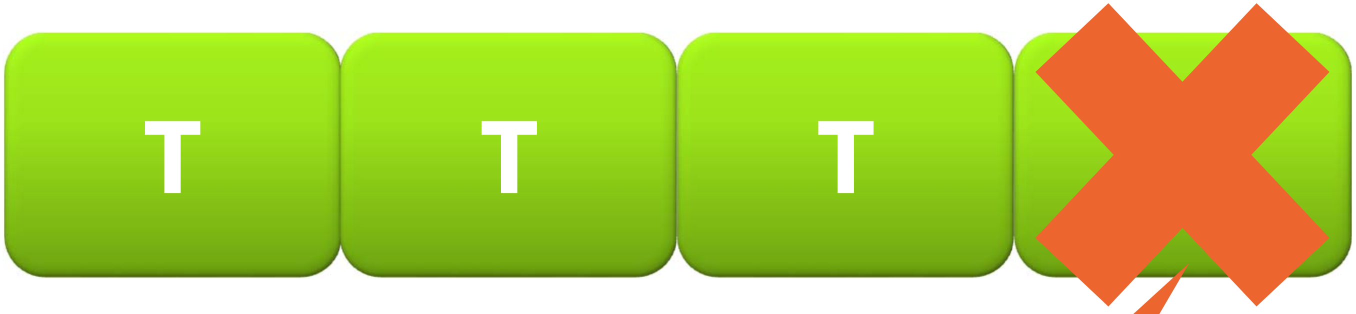
clear()

STL vector’s push_back()



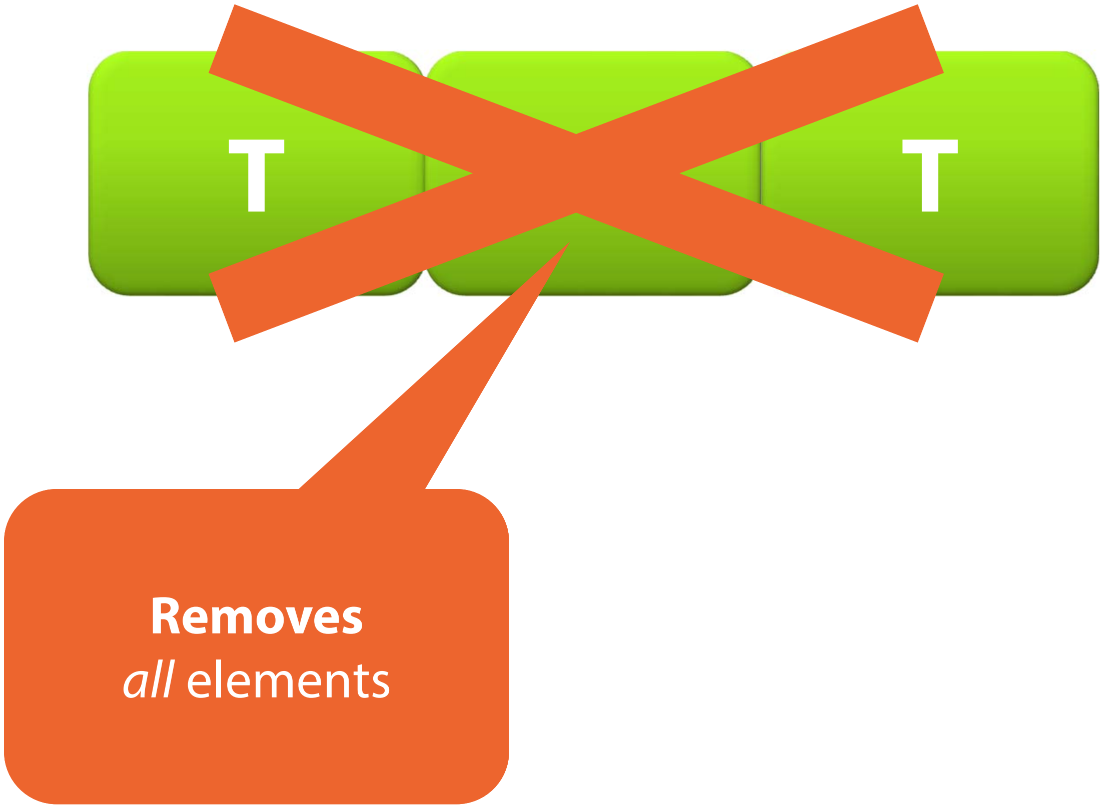
Appends
a *new element*
at the *end*
of the sequence

STL vector's pop_back()



Removes
the *last* element

STL vector’s clear()



Removes
all elements

User Input Demo (Visual Studio)

Summary

- **Event handling in Cinder**
  - Overriding virtual methods
- **Keyboard events**
  - keyDown()
  - keyUp()
- **Mouse events**
  - mouseDown()
  - mouseUp()
  - mouseMove()