# Lab 2: Layout

Deadline: 02/02/2022

# View & ViewGroup

- Basic user interface building block within Android.
- Represents a rectangular portion of the screen.
- Eg: EditText, Button, CheckBox

- **ViewGroup** is an invisible container of other views (child views) and other viewgroups.
- ViewGroup is the base class for layouts.
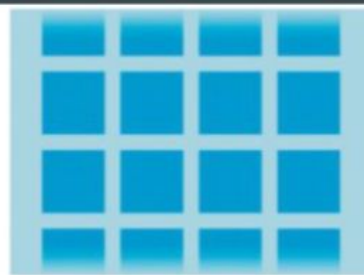- Eg: LinearLayout.

# Types of Layouts

- LinearLayout
- RelativeLayout
- TableLayout
- GridLayout
- FrameLayout
- ConstraintLayout

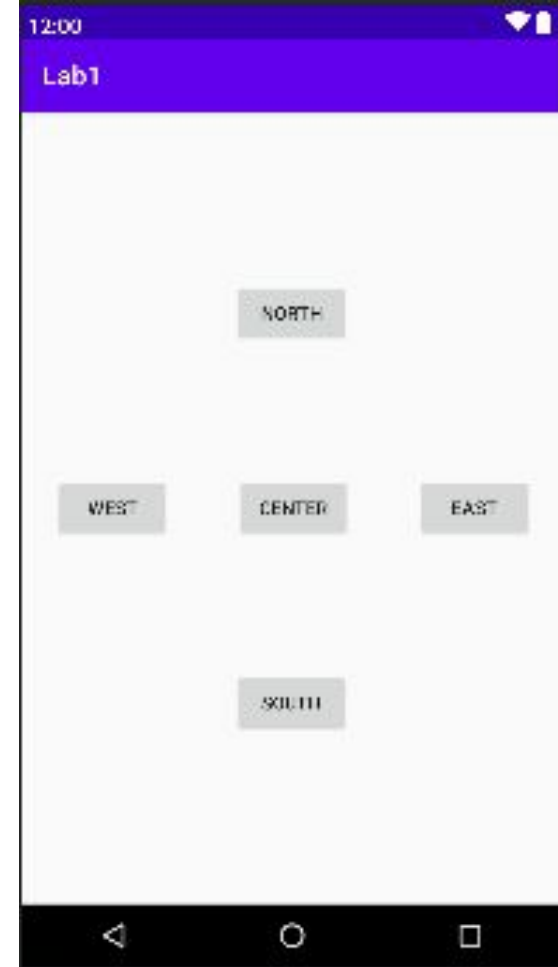| LinearLayout | RelativeLayout | GridLayout | TableLayout |

# Linear Layout

Requirements:
1. WEST, CENTER, EAST button have to be placed at the center **as a whole** inside linearlayout.
2. NORTH and SOUTH button have to be placed 100dp to the top and bottom of CENTER respectively.
3. WEST button has to be placed 25dp relative to the left side of screen.
4. The space between CENTER and WEST, CENTER and EAST should be 50dp.

# Relative Layout

Requirements:

1.  North has to be placed at the center horizontally and the extra space between North and top of screen is 100dp, and the extra space between North and NW/NE is 30dp. Similar rules apply to South
2.  West has to be placed at the center vertically and the extra space between West and start of screen is 20dp. Similar rules apply to East
3.  Center has to be placed at the center of the screen.
4.  Right of NW has to be in alignment with left of Center, and it is below North. Left of NE has to be in alignment with right of center, and it is below North.
5.  Right of SW has to be in alignment with left of Center, and it is above South. Left of SE has to be in alignment with right of center, and it is above South.
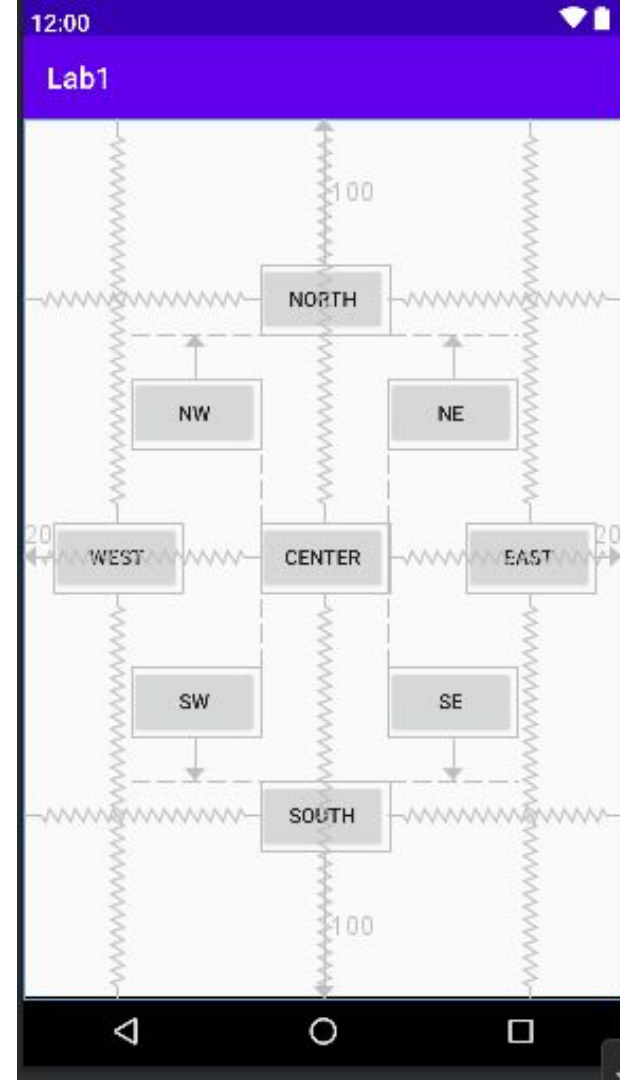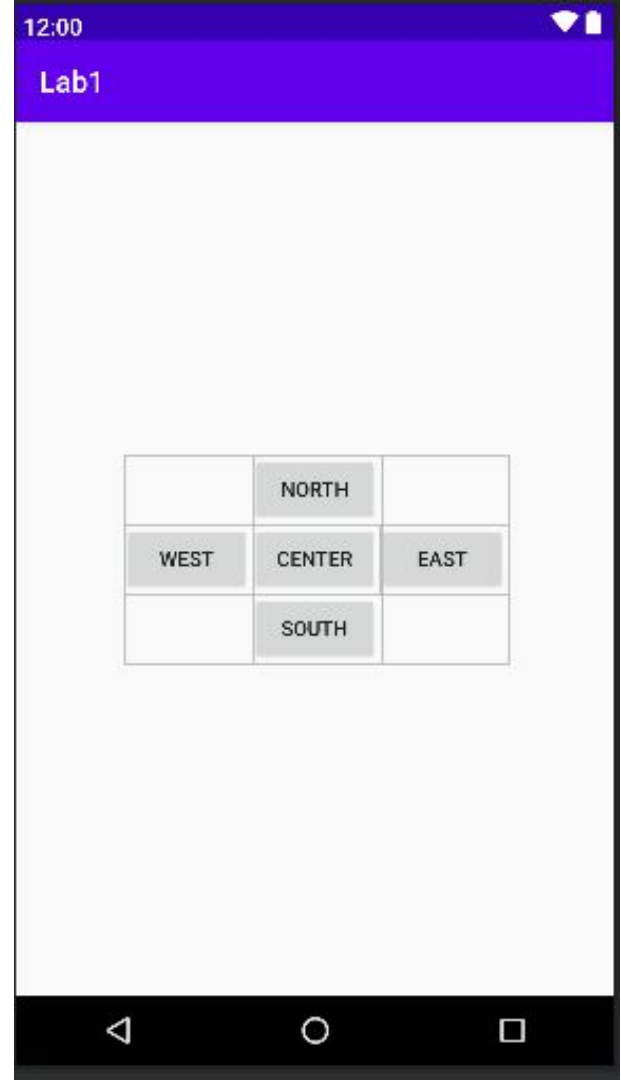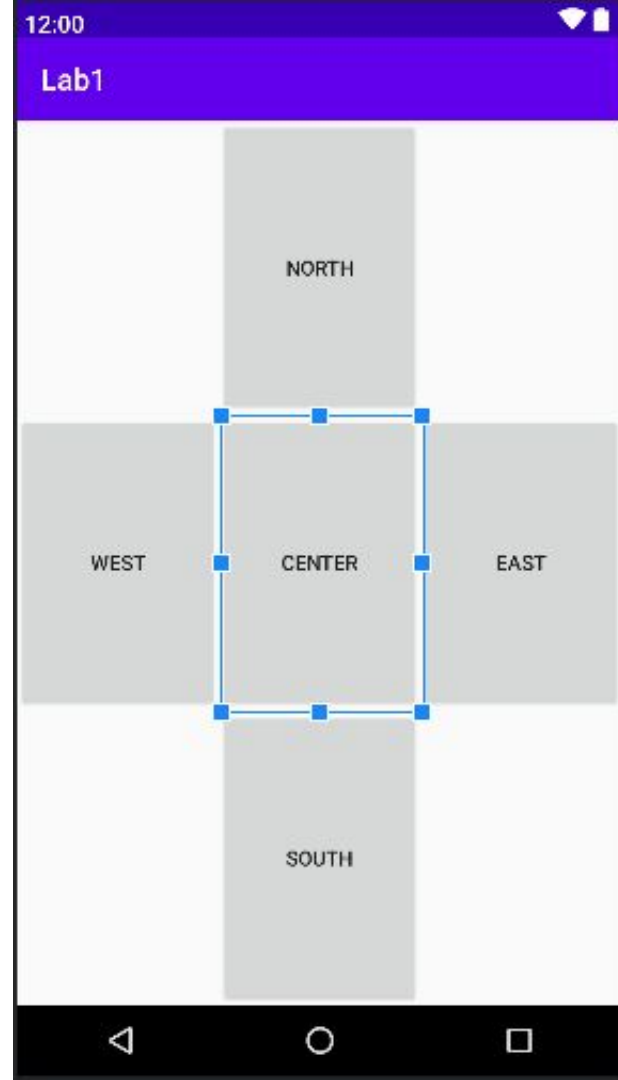
# Table Layout

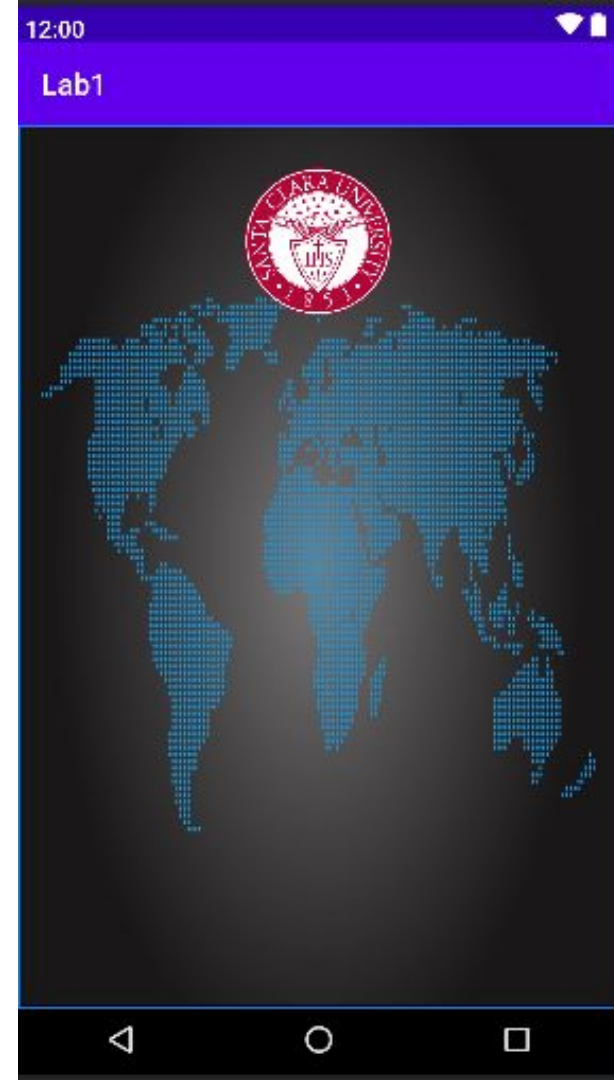Hint: using [android:layout_column](android:layout_column)

# Grid Layout

Hint: using
**android:layout_columnWeight** and
**android:layout_rowWeight**

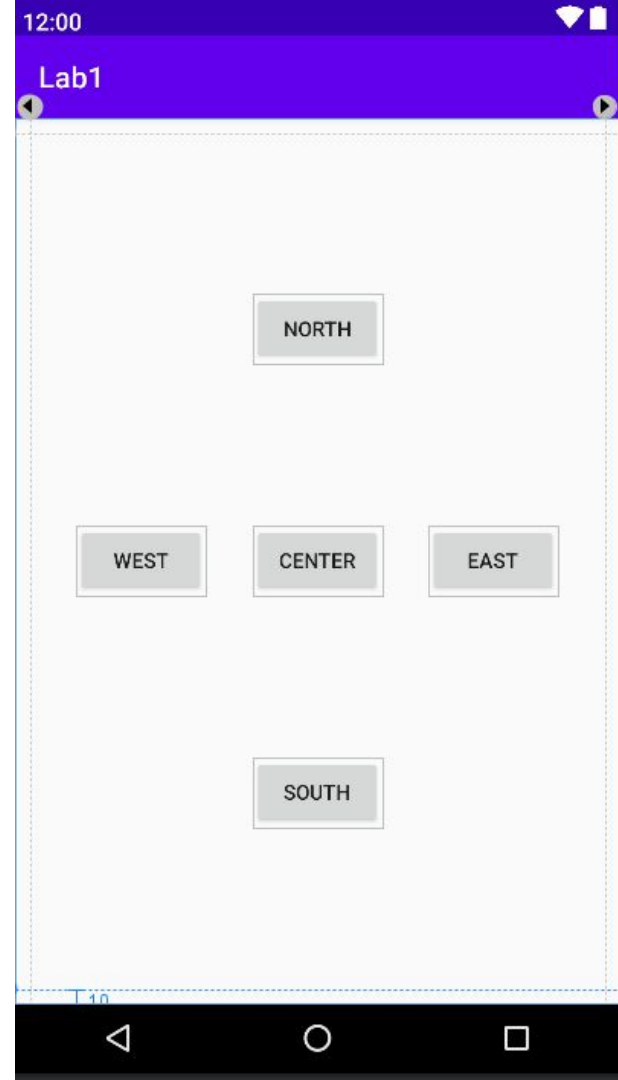# Frame Layout

Requirement:

1. SCU icon has to be placed center horizontally and has extra space of 30dp to the top of screen

# Constraint Layout - 1

Requirements:

1. North has to be placed at the center of the upper part of the screen.
2. South has to be placed at the center of the lower part of the screen.
3. Center has to be placed at the center of the whole screen.
4. West has to be placed at the center of the left part of the screen.
5. East has to be placed at the center of the right part of the screen.

# Constraint Layout - 2

Requirements:

All buttons have to form a circle with Center button at the center with radius of 150 dp (North - 0, NE - 45, East - 90, SE - 135, South - 180, SW - 225, West - 270, NW - 315)

Hint:

Using app:layout_constraintCircleAngle
app:layout_constraintCircleRadius and
app:layout_constraintCircle