NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA,

SURATHKAL.

DEPARTMENT: - INFORMATION TECHNOLOGY

IT351: - Human Computer Interaction

Assignment - 7

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Onscreen Dynamic Keyboard

1. The key positions should be dynamic. Every time the key positions should be varied to change the layout of keys.
2. Assume its numeric keypad or the entire keypad with alphanumeric keys.
3. For alphanumeric keys, the keys can be grouped with some logic to make it easy for the user to input the password.

Motivation.
To avoid keylogger, where the key pressed is being compromised in regular on-device keyboard.

Evaluation

1. Basic dynamic numeric keypad. 60%
2. Alphanumeric keypad with a logical grouping of keys with justification backed by some analysis. 40%

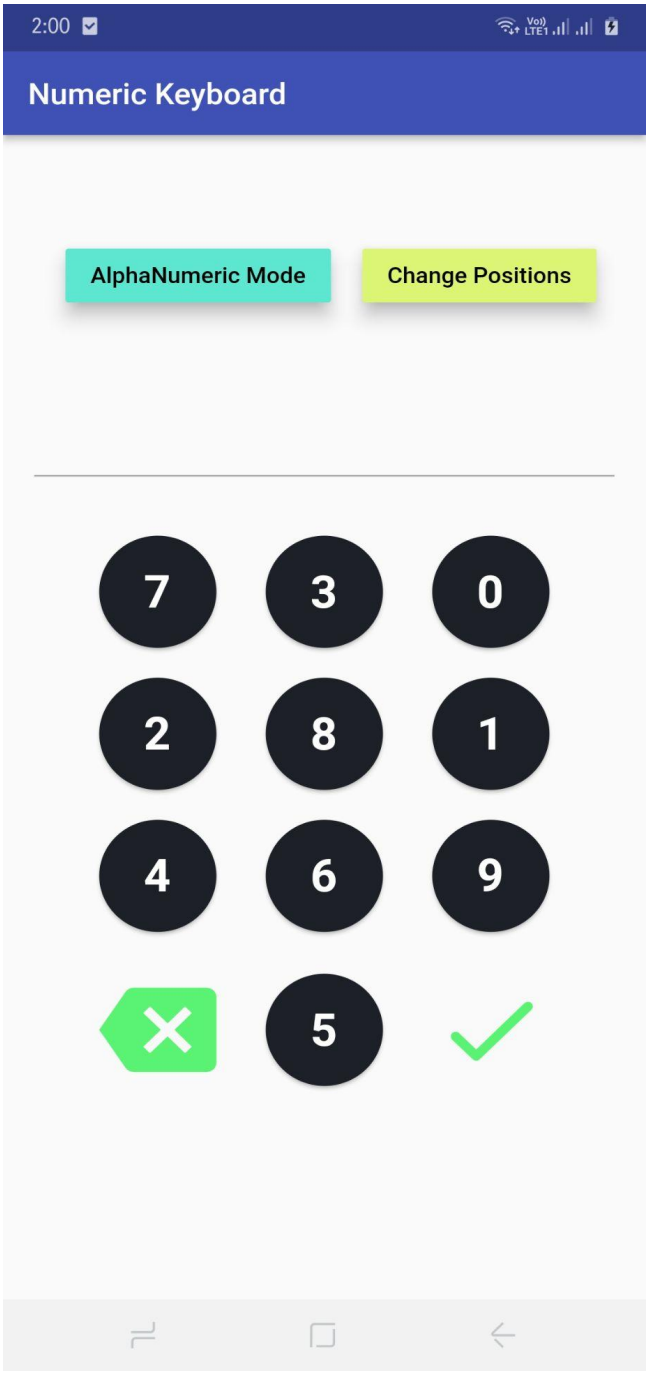
How To Run Code :-

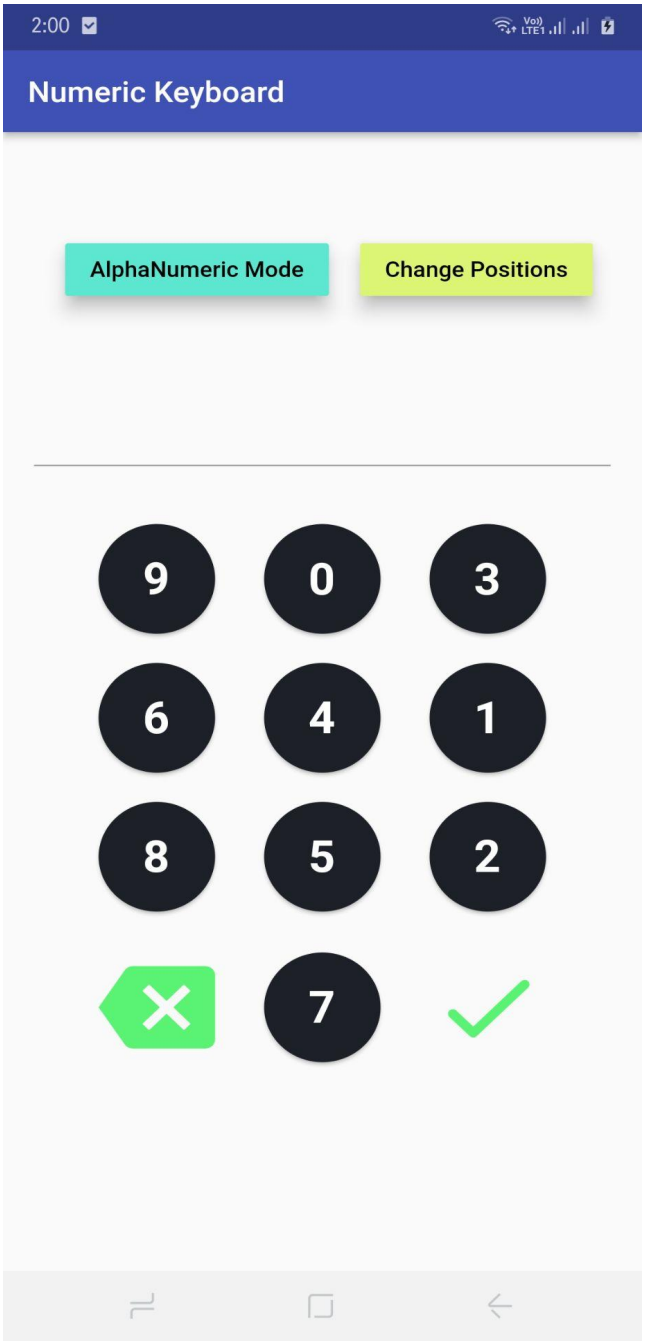
- Download the dynamic_keyboard folder.
- Open Folder in Visual Studio Code.
- Open Terminal and enter these following commands.
    - flutter pub get
    - flutter pub run flutter_launcher_icons:main
    - flutter run --no-sound-null-safety

App ScreenShots :

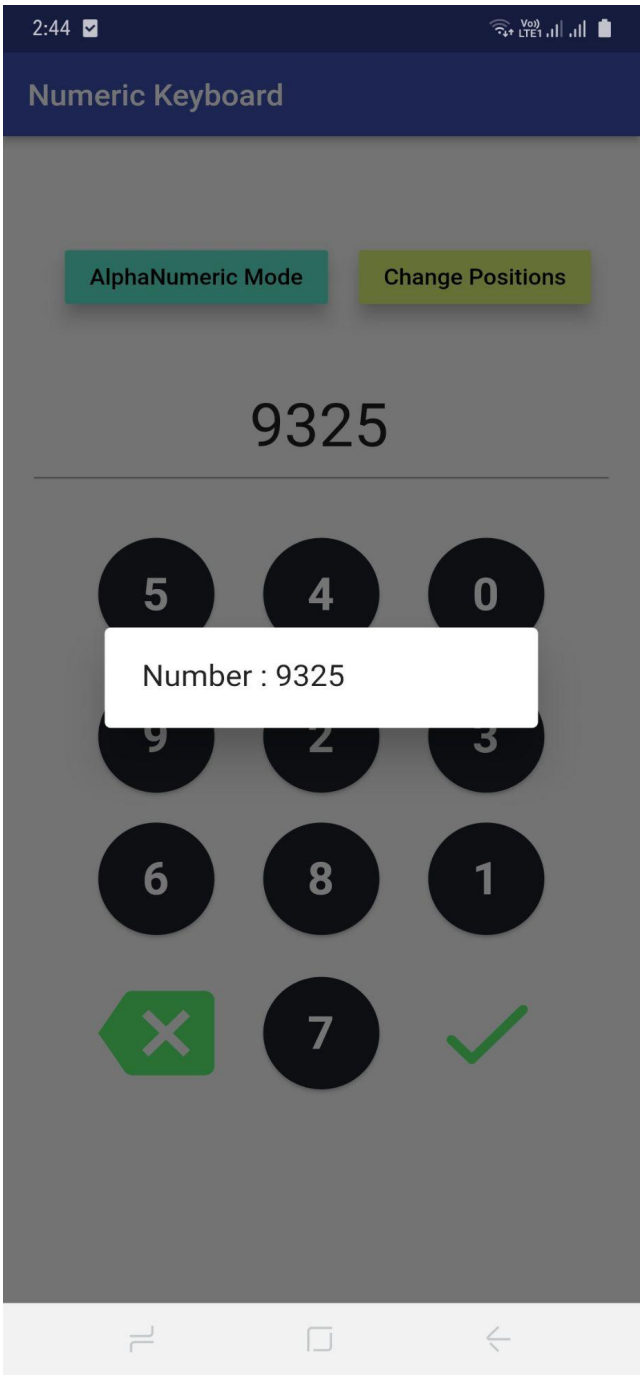
- **Numeric Keyboard**

  The Positions of the digits changes whenever the user clicks on the **Change Positions** button/restarts the application.


2:00
Numeric Keyboard
AlphaNumeric Mode
Change Positions
7
3
0
2
8
1
4
6
9
5


2:00
Numeric Keyboard
AlphaNumeric Mode
Change Positions
9
0
3
6
4
1
8
5
2
7

Whenever the user clicks on the right (✅) button the dialog box will appear which shows whatever user typed in the input box.



When the user clicks on the **AlphaNumeric Mode** user will be redirected to the alphanumeric keyboard screen.

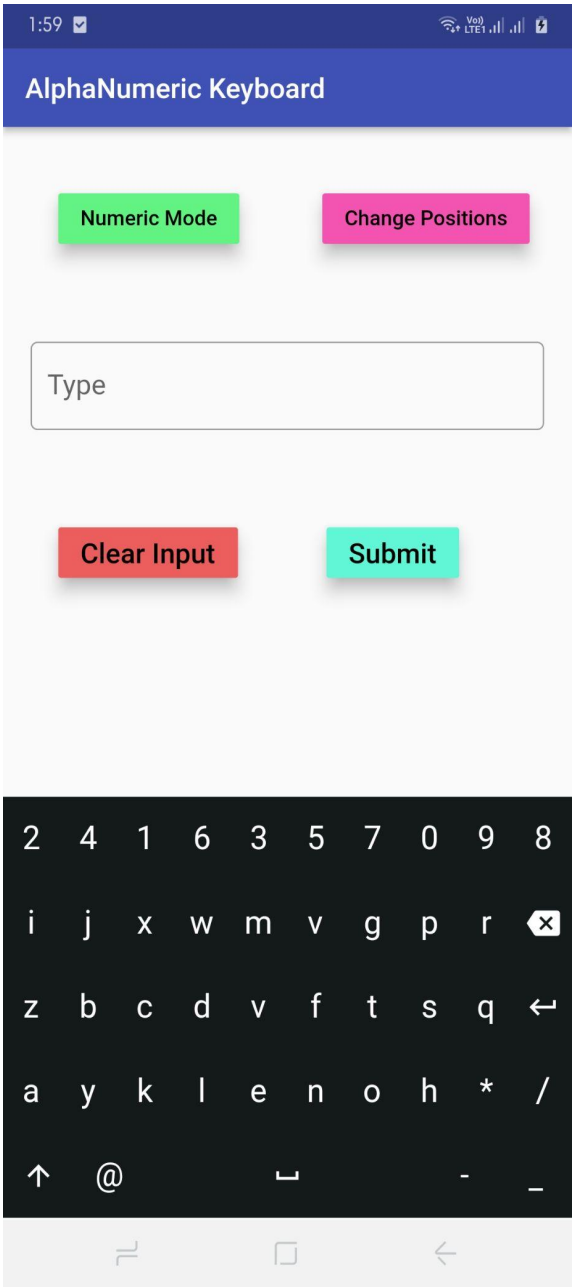
- **AlphaNumeric Keyboard**

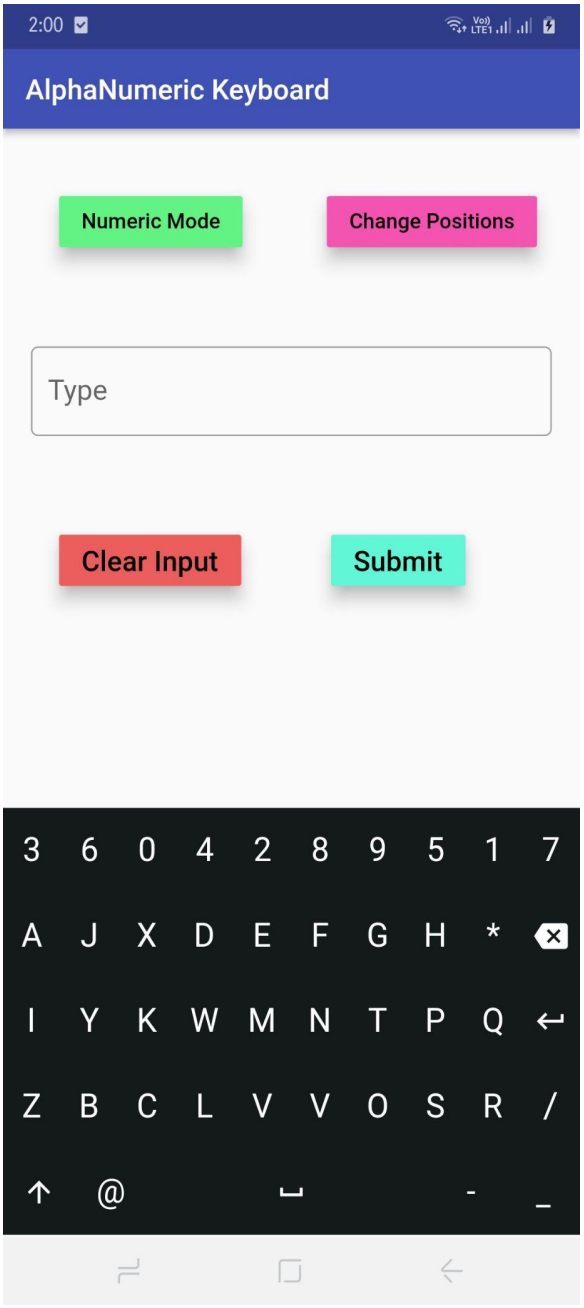
  The AlphaNumeric Keyboard screen contains Virtual Dynamic Keyboard whenever the user clicks on the **Change Positions** button/restarts the application positions of these alphabets will change.

```
groups = [
  ['a', 'i', 'z'],
  ['b', 'j', 'y'],
  ['c', 'k', 'x'],
  ['d', 'l', 'w'],
  ['e', 'm', 'v'],
  ['f', 'n', 'v'],
  ['g', 'o', 't'],
  ['h', 'p', 's'],
  ['r', 'q', '*']
];
```

  I made 9 group,three alphabets in one group.The position will change with respect to row for example ‘a’ in 1st Row , ‘i’ in 2nd Row and ‘z’ in 3rd Row when the user clicks on the **Change Positions** button/restarts alphabets will be shuffled i.e ‘a’ may be in 2nd Row , ‘z’ may be in 1st Row and ‘i’ may be in 3rd Row.Similar technique is used to shuffle all groups.Also for Capital letters same technique is used.

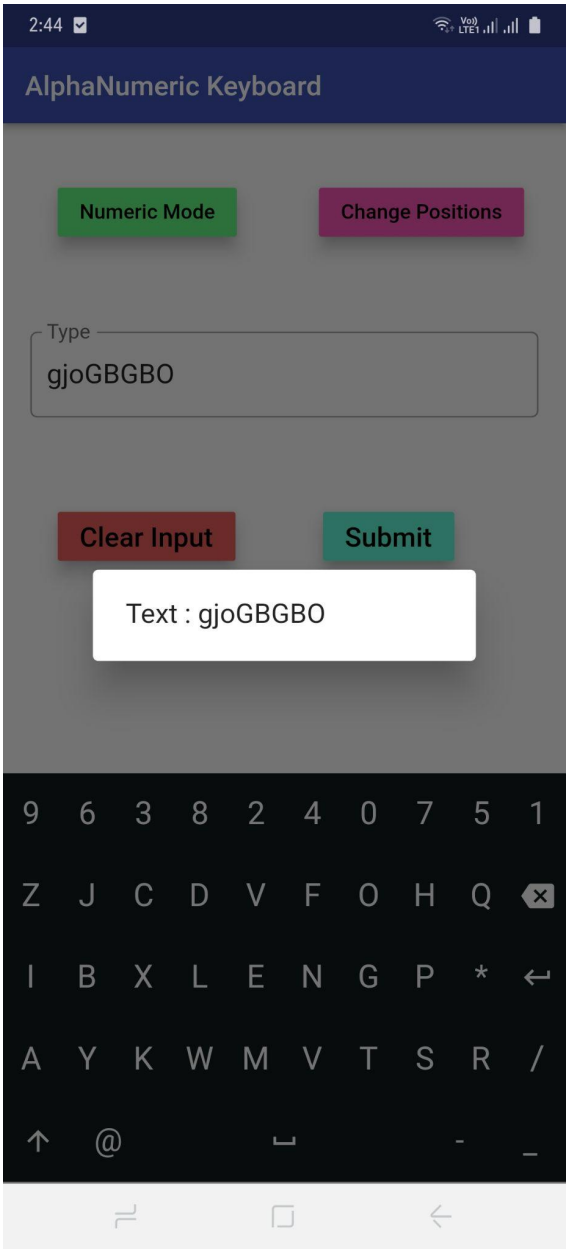
  For numbers it is a random shuffle.


1:59
AlphaNumeric Keyboard
Numeric Mode
Change Positions
Type
Clear Input
Submit
2 4 1 6 3 5 7 0 9 8
i j x w m v g p r
z b c d v f t s q
a y k l e n o h * /
@
-
_


2:00
AlphaNumeric Keyboard
Numeric Mode
Change Positions
Type
Clear Input
Submit
3 6 0 4 2 8 9 5 1 7
A J X D E F G H *
I Y K W M N T P Q
Z B C L V V O S R /
@
-
_

Whenever the user clicks on the **Submit** button the dialog box will appear which shows whatever user typed in the input box.

Clear Input button is used to clear the typed text in the input box by the user.



When the user clicks on the **Numeric Mode** user will be redirected to the numeric keyboard screen.