

PA1 **Simple Wordle**

Mobile App Programming

Wordle

- Guess a five-letters English word.
 - Letter not included / Included but wrong pos / Right
 - Similar with Bulls and Cows(숫자야구)
- <https://www.nytimes.com/games/wordle/index.html>

A	D	I	E	U
M	O	U	N	T
C	H	A	I	R
R	E	T	R	Y
R	E	N	E	W

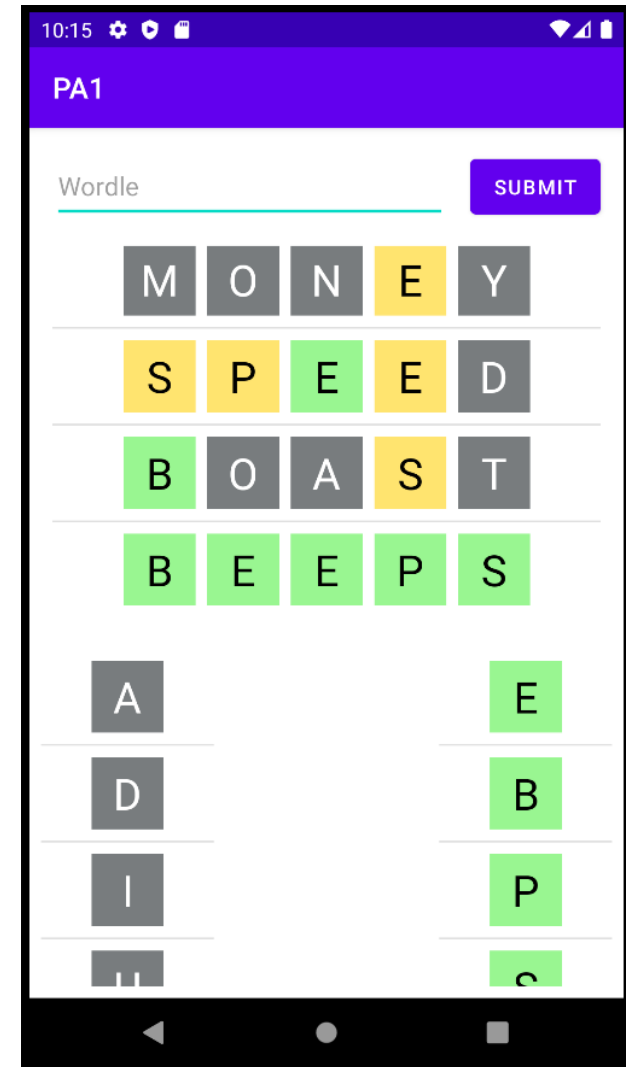
Wordle

- Green: Right letter & Right position
 - Same letter could be elsewhere too
- Yellow: Right letter & Wrong position
- Gray: Wrong letter

A	D	I	E	U
M	O	U	N	T
C	H	A	I	R
R	E	T	R	Y
R	E	N	E	W

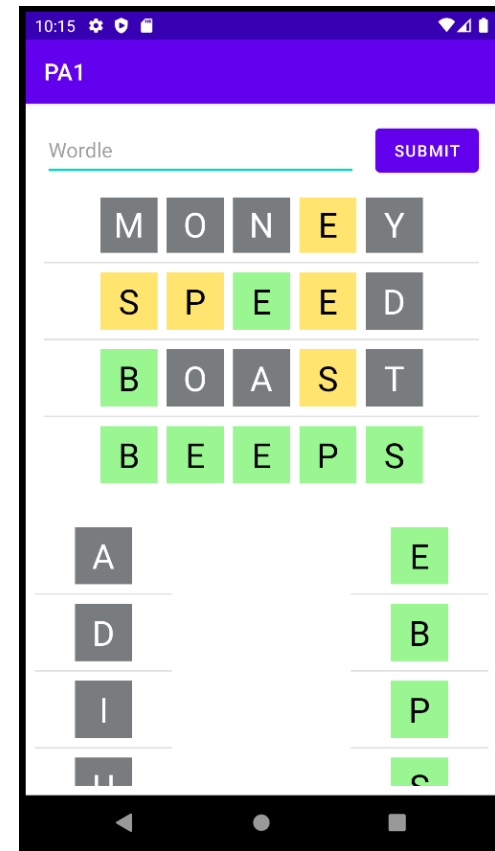
PA1 Goal

- Make Wordle Application
 - We will give you a dictionary file.
 - Text input must be done with EditText.
 - User can only guess with a valid word
 - Guess list must be shown
 - Gray/Yellow/Green letter list must be shown
 - List must be ListView(RecyclerView allowed)



PA1 Goal

- UI
 - Score will be deducted when
 - You did not follow guideline
 - AND seemingly bad
 - No objection allowed
 - TAs will score your apps
 - Pixel 2 API 30
 - 1080 x 1920: 420dpi
 - Android 11.0 (API 30)

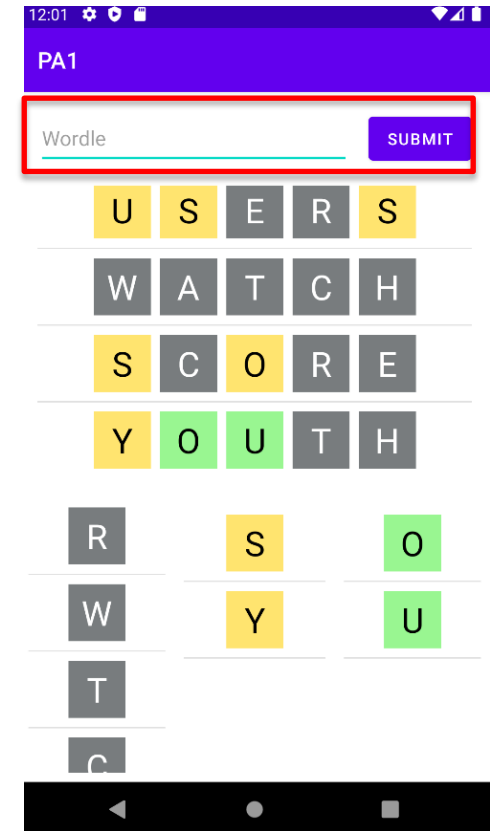


PA1 Specification

- Project Settings
 - Minimum SDK: Must be [26](#)(Android 8.0)
 - Target & Compile SDK: Must be [31](#)(Android 12.0)
 - Application ID(Package): Must be [edu.skku.cs.pa1](#)
- Application Execution
 - The wordle screen must be shown without any action.
 - The application must be started in 10 seconds.
 - UI must not stop more than 5 seconds.
 - No error while build/execution

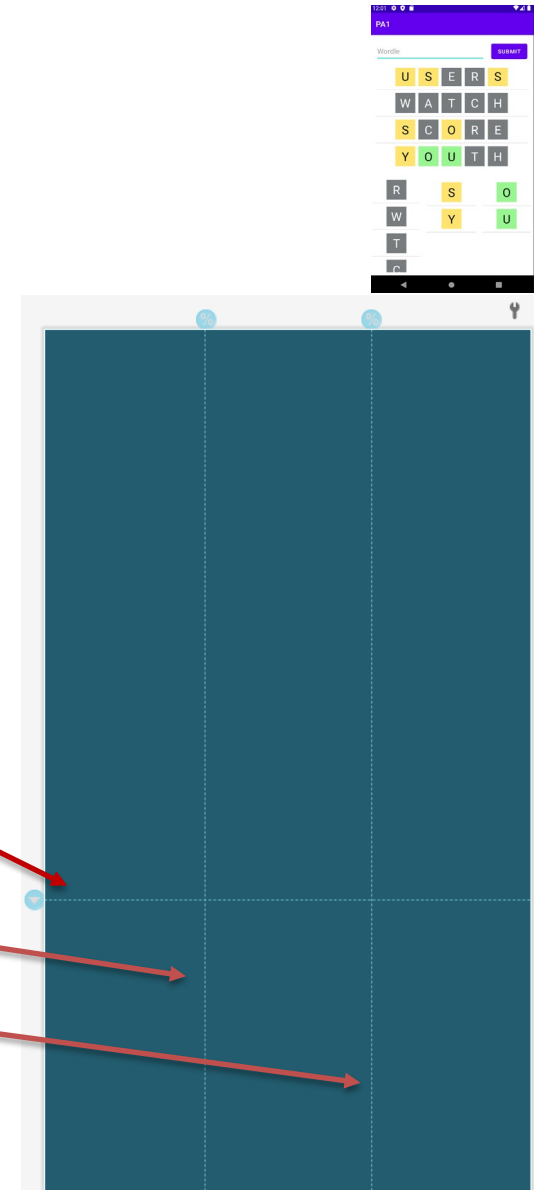
PA1 Specification

- User Interface: Screen
 - EditText
 - height: 50dp
 - all margin: 16dp
 - width: match_constraint
 - Text: None(empty)
 - Hint: Wordle
 - Button
 - height: 50dp
 - all margin: 16dp
 - width: wrap_contents
 - Text: SUBMIT



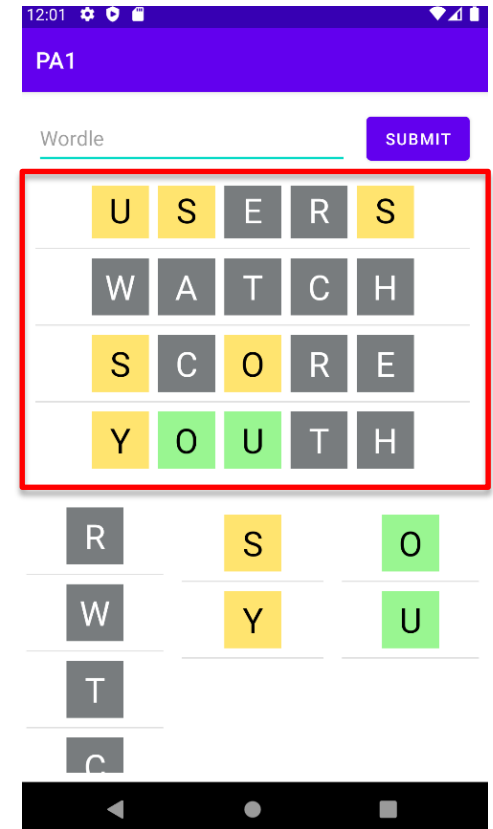
PA1 Specification

- User Interface: Screen
 - Guideline
 - `androidx.constraintlayout.widget.Guideline`
 - Horizontal
 - 250dp from bottom
 - Vertical
 - 33%
 - 67%



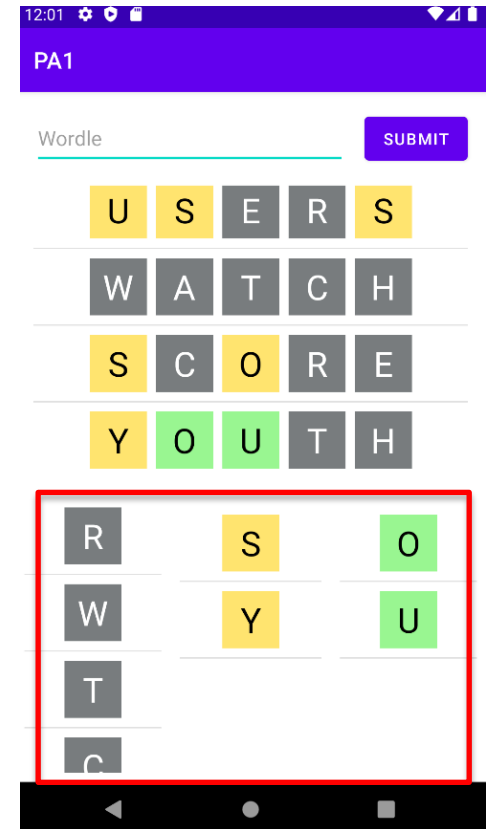
PA1 Specification

- User Interface: Screen
 - Wordle Word List
 - Listview (or RecyclerView)
 - Item Layout: Later
 - margin: 16dp
 - height/width: match_constraint



PA1 Specification

- User Interface: Screen
 - Wordle Letter List
 - Listview (or RecyclerView)
 - Item Layout: Later
 - All margin: 8dp
 - height/width: match_constraint
 - Leftmost = (gray)
 - Middle = (yellow)
 - Rightmost = (green)

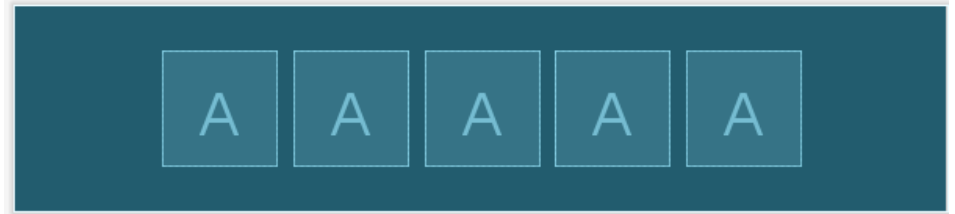


PA1 Specification

- User Interface: Listview

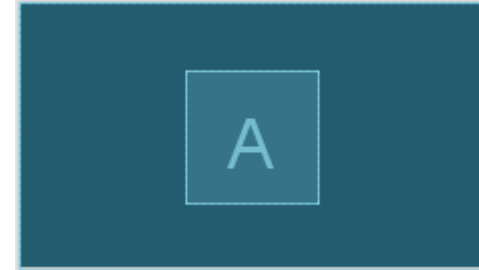
- Wordle Word List

- Listview (or RecyclerView)
 - Must be centered horizontally
 - vertical margin: 8dp
 - horizontal margin between letter Textviews: 8dp
 - Text must be centered vertically&horizontally in TextView
 - Letter Textview
 - width/height: 50dp
 - Text Size: 30sp

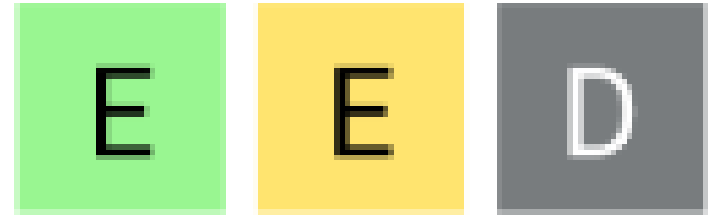


PA1 Specification

- User Interface: Listview
 - Wordle Letter List
 - Listview (or RecyclerView)
 - Must be centered horizontally
 - Letter Textview
 - width/height: 50dp
 - Text Size: 30sp
 - All margin: 8dp
 - Text must be centered vertically&horizontally in TextView

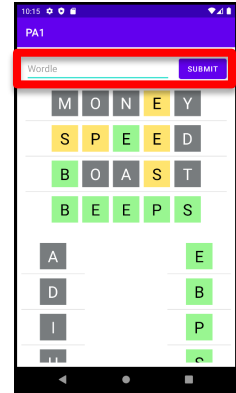


PA1 Specification



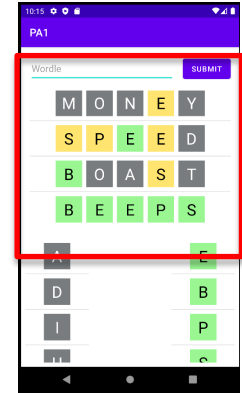
- User Interface: Others
 - Wordle Letter
 - Right Letter & Right position (**Green**)
 - Background = #FF99F691 (#99F691)
 - Text = #FF000000 (#000000)
 - Right Letter & Wrong position (**Yellow**)
 - Background = #FFFFE46F (#FFE46F)
 - Text = #FF000000 (#000000)
 - Wrong Letter (**Gray**)
 - Background = #FF787C7E (#787C7E)
 - Text = #FFFFFFFF (#FFFFFF)

PA1 Specification



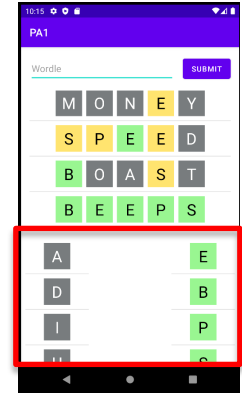
- Functionalities
 - Wordle
 - On app execution, generate a random answer
 - Among given five-letters words dictionary
 - Guess
 - If user type word in EditText and press SUBMIT Button,
 - Check it is in the dictionary
 - » If not, show toast:
"Word '<User_input>' not in dictionary!"
 - » If in, add that guess to below lists and clear EditText

PA1 Specification



- Functionalities
 - Wordle Word list
 - Once user guessed the word in dictionary, it must be added.
 - The guessed five letters word is shown in one line.
 - Newly added word must go to the bottommost.
 - Set the text to guessed word's letter.
 - Set background color and text color according to 'UI: Others'.
 - (Green) (Yellow) (Gray)
 - Since it is ListView(or RecyclerView), it must be scrollable.

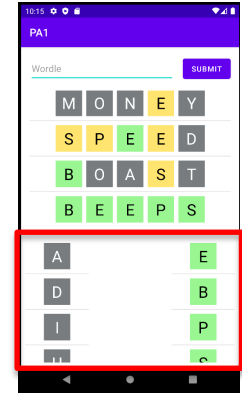
PA1 Specification



- Functionalities
 - Wordle Letter list
 - Once user guessed the word in dictionary, All the guessed five letters must be checked.
 - Set background color and text color according to 'UI: Others'.
 - (Green) (Yellow) (Gray)
 - Since it is ListView(or RecyclerView), each must be scrollable independently.
 - Newly added letter must go bottommost (or it could be sorted alphabetically).

PA1 Specification

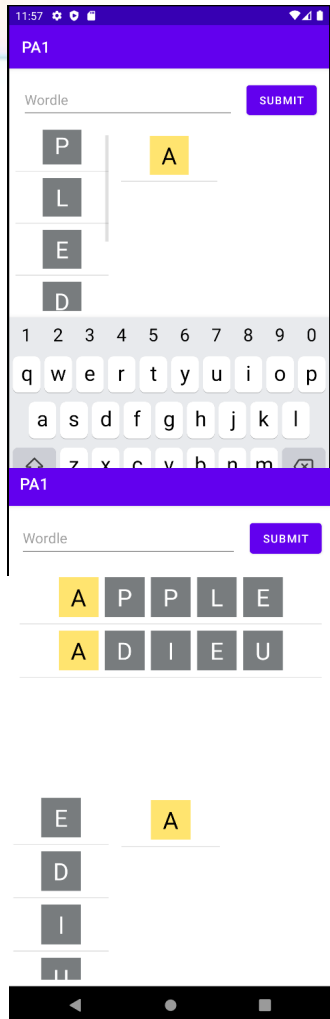
- Functionalities
 - Wordle Letter list
 - If a letter is Gray,
 - Add to left list if not already in left list.
 - If a letter is Yellow,
 - Add to middle list if not already in middle/right list.
 - If a letter is Green,
 - Add to right list if not already in right list.
 - Remove that letter in middle list.



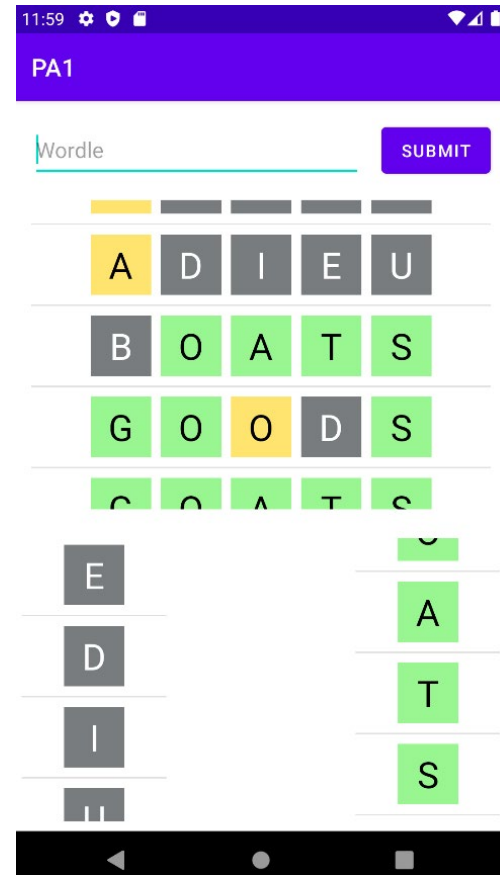
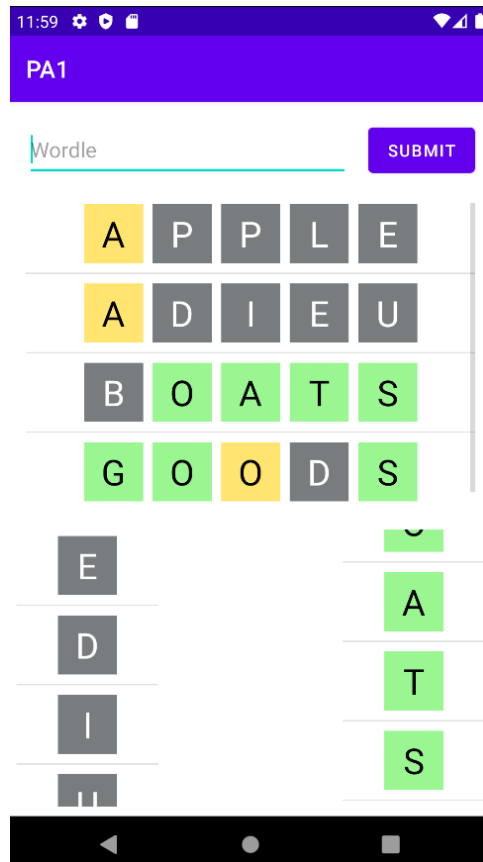
PA1 Others

- Do not care about
 - # of Adapter class
 - # of Adapter object
 - Make reset button: just restart app
 - Successful guess: no need to do something else
- Questions?
 - https://docs.google.com/spreadsheets/d/1bMus8io91-laQfWwELRnt43Qt_gCdFeaDi5_XSMlk4I/edit?usp=sharing
- See this slide until the end.
 - Tips

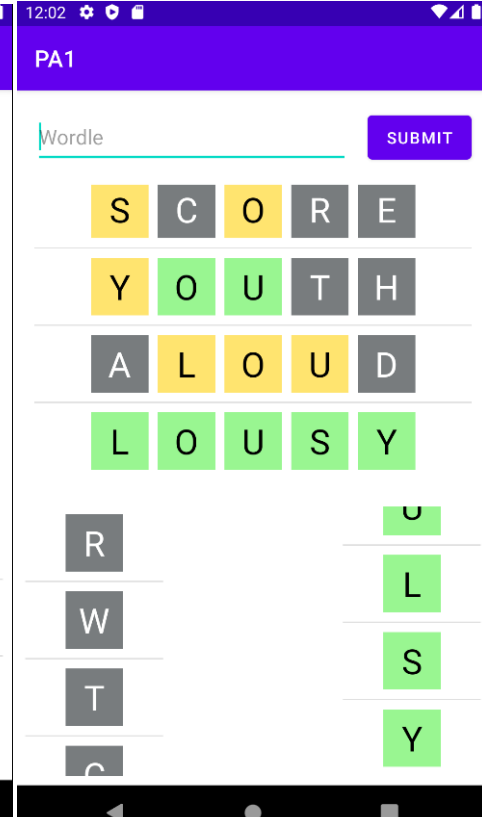
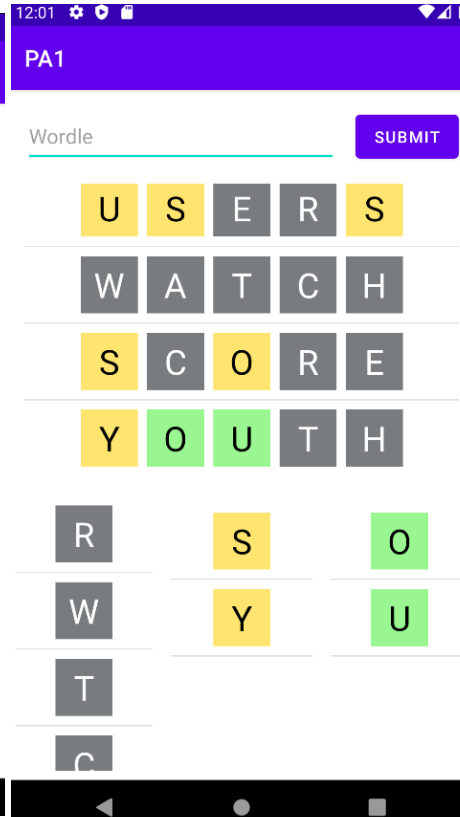
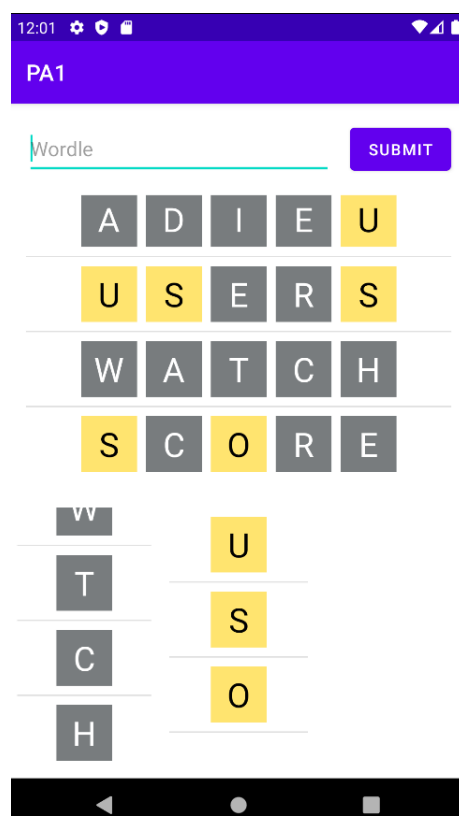
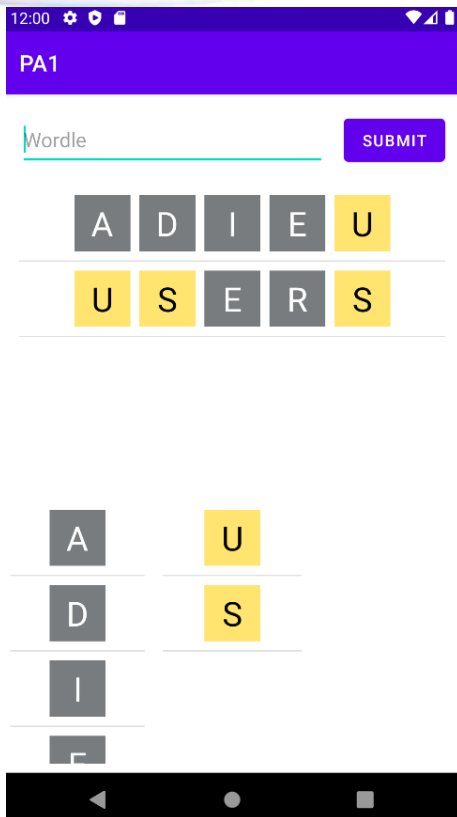
PA1 Screenshots



PA1 Screenshots



PA1 Screenshots

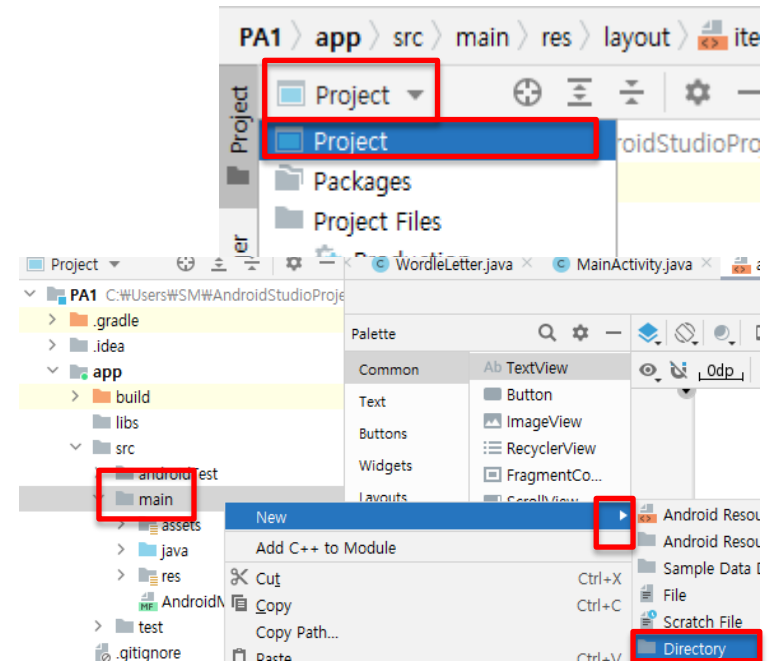
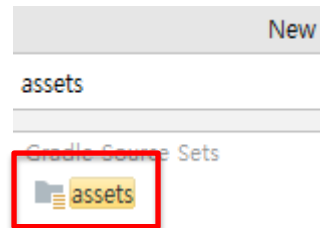


PA1 Submission

- Submit single zip file with name "<Student ID>_pa1.zip"
 - Export to zip -> Change file name
 - Do not care about ending '-<Number>' (ex: 2022524288-1.zip)
- Submission Due
 - 4/4 23:59
 - Delayed Submission
 - ~4/7 23:59
 - Your score will be penalized by 25%p per day.
 - $70/100, 2 \text{ day late} = 70 \cdot (1 - 0.25 \cdot 2) = 35/100$

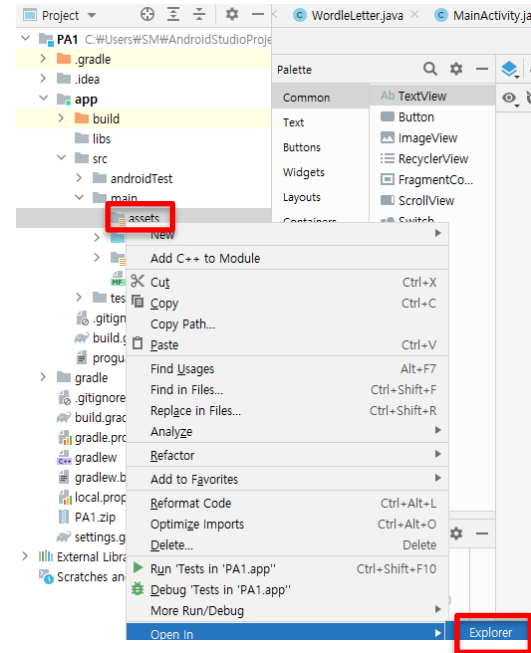
PA1 Tips: File Read

- Download wordle dictionary txt file.
 - on iCampus: one word in single line, line by line
 - source: <https://github.com/cwackerfuss/react-wordle/blob/main/src/constants/wordlist.ts>
- Change project view to “Project”, not “Android”
- Right click on PA1/app/src/main
- New > Directory
- Type ‘asset’ and choose one



PA1 Tips: File Read

- Right click on assets
- Open in explorer
- Go into assets folder
- Paste that txt file in assets

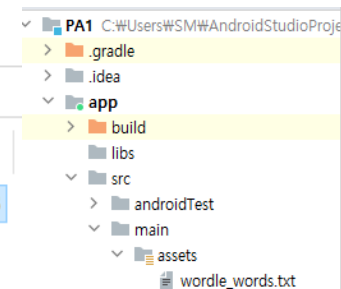


이름	PA1 > app > src > main > assets
assets	유형 크기

이 폴더는 비어 있습니다.

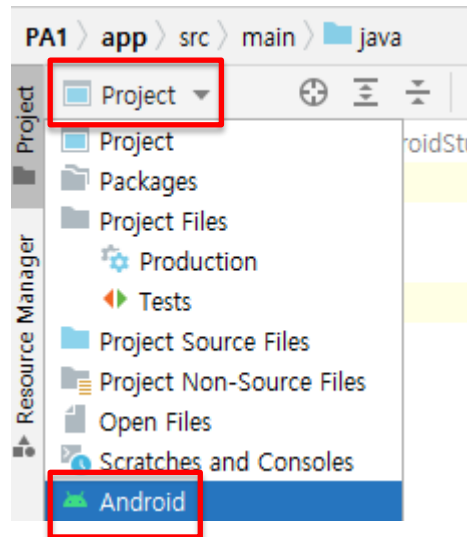
> 로컬 디스크 (C:) > Users > SM > AndroidStudioProjects > PA1 > app > src > main > assets

이름	수정한 날짜	유형	크기
wordle_words.txt	2022-03-20 오후 8:18	텍스트 문서	40KB



PA1 Tips: File Read

- Recommend to revert project view to “Android”

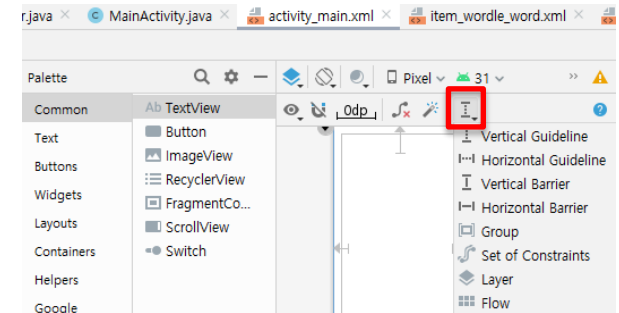


PA1 Tips: File Read

- `Context.getAssets().open("file name");`
- Will open the `InputStream`
- Use Like
 - `InputStream is =
getApplicationContext().getAssets().open("wordle_words.txt");`
- Further Tips:
 - <https://stackoverflow.com/questions/309424/how-do-i-read-convert-an-inputstream-into-a-string-in-java>

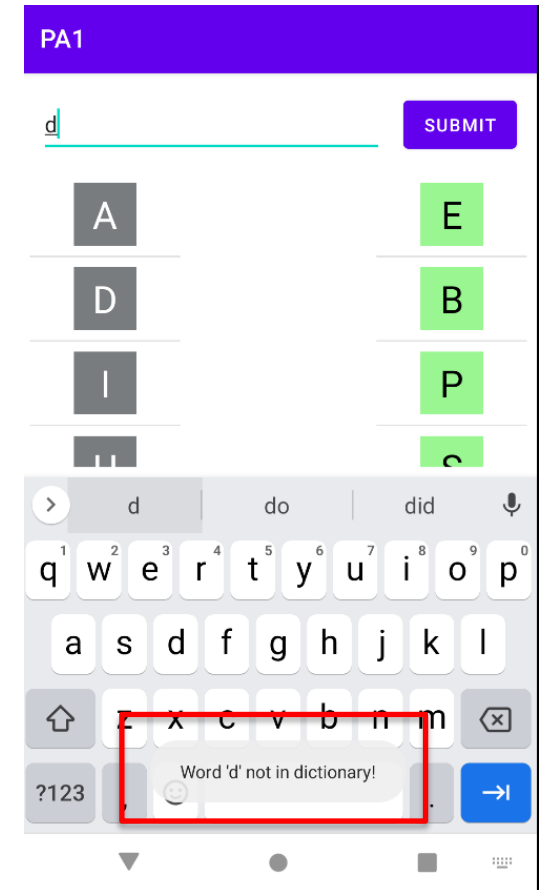
PA1 Tips: Guideline

- Invisible line to help us set constraint.
- Three types
 - X dp from left(top)/right(bottom)
 - `app_layout_constraintGuide_start`
 - `app_layout_constraintGuide_end`
 - X percent from left(top)
 - `app_layout_constraintGuide_percent`
 - Click bubble to change (or by code/Attributes)
- You can make constraint to guidelines



PA1 Tips: Toast

- Small popup to give feedback to user.
- User can keep use application.
- `Toast.makeText(getApplicationContext(),
"Toast_to_show",Toast.LENGTH_SHORT).show()`



- Details:
<https://developer.android.com/guide/topics/ui/notifiers/toasts?hl=ko>

PA1 Tips: Others

- Color: app/res/values/colors.xml

- R.color.name

- ContextCompat.getColor(getApplicationContext(), R.color.???)

- Adapter


- this.notifyDataSetChanged()

- Others

- textView.setBackgroundColor(~) / textView.setTextColor(~) /
textView.setText(~)

- editText.getText().toString() / editText.setText(~)

- android:hint



```
<color name="background_out">#FF787C7E</color>
<color name="background_ball">#FFFFE46F</color>
<color name="background_strike">#FF99F691</color>
<color name="text_out">#FFFFFF</color>
<color name="text_ball">#FF000000</color>
<color name="text_strike">#FF000000</color>
```