RecyclerView / ListView / GridView

We know how important is a list for showing the menu in a game. So here is a quick solution for that.

Section 1 (Making RecyclerView)

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Add a new RecyclerView UI object in the scene.

You'll get 2 GameObject (DeviceOrientation, RecyclerView in Canvas). DeviceOrientation will manage the realtime Orientation change for mobile devices.



Things to Note:

You'll get RecyclerView object with hierarchy:

RecyclerView

ViewPort

Content

Scrollbar Horizontal

Scrollbar Vertical

You can change position, size, and anchor of RecyclerView but can't change the anchor of Content. The reason behind this is Content is adapting the size according to items in it and adjust it's position according to the anchor. You can change the size but it'll have no effect as it'll adapt the size based on items in it.

Now you'll get 2 scripts attached to RecyclerView.

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As it's basically a default unity's ScrollView, you can use all ScrollRect properties.

First script is <u>RecyclerView</u>, which is required to make it work as a list or grid.

In Editable Fields section, you have to change values according to your requirements.

- Orientation, for how you want to scroll it.
- Num Columns, to make a grid and add more columns. In horizontal it'll be number of rows.
- Padding, for inner padding of content.
- Divider, with divider you can add gaps in between the items placed.

Second script is <u>Example</u>, which is an example script which has the code template you'll be using to work with RecyclerView and you have to remove it and repace it with your script. We'll get back to it after making items to populate in the list.



So, we'll resize our RecyclerView and place items in it.

Place an Image into the Content (you can place it anywhere, because we'll be making a prefab out of it.). Make sure set it's anchor to Top Left to make it work properly.

Note: Images is only an example, you can use any UI item you want

Now we have to attach a script ListItem to this image. And sometimes we'll be showing just simple images but sometimes we need a label with image. And we want that label to be dynamic. So, we'll have to extend ListItem and use that for a ViewHolder. Both examples are given below.

Section 2 (Populating with Static List Items)

First We'll use static images for a list. So, Add ListItem Script to the Image we created.

Ignore MyListItem, As it's an example script which is extending ListItem. We'll be doing this in our upcoming section. After adding the ListItem script, make a prefab out of this GameObject.



Now delete Image from Hierarchy and create a script to manage RecyclerView which will replace Example Script and will use the template of it.

So, create a new script called RVManager(or any name you want). We'll need an Adapter to populate the list inside our RecyclerView. So, we can create another script for this or put it inside our RVManager script. I'll be putting inside RVManager Script.

We'll require namespace FM to work with all the classes we need.

Create a class MyAdapter which will extend class Adapter and put a construction and 3 override functions inside it.

In RVManager class create 3 variables for RecyclerView, ListItem and MyAdapter.

Put RecyclerView created in GUI and ListItem prefab in their respective slots. And inisitalise the adapter in Start function.



Now attach RVManager to our RecyclerView and remove the Example script. You can attach this script anywhere and still manage the RecyclerView.

Now put RecyclerView from hierarchy and Image from prefab in Recycler View and Item respectively.

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Now if you run the project you can see we made a list with 50 elements inside it with 10pixels of padding and 10 pixels of dividers.

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Section 3 (Public functions in RecyclerView)

You can edit and add many things using scripts in RecyclerView.

First is Padding and Dividers. You can modify them in your own scripts.



And remember to call recyclerView.SetAdapter after modifying divider and padding values. Or call recyclerView.Redraw() if you are setting adapter before modifying padding or divider.

If you want a callback on single item click, you can use recyclerView.SetOnItemClickListener which will return you ListItem and Index of the clicked item.

More public functions:

- SetOnScrollListener(Callback<int, int>)

First argument is giving the index of first item visible in the view.

Second integer is giving the index of last item visible in the view.

- GetFirstViewIndex()

This function will return int which contains the index of first item visible in the view.

- GetLastViewIndex()

This function will return int which contains the index of last item visible in the view.

- ScrollTo(int index, bool smooth)

It'll scroll the RecyclerView to a given index and you can specify if you want smooth scroll or just snap to the index.

- GetContentRectSize()

It'll return a Vector2 which contains the actual size of content containing items.

- Redraw()

If you are updating the data require to populate the list or any other thing, you'll require to call Redraw() function after that just to refresh everything. It'll retain the positions as it is.

Section 4(Populating with Dynamic List Items)

As we know the basics now, we can populate the list with any dynamic list now. So, we'll make changes in our existing script RVManager and will create a new script for ListItem.

First of all create a new script TestListItem (or call whatever you want). So, we'll put a label in every image. We require a Text item to do so.

Extend this script with list item and put a public Text variable in it. And that's it for this script.



Now, let's edit our prefab Image to show the text too. Put a text inside the item and Repace ListItem script with TestListItem. And put this text in Text slot made in TestListItem script. And make a new or replace existing prefab with this.

Note: No need to say again, but you can use anything here instead of text. This is just an example.



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Remove the Image from Hierarchy as we have prefab for updated Image now.

Now in RVManager we'll just put the index on text and instead of ListItem, now we'll be working with TestListItem but all other code will remain the same.



Changes in this code according to previous one:

In OnBindViewFunction

We are casting ListItem to TestListItem and changing it's text to index.

In RVManager we changed ListView to TestListItem.

We can make a list from Array or List too.

Here is an example:



I made a string array in RVManager and added values in inspector. And received this array in MyAdapter class through constructor. Then changed text in OnBindView.

Here is the outcome:



Inspector:

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If you are familiar with Android's RecyclerView then this should be very same for you. I tried to make it same as Android's default RecyclerView.

If you are facing any bugs or implementation problem, you can contact me at:

support@fatmachines.com

Website: <u>http://fatmachines.com</u>