

News feed application – SOSM

A. Purpose:

Implementing a simple Android application for retrieving news feed from Azure functions and display the content of it in text views for users. On the first screen, the user can scroll through a list of items (Recyclerview with Cardview), sort the list (ascending/descending) or search for keywords. The second screen will display the content/description of the news selected by the user from the first screen. Periodically, calls are made to the Azure functions to retrieve data and all the information is saved in a local database using Room. When new data is introduced, there are checks to differentiate the old data (comparison between what is already on the server (Azure functions) and what already exists in the local database, using Room). The new entry/data will be displayed similar, adding in the title – “-NEW”.

B. Implementation:

- AnotherActivity.java – used for the second screen, which will reuse the fields for title, description, imageView and will set content to view.
- CustomFilter.java – contains the search for keywords.
- MainActivity.java – contains the menu for filtering by title and switching to the second screen. There are some checks to differentiate the oldNews – latestNews, making a get call to the Azure functions periodically and adding “-NEW” in the content of the title for new data introduced.

```
String url ="https://android-news-feed.azurewebsites.net/api/HttpTrigger1?code=sdpMUNHHaT0gk6kKhPfc35veQ5qoSn20JWOa3UYRxhNQKuaSUNmzWA==";
```

- MyAdapter.java – listener for user's inputs, used for setting items as drawables.
- MyHolder.java – listener for on click items.
- News.java – SQLite table for the news, which contains id, title, description and the image. It also contains the logic for sorting ascending, descending by title.
- NewsDao.java – the interface that provides queries for insertAll() and loadAll() news.
- NewsRoomDatabase.java – extends RoomDatabase and each entity corresponding to a table will be created in the database. getDatabase will create the database the first time it's accessed and names it “news_database”.
- res/drawable/ic_action_search and res/drawable/ic_action_sort – vector assets for searching and sorting by title.
- res/drawable/layout – relative layouts for the two screens, the list of items (all the entries for news) and a single item (title, description and image for one entry).
- Dependencies in build.gradle (Module: app): the Recyclerview and Cardview for making the list of items, gson (for parsing json from Azure functions), volley (for making get calls to retrieve data) and the room dependencies used for local database.

```
implementation 'androidx.cardview:cardview:1.0.0'  
implementation 'androidx.recyclerview:recyclerview:1.1.0'
```

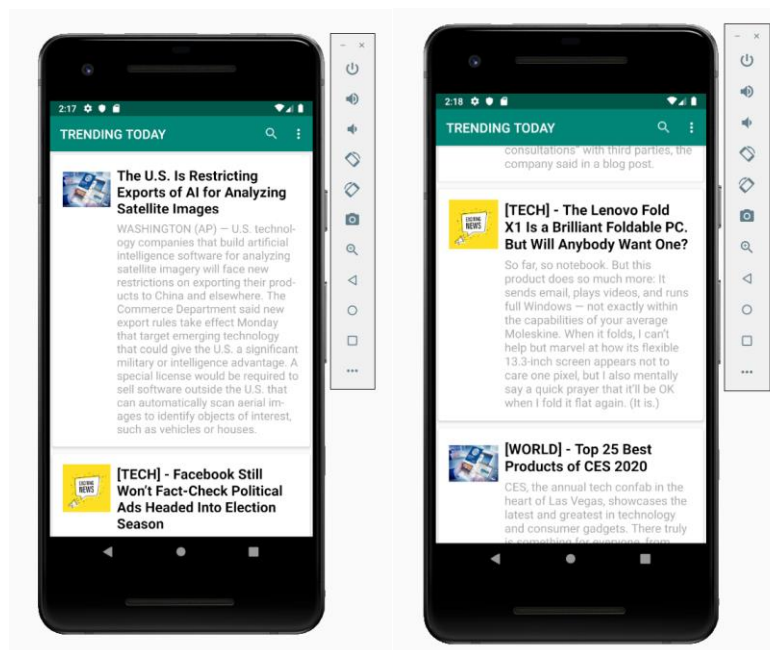
```

implementation 'com.google.code.gson:gson:2.8.6'
implementation 'com.android.volley:volley:1.1.1'
// Room components
implementation "androidx.room:room-runtime:$rootProject.roomVersion"
annotationProcessor "androidx.room:room-compiler:$rootProject.roomVersion"
androidTestImplementation "androidx.room:room-testing:$rootProject.roomVersion"
// Lifecycle components
implementation "androidx.lifecycle:lifecycle-
extensions:$rootProject.archLifecycleVersion"
annotationProcessor "androidx.lifecycle:lifecycle-
compiler:$rootProject.archLifecycleVersion"
// UI
implementation "com.google.android.material:material:$rootProject.materialVersion"
// Testing
androidTestImplementation "androidx.arch.core:core-
testing:$rootProject.coreTestingVersion"

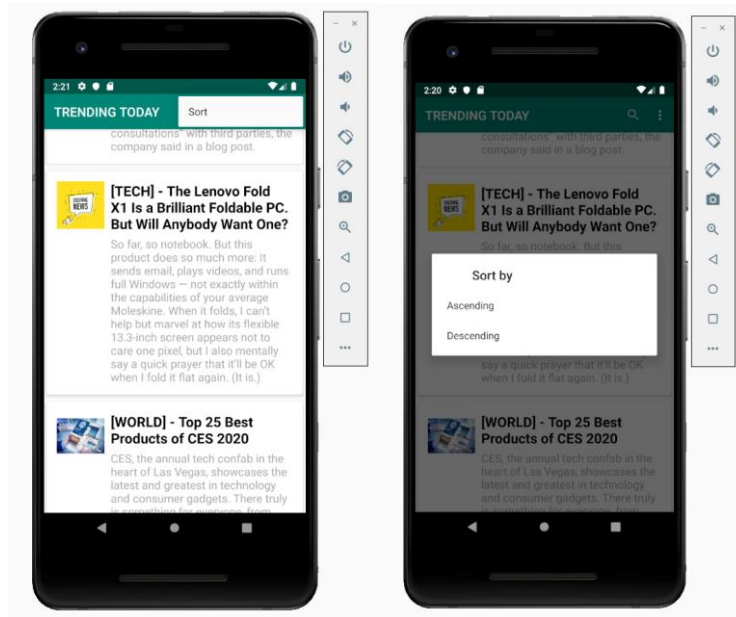
```

C. Attachments for features:

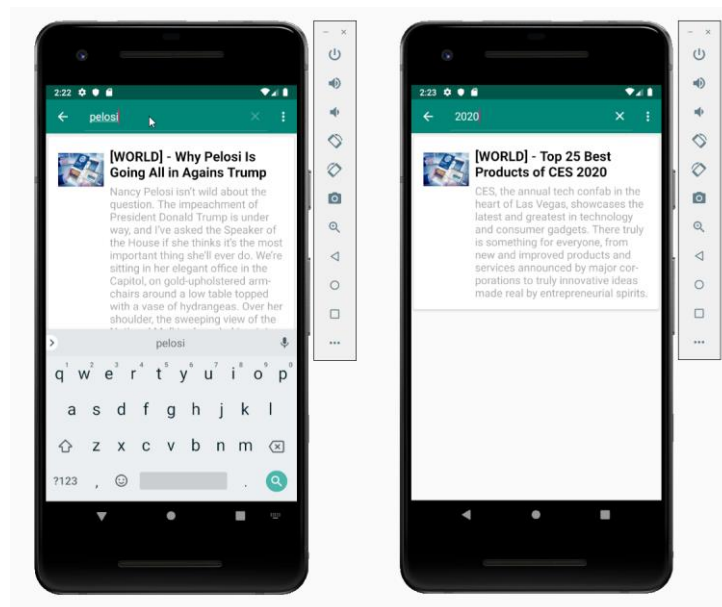
[FIRST SCREEN] - Displaying the list of items/news:



[FIRST SCREEN] - Sort the list (ascending/descending) by title:

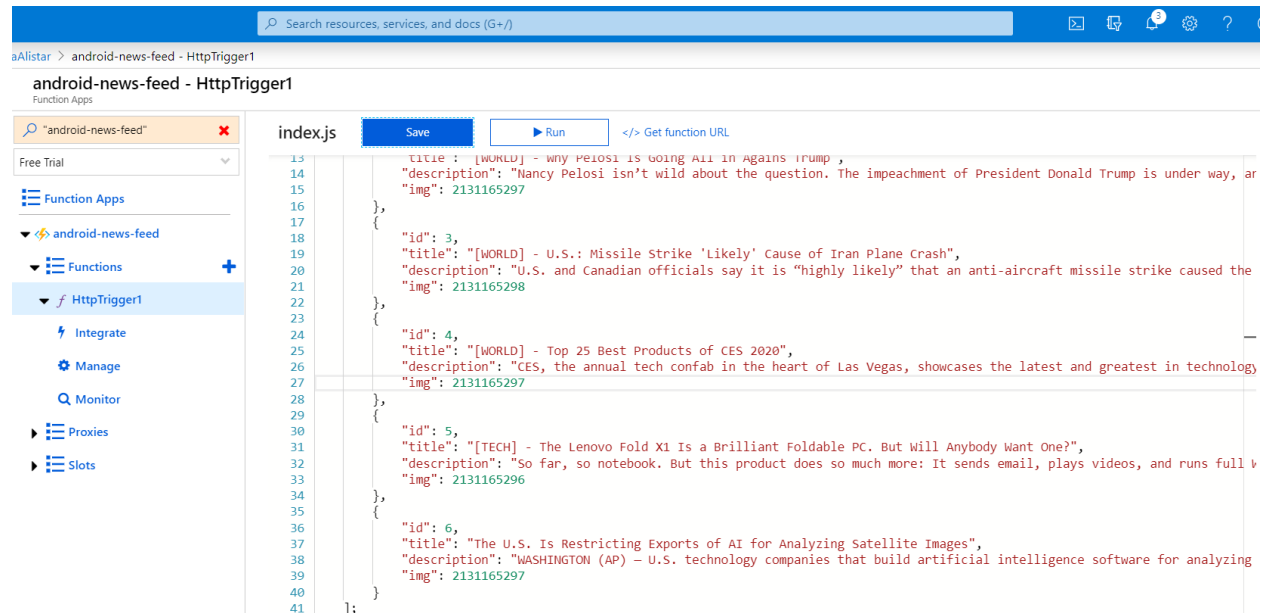


[FIRST SCREEN] - Search for keywords in the title:



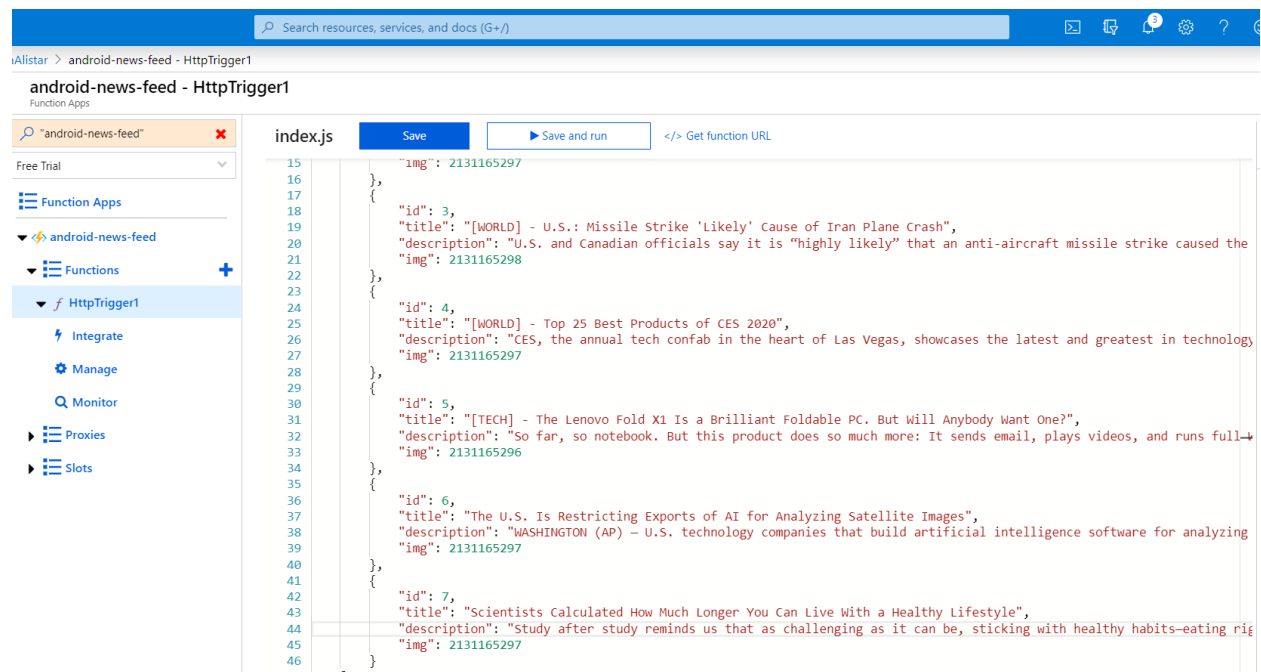
[FIRST SCREEN] – New data introduced:

Old data on the server:



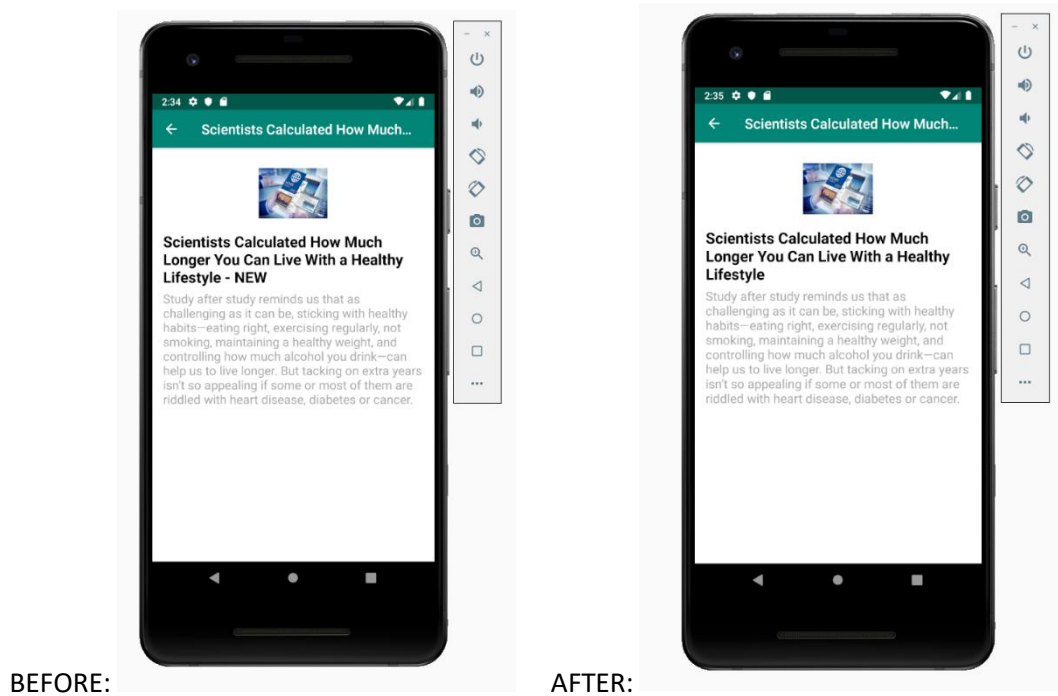
```
13  title : [WORLD] - Why Pelosi is going all in against Trump ,
14  "description": "Nancy Pelosi isn't wild about the question. The impeachment of President Donald Trump is under way, and she's leading the charge.",
15  "img": 2131165297
16  },
17  {
18    "id": 3,
19    "title": "[WORLD] - U.S.: Missile Strike 'Likely' Cause of Iran Plane Crash",
20    "description": "U.S. and Canadian officials say it is \"highly likely\" that an anti-aircraft missile strike caused the crash of a Boeing 737 MAX 8 on Tuesday.",
21    "img": 2131165298
22  },
23  {
24    "id": 4,
25    "title": "[WORLD] - Top 25 Best Products of CES 2020",
26    "description": "CES, the annual tech confab in the heart of Las Vegas, showcases the latest and greatest in technology.",
27    "img": 2131165297
28  },
29  {
30    "id": 5,
31    "title": "[TECH] - The Lenovo Fold X1 Is a Brilliant Foldable PC. But Will Anybody Want One?",
32    "description": "So far, so notebook. But this product does so much more: It sends email, plays videos, and runs full-blown apps.",
33    "img": 2131165296
34  },
35  {
36    "id": 6,
37    "title": "The U.S. Is Restricting Exports of AI for Analyzing Satellite Images",
38    "description": "WASHINGTON (AP) — U.S. technology companies that build artificial intelligence software for analyzing satellite imagery are being asked to limit exports of the software to China.",
39    "img": 2131165297
40  }
41  ];
```

New data/entry added – id:7 – “Scientists Calculated How Much Longer You Can Live With a Healthy Lifestyle”:



```
15  "img": 2131165297
16  },
17  {
18    "id": 3,
19    "title": "[WORLD] - U.S.: Missile Strike 'Likely' Cause of Iran Plane Crash",
20    "description": "U.S. and Canadian officials say it is \"highly likely\" that an anti-aircraft missile strike caused the crash of a Boeing 737 MAX 8 on Tuesday.",
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24    "id": 4,
25    "title": "[WORLD] - Top 25 Best Products of CES 2020",
26    "description": "CES, the annual tech confab in the heart of Las Vegas, showcases the latest and greatest in technology.",
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28  },
29  {
30    "id": 5,
31    "title": "[TECH] - The Lenovo Fold X1 Is a Brilliant Foldable PC. But Will Anybody Want One?",
32    "description": "So far, so notebook. But this product does so much more: It sends email, plays videos, and runs full-blown apps.",
33    "img": 2131165296
34  },
35  {
36    "id": 6,
37    "title": "The U.S. Is Restricting Exports of AI for Analyzing Satellite Images",
38    "description": "WASHINGTON (AP) — U.S. technology companies that build artificial intelligence software for analyzing satellite imagery are being asked to limit exports of the software to China.",
39    "img": 2131165297
40  },
41  {
42    "id": 7,
43    "title": "Scientists Calculated How Much Longer You Can Live With a Healthy Lifestyle",
44    "description": "Study after study reminds us that as challenging as it can be, sticking with healthy habits—eating right, exercising, and getting enough sleep—can significantly extend your life.",
45    "img": 2131165297
46  }
47  ];
```

Output:



The new entry was added having “-NEW” in the title. The data will be stored on the local database and will become old data, thus the title will not contain “-NEW” in the title.

[SECOND SCREEN] – Displaying simple data (the description of the news):

The second screen will show up when user will click on same specific news.

