JUST A CAT —— AN INFORMATION APPLICATION

1. Introduction

Just a Cat is an informative Android application. It integrates latest news from *The New York Times*, *The Guardian* and some mainstream medias in China, weather information, projects on github trending, a turing robot which can chat with users (support voice input) and translation (support voice input).

2. APIs

The Guardian

> *The Guardian* is a British daily newspaper which is focus on reporting international news. It is good at making comments and analytical thematic articles. The paper's readership is generally on the mainstream left of British political opinion.

The New York Times (need to use proxy)

> *The New York Times* is an American newspaper based in New York City with worldwide influence and readership. It has long been regarded within the industry as a national "newspaper of record".

Integration of some mainstream medias in China (Tencent, CCTV, World Wide) (unofficial)

> All of them are large Chinese news websites.

Turing Robot

> An open intelligence chat robot platform which provide APIs for users to chat with turing robot.

Weather (unofficial)

> Provide the weather information of every province, including weather forecast, air quality and life advice.

Bing pictures (background picture of weather page) (unofficial)

> Update a beautiful picture everyday.

Youdao Translator

> A Translator.

Speech recognition method developed by iFly (SDK is under `Just/app/libs`)

> Support voice input.

Github Trending (unofficial, Code)

> Exhibits some potential open source projects on Github.

3. Implement

- Adopt material design style, use the slide menu to switch different information pages.
- Use retrofit to make Http&Https requests, use GSON and SimpleXml to parse data.

Data parsing

- Deal with XML
  - `GithubParser Class` Use SimpleXml to parse XML data from API of github trending

```
public class GitHubParser
{

    @ElementList(inline = true,entry = "project",required = false)
    private ArrayList<Project> projects;

    public ArrayList<Project> getProjects() {
        return projects;
    }

    public void setProjects(ArrayList<Project> projects) {
        this.projects = projects;
    }

    @Root(name = "project",strict = false)
    public static class Project
    {
        @Element(name = "owner",required = false)
        private String owner;
        @Element(name = "repository_name",required = false)
        private String repository_name;

        @Element(name = "name",required = false)
        private String name;

        @Element(name = "descriptions",required = false)
        private String descriptions;

        @Element(name = "language",required = false)
        private String language;

        @Element(name = "stars",required = false)
        private String stars;

        @Element(name = "url",required = false)
        private String url;

        @ElementList(entry = "contributor",inline = true,required =
false)
        private ArrayList<Contributor> contributors;

        public String getDescriptions()
        {
            if (descriptions == null)
                return "This article does not have a title, please
click to view details";
            return descriptions;
        }

        public void setDescriptions(String descriptions)
        {
            this.descriptions = descriptions;
        }

        public String getTitle()
        {
            if (descriptions == null)
                return "This article does not have a title, please
click to view details";
            return descriptions;
        }

        public String getUrl()
        {
            if (url == null) return "https://github.com/";
            return url;
        }

        public void setUrl(String url)
        {
            this.url = url;
        }

        public ArrayList<Contributor> getContributors()
        {
            return contributors;
        }

        public void setContributors(ArrayList<Contributor>
contributors)
        {
            this.contributors = contributors;
        }

        public String getName()
        {
            if(name == null) return "None";
            return name;
        }

        public void setName(String name)
        {
            this.name = name;
        }

        public String getLanguage()
        {
            if(language == null) return "None";
            return language;
        }

        public void setLanguage(String language)
        {
            this.language = language;
        }

        public String getStars()
        {
            return stars;
        }

        public void setStars(String stars)
        {
            this.stars = stars;
        }

        public String getOwner()
        {
            return owner;
        }

        public void setOwner(String owner)
        {
            this.owner = owner;
        }

        public String getRepository_name()
        {
            return repository_name;
        }

        public void setRepository_name(String repository_name)
        {
            this.repository_name = repository_name;
        }

        @Root(name = "contributor", strict = false)
        public static class Contributor
        {
            @Element(name = "avatar",required = false)
            private String avatar;

            public String getAvatar()
            {
                return avatar;
            }

            public void setAvatar(String avatar)
            {
                this.avatar = avatar;
            }
        }
    }

    public static class Repository
    {
        @SerializedName("subscribers_count")
        private String watchers_count;

        @SerializedName("forks_count")
        private String forks_count;

        public String getWatchers_count()
        {
            return watchers_count;
        }

        public void setWatchers_count(String watchers_count)
        {
            this.watchers_count = watchers_count;
        }

        public String getForks_count()
        {
            return forks_count;
        }

        public void setForks_count(String forks_count)
        {
            this.forks_count = forks_count;
        }
    }
}
```

- Deal with JSON example
  - `GuardianJsonParser Class` Use GSON to parse JSON data form API of The Guardian

```
public class GuardianJsonParser
{
    // Field constants
    private static final String JSON_RESPONSE = "response";
    private static final String JSON_RESULTS = "results";
    private static final String JSON_TAGS = "tags";
    private static final String JSON_BLOCKS = "blocks";
    private static final String JSON_REQUESTED_BODY_BLOCKS =
"requestedBodyBlocks";
    private static final String JSON_BODY_LATEST = "body:latest";
    private static final String JSON_ELEMENTS = "elements";
    private static final String JSON_ASSETS = "assets";
    private static final String JSON_FILE = "file";
    private static final String VALUE_NO_IMAGE = "No Image";
    private static final String VALUE_NO_AUTHOR = "No Author";
    private static final String ARTICLE_ID = "id";
    private static final String ARTICLE_TYPE = "type";
    private static final String ARTICLE_SECTION_ID = "sectionId";
    private static final String ARTICLE_SECTION_NAME = "sectionName";
    private static final String ARTICLE_WEB_PLUBLICATION_DATE =
"webPublicationDate";
    private static final String ARTICLE_WEB_TITLE = "webTitle";
    private static final String ARTICLE_WEB_URL = "webUrl";
    private static final String ARTICLE_API_URL = "apiUrl";
    private static final String ARTICLE_IS_HOSTED = "isHosted";
    private static ArrayList<Articles> mArticlesArrayList;
    // GuardianJsonParser Constructor
    public GuardianJsonParser()
    {
    }
    public static ArrayList<Articles> getArticlesFromJSON(String
articlesJSONString)
    {
        try
        {
            // Create the articlesJSON object with the
articlesJSONString parameter
            JSONObject jsonObject = new
JSONObject(articlesJSONString);
            JSONObject responseObject =
jsonObject.getJSONObject(JSON_RESPONSE);
            JSONArray resultsArray =
responseObject.getJSONArray(JSON_RESULTS);
            int articlesQty = resultsArray.length();
            mArticlesArrayList = new ArrayList<>();
            // Loop through the articlesArray to parse each Json
object needed
            for (int i = 0; i < articlesQty; i++)
            {
                JSONObject articleRecord =
resultsArray.getJSONObject(i);
                // Parse the individual data elements needed
                String articleId =
articleRecord.getString(ARTICLE_ID);
                String articleType =
articleRecord.getString(ARTICLE_TYPE);
                String articleSectionId =
                    articleRecord.getString(ARTICLE_SECTION_ID);
                String articleSectionName =
                    articleRecord.getString(ARTICLE_SECTION_NAME);
                String articleWebPublicationDate =

 articleRecord.getString(ARTICLE_WEB_PLUBLICATION_DATE);
                String articleWebTitle =
articleRecord.getString(ARTICLE_WEB_TITLE);
                String articleWebUrl =
articleRecord.getString(ARTICLE_WEB_URL);
                String articleApiUrl =
articleRecord.getString(ARTICLE_API_URL);
                Boolean articleIsHosted =
                    articleRecord.getBoolean(ARTICLE_IS_HOSTED);
                // Try to get the author from the tags
                JSONArray articleTagsArray =
articleRecord.getJSONArray(JSON_TAGS);
                String articleAuthor = VALUE_NO_AUTHOR;
                try
                {
                    JSONObject articleContributor =
                        articleTagsArray.getJSONObject(0);
                    articleAuthor =
articleContributor.getString(ARTICLE_WEB_TITLE);
```

```
                } catch (JSONException ignored)
                {
                }
                // Try to get the image
                String articleFile = VALUE_NO_IMAGE;
                try
                {
                    JSONObject articleBlocks =
                        articleRecord.getJSONObject(JSON_BLOCKS);
                    JSONObject articleRequestedBlocks =

 articleBlocks.getJSONObject(JSON_REQUESTED_BODY_BLOCKS);
                    JSONArray articleBodyLatestArray =

 articleRequestedBlocks.getJSONArray(JSON_BODY_LATEST);
                    JSONObject articleBodyLatest =
                        articleBodyLatestArray.getJSONObject(0);
                    JSONArray articleElements =

 articleBodyLatest.getJSONArray(JSON_ELEMENTS);
                    JSONObject articleAssets =
articleElements.getJSONObject(1);
                    JSONArray articleImageArray =
                        articleAssets.getJSONArray(JSON_ASSETS);
                    JSONObject articleImage =
articleImageArray.getJSONObject(3);
                    articleFile = articleImage.getString(JSON_FILE);
                }
                catch (JSONException ignored)
                {
                }
                // Create an Article Object
                Articles article = new Articles(articleId,
articleType,
                                                articleSectionId,
                                                articleSectionName,

 articleWebPublicationDate,
                                                articleWebTitle,
articleWebUrl,
                                                articleApiUrl,
articleIsHosted,
                                                articleAuthor,
articleFile);
                // Add the Article Object to the ArrayList
                mArticlesArrayList.add(article);
            }
        }
        catch (JSONException e)
        {
            Log.e("Exception: ", "" + e);
            e.printStackTrace();
        }
        return mArticlesArrayList;
    }
}
```

- `Utility Class` Use GSON to parse JSON data from weather API

```
public class Utility
{
    public static boolean handleProvinceResponse(String response)
    {
        if (!TextUtils.isEmpty(response))
        {
            try
            {
                JSONArray allProvinces = new JSONArray(response);
                for (int i = 0; i < allProvinces.length(); i++)
                {
                    JSONObject provinceObject =
allProvinces.getJSONObject(i);
                    Province province = new Province();

 province.setProvinceName(provinceObject.getString("name"));

 province.setProvinceCode(provinceObject.getInt("id"));
                    province.save();
                }
                return true;
            }
            catch (JSONException e)
            {
                e.printStackTrace();
            }
        }
        return false;
    }

    public static boolean handleCityResponse(String response, int
provinceId)
    {
        if (!TextUtils.isEmpty(response))
        {
            try
            {
                JSONArray allCities = new JSONArray(response);
                for (int i = 0; i < allCities.length(); i++)
                {
                    JSONObject cityObject =
allCities.getJSONObject(i);
                    City city = new City();
                    city.setCityName(cityObject.getString("name"));
                    city.setCityCode(cityObject.getInt("id"));
                    city.setProvinceId(provinceId);
                    city.save();
                }
                return true;
            }
            catch (JSONException e)
            {
                e.printStackTrace();
            }
        }
        return false;
    }

    public static boolean handleCountyResponse(String response, int
cityId)
    {
        if (!TextUtils.isEmpty(response))
        {
            try
            {
                JSONArray allCounties = new JSONArray(response);
                for (int i = 0; i < allCounties.length(); i++)
                {
                    JSONObject cityObject =
allCounties.getJSONObject(i);
                    County county = new County();

 county.setCountyName(cityObject.getString("name"));

 county.setWeatherId(cityObject.getString("weather_id"));
                    county.setCityId(cityId);
                    county.save();
                }
                return true;
            }
            catch (JSONException e)
            {
                e.printStackTrace();
            }
        }
        return false;
    }

    public static Weather handleWeatherResponse(String response)
    {
        try
        {
            JSONObject jsonObject = new JSONObject(response);
            JSONArray jsonArray
 =jsonObject.getJSONArray("HeWeather");
            String weatherContent =
jsonArray.getJSONObject(0).toString();
            return new Gson().fromJson(weatherContent,
Weather.class);
        }
        catch (Exception e)
        {
            e.printStackTrace();
        }
        return null;
    }
}
```

Dependencies

```
    compile 'com.lguipeng.bubbleview:library:1.0.0'
    compile 'com.github.medyo:android-about-page:1.2.4'
    compile 'org.litepal.android:core:1.4.1'
    compile 'com.android.support:design:26.+'
    compile 'de.hdodenhof:circleimageview:2.1.0'
    compile 'com.android.support:recyclerview-v7:26.+'
    compile 'com.android.support:cardview-v7:26.+'
    compile 'com.github.bumptech.glide:glide:3.7.0'
    compile 'com.squareup.okhttp3:okhttp:3.4.1'
    compile 'com.squareup.retrofit2:retrofit:2.0.1'
    compile 'com.squareup.retrofit2:converter-gson:2.0.1'
    compile 'com.google.code.gson:gson:2.7'
    compile 'com.youth.banner:banner:1.4.9'
    compile 'com.roughike:bottom-bar:2.3.1'
    compile 'com.github.GrenderG:Toasty:1.3.0'
    compile 'com.squareup.picasso:picasso:2.5.2'
    compile 'com.github.bumptech.glide:glide:3.5.2'
    compile 'io.reactivex:rxandroid:1.1.0'
    compile 'io.reactivex:rxjava:1.1.3'
    compile 'com.squareup.retrofit:retrofit:2.0.0-beta1'
    compile 'com.squareup.retrofit2:retrofit:2.0.0-beta4'
    compile 'com.squareup.retrofit:converter-gson:2.0.0-beta2'
    compile 'com.squareup.retrofit:adapter-rxjava:2.0.0-beta2'
    compile 'com.astuetz:pagerslidingtabstrip:1.0.1'
    compile 'com.facebook.fresco:fresco:0.9.0+'
    compile ('com.squareup.retrofit2:converter-simplexml:2.1.0'){
        exclude group: 'xpp3', module: 'xpp3'
        exclude group: 'stax', module: 'stax-api'
        exclude group: 'stax', module: 'stax'
    }
    compile 'io.reactivex.rxjava2:rxjava:2.1.6'
    compile 'com.squareup.retrofit2:adapter-rxjava2:2.3.0'
    compile 'io.reactivex.rxjava2:rxandroid:2.0.1'
```

4.Other functions

- Change Themes

  In fact, this function just change the color of toolbar from blue to grey.

- Favorites

  You can touch the "favorites" button on news page to add it to your favorites list, you can also clean your favorites list.

5. Development and configuration

Language: Java

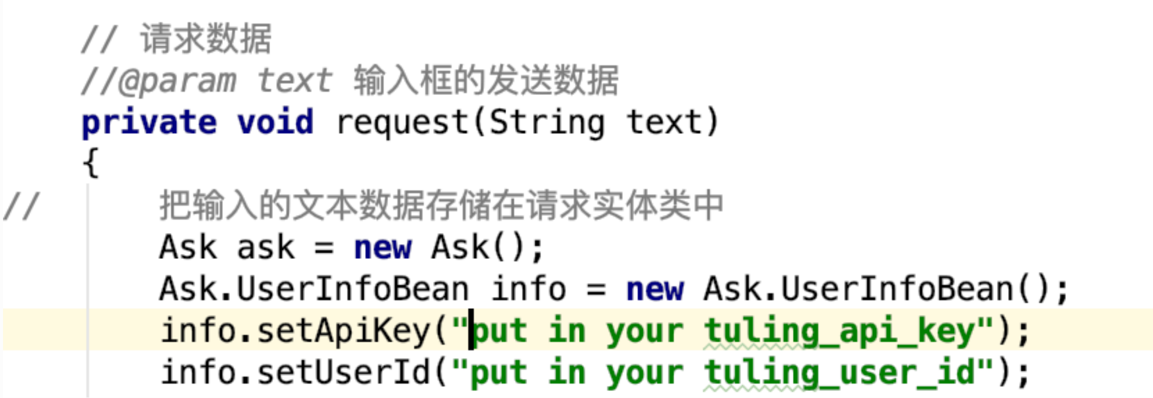
IDE: IntelliJ IDEA

How to run: Download the project and run in IDEA

About APIs: You must provide your own keys of following five APIs in order to connect with and fetch data from them.

- Turing Robot

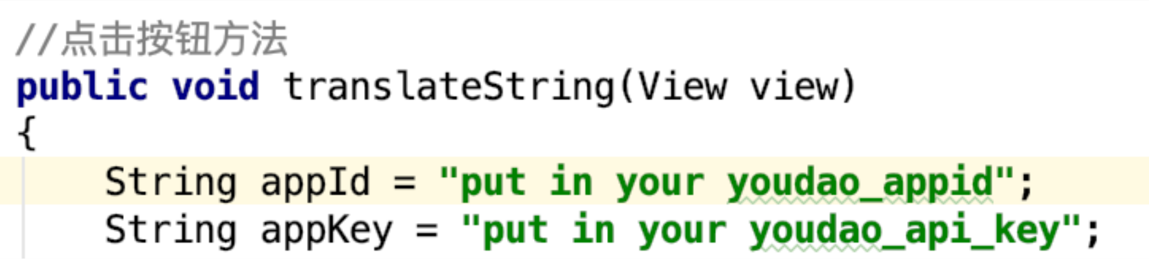
  Create a API on http://www.tuling123.com and put your key and user id here in `Activity/TulingActivity.java`



```
    // 请求数据
    //@param text 输入框的发送数据
    private void request(String text)
    {
//      把输入的文本数据存储在请求实体类中
        Ask ask = new Ask();
        Ask.UserInfoBean info = new Ask.UserInfoBean();
        info.setApiKey("put in your tuling_api_key");
        info.setUserId("put in your tuling_user_id");
```

- Youdao Translator

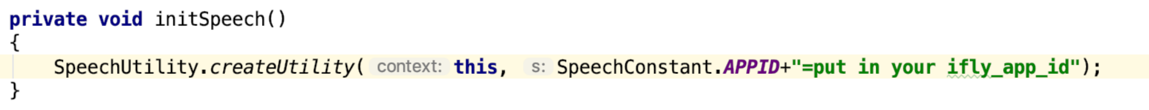
  Create a API on https://www.xfyun.cn and and put your key and app id here in `Activity/TranslateActivity.java`



```
//点击按钮方法
public void translateString(View view)
{
    String appId = "put in your youdao_appid";
    String appKey = "put in your youdao_api_key";
```

- iFly

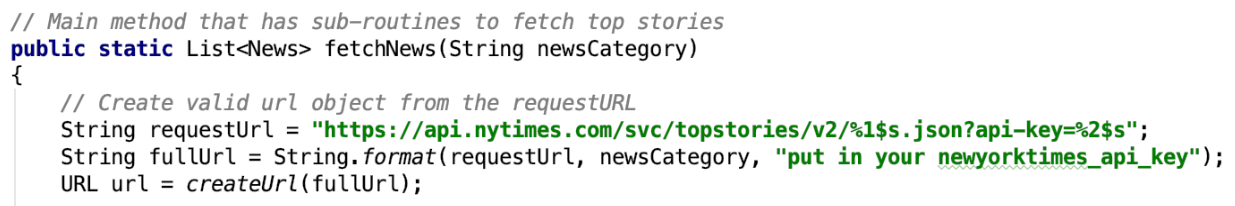
Create a API on https://ai.youdao.com and download SDK. Put your app id here in `Activity/TranslateActivity.java`



```
private void initSpeech()
{
    SpeechUtility.createUtility( context: this,  s: SpeechConstant.APPID+"=put in your ifly_app_id");
}
```

- The New York TImes

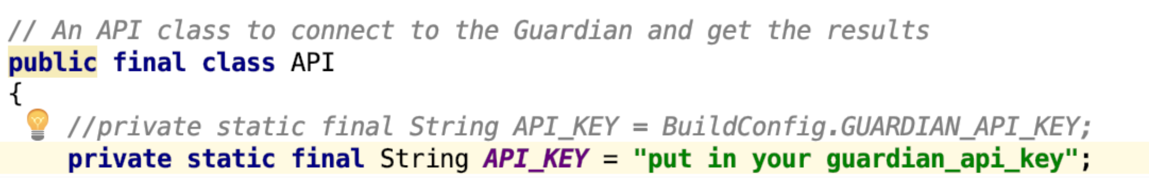
Creat Create a API on https://developer.nytimes.com and put your key here in `util/NewsQueryUtils.java`



```
// Main method that has sub-routines to fetch top stories
public static List<News> fetchNews(String newsCategory)
{
    // Create valid url object from the requestURL
    String requestUrl = "https://api.nytimes.com/svc/topstories/v2/%1$s.json?api-key=%2$s";
    String fullUrl = String.format(requestUrl, newsCategory, "put in your newyorktimes_api_key");
    URL url = createUrl(fullUrl);
```

- The Guardian

Creat Create a API on https://developer.nytimes.com and put your key here in `Data/API.java`

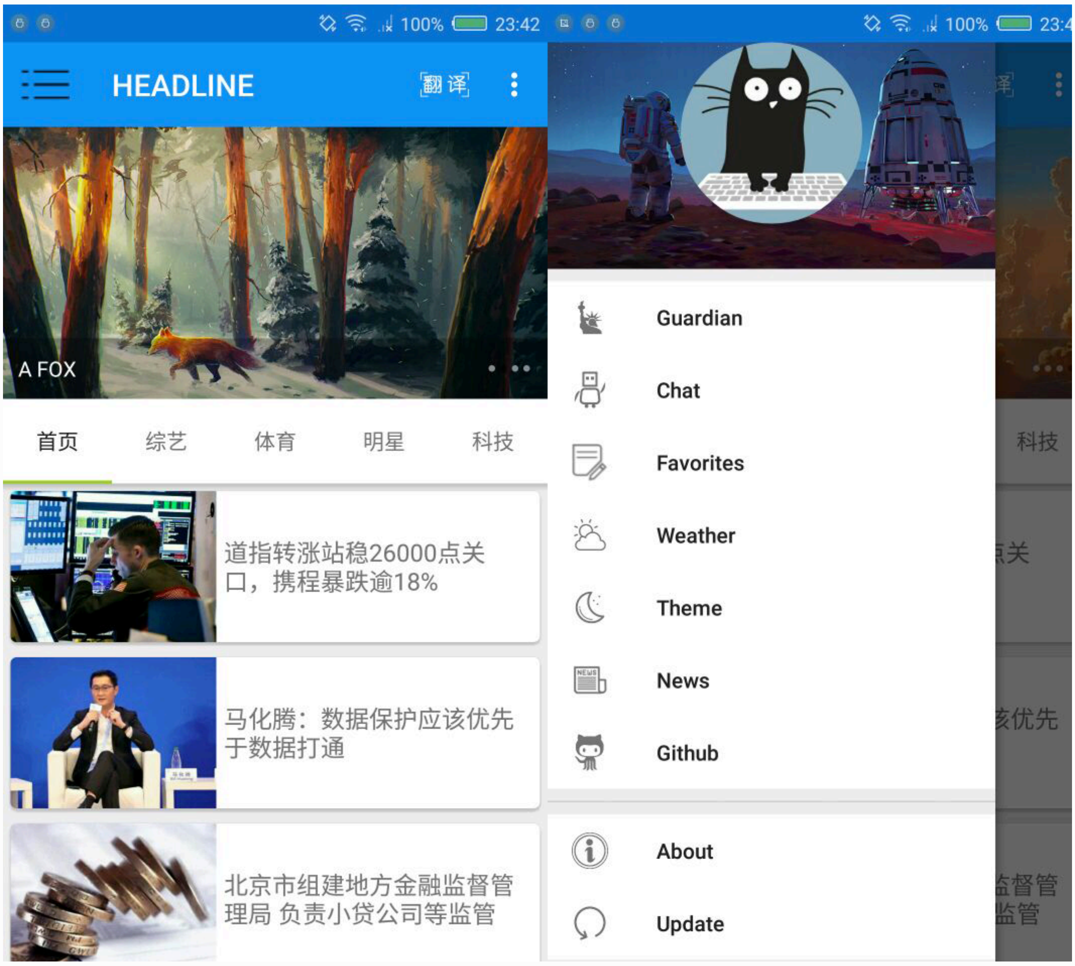


```
// An API class to connect to the Guardian and get the results
public final class API
{
    //private static final String API_KEY = BuildConfig.GUARDIAN_API_KEY;
    private static final String API_KEY = "put in your guardian_api_key";
```

6. ScreenShots

Home page and slide menu

Click the menu button on the top left corner to expanding the slide menu.



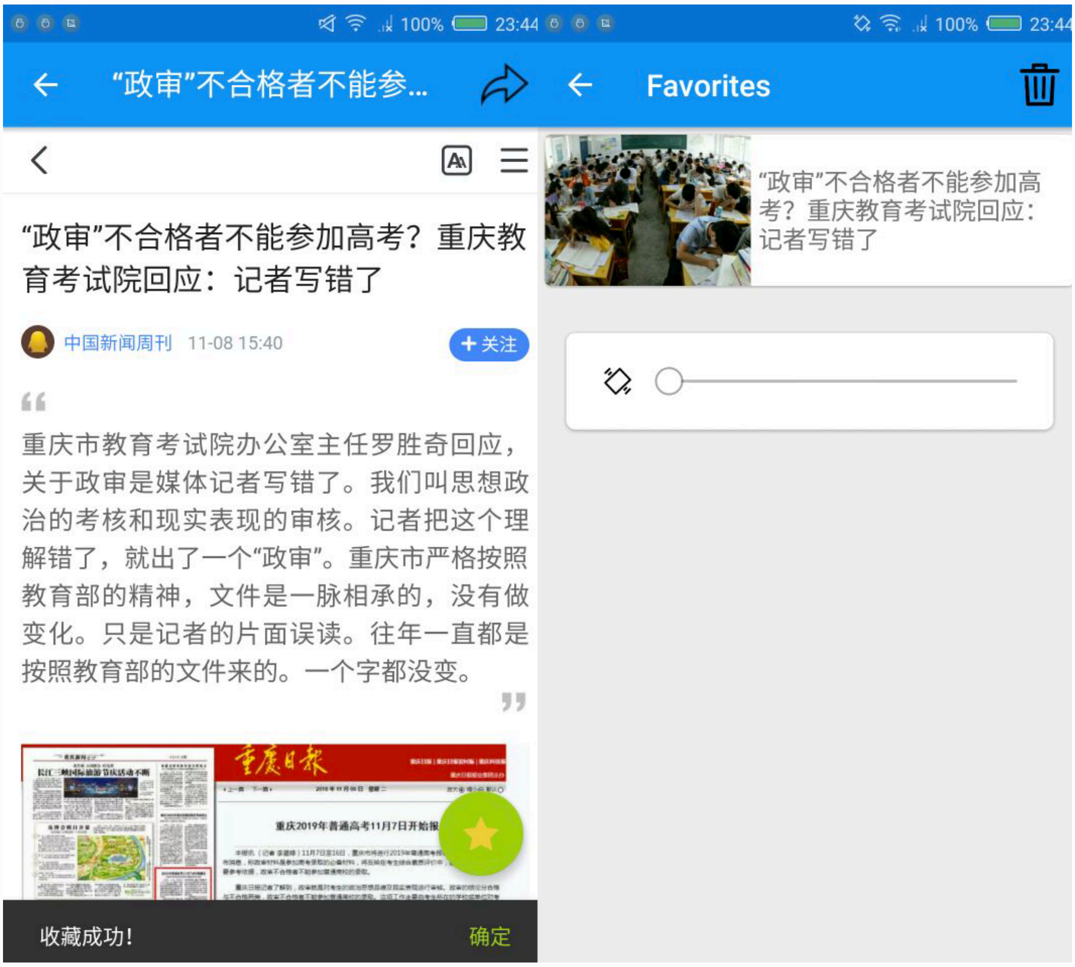
道指转涨站稳26000点关口，携程暴跌逾18%

马化腾：数据保护应该优先于数据打通

北京市组建地方金融监督管理局 负责小贷公司等监管

Favourites

Click the favorites button on the bottom right corner to add this news into your favorites list. Click the delete button on the op right corner to clean your favorites list.



“政审”不合格者不能参加高考？重庆教育考试院回应：记者写错了

中国新闻周刊 11-08 15:40

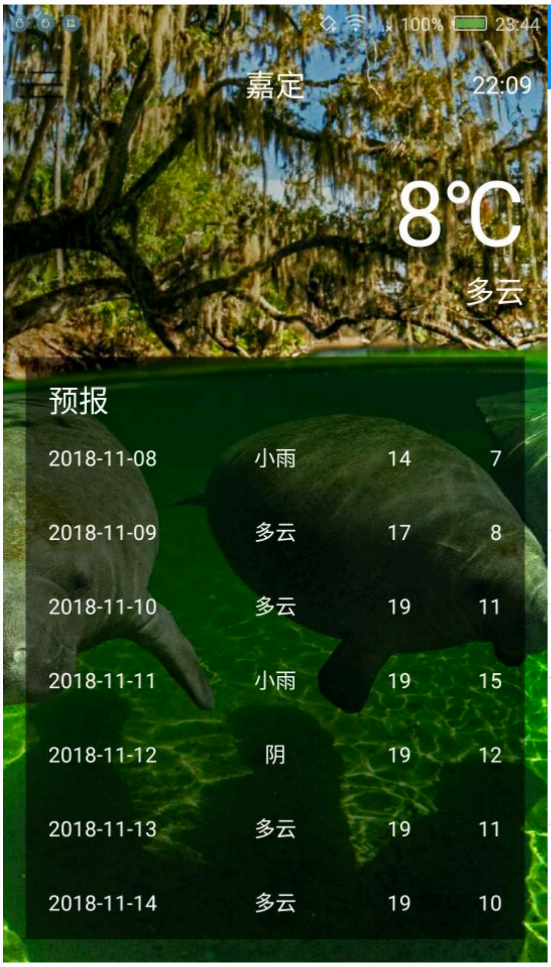
重庆市教育考试院办公室主任罗胜奇回应，关于政审是媒体记者写错了。我们叫思想政治的考核和现实表现的审核。记者把这个理解错了，就出了一个“政审”。重庆市严格按照教育部的精神，文件是一脉相承的，没有做变化。只是记者的片面误读。往年一直都是按照教育部的文件来的。一个字都没变。

收藏成功！

“政审”不合格者不能参加高考？重庆教育考试院回应：记者写错了

Weather

Click the menu button on the top left corner to expanding the provinces and cities menu.



嘉定

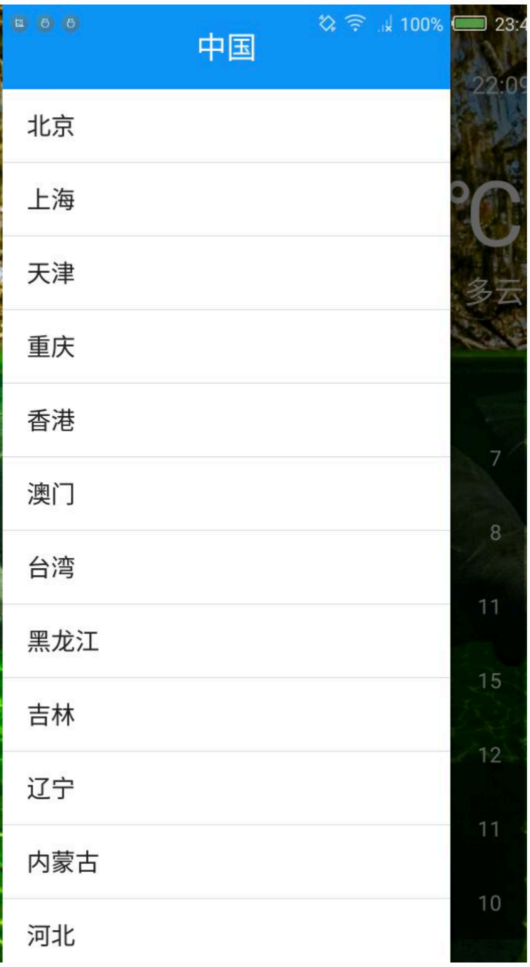
22:09

8°C

多云

预报

2018-11-08	小雨	14	7
2018-11-09	多云	17	8
2018-11-10	多云	19	11
2018-11-11	小雨	19	15
2018-11-12	阴	19	12
2018-11-13	多云	19	11
2018-11-14	多云	19	10



中国

北京

上海

天津

重庆

香港

澳门

台湾

黑龙江

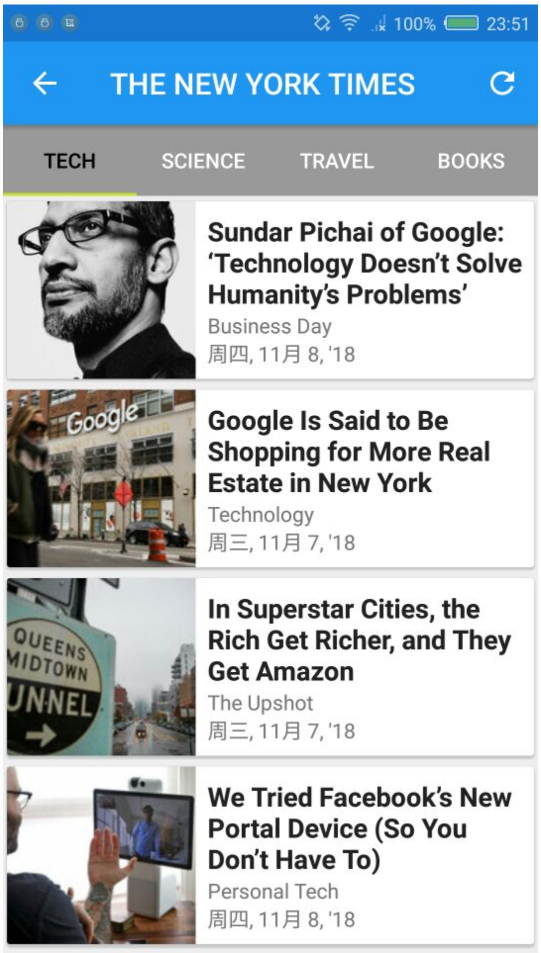
吉林

辽宁

内蒙古

河北

The New York Times



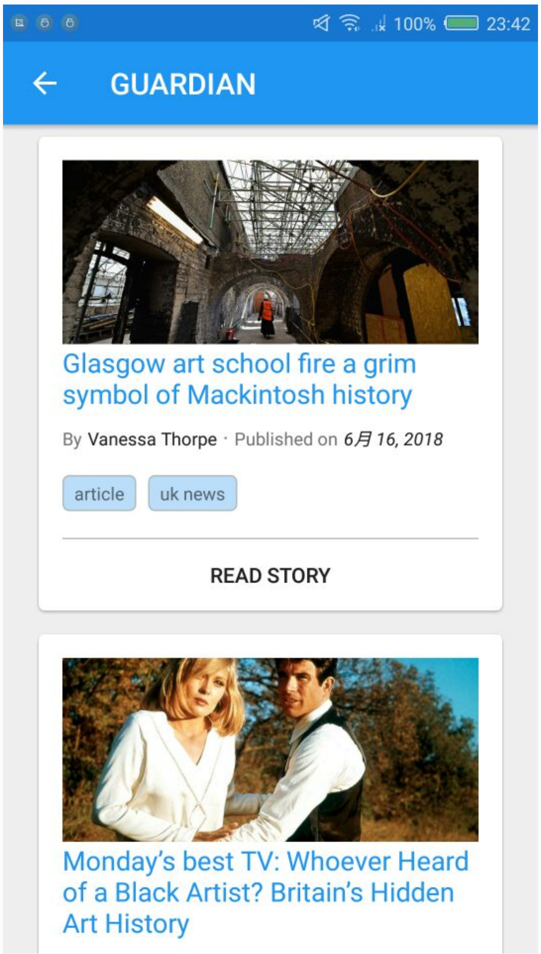
Sundar Pichai of Google: ‘Technology Doesn’t Solve Humanity’s Problems’
Business Day
周四, 11月 8, '18

Google Is Said to Be Shopping for More Real Estate in New York
Technology
周三, 11月 7, '18

In Superstar Cities, the Rich Get Richer, and They Get Amazon
The Upshot
周三, 11月 7, '18

We Tried Facebook’s New Portal Device (So You Don’t Have To)
Personal Tech
周四, 11月 8, '18

The Guardian



GUARDIAN

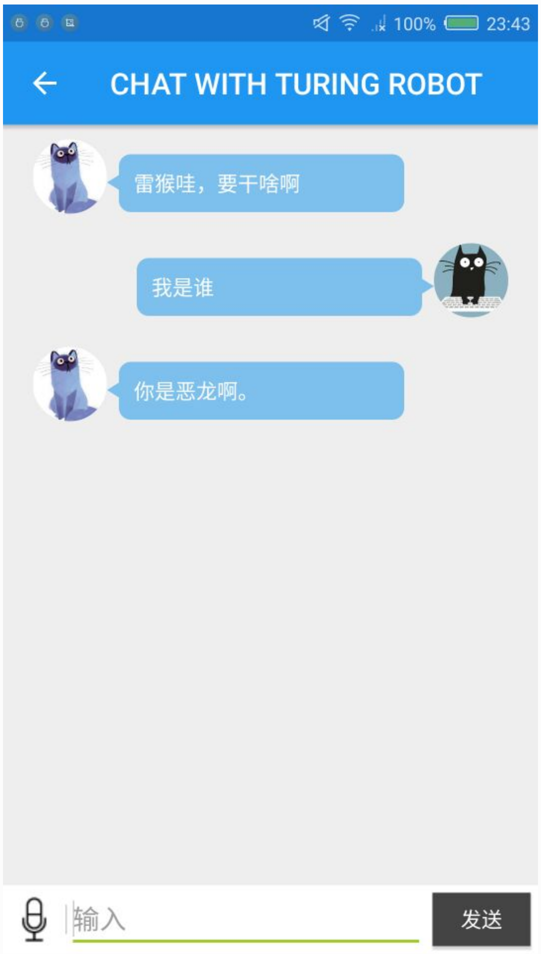
Glasgow art school fire a grim symbol of Mackintosh history

By Vanessa Thorpe · Published on 6月 16, 2018

Monday's best TV: Whoever Heard of a Black Artist? Britain's Hidden Art History

图灵机器人

Click the "microphone" button to change your voice to words.



100% 23:43

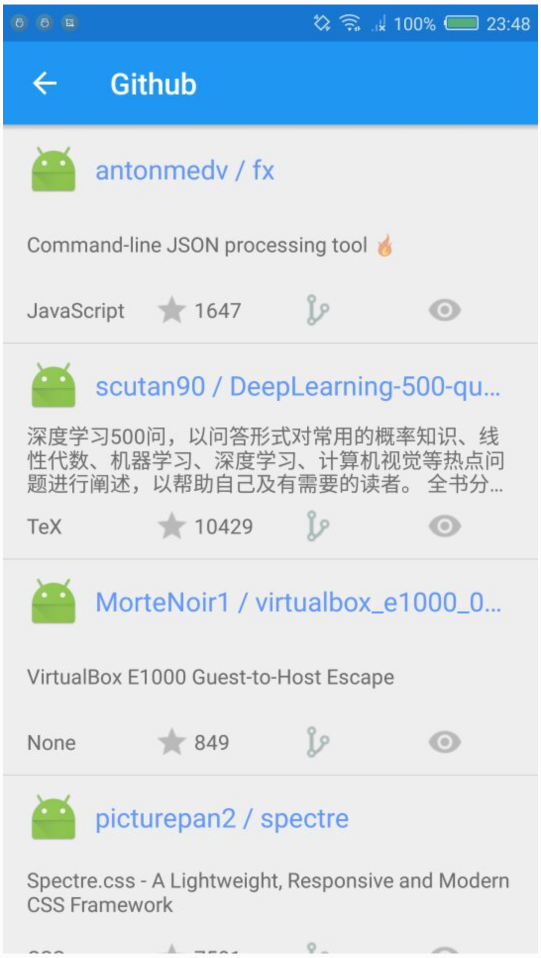
CHAT WITH TURING ROBOT

雷猴哇，要干啥啊

我是谁

你是恶龙啊。

Github



100% 23:48

Github

antonmedv / fx

Command-line JSON processing tool

JavaScript ★ 1647

scutan90 / DeepLearning-500-qu...

深度学习500问，以问答形式对常用的概率知识、线性代数、机器学习、深度学习、计算机视觉等热点问题进行阐述，以帮助自己及有需要的读者。 全书分...

TeX ★ 10429

MorteNoir1 / virtualbox_e1000_0...

VirtualBox E1000 Guest-to-Host Escape

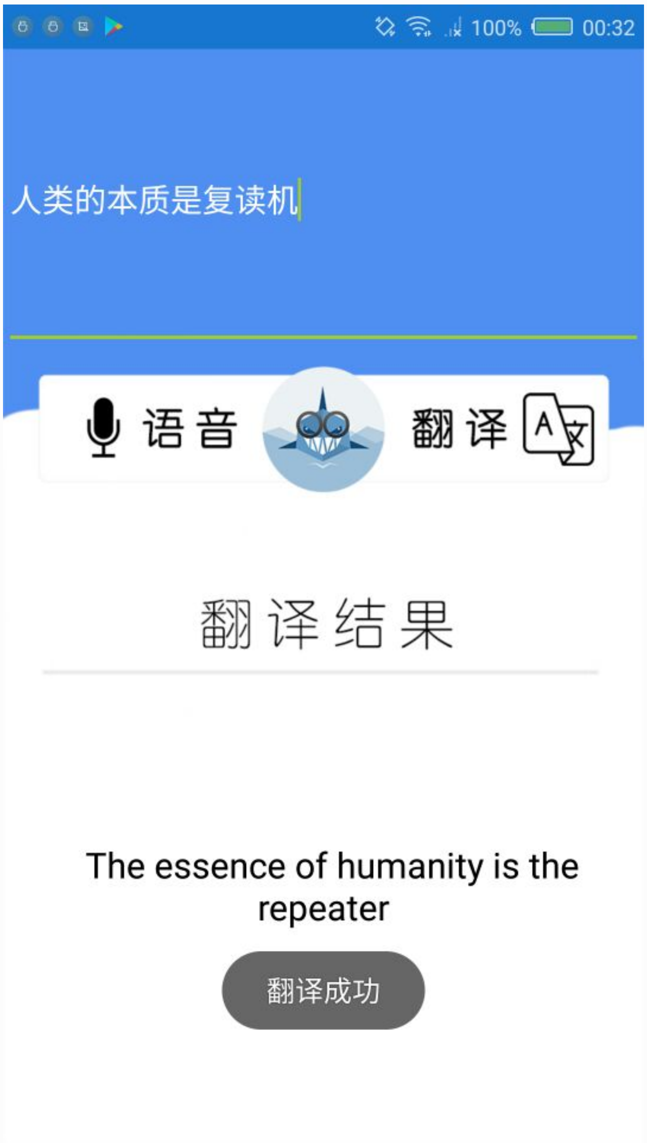
None ★ 849

picturepan2 / spectre

Spectre.css - A Lightweight, Responsive and Modern CSS Framework

Translator

Click the "microphone" button to change your voice to words.



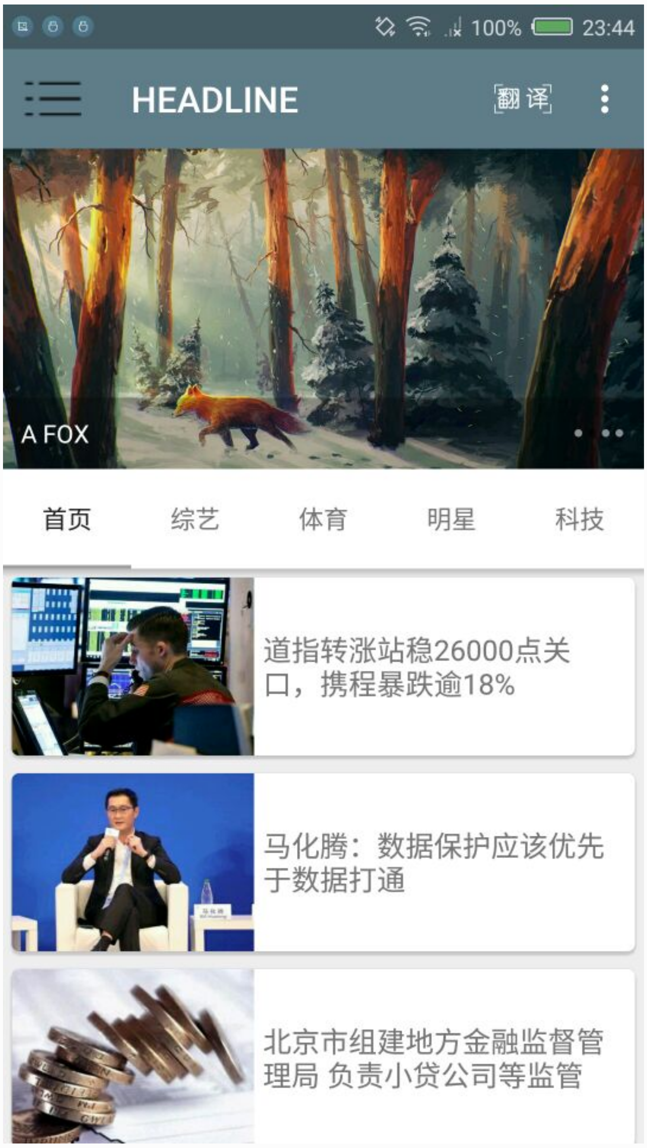
人类的本质是复读机

翻译结果

The essence of humanity is the repeater

翻译成功

Change theme

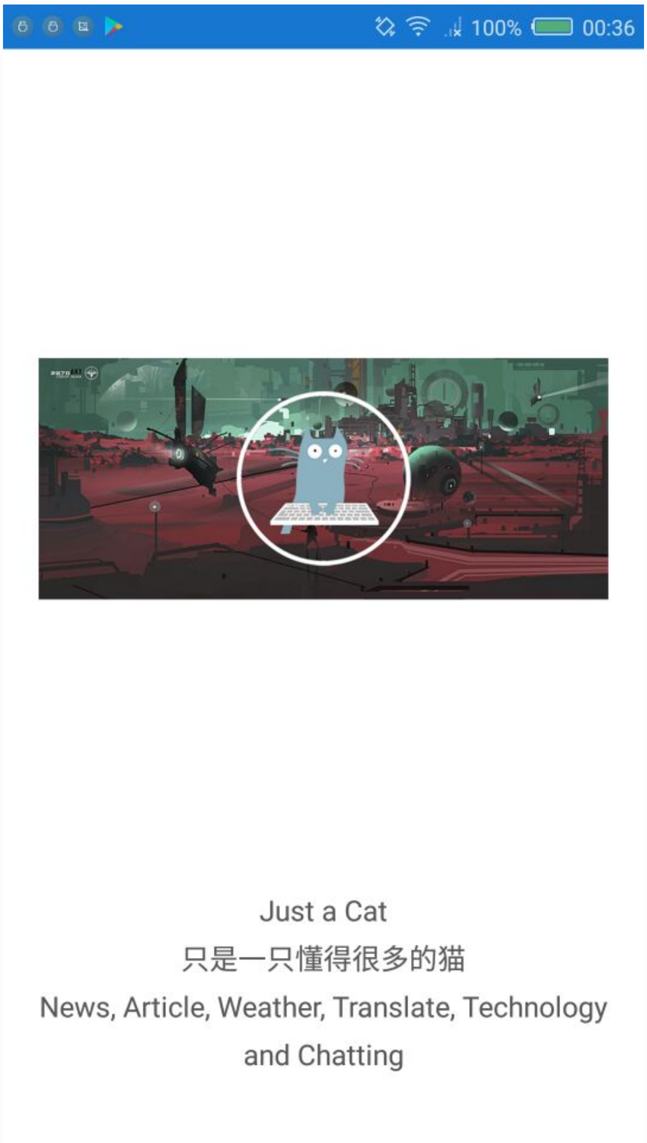


道指转涨站稳26000点关口，携程暴跌逾18%

马化腾：数据保护应该优先于数据打通

北京市组建地方金融监督管理局 负责小贷公司等监管

About



Just a Cat

只是一只懂得很多的猫

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