

8-LABORATORIYA ISHI

ANDROID STUDIOGA ASOSIY KOMPONENTALAR BILAN ISHLASH: LAYOUT, TABLE, LISTVIEW, GRID, LIST VA BOSHQALAR.

Ishdan maqsad: Android Studioga asosiy komponentalar bilan ishlash: Layout, Table, ListView, Grid, List va boshqalarni o'rganish.

NAZARIY QISM

Palette panelida foydalanuvchi interfeysi komponentlari mavjud.

LinearLayout

Layout da ikkita variant **mavjud: Horizontal va Vertical.**

LinearLayout tartibi barcha q ob'ektlar bir yo'nalishda — vertikal yoki gorizontal ravishda moslashtiradi.

Yo'nalish **Android yo'nalishi xususiyati bilan belgilanadi: orientation:**

android:orientation="horizontal"

android:orientation="vertical"

Misol:

```
<?xml version="1.0" encoding="utf-8"?>
```

```
<LinearLayout
```

```
xmlns:android="http://schemas.android.com/apk/res/android"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    android:orientation="vertical">
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="match_parent"
```

```
    android:layout_weight="1"
```

```
    android:orientation="horizontal">
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="fill_parent"
```

```
    android:layout_weight="1"
```

```
    android:background="#aa0000"
```

```
    android:gravity="center_horizontal"
```

```
    android:text="red"/>
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```

        android:layout_height="match_parent"
        android:layout_weight="1"
        android:background="#00aa00"
        android:gravity="center_horizontal"
        android:text="green"/>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="#0000aa"
    android:gravity="center_horizontal"
    android:text="blue"/>
<TextView
    android:layout_width="wrap_content"
    android:layout_height="match_parent"
    android:layout_weight="1"
    android:background="#aaaa00"
    android:gravity="center_horizontal"
    android:text="yellow"/>
</LinearLayout>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="fill_parent"
    android:layout_weight="1"
    android:orientation="vertical">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="row one"
        android:textSize="15dp"/>
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="row two"
        android:textSize="15dp"/>

```

```

<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="row three"
    android:textSize="15dp"/>
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_weight="1"
    android:text="row four"
    android:textSize="15dp"/>
</LinearLayout>
</LinearLayout>

```

Natija:



Ushbu misolda TextView elementlarini gorizontal va vertikal ravishda joylashtirishning ikkita usuli qo'llaniladi.

LinearLayout markirovkasi android-ning qiziqarli xususiyatiga ega: layout_weight, bu ichki elementining egallaydigan joyini bildiradi. Ushbu xususiyat taqdimotning "ahamiyati" ni belgilaydi va bu elementni qolgan bo'sh joyni to'ldirish uchun kengaytirishga imkon beradi. Standart holda 0 ga teng bo'ladi.

Misol uchun, agar uchta matn maydoni mavjud bo'lsa va ularning ikkitasi 1 qiymatida bo'lsa, ikkinchisiga hech qanday qiymat (0) berilmagan bo'lsa, u holda uchinchi matn maydoni kengaytirilmaydi va bu maydon tomonidan ko'rsatilgan matn hajmi bilan belgilanadigan maydonni egallaydi. Boshqa ikkitasi uchinchi maydon bilan band bo'lmagan bo'sh joyni to'ldirish uchun bir xil darajada kengayadi. Agar uchinchi maydon 2 (0 o'rniga) hajmda belgilansa,

bu maydon boshqa ikki kishiga qaraganda "muhimroq" deb e'lon qilinadi, shuning uchun uchinchi maydon umumiy maydonning 50 foizini oladi, dastlabki ikkitasi umumiy maydonning 25 foizini oladi

Bundan tashqari, Android xususiyatini ham belgilashingiz mumkin: weightSum. Agar atribut 100 qiymatini belgilasa, unda biz ichki matnlarning oladigan joy hajmini foiz sifatida qulay shaklda ko'rsatishimiz mumkin. Ushbu usul veb-ustalar tomonidan keng qo'llaniladi.

Misol:

```
<?xml version="1.0" encoding="UTF-8"?><LinearLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#0000FF"
    android:orientation="vertical"
    android:weightSum="100">
    <LinearLayout
        android:layout_width="fill_parent"
        android:layout_height="0dp"
        android:layout_weight="50"
        android:background="#FFFF00"
        android:gravity="center">

        <TextView
            android:id="@+id/textView"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Salom dunyo"
            android:textColor="@color/black"
            android:textSize="45sp" />
    </LinearLayout></LinearLayout>
```

Natija:



TabLayout/TabItem

TableLayout, masalan, Sudoku, Tic-toe va boshqalar kabi mantiqiy o'yinlar yaratishda foydalanish uchun qulay.

TableLayout uchun ba'zi qoidalar mavjud. Birinchidan, har bir ustunning kengligi ustundagi eng keng tarkib bilan belgilanadi. Ichki elementlari atributlarda **match_parent** **qiymatini** **ishlatadi**. Layout_height uchun **TableRow xususiyati** har doim *wrap_content*.

Agar **Android xususiyati**: "*" " qiymatini belgilash uchun TableLayout komponentining stretchColumns bo'lsa, har bir TableRow komponentining tarkibi tartibning to'liq kengligiga cho'zilishi mumkin.

Misol

Ob-havo prognozi jadvalini yaratish

Misol uchun, ob-havo prognozi jadvalini yaratish uchun quyidagi dizayndan foydalanish mumkin:

1. Birinchi qatorda jadval sarlavhasini ko'rsatish
2. Ikkinchi qatorda taqvim turiga ko'ra sanalar ko'rsatiladi
3. Uchinchi qatorda eng yuqori haroratni ko'rsating
4. To'rtinchi qatorda eng past haroratni ko'rsating
5. Beshinchi qatorda grafiklarni ko'rsatish (yomg'ir, qor, bulut, quyosh)

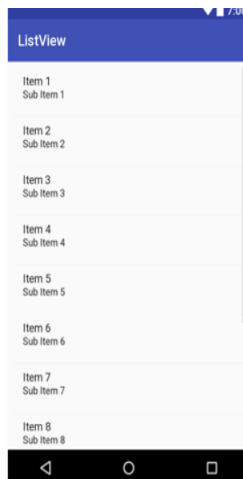
	Feb 7	Feb 8	Feb 9	Feb 10	Feb 11
Kun Baland	28°F	26°F	23°F	17°F	19°F
Kun Past	15°F	14°F	3°F	5°F	6°F
Shartlar					

ListView

ListView-elementlarning aylanadigan ro'yxati

Biroq, agar XML kodini ko'rib chiqsak, u erda hech narsa ko'rilmaydi.

```
<ListView android:id="@+id/listView"
    android:layout_width="match_parent"
    android:layout_height="wrap_content" >
</ListView>
```



Mainactivity oynasiga o'tib quyidagilarni yozamiz

```
// kod onCreate usulida yozilgan()// ListView elementining namunasini
oling
ListView listView = findViewById(R.id.listView);
// string qator aniqlashfinal
String[] cat Names = new String[]
{ "Ryjik", "Barsik", "Murzik", "Murka", "Vaska", "Thomasina",
"Kristina", "Qurol", "Smoke", "Kuzya", "Kiti", "Masyanya", "Simba" };
// ma'lumot adapteridan foydalaning ArrayAdapter<String> adapter = new
ArrayAdapter<>(this, android.R.layout.simple_list_item_1,
catNames); listView.setAdapter(adapter);
```

GridLayout

Android 4.0-da GridLayout (**Asboblarning panelidagi Layouts bo'limi**) nomi ostida yangi tartib paydo bo'ldi. Bir qarashda TableLayout kabi ko'rinishi mumkin. Lekin, aslida, bu juda ham qulay va funktsionaldir. Va yangi platforma uchun ishlab chiqilgan yangi loyihalarda o'rganish va undan foydalanish tavsiya etiladi.

Android kutubxonasiga **Android klassi** qo'shildi. **support.v7.widget.GridLayout**, bu komponentni eski qurilmalar uchun ishlatishga imkon beradi.

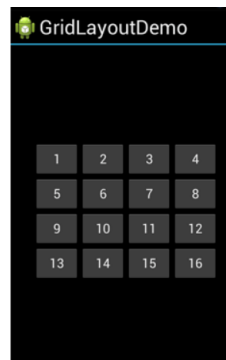
Belgilar Android sinfiga tegishli. **widget.GridLayout** va TableLayout kabi ustunlar, qatorlar, hujayralar mavjud, ammo elementlar moslashuvchan tarzda sozlanishi mumkin.

Ustunlar va qatorlar soni **Android** atributlari tomonidan ishlatiladi:
columnCount="number" va **android: rowCount="number"**.

Misol:

```
<?xml version="1.0" encoding="utf-8"?>
<GridLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:columnCount="4"
    android:orientation="horizontal" >
    <Button android:text="1" />
    <Button android:text="2" />
    <Button android:text="3" />
    <Button android:text="4" />
    <Button android:text="5" />
    <Button android:text="6" />
    <Button android:text="7" />
    <Button android:text="8" />
    <Button android:text="9" />
    <Button android:text="10" />
    <Button android:text="11" />
    <Button android:text="12" />
    <Button android:text="13" />
    <Button android:text="14" />
    <Button android:text="15" />
    <Button android:text="16" />
```

Natija:



GridView

GridView komponenti tekis jadval hisoblanadi. GridView uchun ArrayAdapter yoki BaseAdapter sinfidan olingan sinfni yaratish va uning getView usulini () qayta tuzish orqali ma'lumotlar elementlarini ko'rsatish uchun o'z maydonlarini ishlatish mumkin.

GridView uchun ustunlar soni tez-tez statik tarzda o'rnatiladi. Elementdagi qatorlar soni adapter taqdim etadigan elementlarning soniga qarab dinamik ravishda aniqlanadi.

Xususiyatlari

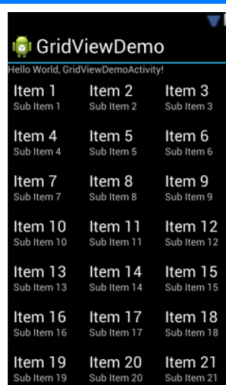
android — numColumns-ustunlar sonini aniqlaydi. Agar qiymat *berilgan* bo'lsa auto_fit, tizim mavjud maydonga asoslangan ustunlar sonini hisoblab chiqadi

android — verticalSpacing-jadval hujayralari orasidagi bo'sh joy hajmini belgilaydi

android:columnWidth-ustunlar kengligini o'rnatadi

android — stretchMode-bo'sh joy qoldig'ini belgilangan Android qiymati bilan jadval uchun ajratilganligini ko'rsatadi: numColumns="auto_fit". Ustunlar xujayralari orasidagi bo'sh joy qoldig'ini kengaytirish uchun yoki *spacingWidth* — hujayralar orasidagi bo'shliqni kengaytirish uchun columnWidth qiymatlarini qabul qiladi


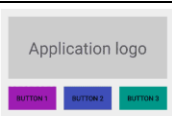

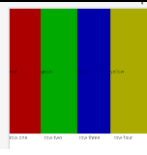

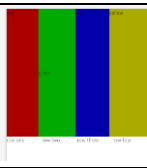

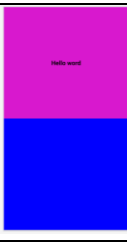
Misol:





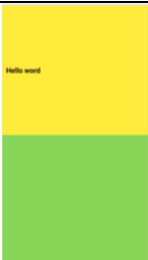
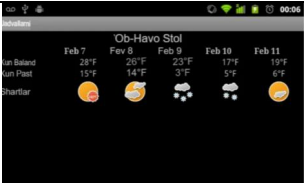
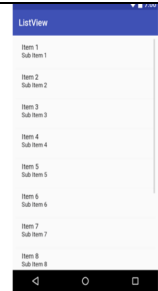


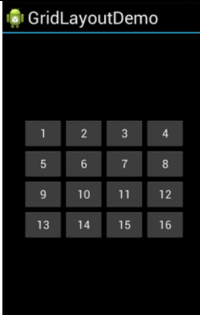
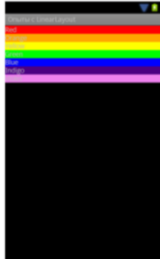



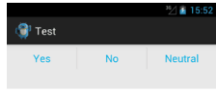

LABORATORIYA ISHINI TOPSHIRISH TARTIBI:

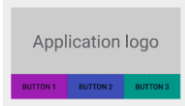
1. Ushbu mavzu bo'yicha ma'ruza darsida, laboratoriya ishining nazariy ko'rsatmalar qismida, shuningdek tavsiya etilgan adabiyotlarda ko'rilgan mavzu ma'lumotlarini yaqindan o'rganib, o'zlashtirib, nazorat savollariga javob berishga tayyor bo'ling.

2. Topshiriq sifatida har bir talaba berilgan topshiriqlarni bajaradi va ushbu jarayonni hisobot ko'rinishida shakllantiradi.

№	Vazifa
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