

Čuvanje podataka

SharedPreferences, save instance state, storage

<https://github.com/mariciv/InfinumAcademyProject/>



Your app should NOT

- ✦ “crash if the user receives a phone call or switches to another app while using your app.”
- ✦ “consume valuable system resources when the user is not actively using it.”
- ✦ “lose the user's progress if they leave your app and return to it at a later time.”
- ✦ “crash or lose the user's progress when the screen rotates between landscape and portrait orientation.”

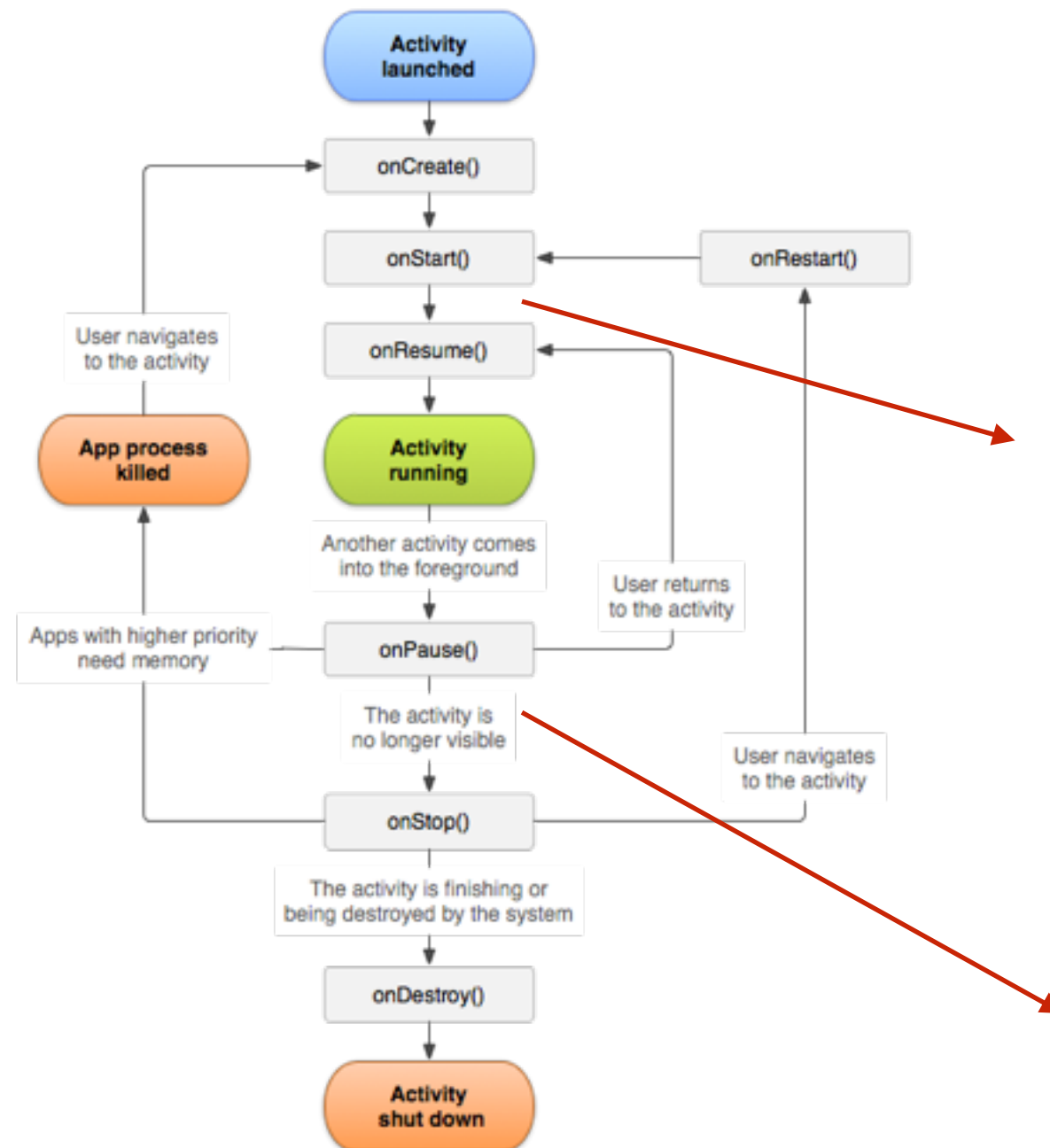


Stanje Activity-a

- ✦ Activity može otići u pozadinu
- ✦ Promjena konfiguracije
- ✦ Stanje nije automatski očuvano
- ✦ `SavedInstanceState`



Activity life cycle



`onRestoreInstanceState(Bundle)`

`onSaveInstanceState(Bundle)`



Kada koristiti save instance state

- ✦ Android čuva stanje layouta
 - ✦ Kada view ima definirani id
- ✦ Custom views
- ✦ Field members



Bundle

- ✦ Mapa podataka
- ✦ *put*(String key, * value)*
- ✦ *get*(String key, * defaultValue)*
 - ✦ defaultValue is optional
- ✦ Male količine podataka
- ✦ Kratak period čuvanja podataka



SharedPreferences

- ✦ Jednostavni podatci spremljeni kao key-value mapa
- ✦ Male količine podataka
- ✦ Dug period čuvanja podataka
- ✦ Podatci koji opisuju aplikaciju
 - ✦ Account name, tema boja, razne korisnikove opcije



Pristup

- ✦ *getSharedPreferences(String name, int mode)*
 - ✦ MODE_PRIVATE
- ✦ *getPreferences(int mode)*
- ✦ PreferenceManager
 - ✦ *getDefaultSharedPreferences(Context context)*

Spremanje i dohvat podataka

- ✦ Spremanje samo primitivnih tipova podataka
 - ✦ int, boolean, long, float, String, StringSet
- ✦ Modificiranje podataka obavlja Editor
 - ✦ `SharedPreferences.edit()`
 - ✦ `put*(String key, * value)`
 - ✦ `get*(String key, * defaultValue)`
- ✦ Transakcija
 - ✦ `commit()` / `apply()`



Live code session

Save state

Internal storage

- ✦ Datoteke dostupne samo u aplikaciji
- ✦ Male i srednje količine podataka
- ✦ Dug period čuvanja podataka



Pisanje

- ✦ `FileOutputStream`
- ✦ `openFileOutput(String fileName, int mode)`
- ✦ `write()`
- ✦ `close()`
- ✦ Mode: `MODE_PRIVATE` / `MODE_APPEND`

Čitanje

- ✦ FileInputStream
- ✦ *openFileInput(String fileName)*
- ✦ *read()*
- ✦ *close()*

External storage

- ✦ Zajednički pristup podacima
- ✦ Velike količine podataka
- ✦ Zahtjeva permission
 - ✦ WRITE_EXTERNAL_STORAGE
 - ✦ READ_EXTERNAL_STORAGE



Pristup

- ✦ *Environment.getExternalStorageState()*
 - ✦ MEDIA_MOUNTED
 - ✦ MEDIA_MOUNTED_READ_ONLY
- ✦ Dohvat i stvaranje datoteka
 - ✦ *Environment.getExternalStorageDirectory()*



Live code session

But first let me take a selfie

Kolekcije podataka

ListView, GridView, RecyclerView



Adapter

- ✦ Neodređen broj podataka
- ✦ AdapterView ima odgovornost prikaza podataka
- ✦ Adapter brine o ispravnosti podataka koji prikazuje AdapterView
- ✦ BaseAdapter, ArrayAdapter, ListAdapter, SpinnerAdapter



Prikaz podataka

- ✦ ListView
- ✦ GridView
- ✦ RecyclerView
 - ✦ LayoutManager



Live code session

Zadatak

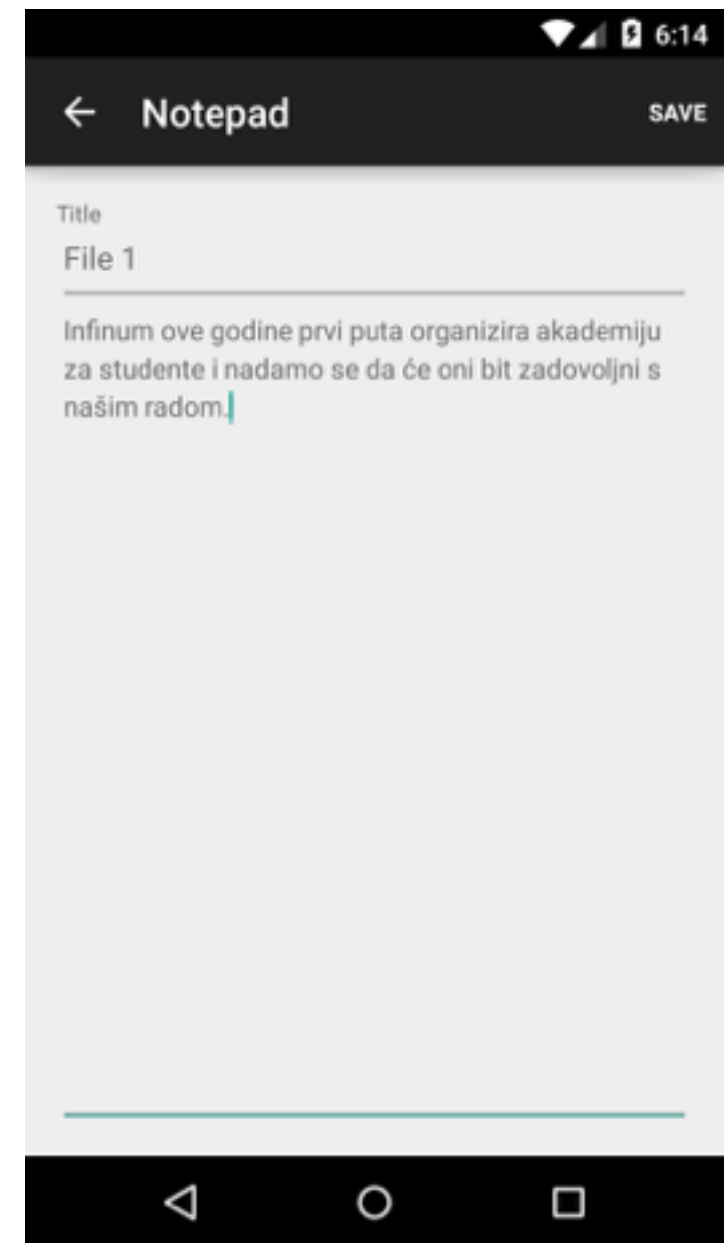
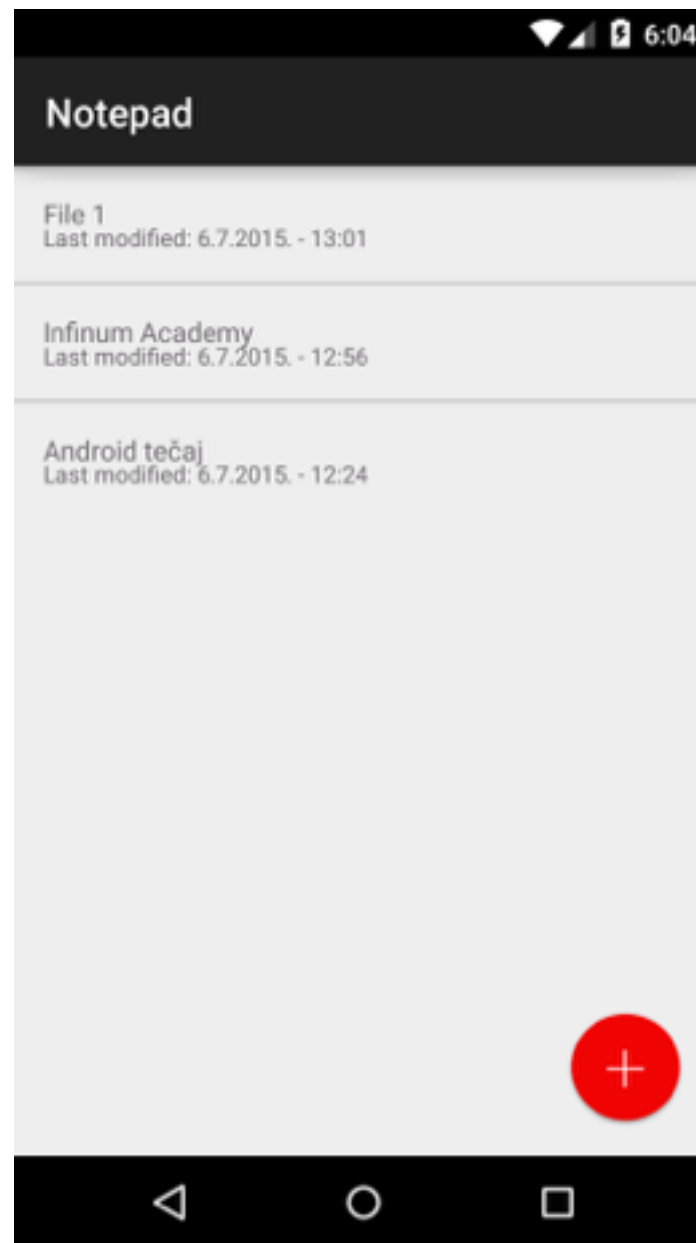
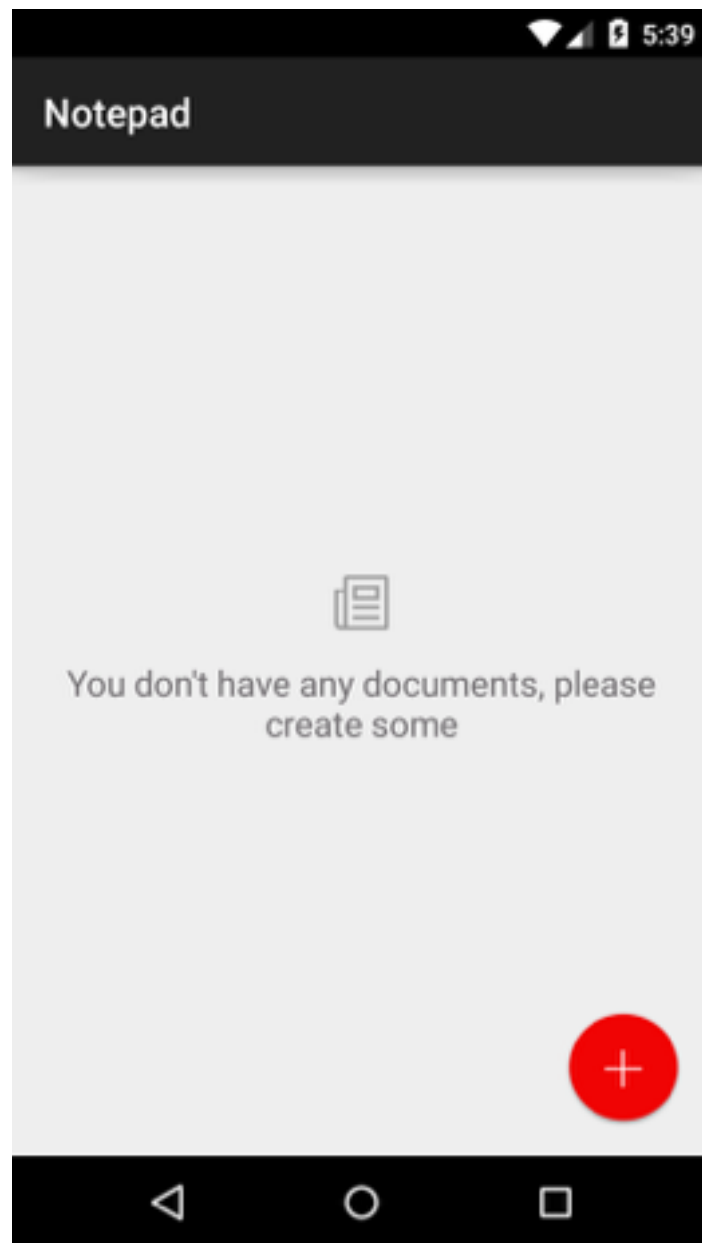
Zadatak 3 – Notepad

Napraviti aplikaciju koja se sastoji od dva ekrana. Prvi ekran prikazuje listu spremljenih datoteka. Inicijalno stanje prvog ekrana (kod prvog pokretanja) je prazan ekran koji ne smije biti samo pozadina (empty state). Spremljeni dokumenti moraju biti vidljive kod ponovnog pokretanja aplikacije. Klik na item liste pokreće drugi ekran za editiranje dokumenta. Ekran za editiranje mora imati mogućnost definiranja naslova dokumenta i sadržaja. Spremanje promjena inicira korisnik (nije automatski). Gumb za spremanje omogućen samo kada promjene postoje. Kreiranje novog dokumenta omogućiti na početnom ekranu s FAB kontrolom (Floating action button).

<http://www.google.com/design/spec/components/buttons-floating-action-button.html#>



Zadatak 3 – Notepad



Zadatak 3 – dodatno

- ✦ Dialog upozorena za povratak iz editiranja kada promjene nisu spremljene
- ✦ Brisanje dokumenata
- ✦ Bolja indikacija da promjene u dokumentu nisu spremljene
- ✦ Bilo koja nadogradanja



Reference

<http://developer.android.com/training/basics/activity-lifecycle/recreating.html>

<http://developer.android.com/training/basics/data-storage/shared-preferences.html>

<http://developer.android.com/guide/topics/data/data-storage.html>

<https://developer.android.com/training/material/lists-cards.html>

<https://developer.android.com/reference/android/support/v7/widget/RecyclerView.html>

