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Module 3 - Android: Local Inter-Process Communication (IPC)

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1. Which of the following are limitations with using startService() to communicate between an activity and a service (choose all that apply): **4 / 4 points**

- [x] startService() doesn't allow an extended "conversations"

Correct
See M3-L1-pt1

- [ ] startService() does not allow extras to be passed with an intent in a consistent and useful manner
- [ ] startService() does not work across process boundaries
- [ ] startService() incurs security and performance drawbacks

2. Which of the following are are unusual or disallowed use cases for activity and service communication (choose all that apply): **4 / 4 points**

- [x] Using a broadcast receiver to communicate from an activity to a started service

Correct
See M3-L1-pt1

- [x] Using startService() to communicate from a service to an activity

Correct
See M3-L1-pt1

- [ ] Using a messenger to communicate from a service to an activity
- [x] Using a messenger to communicate from an activity to a started service

Correct
See M3-L1-pt1

3. Which of the following are limitations with using bindService() to communicate between an activity and a service (choose all that apply): **4 / 4 points**

- [ ] bindService() incurs security and performance drawbacks
- [x] bindService() does not allow extras to be passed with an intent in a consistent and useful manner

Correct
See M3-L1-pt2

- [ ] bindService() does not work across process boundaries
- [ ] bindService() doesn't allow an extended "conversations"

4. Which of the following are correct statements about an Android handler (choose all that apply): **6 / 6 points**

- [ ] A handler can only run in the main thread of control in a process
- [ ] A handler implements the parcelable interface
- [x] A handler can be used to send and process messages in one or more threads within a single process

Correct
See M3-L2-pt1

- [x] A handler often eliminates the need for apps to use synchronizers

Correct
See M3-L2-pt1

- [ ] A handler reference can be passed as data in a message or as an extra in an intent

- [ ] A handler can be used to send and process messages in one or more threads running in different processes

5. Which of the following are correct statements about an Android messenger (choose all that apply): **4 / 4 points**

- [x] A messenger implements the parcelable interface

  ✓ **Correct**
  See M3-L2-pt1

- [x] A messenger reference can be passed as data in a message or as an extra in an intent

  ✓ **Correct**
  See M3-L2-pt1

- [x] A messenger can be used to send and process messages in one or more threads running in different processes

  ✓ **Correct**
  See M3-L2-pt1

- [x] A messenger can be used to send and process messages in one or more threads within a single process

  ✓ **Correct**
  See M3-L2-pt1

6. Which of the following are typical examples of what a started service does after it receives an intent from an activity (choose all that apply): **6 / 6 points**

- [ ] It returns a Binder reference to the activity via its onBind() hook method
- [ ] It enhances in an extended conversation with the activity
- [ ] It launches the service using the activator pattern
- [x] It obtains a reference to a messenger from the intent

  ✓ **Correct**
  See M3-L2-pt2

- [x] It performs some processing

  ✓ **Correct**
  See M3-L2-pt2

- [x] It returns results back to the activity via the messenger reference

  ✓ **Correct**
  See M3-L2-pt2

7. Which of the following are correct statements about usage considerations for messengers (choose all that apply): **4 / 4 points**

- [ ] Messengers are best suited for sophisticated interactions and complex data types
- [ ] Messengers shield app developers from marshaling and demarshaling details of message content
- [x] Messengers are best suited for simple interactions and data types

  ✓ **Correct**
  See M3-L2-pt2

- [x] App developers are responsible for marshaling and demarshaling of message content

  ✓ **Correct**
  See M3-L2-pt2

8. Which of the following is the behavior of the Android Activity Manager Service when the onStartCommand() hook method returns START_REDELIVER_INTENT (choose all that apply): **4 / 4 points**

- [ ] It communicates this return value back to the client activity
- [ ] It automatically restarts a killed service via a new call to onStartCommand() and supplies a null intent
- [x] It automatically restarts a killed service via a new call to onStartCommand() and supplies the same intent as was delivered this time

  ✓ **Correct**
  See M3-L3-pt1

- [ ] It does not automatically restart the killed service, which must be explicitly restarted by an app

9. Which of the following methods must be called to implement the Android "Concurrent Service Stopping" idiom (choose all that apply): **4 / 4 points**

- [x] stopSelf()

✓ **Correct**
See M3-L3-pt2

- [ ] onUnbind()
- [ ] onBind()
- [x] onStartCommand()

✓ **Correct**
See M3-L3-pt2

10. Which of the following are correct statements about a bound service (choose all that apply): **4 / 4 points**

- [x] A bound service should be used when a client component wants to have an extended conversation with the service

✓ **Correct**
See M3-L4-pt3

- [ ] A bound service typically does not return a result to the activity that bound to it
- [ ] A bound service runs in the background indefinitely until the mobile device is powered down
- [x] A bound service lives only while it serves other app components

✓ **Correct**
See M3-L4-pt3