Fresco框架分析

原创 2021-04-08 11:31 | 2022-09-26 16:20 编辑过 | 47次浏览 | 0条评论

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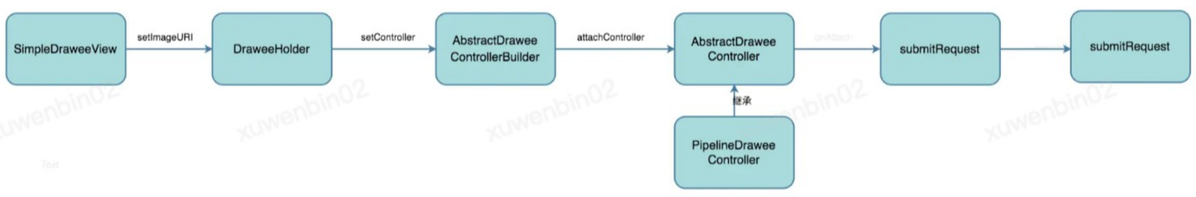
Fresco全流程

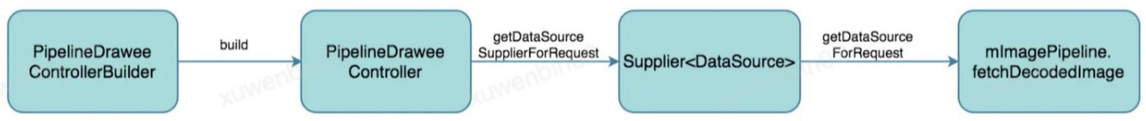
fresco图层

```
o RootDrawable (top level drawable)
|
+--o FadeDrawable
   |
   +--o ScaleTypeDrawable (placeholder branch, optional)
   |  |
   |  +--o Drawable (placeholder image)
   |
   +--o ScaleTypeDrawable (actual image branch)
   |  |
   |  +--o ForwardingDrawable (actual image wrapper)
   |     |
   |     +--o Drawable (actual image)
   |
   +--o null (progress bar branch, optional)
   |
   +--o Drawable (retry image branch, optional)
   |
   +--o ScaleTypeDrawable (failure image branch, optional)
      |
      +--o Drawable (failure image)
```

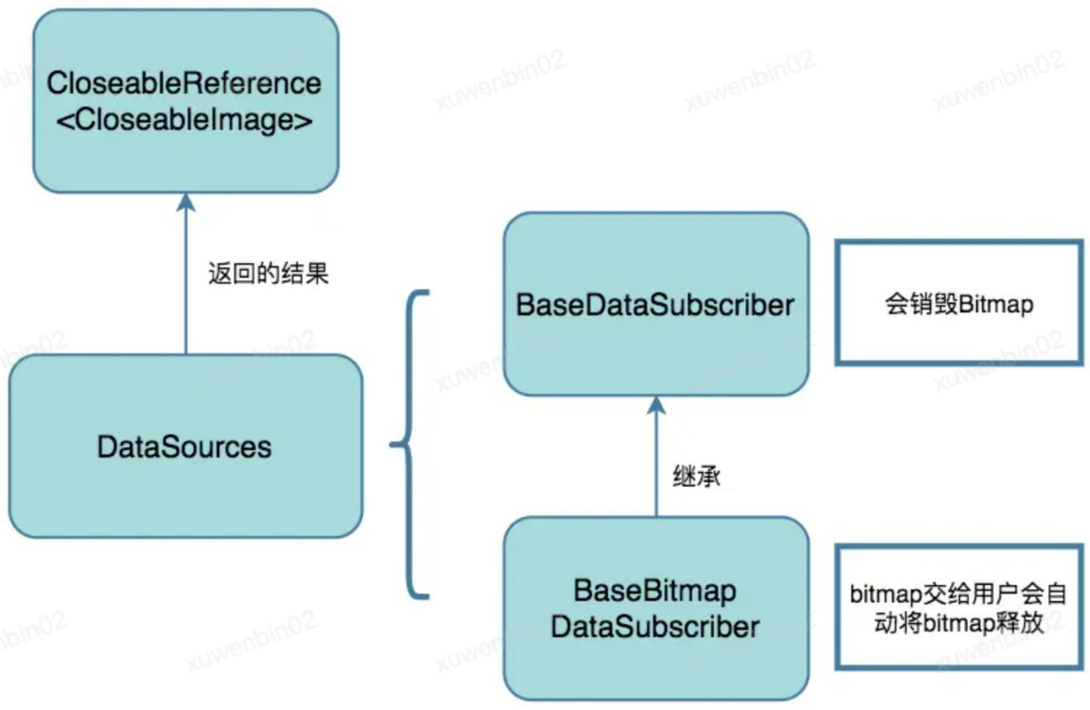
以下流程图分别从UI到网络请求层



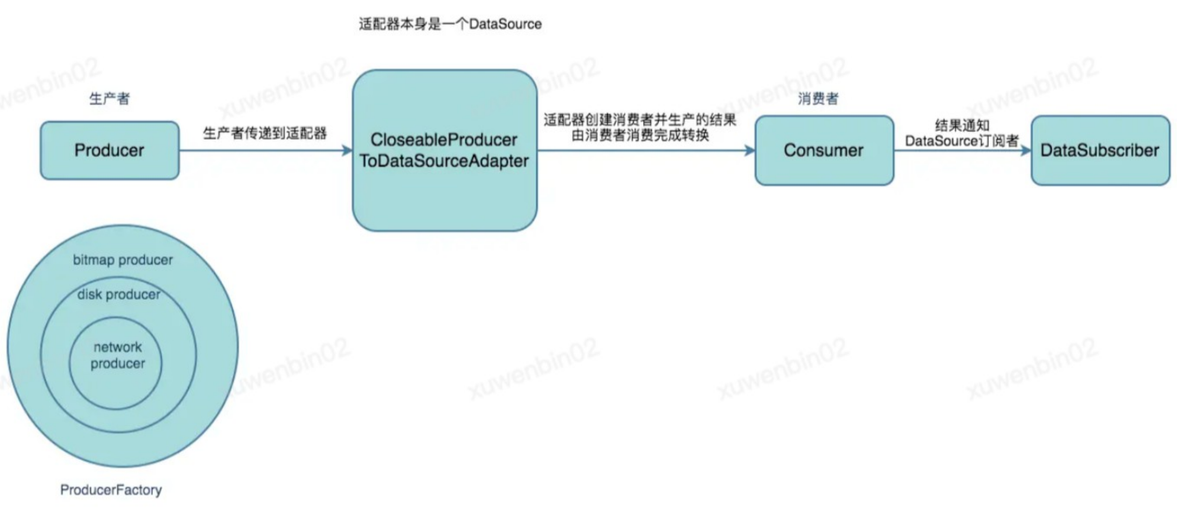
获得dataSource，该dataSource是通过网络、内存、磁盘返回的数据



dataSource是一个数据观察模式，用于将请求到的数据分发给订阅者

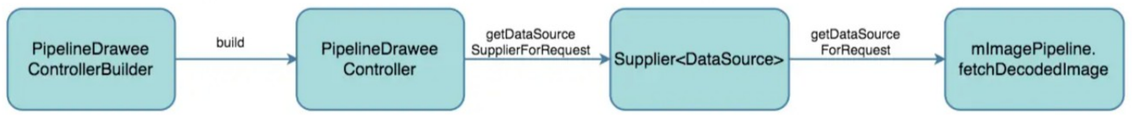


dataSource创建一个Consumer，通过传入的producer进行转换数据



网络请求fresco提供了两个，默认的是UrlConnection,还提供了一个okhttp的。
producer内部通过设置的数据请求级别，依次判断用哪个级别的数据请求，内存-磁盘-网络

最后就是请求数据源的流程



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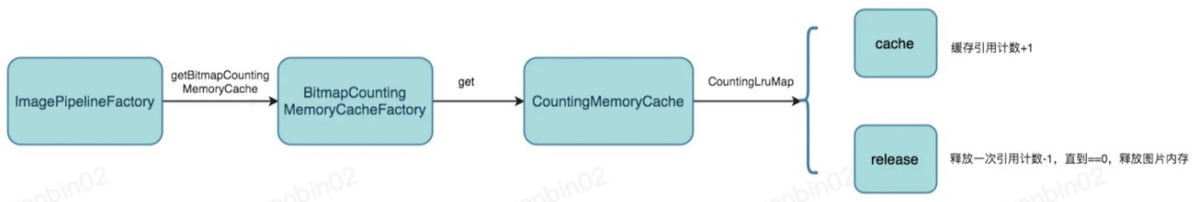
Fresco缓存




```
/**
 * Caches the given key-value pair.
 *
 * <p> Important: the client should use the returned reference instead of the original one.
 * It is the caller's responsibility to close the returned reference once not needed anymore.
 *
 * @return the new reference to be used, null if the value cannot be cached
 */
public CloseableReference<V> cache(
    final K key,
    final CloseableReference<V> valueRef,
    final EntryStateObserver<K> observer) {
  Preconditions.checkNotNull(key);
  Preconditions.checkNotNull(valueRef);

  maybeUpdateCacheParams();

  Entry<K, V> oldExclusive;
  CloseableReference<V> oldRefToClose = null;
  CloseableReference<V> clientRef = null;
  synchronized (this) {
    // remove the old item (if any) as it is stale now
              // mExclusiveEntries是待删除的目标，存放着引用计数为0，entry.isOrphan= false的目标。没弄明白
mExclusiveEntries为什么要多一步缓存，而不是直接释放
    oldExclusive = mExclusiveEntries.remove(key);
    Entry<K, V> oldEntry = mCachedEntries.remove(key);
    if (oldEntry != null) {
      makeOrphan(oldEntry);
// 只有entry.isOrphan == true && entry.clientCount == 0才会被释放
      oldRefToClose = referenceToClose(oldEntry);
    }
// 判断当前缓存内存大小、缓存entry数量等是否满足缓存条件
    if (canCacheNewValue(valueRef.get())) {
      Entry<K, V> newEntry = Entry.of(key, valueRef, observer);
      mCachedEntries.put(key, newEntry);
                // 引用+1
      clientRef = newClientReference(newEntry);
    }
  }
  CloseableReference.closeSafely(oldRefToClose);
  maybeNotifyExclusiveEntryRemoval(oldExclusive);

  maybeEvictEntries();
  return clientRef;
}
```

```
/** Returns the value reference of the entry if it should be closed, null otherwise. */
@Nullable
private synchronized CloseableReference<V> referenceToClose(Entry<K, V> entry) {
  Preconditions.checkNotNull(entry);
  return (entry.isOrphan && entry.clientCount == 0) ? entry.valueRef : null;
}
```

```
/** Creates a new reference for the client. */
private synchronized CloseableReference<V> newClientReference(final Entry<K, V> entry) {
  increaseClientCount(entry);
        // 这个设计思想可以学习下，返回一个包含一定能力的包装结果，而不是最原始的数据
  return CloseableReference.of(
      entry.valueRef.get(),
      new ResourceReleaser<V>() {
        @Override
        public void release(V unused) {
          releaseClientReference(entry);
        }
      });
}
```