Service

Код программы:

Activity:

```java
package com.example.service;

import com.example.service.MyService.MyBinder;

import androidx.appcompat.app.AppCompatActivity;

import android.content.ComponentName;
import android.content.Context;
import android.content.Intent;
import android.content.ServiceConnection;
import android.os.Bundle;
import android.os.IBinder;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    MyService myService;
    int service_flag;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        ServiceConnection mConnection = new ServiceConnection() {
            @Override
            public void onServiceConnected(ComponentName className, IBinder service) {
                MyBinder binder = (MyBinder) service;
                myService = binder.getService();
            }

            @Override
            public void onServiceDisconnected(ComponentName componentName) {

            }
        };
        service_flag = 0;
        Button btnStartService = findViewById(R.id.btnStartService);
        Button btnBindService = findViewById(R.id.btnBindService);
        Button btnKillService = findViewById(R.id.btnKillService);
        Button btnGoService = findViewById(R.id.btnGoService);
        Intent start_service = new Intent(MainActivity.this, MyService.class);

        btnStartService.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                startService(start_service);
                service_flag = 1;
```

```java
                }
        });

        btnBindService.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                bindService(start_service, mConnection,
Context.BIND_AUTO_CREATE);
                service_flag = -1;


            }
        });

        btnKillService.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if (service_flag == 1){
                    stopService(start_service);
                    service_flag = 0;
                }
                else if (service_flag == -1){
                    unbindService(mConnection);
                    service_flag = 0;
                }
                else{
                    Toast.makeText(MainActivity.this, "Сервис не запущен",
Toast.LENGTH_SHORT).show();
                }


            }
        });
        btnGoService.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if (myService != null){
                    String answer = myService.MyService();
                    Toast.makeText(MainActivity.this, "Completed " + answer,
Toast.LENGTH_SHORT).show();
                }
                else{
                    Toast.makeText(MainActivity.this, "Сервис не вызван ",
Toast.LENGTH_SHORT).show();
                }


            }
        });

    };
}
```

Service:

```java
package com.example.service;

import android.app.Service;
import android.content.Intent;
import android.os.Binder;
import android.os.IBinder;
import android.util.Log;


public class MyService extends Service {
```

```java
    final String DEBUG = "SERVICE";

    public class MyBinder extends Binder {
        MyService getService() {
            return MyService.this;
        }
    }

    @Override
    public void onCreate() {
        super.onCreate();
        Log.d(DEBUG, "Service has started");
    }

    @Override
    public IBinder onBind(Intent intent) {
        final IBinder mBinder = new MyBinder();
        Log.d(DEBUG, "Service binded");
        return mBinder;
    }

    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {
        Log.d(DEBUG, "onStartCommand: " + intent + flags + " startId: " +
startId);
        MyService();
        return super.onStartCommand(intent, flags, startId);
    }

    @Override
    public void onDestroy() {
        super.onDestroy();
        Log.d(DEBUG, "Service has been destroyed!");
    }

    public boolean onUnbind(Intent intent) {
        Log.d(DEBUG, "MyService onUnbind");
        return super.onUnbind(intent);
    }

    public String MyService() {

        int number = 0;
        Log.d(DEBUG, "Number: " + number);
        while (number < 99999) {
            number++;
        }
        Log.d(DEBUG, "Number: " + number);
        return "√";
    }
}
```

Layout:

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="wrap_content">
    <Button
        android:id="@+id/btnStartService"
```

```xml
        android:layout_width="match_parent"
        android:layout_height="70dp"
        android:layout_weight="0.2"
        android:layout_marginHorizontal="30dp"
        android:layout_marginVertical="10dp"
        android:text="startService"/>
    <Button
        android:id="@+id/btnBindService"
        android:layout_width="match_parent"
        android:layout_height="70dp"
        android:layout_weight="0.2"
        android:layout_marginHorizontal="30dp"
        android:layout_marginVertical="10dp"
        android:text="bindService"/>

    <Button
        android:id="@+id/btnKillService"
        android:layout_width="match_parent"
        android:layout_height="70dp"
        android:layout_weight="0.2"
        android:layout_marginHorizontal="30dp"
        android:layout_marginVertical="10dp"
        android:text="KillService" />

    <Button
        android:id="@+id/btnGoService"
        android:layout_width="match_parent"
        android:layout_height="70dp"
        android:layout_weight="0.2"
        android:layout_marginHorizontal="30dp"
        android:layout_marginVertical="10dp"
        android:text="Complete Service"/>

</LinearLayout>
```

Контрольные вопросы:

Когда происходит создание и удаление связанного сервиса?

Ответ: Создание связанного происходит при вызове метода bindService (intent, connection, context), удаление при вызове unbindService(connection)
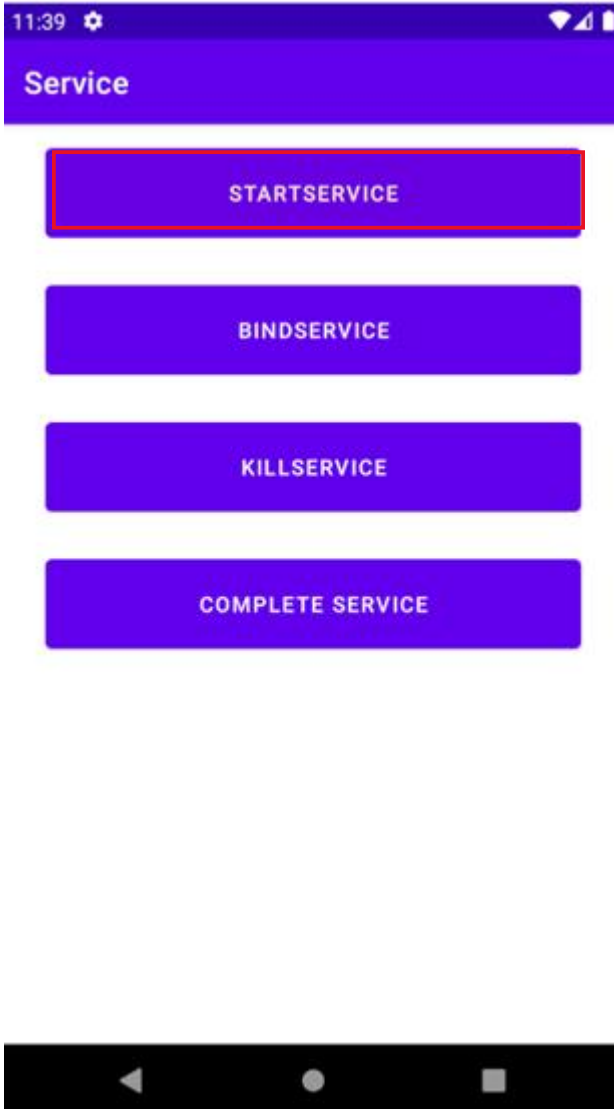
Какие методы жизненного цикла вызываются у сервиса и в какой последовательности?

Ответ: При создании связанного сервиса - onCreate(), onBind(). При использовании startService() - onStartCommand()
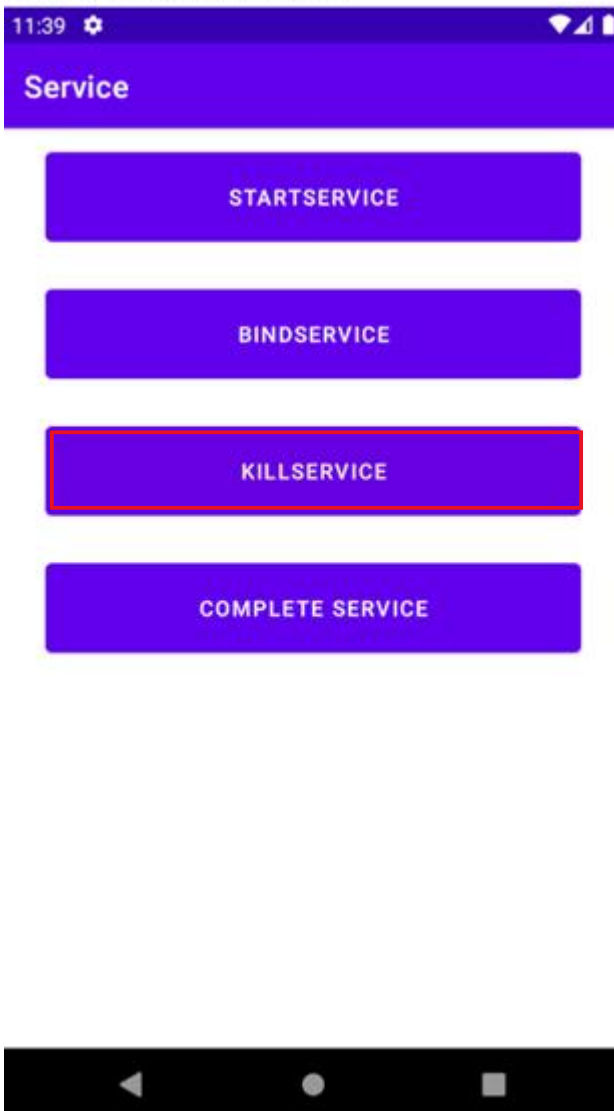
Как соотносится ЖЦ активности и сервиса?
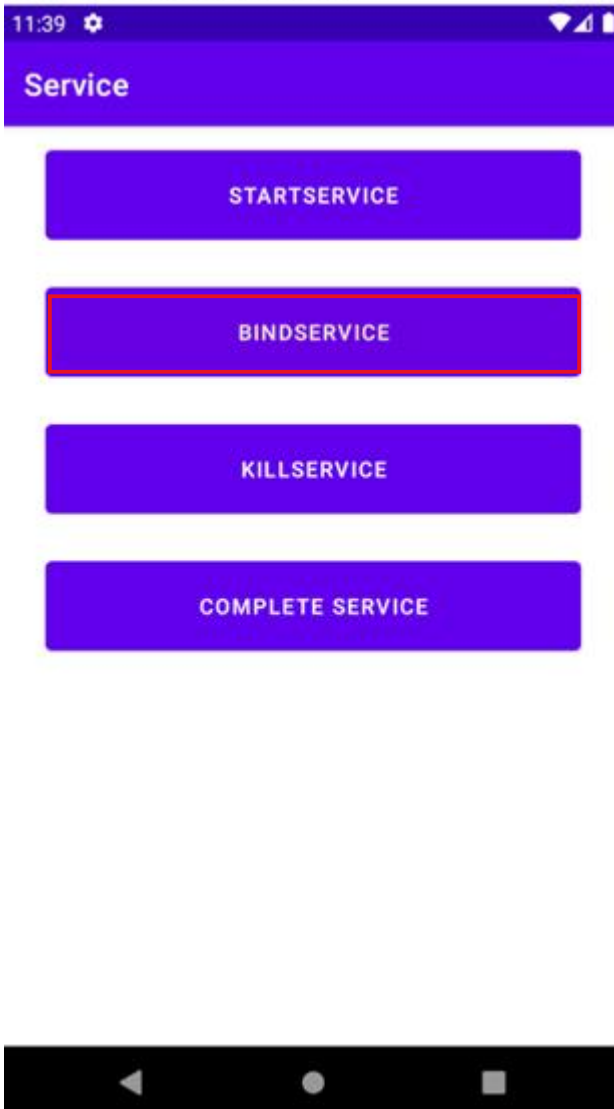
Ответ: Есть методы onCreate(), onDestroy()

Работа приложения:

```
2022-02-18 11:45:38.788 15107-15107/com.example.service D/SERVICE: Service
has started
2022-02-18 11:45:38.789 15107-15107/com.example.service D/SERVICE:
onStartCommand: Intent { cmp=com.example.service/.MyService }0 startId: 1
2022-02-18 11:45:38.789 15107-15107/com.example.service D/SERVICE: Number: 0
2022-02-18 11:45:38.789 15107-15107/com.example.service D/SERVICE: Number:
99999
```
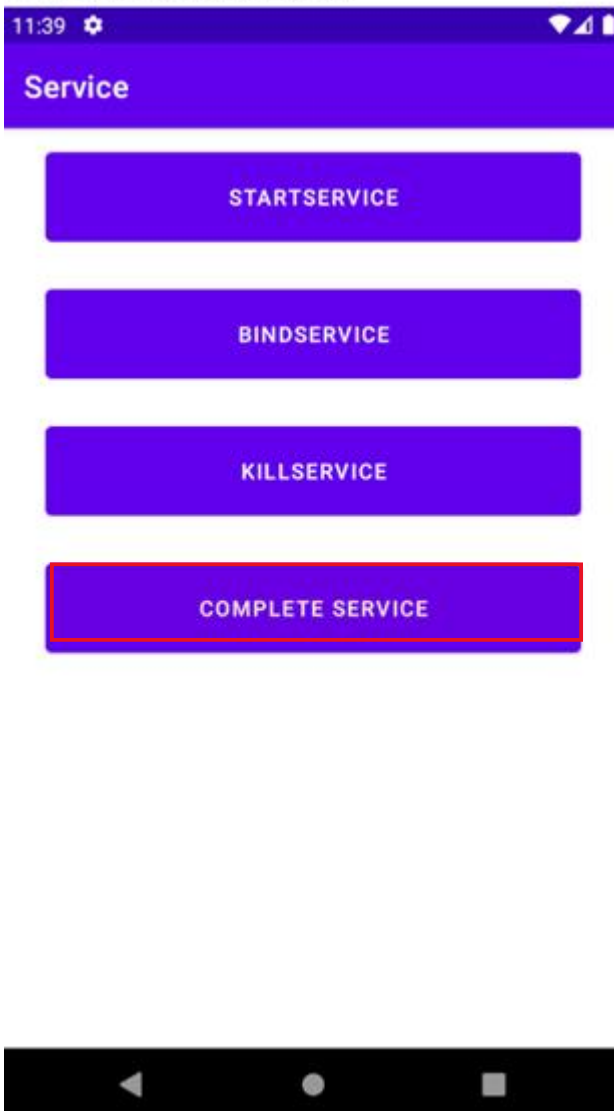
2022-02-18 11:46:44.389 15107-15107/com.example.service D/SERVICE: Service has been destroyed!
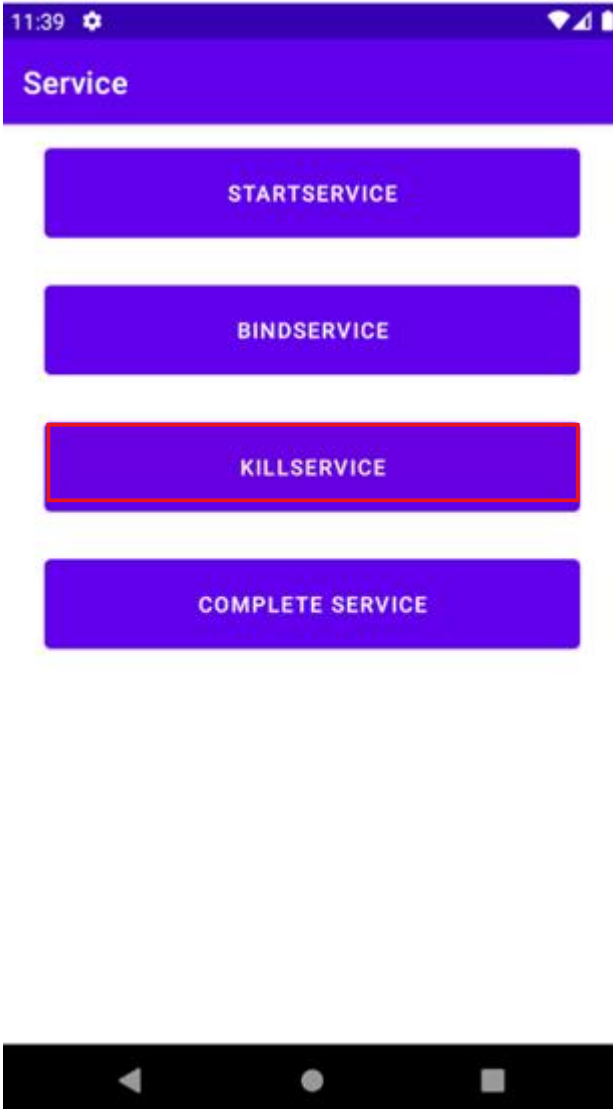2022-02-18 11:46:44.389 15107-15107/com.example.service D/SERVICE: Service has been destroyed!

2022-02-18 11:48:49.479 15107-15107/com.example.service D/SERVICE: Service has started
2022-02-18 11:48:49.480 15107-15107/com.example.service D/SERVICE: Service binded

2022-02-18 11:48:49.479 15107-15107/com.example.service D/SERVICE: Service has started
2022-02-18 11:48:49.480 15107-15107/com.example.service D/SERVICE: Service binded

2022-02-18 11:48:53.182 15107-15107/com.example.service D/SERVICE: Number: 0
2022-02-18 11:48:53.182 15107-15107/com.example.service D/SERVICE: Number: 99999
2022-02-18 11:48:53.182 15107-15107/com.example.service D/SERVICE: Number: 0
2022-02-18 11:48:53.182 15107-15107/com.example.service D/SERVICE: Number: 99999

2022-02-18 11:48:55.542 15107-15107/com.example.service D/SERVICE: MyService onUnbind
2022-02-18 11:48:55.542 15107-15107/com.example.service D/SERVICE: Service has been destroyed!
2022-02-18 11:48:55.542 15107-15107/com.example.service D/SERVICE: MyService onUnbind
2022-02-18 11:48:55.542 15107-15107/com.example.service D/SERVICE: Service has been destroyed!