

## **THE BENEFITS OF REACTIVE PROGRAMMING**

Reactive programming in is the alternative approach to processing data aimed at following the threads and reacting to their changes. It allows to significantly reduce the code and create convenient constructions to control asynchronous tasks and events.

A thread is essentially the sequence of instructions that are executed in parallel with other threads. It allows to do multiple things at once showing animations and user input processing while downloading images or sounds.

All things that programmers use in their application are somehow asynchronous. We work with the internet, send there requests, and can wait responses for a long period of time. It is impossible to block the main thread for waiting responses; therefore, it would be reasonable to put long-term operations in a background thread.

The user is also an asynchronous resource. When you change the UI, the man in turn reacts by changing data in the text fields, or by simply pressing the application buttons. All this happens in asynchronous manner. The user is not forced to work with application; the program just waits for any reaction to start working.

Constructing single threaded applications, which on default work in the main thread is considered possible, but in fact even the UI is a part of asynchronous resource. Applications must respond to the users input in a reasonable way. The application must be reactive and responsive with those threads which are used in different time. This implies that it should avoid the condition, in which the main threads are suddenly blocked, or part of data is arrived in an asynchronous mode, and the application either does not respond, or fails. Eventually, your code must control everything.

Complexity is not always the right solution: the application should maintain all of these states, understanding, that all multiple resources represent and store data in a quite different manner. For example, it is impossible to use Android platform as it is, because it is essentially asynchronous. Such things like push notifications, broadcasts through all system, and even alteration of all configurations can be helpful. The user can unexpectedly rotate the screen at any time, and your code should immediately react to the change. There are a lot of important things not to be forgotten when dealing with Android system. For instance, if we want to obtain successful callback and transfer information directly to the user interface, we may have a problem because the activities in Android are short-lived. They can disappear anytime. If the asynchronous call returns the result after the user interface was destroyed, the program will not avoid problems. Though you can try to construct your system to operate in a

synchronous manner, but any asynchronous unit will break all concept of imperative programming, that is the asynchronous unit will begin to operate independently in the proper thread.

If we want to be reactive with all of these examples, we can subscribe to user and say: "Receive notification in the main thread and transfer information into the user interface." And as soon as there are changes on the part of the user, our pattern will be automatically executed. You will be able to see these updates and will no longer be concerned for manual control.

It is just the reactive programming that can help us to provide proper operation of multiple threads, the main purpose of which is the response to changes of different data types, forms, complexity and accessibility. It will allow us to create the application properly – in an asynchronous manner. The application can be quite reactive if you leave the attempts to control all states personally, and just integrate them with the asynchronicity of resources.

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## **REASONS OF THE PROBLEMS FOR ATTRACTING FOREIGN INVESTMENT TO UKRAINE**

The attracting foreign investment is an objective necessary condition for achieving stability of national economic and socio-political system. Foreign investments play an important role in the economy of any country because they result from the international division of labor, development of international relations, integration of the national economies into the global market, especially in today's globalization and international processes. Restoring sustainable economic growth in Ukraine requires to ascertaining the real state of investment processes and the causes of investment activity decline and Ukraine's attractiveness as an investment object on the world stage. Ukraine has a powerful industrial potential, a favorable geographical position, developed transport infrastructure, extensive human and professional labor market. In terms of economic potential, Ukraine is among the first five countries in Europe, and to the efficiency of its use is among the second hundred countries. World experience shows that countries with economies in transition cannot get out of the crisis themselves without the involvement and the effective use of foreign investment. Accumulating capital, providing access to modern technology and management,