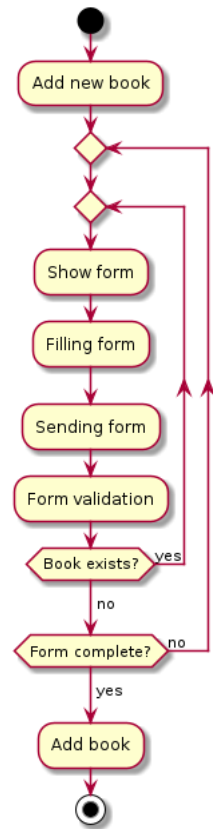


Software Engineering – Activity diagrams

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1 Activity diagrams

Activity diagrams allows to visualize the execution of a process. They are very similar to traditional block diagrams but they must follow strict form.

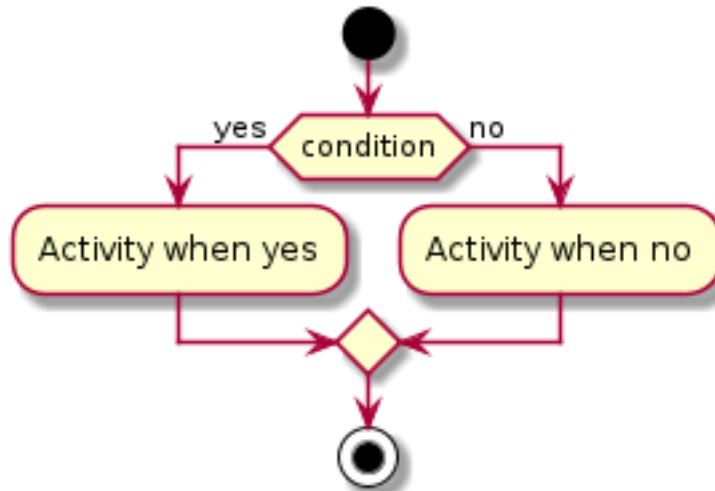


Each diagram must begin with the *start activity* (filled circle). It is the place where we start reading the diagram. On each diagram exactly one start activity should be included. *End activity* (filled circle inside other circle) means the end of all execution.

Most activities are represented by rectangles with round corners. It represents the operations (or a whole process). Each activity should have its own

name.

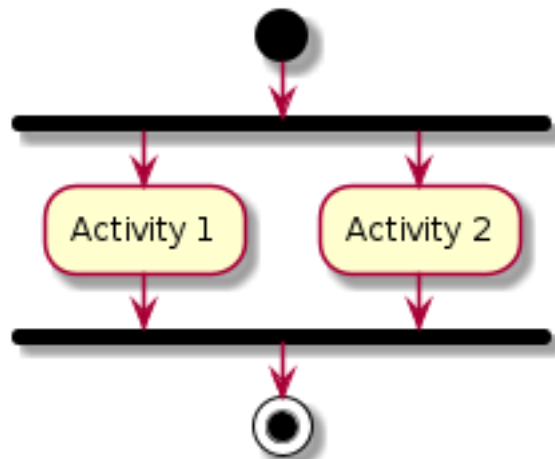
To indicate conditions the diamonds are used.



It have to be marked that diamond with description indicates the condition and the empty diamond indicates the return from the condition. Additionally the arrows that create branch should be described to indicate when we pick the correct way. Only one arrow will have control.

We should never join two arrows together. Additionally we should not connect many input arrows to one activity. It means that we need to have control from all arrows to execute that activity. We should always remember the rule that when we create branch with diamond we need also join them with diamond.

To indicate that couple of activities can be executed parallel we use synchronization block.



In this case we assume that two activities can be executed at the same time.

Additionally we need to remember that such activities can be executed in any order.

Similarly as with conditions here we also need to remember that creating branch with synchronization needs to be also joined with synchronization block.

There is one significant difference with the condition and synchronization. When we use diamond only one branch will be executed. In case of synchronization all branches will be executed. In case of joining with diamond control from one arrow is enough to move forward. In case of the synchronization we wait for control from all arrows.

2 Tasks to complete

1. Create the activity diagrams. Results put in the element <article id="activity-diagrams">. One diagram in each section.