

## Designing Interactive Systems II

### Assignment I “Hello GUI”

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#### 3. Expert Question: Testing Your Understanding

1. Console application HelloWorldConsole gets a user input in textual format (1 character in our case) while the application with GUI HelloWorldGraphical gets an action performed by user. In the console application user would like to know in advance all options he or she can choose before communicating to the application, what in turn is more efficient for the person in terms of not pressing any button until anything shows up. In contrast, graphical application shows possible variants for interacting to user, so to only choose existing one by pressing an appropriate button.
2.
  - 2.(a) The minimum number of event listeners is one. We can write this event listener and subscribe to all buttons' events, though according to best practices it is not considered to be a good solution.
  - 2.(b) The maximum number of event listeners would be 4. There are 4 buttons on the window (3 for language options and 1 for closing), so we can create a listener for each button.
  - 2.(c) There is a reason to use more event listeners to separate concerns among different methods. It is regarded as a better solution according to OO-design principles. Also, relying on the action method name or its type, as when action name is changed, means we will discover the error only during the runtime, what is obviously we do not want to get. There is a possibility to catch all events in only one event listener, but it will reduce maintainability of the program. However, for the current tasks it does not look so critical.