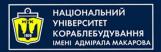# Selenium Waits

Test automation basics with Selenium & Java

- Thread.sleep(1000) - stops program execution to 1 second

- WebDriverWait waits for some event

- Implicit wait
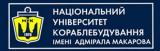
- Explicit wait

- Fluent wait

- waits till element will be displayed on a page
- waits till timeout
- if element was not found, it throws:
  org.openqa.selenium.NoSuchElementException:
  no such element

  <u>Example:</u>

```
driver.manage().timeouts().implicitlyWait(30, TimeUnit.SECONDS);
```

Now, this form is deprecated, so use it as follows:

```
driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(30));
```

1) customizable timeout
2) flexible wait for events:
   - element's presence
   - element (in-)visibility
   - till page loaded
   - till alert displayed
   - till Javascript returns some value

Example:

```
WebDriverWait wait = new WebDriverWait(driver, Duration.ofSeconds(30));

wait.until(ExpectedConditions.elementToBeClickable(searchButton));
```

Do not mix implicit and explicit waits

if you use **explicit** waits,
then implicit wait should **not** be **used** be **or set to '0'**

- implicit wait equals 0 by default,
- it could be set to zero manually:

```
driver.manage().timeouts().implicitlyWait(Duration.ofSeconds(0));
```

Custom wait example

```java
boolean isElementDisplayed(By by, int timeout) throws InterruptedException {
    List<WebElement> elements = driver.findElements(by);
    for(int i = 0; (i < timeout) && (elements.size() == 0); i++) {
        Thread.sleep(1000);
        elements = driver.findElements(by);
    }
    return elements.size() > 0;
}
```

Add to test explicit wait, until chosen element would not be visible.

Create test with following steps:

- Open google.com
- wait until page header will be visible
- wait until search button will be clickable
- type some string in search field
- press search button
- verify that search page header is invisible on results page

Hint: use
`ExpectedConditions.invisibilityOf(element));`