# Keystroke Level Modelling (KLM)

**Keystroke-level model**, sometimes referred to as KLM or KLM-GOMS (Goals, Operators, Methods, Selection rules).

*Efﬁciency is the speed with which a user can accomplish a given task*

This technique allows you to predict how long it will take experienced users to complete a task. This approach provides estimates of task times to within an accuracy of 10%. It is best used for getting measures of efficiency when comparing designs or competing products.

**TASK 1: WATCH THE VIDEO**

In this video you will see an example of KLM. <https://www.youtube.com/watch?v=yJLaqYzk55E>.  
At the end of the video you will see what each factor equates to in time.  
Also you will see the average time the process should take for the average user.

**TASK 2: PREDICT USING KLM**

Consider the text editing Task of searching a Microsoft Word document for all occurrences of a four-letter word, and replacing it with another four-letter word. How long will it take an experienced Word user to complete this?

1. **Complete the Operation & Time columns** in the table below, which has been started fro you, by adding the appropriate letter & times:

* K (0.2 s) – press a key or mouse button
* P (1.1 s) – point with mouse
* H (0.4 s) – home on keyboard, mouse or other device
* M (1.35 s) – mentally prepare

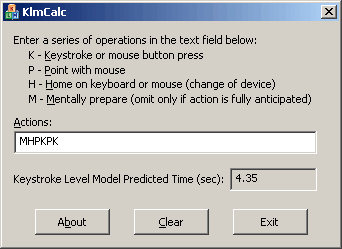
There are some rules for how these times are applied (simplified): M should go in front (or between) all operations unless they are fully anticipated. H is inserted each time a user moves between devices (from keyboard to mouse, for example).

1. Calculate the total time

|  |  |  |
| --- | --- | --- |
| **Description** | **Operation** | **Time (sec)** |
| Reach for mouse (H – home in on the mouse) | H | 0.4 |
| Move pointer to "HOME" tab (P – point with mouse) | P | 1.1 |
| Click on "HOME" tab (K – Press / click HOME key) | K | 0.2 |
| Move pointer to "Replace" button (P – point with mouse) | P | 1.1 |
| Click on "Replace" command (K – Press/click ‘Replace’ icon) | K | 0.2 |
| Home on keyboard (move hands to keyboard) | H | 0.4 |
| Type word to be replaced (M, think about word, KKKK (four keys on keyboard represent 4 letters) | MKKKK | 2.15 |
| Reach for mouse |  |  |
| Point to REPLACE field |  |  |
| Click on field |  |  |
| Home on keyboard |  |  |
| Type new word |  |  |
| Reach for mouse |  |  |
| Move pointer on Replace-All |  |  |
| Click on field |  |  |
| Click OK |  |  |
| Click Close |  |  |
| **Total** |  |  |

* Complete the task under experimental conditions & enter your time

|  |  |
| --- | --- |
| **Time taken by me:** |  |



You could use KlmCalc to calculate the time of the task. 

**Free KlmCalc Download** ([Right-click to download KlmCalc V1.0 for Windows  
(klmcalcv1.zip, last modified 17-Nov-2012, size 820K)](http://www.syntagm.co.uk/design/klmcalcv1.zip). Just unzip the file and put the .exe file somewhere convenient (it does not take up a lot of space, so fits nicely on your desktop). And, just to be clear, the program is completely free.

Record your findings:

**Keystroke Level Model**

* Write a brief explanation of Keystroke Level Modelling In your own words.
* What is it used for? What does it measure? Is it a descriptive or predictive model?
* Briefly describe the experiment and add screen shots as appropriate.
* How does your result compare with the total calculated before the experiment?
* How could KLM be used for designing a User Interface? (see below)

Further links:

<http://www.slideshare.net/WorldUsabilityDayWroclaw/how-to-use-the-keystrokelevel-model-to-compare-the-efficiency-of-user-interfaces>

Could this model be used to determine how long a task might take on a smart phone? E.g. to Remove the keypad lock. • Add a contact with a mobile number. • Send an SMS with text “Hi” to a new number • Add a “Meeting” at 10:00 the next day in the calendar. • Delete a contact. • Activate the keypad lock.