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Course: **Human-Computer Interaction**

Topic: **Statistical data analysis in HCI research**

Resource: **A mock-up case (student assignment)**

The aim of the experiment was to investigate whether working in the developed web application is faster and more pleasant when it is used in a desktop browser (on a PC) or in a mobile browser (on a smartphone).

40 participants took part in the controlled experiment. During the test, they had to complete a cycle of 10 tasks within the said web application using both a desktop browser and a browser on a smartphone. The mean value of the execution of all 10 tasks in the cycle was used as a quantitative efficiency indicator. At the end of the test, the participants completed a simple questionnaire in which they gave their subjective assessment of the level of satisfaction when working with the web application (1 - lowest level of satisfaction, 11 - highest level of satisfaction). The mean values of the task execution time and the results of the questionnaire are available in an Excel file (below).

Carry out a statistical analysis of the available data and draw appropriate conclusions.

DATA

| CASE 05 | Desktop | Mobile | Desktop | Mobile |
|----------------|------------------------------------|--------|--------------------------------|--------|
| | Task execution time (AVG, seconds) | | Level of satisfaction [1 - 11] | |
| Participant 01 | 19.02 | 22.95 | 9 | 8 |
| Participant 02 | 19.72 | 19.22 | 9 | 10 |
| Participant 03 | 19.69 | 13.61 | 10 | 9 |
| Participant 04 | 19.40 | 10.88 | 9 | 8 |
| Participant 05 | 16.95 | 26.57 | 10 | 10 |
| Participant 06 | 20.18 | 16.58 | 9 | 4 |
| Participant 07 | 16.33 | 9.54 | 9 | 9 |

| | | | | |
|----------------|-------|-------|----|----|
| Participant 08 | 14.07 | 19.14 | 9 | 8 |
| Participant 09 | 15.04 | 24.58 | 8 | 5 |
| Participant 10 | 18.93 | 22.47 | 8 | 7 |
| Participant 11 | 17.75 | 22.19 | 6 | 10 |
| Participant 12 | 15.58 | 16.08 | 10 | 9 |
| Participant 13 | 18.84 | 15.93 | 8 | 8 |
| Participant 14 | 17.88 | 22.93 | 7 | 8 |
| Participant 15 | 18.61 | 13.78 | 9 | 7 |
| Participant 16 | 16.48 | 16.65 | 7 | 6 |
| Participant 17 | 19.69 | 13.88 | 8 | 8 |
| Participant 18 | 18.52 | 25.36 | 9 | 6 |
| Participant 19 | 14.82 | 15.61 | 7 | 7 |
| Participant 20 | 23.93 | 14.28 | 10 | 8 |
| Participant 21 | 21.35 | 15.91 | 6 | 9 |
| Participant 22 | 18.06 | 22.49 | 6 | 10 |
| Participant 23 | 14.67 | 18.7 | 11 | 8 |
| Participant 24 | 16.39 | 15.12 | 9 | 8 |
| Participant 25 | 13.02 | 18.8 | 10 | 5 |
| Participant 26 | 16.99 | 19.1 | 9 | 9 |
| Participant 27 | 18.4 | 20.43 | 9 | 7 |
| Participant 28 | 21.47 | 9.56 | 10 | 6 |
| Participant 29 | 12.3 | 19.5 | 10 | 8 |
| Participant 30 | 18.5 | 13.21 | 9 | 9 |
| Participant 31 | 15.68 | 15.49 | 9 | 9 |
| Participant 32 | 16.84 | 9.46 | 7 | 9 |
| Participant 33 | 19.87 | 18.29 | 9 | 6 |
| Participant 34 | 18.36 | 21.94 | 10 | 6 |
| Participant 35 | 18.61 | 10.58 | 9 | 10 |
| Participant 36 | 18.21 | 18.7 | 10 | 7 |
| Participant 37 | 16.1 | 8.64 | 8 | 9 |
| Participant 38 | 19.26 | 24.78 | 8 | 9 |
| Participant 39 | 16.36 | 22.4 | 9 | 8 |
| Participant 40 | 13.17 | 10.79 | 10 | 8 |