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USING THE CAPABILITIES OF THE C++ PROGRAMMING LANGUAGE TO CALCULATE HUMAN BIORHYTHMS

Introduction. The human body organism is subjected to various biological rhythms that affect various processes within the human body. Taking into account these rhythms and the right attitude to them allow maintaining man's health at the proper level, choosing the best time for various activities, selecting correctly people for joint activities. At the moment, the C++ programming language is relevant for this task.

Main part. The purpose of the study is to study the possibility of using the C++ programming language for calculating and plotting biorhythms, as well as calculating the compatibility of people. The developed program has the following functionality:

- allows to enter a person's date of birth,
- allows to enter the time interval at which human biorhythms are calculated,
- builds physical, emotional, intellectual charts of biorhythms,
- calculates the compatibility of people by biorhythms, according to the dates of birth.

The program was developed in the C++ Builder environment.

Biological rhythms (biorhythms) (from Greek. βίος — bios, "life" and ῥυθμός — rhythmos, "any repetitive movement, rhythm") — periodically recurring changes in the nature and intensity of biological processes and phenomena. There are periods of biological processes. For physical processes, this period is 23 days, for emotional — 28 days, for intellectual —33 days.

Biorhythms are calculated using the following formula:

$$\text{bio} = \sin\left(\frac{2\pi t}{P}\right) 100\ \%,$$

where "bio" is an indicator of human activity by rhythm,

$P = \{23,28,33\}$ — cycles of physical processes,

t — the number of days lived [1], calculated in the program based on the date of birth and the 2nd date entered.

The graphs (Figure 1) show the activity of various processes of the human body.

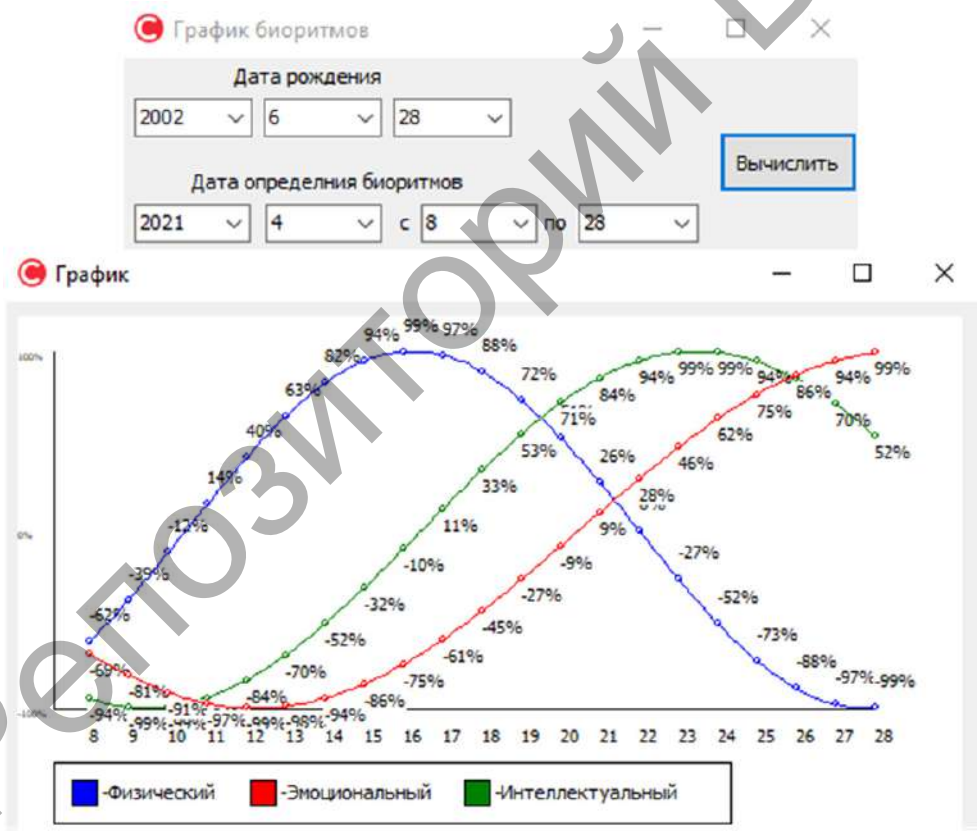

Figure 1 — Plotting biorhythms by the entered date

Let us analyze the results obtained. So from April 25, a person will be in the best physical condition, and from April 8 to April 17, it is better to refrain from physical activity. From April 24, the testee will be in the worst condition for mental work, and from April 14 to April 19 is the best time for mental activity. From April 20 to 27 is the time of the optimistic state, when the abilities for creative activity manifest themselves.

The program also calculates the compatibility of two people based on their dates of birth.

The compatibility of people shows the coincidence of biorhythms, on the basis of which it is possible to determine how well these people fit each other.

Compatibility is calculated by the formula:

$$sov = 100 - raz\ \%P \cdot 100\ / P,$$

where “sov” is the compatibility level. $P = \{23,28,33\}$ — cycles of physical processes, raz is the difference in the number of days lived.

In Figure 2, you can observe the result of the program’s work.

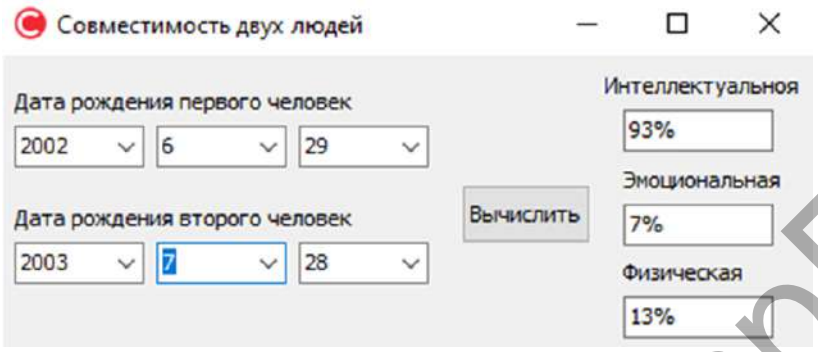

Figure 2 — Calculating the compatibility of two people

0—25 % — extremely poor compatibility;
25—50 % — poor compatibility;
50—70 % — normal compatibility;
70—90 % — good compatibility;
90—100 % — excellent compatibility [2].

Let us analyze the received data. Individuals will interact poorly physically. They will interact intellectually very well. And they will diverge greatly emotionally.

Conclusion. The C++ Builder development environment is well suited for solving the problem of calculating biorhythms, plotting their graphs and calculating the compatibility of people. This program can be used for the best man’s activity planning for a certain period of time.

References

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