**How to use the program WDHV v1.0**

**(module of QextNewEdition )**

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* **About WDHV:**

This program is designed to calculate the weight distribution of linear codes over finite fields. The use does not require special programming language skills.

* **Installation:**

No installation required. You only need to create a directory with a name you choose and download a version of the program that corresponds to the operating system you are using - Linux or Windows.

* **Starting:**

3.1) For Windows - Run the program like any other executable program.

3.2) For Linux - The program is a console application and therefore should be started with the following commands:

**./ WDHV**

or

**chmod +x WDHV** //after that

**./ WDHV**

!!!Important!!! To run properly, you need to run a single copy in a directory!

* **User interface:**

Three different options can be selected after starting:

1. Start computation

2. Change input file

3. Generate random codes in the file ‘EXAM’

* **Some explanation**

If you select 1 directly, the program will calculate the weight distribution of linear codes with generator matrices in the file "EXAM" and will record the results in the file "EXAM\_r". The form of the generator matrices is the same as in the package "Q-Extension":

<http://www.moi.math.bas.bg/~iliya/Q_ext.htm>

If you want to change the name of the input file, you should choose 2. With point 3 you can generate ‘number’ randomly codes with the same parameters. The generator matrices will be written in the file ‘EXAM’. For the correctness of the results for the codes with small length you can use program ‘tools’ from the package ‘Q\_Extension’.

If you have any questions or comments, please do not hesitate to email me at [iliyab@math.bas.bg](mailto:iliyab@math.bas.bg)

* **Additional:**

This software is implementation of the algorithm of the manuscript:

"Characteristic vector and weight distribution of a linear code" by Bouyukliev, Bouyuklieva, Maruta and Piperkov.

The source code (unpolished) of the program is also available.

About QextNewEdition**:**

<http://www.moi.math.bas.bg/moiuser/~data/Software/QextNewEditionWDHV.html>