

BZQ - Step by Step

28th June 2013

Note: Because of the novelty of this software there is a lot of feedback from the users that lead to continuous improvements and additions. You are encouraged to download updates (of the program and the guide) at your convenience.

Additions and improvements of version 3.6 from 5th April 2013:

- 8b Reverb
- 20 Troubleshooting (.wav file is not played by VLC)

Additions and improvements of version 3.3 (from 1st March 2013):

- 8a Volume adjustment for Ison.
- 11a Defining your own intervals and scales
- 11b A friendlier and more efficient way of entering scales.
- 11c Saving and Opening a Scale
- 11d Displaying the actual intervals of a score

Additions and improvements of version 3.2 (from 23rd February 2013):

- 1 Operation in Windows 8, Linux and Mac OS
- 10a Menu for selecting voices, among others, of choirs e.g. of 2-3 persons as well as cello instrument which has absolute accuracy in pitch.
- 10b Easier score coding with the aid of a watermark.
- 12a Summary table of other character and symbols
- 14 Additional scales
- 20 Troubleshooting

1

Introduction

It is known that, after our Orthodox Faith, most valuable elements of our Tradition are the Language of the Holy Gospel and the Byzantine Church Music.

BZQ is a free software meant firstly to assist the student of Byzantine music in his own homework. The Teacher is hereby not substituted, on the contrary he can guide the student how or in which cases to use BZQ more effectively so as to speed up learning Byz.M.

BZQ may also be used by advanced chanters and teachers when experimenting with intervals and scales or when writing their books.

BZQ reads text files (invariably with an extension .bzq) containing coded Byzantine notation, and then creates the so-called Parallagi as sound file of the .wav type.

The Greek word Parallagi (Παραλλαγή, Ital. Solfeggio, Fr. Solfege) is better known in the English language by the similar word Parallax, mainly used in Astronomy and Navigation and means variation, change, transfer, difference between two things. Indeed the melody of B.M. score when actually sung, is not the mere flat singing of the notes, but it is *changed* and embellished for the various quality characters in the score.

BZQ Coding is done with the aid of simple letters and other characters, as explained herebelow.

The prerequisite for using BZQ is a basic knowledge of the theory of Byzantine Music.

The free BZQ runs in MS Windows XO, 7 and 8 or via Wine or virtual Windows in Linux or Mac.

BZQ creates sound files (.wav) which may be converted to .mp3 or copied to an Audio CD etc for distribution and easy replay.

The following topics describe in detail how to do each step in using BZQ.

Some initial steps (e.g. zipped files) may not apply to your case and may be omitted.

After a first reading and assimilating, you will only use this document as a reference for specific details.

2

Obtaining BZQ

BZQ for MS Windows is offered free "as is" from the web site mentioned at the end of this document. It may be freely distributed by e-mail, CD or USB-Stick.

3

Unzipping

If you have received a BZQ folder on a CD or USB-Stick, then skip the rest of this paragraph and go to the next heading.

If you have obtained BZQ in a .zip file you right-click the file BZQ.zip and respond with as follows in Windows XP (Windows 7 is similar):

Open with:

Compressed (zipped) Folder

Select the file BZQ.zip

File

Extract All

Next

Browse

Select the disk and/or folder, eg. Desktop, or C: etc (*)

OK

Next

Finish

(*) The unzipped folder BZQ has now been stored in the path you have chosen above.

4

Storing to Hard Disk or USB-Stick

The (unzipped/extracted) BZQ folder may be Copied-Pasted into the computer or into a portable USB Stick which can be used directly with any computer.

5Reviewing your BZQ folder.

Double-Click on the BZQ folder.

The following list is displayed:

EXAMPLES	this folder contains worked examples for using BZQ.
SUPPORT	this folder contains the BZQ.exe program and supporting files. You should not change this folder or its files.
USER	This is an empty folder for your own .bzq files etc. You may want to rename it e.g. to JOHN.
BZQ - Step by Step.pdf	The present document.
BZQ - Step by Step Greek.pdf	The same document in Greek.

VLC 2-0-1 download from VideoLAN org	this is an internet link for installing the latest VLC.
vlc-2.0.1-win32.exe	this may be shown in larger CD distributions. If you have no internet connection you may install VLC by running this file.

6Alternative VLC install

The .wav files which are automatically created by uBZQ, normally play in the default sound program installed. Alternatively you can install the widely used VLC.

VLC will automatically be used if it is installed in its default path:

C:\Program Files\VideoLAN\VLC\vlc.exe

To install VLC open the folder BZQ and select the method of installing VLC either from the internet <http://vlc-media-player.en.softonic.com/download> or directly from the folder.

The corresponding files are explained in the previous topic.

7Running BZQ for the first time

After you have stored the unzipped BZQ folder and have installed VLC, you may run it for the first time as follows.

Open the folder BZQ.

Open the folder SUPPORT

Right-click on the file BZQ.exe

Send To

Desktop (create shortcut)

Go to the Desktop

Double-click the BZQ.exe (the shortcut you just created)

The BZQ program opens.

The white, larger part shows a text box with some bzq-coded example text such as:

2s 100x VZ =D K -D -D -b g /" g -D

Click on the button "Create .wav file"

The adjacent button informs you that it will take a number of seconds to create the .wav file.

This time is approximate and depends on the speed of your computer.

After that time the VLC Media Player opens and plays the sound file containing the Parallagi.

You may replay this file, and you may utilize VLC to convert the file to .mp3 etc. For this you must experiment and learn VLC.

Click on the button Exit to end the program.

Also remember to close the VLC program.

8

Writing your first Exercise

Run BZQ

Click inside the large white text box, the "BZQ code box".

Using the mouse, select all the text written in this text box.

Press the key "Delete".

The text box is now empty.

Write the following text (you may include any spaces):

n p b g D K D

Click on the button "Create .wav file"

After a few seconds you hear the corresponding notes

Ni Pa Bou Ga Di Ke Di

Let us now use a faster tempo, eg 100 beats per minute.

Add the following at the beginning:

100x

thus, the complete text reads:

100x n p b g D K D

for more clarity, you may want to have the coded score in 2 lines like:

100x

n p b g D K D

Now,

Add - before K

Add .. before the last D

The coded score is now:

100x

n p b g D -K ..D

Create a .wav file, as previously.

You note that the character “-” has increased the time by one beat and the “..” by two beats.

We will now introduce a Petasti (flUtter) by adding a U before K:

100x
n p b g D -UK ..D

In the little box next to QUALITY ANALYSIS enter the number 8

Create a .wav file.

You can now hear a strong petasti effect on the note Ke.

Now changed the QUALITY ANALYSIS to a reasonable middle value of 4.

Create a .wav file.

It now sounds better.

All the above tests so far were tacitly done with the default diatonic scale.

We shall now change the score to the soft chromatic scale of the 2nd Mode Scale, by simply adding the code 2S somewhere before the notes, and add an ison of Di by the code =D, eg.:

100x 2S =D
n p b g D -UK ..D

Create a .wav file.

You can hear the difference, eg. in the lower Ke.

You can also hear the ison (or isokratima).

We shall now change the Scale to Mode 6 (2nd Plagal)

by changing 2S to 6S, i.e.:

100x 6S
n p b g D -UK ..D

and we can execute this similarly.

Finally, we can change the tonality eg. reduce it by 12 moria by the preceding code -12% i.e.:

100x 6S -12%
n p b g D -UK ..D

You may execute this and hear the Parallagi in a lower pitch.

At the end, close BZQ and VLC.

8aVolume of Ison

It can be adjusted in the score text by a number from 0 to 9 and the command (without spaces) [=]

Example:

In the previous example, if you want a soft ison of 3, you should add the following code in the beginning:

3 [=]

If there are more [=] commands in the text, then the last one overrides.

If there is no [=] command then the value in the field "Ison Intensity" or "ΕΝΤΑΣΙΣ ΙΣΟΚΡΑΘΜΑΤΟΣ" is applied.

8bReverb

A simple reverb may be directly included to the generated .wav file by entering a value (0 to 9) into the field:

"Reverb delay R: (0 - 9 metres)"

The delay generated corresponds to an average wall distance of 0 to 9 metres.

9Using worked examples

Run BZQ

Click on the button "BZQ file" at the top left corner.

Open BZQ file

Look in the folder EXAMPLES

Select e.g. BZQ.Agios_O_Theos.BZQ

Open

The following text is automatically entered into the coded-score text box e.g.:

```
2s      100x
VZ =D K -D -D -b g /" g -D
```

At the same time a .jpg image file opens showing a scanned page of the original Byz.M. score. (if it is available).

Create a .wav file, and move the image file on the screen so as to watch the original score as the generated Parallagi is being played.

You may experiment by changing the tempo, quality, or tonality (without permanently changing the original files)

See also the hint under the topic: Coding method

At the end close BZQ, VLC and the image file.

10Creating the your own Parallagi you really need to learn

After you have had experience with all the above topics, you may create your own really useful Parallagi. For a beginner in Byz.Music it may be a whole hymn. A more advanced may need to create a difficult part of the score only.

If the hymn is many lines of score, it is a good idea to add line numbers with a pencil at the left.

Once you have decided which hymn you want to study via BZQ, it is often a good idea to scan or photograph an image of the original B.M. score and obtain an image file.

This will speed up coding and is handy when you subsequently listen to the BZQ-generated Parallagi.

To be sure, you want to watch copyright if you plan to distribute the image.

Next, save the the image file in the .jpg type, giving it an appropriate name, e.g. Kyrie and the extension .jpg

Then open the program BZQ by double-clicking the shortcut you have place on the Desktop (step 7, above).

Next, click on

BZQ file (near the top left corner)

New BZQ file.

Any old contents of the large text box are deleted and some line numbers appear in square brackets, e.g.

[1]

[2]

[3]

and so on. These numbers are not part of the music score, they are ignored, and are convenient to distinguish line numbers.

Now you need to save this new text with the proper name. Click the following:

BZQ file (near the top left corner)

Save BZQ As

select your folder e.g. JOHN

write the same basic name ie Kyrie (.bzq is added automatically)

Save

Now re-open the file Kyrie.bzq

BZQ file

Open BZQ file

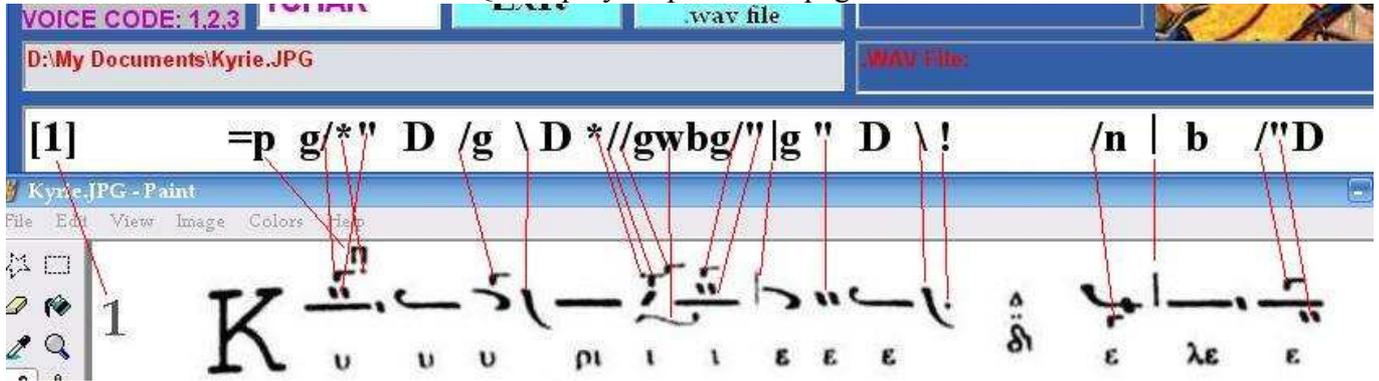
select your folder e.g. JOHN

select the file Kyrie.bzq

Open

The image file Kyrie.jpg opens automatically.

You then drag and reshape the BZQ window and the image window so as to have line by line the image file just below the text box, e.g.:



As you translate each line of B.M.score into BZQ code, you may want to save it in between and hear the sound file up to that point. This will give you confidence that you are proceeding correctly.

If the created Parallagi does not sound right to you then check your code, e.g.:

- that the theory is correct, e.g. if a gorgon is noted on an Oligon & Kentimata combination then it refers to the Kentimata.
- Decimal numbers must have a comma and NOT a decimal point.
- The notes from the middle Di and above should be written in BLOCK letters.

When you are satisfied that your Parallagi sounds right, you must rename the temporary .wav file to a final name. You can use VLC or any other sound editing software to convert it into another format like .mp3, or even produce an Audio CD with your favourite Parallagi. In this way you will be able to listen to these sound files without waiting for the BZQ program to create them again.

10a

Voice Code

You may type a voice code in the field "ΚΩΔΙΚΟΣ ΦΩΝΗΣ - VOICE CODE", e.g. CHOIR3. If you do not remember the exact name then you can open the menu "ΦΩΝΗ-Voice" and select a file of ".bin" type.

10b

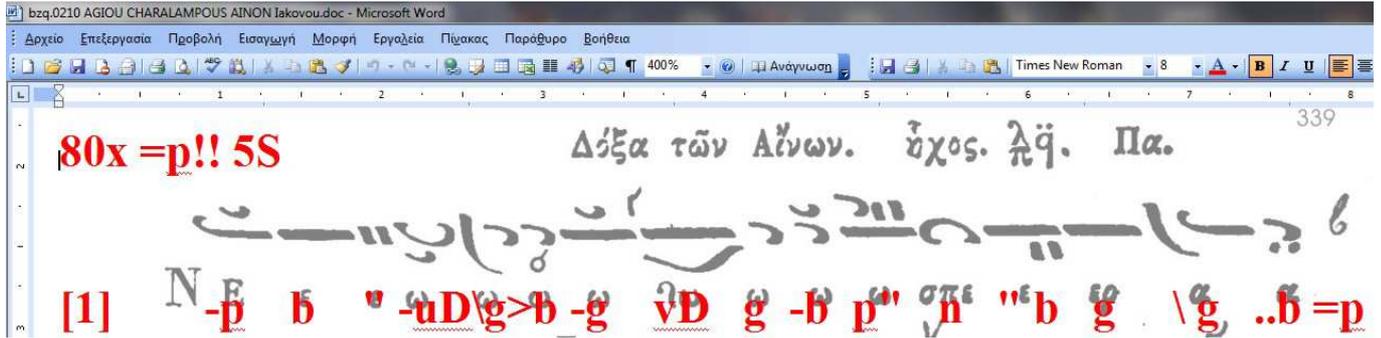
Coding with the aid of a watermark

The fastest way of coding a score depends e.g.

- on your experience with BZQ,
- on the length of the score,
- on the ease of finding or making a digital copy of the score page.

If you have a digital copy (e.g. of .jpg type) and the score is more than one page, then it may pay rather to write the coded text in MS Word or a similar program, which allows you to use the image as a Watermark.

Under each line of the score line in the watermark, type first the line number in square brackets, e.g. [1] and then the codes of notes and other characters.

Example:

You can then copy the code by Ctrl+A, Ctrl+C and paste it to the BZQ text editor by Ctrl+V.

11**Experimenting with Natural Scales and Intervals**

Advance chanters may want to try the so-called natural or Pythagorean scales. The intervals of these scales are calculate by ratios of numbers such 3/2, 9/8 etc. The codes for these scales are given lower in this document.

If you have already code a hymn in the 1st Mode (1S), then you can try it with the corresponding natural scale by substituting 1S with 11S and click create .wav.

If you want to listen to an unusual specific interval e.g. 4.2 moria you can write the following coding using the same note twice, e.g. Di:

D 4,2 > D

This will play the note Di and then the note Di with a pitch of 4.2 moria higher.

Please remember to **use a comma (4,2) instead of a decimal point!**

11a**Defining your own intervals and scales**

You can define one or more scales on the basis of your own intervals (either ratios or parts, moria, of a specific octave division). Each new scale is usually written on one or two lines at the beginning of the text score (.bza) or in any case before the score part that uses this scale.

Example 1: The following ratios are defined as intervals of scale number "1s":

1s 9:8@d 9:8@k 10:9@z 16:15@n 9:8@p 10:9@b 16:15@g 9:8@D 9:8@K 10:9@Z 16:15@N 9:8@P 10:9@B 16:15@G 9:8@H

Example 2: The following moria (72nds) are defined for scale number "36s":

72[octave] 36s 12:@d 12:@k 10:@z 8:@n 12:@p 10:@b 8:@g 12:@D 12:@K 10:@Z 8:@N 12:@P 10:@B 8:@G 12:@H

The octave division is done by the command [OCTAVE], e.g.

68 [octave] ie 68 parts for the scale of Chrysanthos, or

1200[octave] ie 1200 cents.

Defining a natural scale (1-40) is defined by the letter "S", e.g.
36s

Defining a natural (fractional) interval is done relative to the previous lower note by the command

numerator : denominator @ note, e.g.

9 : 8 @ p

i.e. the note pa is put 9:8 (roughly 12.23 moria) higher than ni. (not the character ":")

Defining an interval by parts, moria, cents, is done relative to the previous lower note by the command

parts : @ note , e.g. , assuming a preceding division 72[octave],

12,2 : @ p

i.e. the interval parts are written like a numerator but there is no denominator after the division character ":".

After the above definitions of scales and their intervals, we carry on with the score of our lesson. Remember that from now on (and until other definitions) the moria used will refer to the latest scale division (e.g. 68) defined by the latest [OCTAVE] command.

If no scale division is defined, the default is 72 parts or moria.

The next part describes a friendlier and more efficient way of defining scales.

11b

A friendlier and more efficient way of entering scales.

Instead of typing the complicated commands to define scales, you can (in a friendlier and safer way) use the entry form directly above the BZQ text editor:

The screenshot shows a software interface with a table for defining scales and a text editor below it. The table has columns for notes (a, d, k, z, n, p, b, g, D, K, Z, N, P, B, G, H) and rows for 'Parts (or Numerator)' and 'blank (or Denominator)'. The text editor contains the command: `2s 100x =d !! VZ K -D -D -b g /" g -D !!`

OCTAVE	12	a	d	k	z	n	p	b	g	D	K	Z	N	P	B	G	H
Scale No. (1 - 40)	1																
Parts (or Numerator)		9	9	10	16	9	10	16	9	9	10	16	9	10	16	9	
blank (or Denominator)		8	8	9	15	8	9	15	8	8	9	15	8	9	15	8	

Click on the button "New Scale" to clear any old data from the entry form and enter the appropriate data for the new scale.

Now click on the button "Load below:"

If there is no error, the command is created on the first line of the score text.

If there is an error, a message is displayed in the grey field.

(As explained below, you can also save the scale under a file name with the extension .BSC, e.g. MyFile.bsc, for future use).

The screenshot shows a software interface for creating a .wav file from a scale definition. The interface includes a table of intervals for a scale with 12 notes (a-h). The intervals are shown as decimal numbers. Below the table, a text editor shows the scale definition: 72[octave]1s 9:8@d 9:8@k 10:9@z 16:15@n 9:8@p 10:9@b 16:15@g 9:8@D 9:8@2s 100x =d !! VZ K -D -D -b g /" g -D !!

11c

Saving and Opening a Scale

Click on the menu "ΚΑΙΜΑΞ - Scale".

Click on "Save Scale As"

Type the file name, e.g. MyFile.bsc

Click on "Save".

Your scale definition has been saved for future use.

To open an existing scale in a file of type .bsc:

Click on "ΚΑΙΜΑΞ - Scale".

Click on "Open s Scale"

Select the scale definition file of type .bsc, e.g. MyFile.bsc

Click on "Open"

The scale is shown in the entry form.

It may be edited if necessary and then loaded into the text editor as explained in 11b.

11d

Displaying the actual intervals of a score

Type the command: [inform]

When you click on the button "Create .wav file" a line is displayed on the top of the text score showing the nett intervals between the score notes including any flat or sharp corrections. The intervals are shown as decimal numbers depending on the OCTAVE field in the entry form.

In the example shown (which plays a simple portion of a new natural scale), the OCTAVE field was firstly 72 and the corresponding intervals are shown on the second line as 12.2346...etc.

The OCTAVE field was then changed to 1200, a new "Create .wav" was clicked and a new line of intervals, this time in cents, was added to the top of the previous text.

New scale:	OCTAVE	1200	C:\My Documents\bsc-1 PTOLEMAIOS NATURAL.BSC														.wav file	
	Scale No. (1 - 40)	1	a	d	k	z	n	p	b	g	D	K	Z	N	P	B	G	H
	Parts (or Numerator)		9	10	11	12	10	11	12	9	10	11	12	10	11	12	9	
Load below:	blank (or Denominator)		8	9	10	11	9	10	11	8	9	10	11	9	10	11	8	

[octave=1200 , 203.91 , 182.4038 , 165.0043 , 150.6371 , 182.4038 , 165.0043 , 150.6371]

cents

[octave=72 , 12.2346 , 10.94423 , 9.900256 , 9.038227 , 10.94423 , 9.900256 , 9.038227]

72[octave]1s 9:8@d 10:9@k 11:10@z 12:11@n 10:9@p 11:10@b 12:11@g 9:8@D

1s adkznpbgD [inform]

REFERENCE PART

12

Musical Notes

The program uses the following sequence of 16 Byzantine notes:

ga di ke zo ni pa vou ga DI KE ZO NI PA VOU GA DI with single letters:

a d k z n p b g D K Z N P B G H, or Greek:

α δ κ ζ ν π β γ Δ Κ Ζ Ν Π Β Γ Η

Warning 1. There is an essential difference between lower and upper case of letters denoting notes. However, for all other coding, case is not significant.

Warning 2. **When the note is in the shape of KENTIMATA (") then the symbol of double quotes is used to denote the quality and the note at the same time.**

Thus no letter of the note must be written.

Example: **pb"D** means pbgD where g (ga) has a shape of kentimata.

Warning 3. The note Vou is coded here with the letter B and not V.

This has two reasons: a) The letter V is needed for another use.

b) The Latin letter B is on the same key as the Greek B (beta) which is used for the note Vou (in Greek: Βου). Actually the names of Byzantine notes are a paraphrase of the first letters of the Greek alphabet i.e. αβγδεζη.

Also, the letter V would solve the pronunciation problem in English only but not in other languages like German or Dutch where the correct V-sound would be given by the words "Wu" and "Woe" respectively. In Spanish, initial V and B have practically the same pronunciation.

12a

Summary table of other character and symbols

Έλλ..	Engl.	Σημασία	Meaning	Παράδειγμα/Example
τT	tT	άνTικένωμα	anTikenoma	KtZ
.		άπλη		K.Z
-		άρνητικός αριθμός	negative number	1s -12,23%
\		Βαρεία	vareia (\ -shape)	\Z
=		βάσις δι'ισοκράτημα	basis for ison	3[=] K=Z
=		βάσις όρισμοῦ διαστήματος	basis for an interval	1s =K11:10@Z
/		γοργόν	gorgon	N/Z
//		δίγοργον	digorgon	N//ZK
:		διαστήματος διαιρέτης	interval divisor	K9:8
@		διαστήματος διόρθωσις	interval correction	9:8@K
>		δίεςις	sharp	>K
}		δίεςις γενική (μελλοντικῶς)	sharp, general (future)	
..		διπλή	.	.K
[Έντολή ἢ σχόλιον, αρχή	command/comment, begin[just a comment]	
]		Έντολή ἢ σχόλιον, τέλος	command/comment, end	68[octave] 3[=]
		Θέσις	thesis	K Z
"		Κεντήματα	Kentimata	K"
-		Κλάσμα	klasma	K-Z
σΣ	sS	κλίμαξ	Scale	2s
(Μεταθέσεως αρχή	Transpose, begin	K(p)
)		Μεταθέσεως τέλος	Transpose, end	K(p)
λλ	ll	όμαΛόν	omaLon	K L K
*		παρεστιγμένον	parestigmenon	N **/Z K
!		Παῦσις	pause	K!K
θΘ	uU	πεταστή	petasti, flUtter	K UZ -K
q	Q	ποιότης 0 - 9	Quality 0 to 9	6[Q]
ς	wW	Σύνδεσμος, έτερον	syndesmos (stylised W)	wK K
+		τίποτε	nothing	
%		Τονικότης	tonality	1s -12%
,		ύποδιαστολή	decimal comma!	2,5>K
<		ύφεσις	flat	6,7 < K
{		ύφεσις γενική (μελλοντικῶς)	flat, general	
υΥ	yY	Υφος (μελλοντικῶς)	stYle (future use)	
χΧ	xX	Χρόνος	tempo	95X
ψΨωΩcCvV		ψηφιστόν	psifiston (V-shape)	VK

13Coding method

BZQ coding is in its simplest form a series of letters (Greek or Latin) denoting Byzantine notes.

Example: $\nu \pi \beta \gamma$ or $n p b g$

The notes are modified for duration or quality by other characters

which are usually written before the notes. Example: $-UD \setminus g > b -g$



Meaning:

Hint:

As an illustration of coding there are two worked examples with the coding directly written on the original B.M. score. These are the files

BZQ.En_Tais_Lamprotisi.JPG

BZQ.O LORD I HAVE CRIED- TONE 6.JPG

These .jpg files open automatically when the corresponding .bzq files are loaded in the program.

14Musical Scales

1S	=	diatonic S cale, 1 st tone or mode
2s	=	soft chromatic scale, 2 nd tone. Warning: When the melody descends not further than pa, then pa is automatically set at the diatonic pitch, ie the interval pa-vou is set to 10 moria
3s	=	enharmonic, 3 rd tone
4s	=	diatonic
5s	=	plagal 1st
6s	=	chromatic, plagal 2nd
7s	=	enharmonic
8s	=	diatonic
9s	=	zygos
10s	=	kliton
11s	=	natural diatonic
12s	=	natural soft chromatic
13s	=	natural enharmonic
14s	=	natural diatonic
15s	=	natural plagal 1st
16s	=	natural chromatic, plagal 2nd
17s	=	natural enharmonic
18s	=	natural diatonic
19s	=	natural,zygos
20s	=	natural,kliton
21s	=	European (Western) music scale
22s	=	spathi, Ke
23s	=	spathi, Ke (BZQ alternative natural)
24s	=	spathi, Ke Ke (BZQ alternative natural)
25s	=	spathi, Ke (Ioannidis alternative)
26s	=	spathi, Ga (Ioannidis alternative)
27s	=	spathi, Ga (Kakoulidis alternative)
28s	=	spathi, Ga (BZQ alternative natural)
29s	=	zygos (Ioannidis alternative)
30s	=	kliton (Ioannidis alternative)
31s	=	zygos (BZQ alternative natural)
32s	=	diatonic (1883 Committee)
33s	=	soft chromatic (1883 Committee)
34s	=	hard chromatic (1883 Committee)
35s	=	enharmonic (1883 Committee)

Note 1: There are alternative numbers for diatonic and enharmonic scales

Note 2: the intervals of of the "natural" scales are more accurately calculated

By ratios of integers, e.g. 16/15, 9/8 etc.

Table of intervals used:

Scale \ Note	a	d	k	z	n	p	b	g	D	K	Z	N	P	B	G	H
21S	'European	12	12	12	6	12	12	6	12	12	12	6	12	12	6	12
01S	diat.	12	12	10	8	12	10	8	12	12	10	8	12	10	8	12
04S	diat.	12	12	10	8	12	10	8	12	12	10	8	12	10	8	12
05S	diat.	12	12	10	8	12	10	8	12	12	10	8	12	10	8	12
08S	diat.	12	12	10	8	12	10	8	12	12	10	8	12	10	8	12
11S	diat.nat.	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7
14S	diat.nat.	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7
15S	diat.nat.	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7
18S	diat.nat.	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7	12.2	12.2	10.9	6.7
32S	diat.nat.	12.2	12.2	9.7	8	12.2	9.7	8	12.2	12.2	9.7	8	12.2	9.7	8	12.2
03S	eharm.	6	12	12	6	12	12	6	12	12	6	12	12	6	12	12
07S	eharm.	6	12	12	6	12	12	6	12	12	6	12	12	6	12	12
17S	eharm.nat	5.6	12.2	12.2	5.6	12.2	12.2	5.5	12.2	12.2	5.6	12.2	12.2	5.6	12.2	12.2
35S	eharm.nat	5.4	12.3	12.2	5.4	12.3	12.2	5.4	12.3	12.2	5.4	12.3	12.2	5.4	12.3	12.2
13S	enharm.nat	5.6	12.2	12.2	5.6	12.2	12.2	5.5	12.2	12.2	5.6	12.2	12.2	5.6	12.2	12.2
09S	zygos	12	12	10	8	18	4	16	4	12	10	8	12	10	8	12
29s	zygos	12	12	10	8	18	3	17	4	12	10	8	12	10	8	12
19s	zygos nat	12.2	12.2	9.9	7.7	17.4	4.1	16	4.6	12.2	9.9	8.3	12.2	9.9	8.3	12.2
31s	zygos nat	12.2	12.2	9.9	7.7	18.9	3.2	16	4	12.2	9.9	8.3	12.2	9.9	8.3	12.2
10S	kliton	12	12	10	8	12	14	12	4	12	10	8	12	10	8	12
30S	kliton	12	12	10	8	12	22	4	4	12	10	8	12	10	8	12
20S	kliton nat	12.2	12.2	9.9	7.7	12.2	18.9	6.7	4.2	12.2	9.9	8.3	12.2	9.9	8.3	12.2
02S	soft chr.	8	14	8	12	8	14	8	12	8	14	8	12	8	14	8
12S	soft chr.nat	8.3	13.9	7.7	12.2	8.3	13.9	7.7	12.2	8.3	13.9	7.7	12.2	8.3	13.9	7.7
33S	soft chr.nat hard chr	8	13.9	8	12.2	8	13.9	8	12.2	8	13.9	8	12.2	8	13.9	8
34S	nat	12.2	5.4	20.2	4.3	12.2	5.4	20.2	4.3	12.2	5.4	20.2	4.3	12.2	5.4	20.2
06S	hard chr. hard	12	6	20	4	12	6	20	4	12	6	20	4	12	6	20
16S	chr.nat.	12.2	6.7	18.9	4.4	12.2	6.7	18.9	4.4	12.2	6.7	18.9	4.2	12.2	6.7	18.9
26s	spathi γ	12	12	10	8	12	14	4	4	20	6	12	12	10	8	12
27s	spathi γ spathi γ	12	12	10	8	12	14	4	4	20	10	8	12	10	8	12
28s	nat	12.2	12.2	9.9	7.7	12.2	13.9	4.8	4.8	18.9	7.7	9.9	12.2	9.9	7.7	12.2
22S	spathi κ	12	12	10	8	12	10	8	20	4	4	14	12	10	8	12
25s	spathi κ spathi κ	12	12	10	8	12	12	6	20	4	4	14	12	10	8	12
23S	nat spathi κ	12.2	12.2	9.9	7.7	12.2	12.2	6.7	18.9	4.1	4.1	13.9	12.2	9.9	8.3	12.2
24s	nat	12.2	12.2	9.9	7.7	12.2	10.9	8.3	18.9	3.9	4.1	13.9	12.2	9.9	8.3	12.2

15Pitch (Frequency)

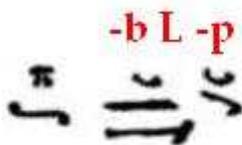
- 2,3> = 2.3 moria diesis
 4,5< = 4.5 moria yphesis
 -7,5% = tonality is lower by -7.5 moria or roughly -7.5% (percent)!
- Mnemonic digression:
 For intervals up to 14 moria, the number of moria is practically the same as the percentage (%) difference in pitch. Thus the use of % for moria!
- p(D) = transpose by note, e.g. Di at the pitch of Pa
 6,7@g = continuous diesis (raising) of ga by 6.7 moria

16Time characters

- 100X = Tempo (in Greek XRONOS, Chronos) e.g. 100 beats per minute.
- / = gorgon. Example: 
- coding:  ..γ
- */ = parestigmenon, left hand side, **by an asterisk (*), not a point.**
 /* = parestigmenon, right hand side
 // = digorgon
 /// = trigorgon, and so on
 . = apli
 - = klasma
 !, + = pause

17Characters of Quality or time-less substance

- U = Petasti, (mnemonic shape U, and the word flUtter)
 V = psifiston, (mnemonic shape V)
 W = Syndesmos or heteron (mnemonic shape W)
 \ = vareia, grave, (mnemonic shape \)
 T = anTikenoma
 λ,Λ,L = omaLon, see examples below:



- " = **kentimata, are written without a letter for the note !**
 | = thesis, for future implementation, but useful to write always for easier reading and debugging the score.

18Chanter Code

An extended distribution on CD may contain more Voices (Chanter Codes) as they are recorded from time to time. Please contact the Author, as explained at the end, to obtain additional recorded single voices or choirs.

19Other code characters

=p = Ison Pa (Ison literally means "equal", thus the mnemonic sign =)
5,5[Q] = force 5.5 for all Qualities
overrides the screen entry.
[.....] = various comments, are not executed as notes

20Troubleshooting**Wrong result:**

Please check the following:

Decimal numbers are written with a decimal comma (,) and **not a point**.

This is a) because of the Continental European practice, but also

b) because of the use of the point or dot (.) as *apli* for additional duration.

Comments are written inside square brackets e.g. [this is a comment...]

However *commands* inside square brackets should not contain spaces

e.g. [=], [octave].

UPPERCASE letters of notes refer to the higher notes e.g. N.

In case of an inexplicable problem please send full information:

- a copy of the score text file
- exact wording of the error message
- what action you did prior to the problem, e.g. just started the program, clicked on a menu etc.
- What Operation System you have used, e.g. Windows XP, or 7, or 8, or Linux(or MAC OS) with Wine or virtual PC etc.
- In the case of Windows 8, you should do the following:
 1. Right-click the program's icon and choose Properties.
 2. click the Compatibility tab and then click the Run Compatibility Troubleshooter button.
 3. In the Compatibility Mode section, select the Run This Program in Compatibility Mode For check box and select the program's desired Windows version from the drop-down list.
 4. Right-click the program's icon and choose Properties.
 5. When the Properties dialog box appears, click the Compatibility tab and then click the Run Compatibility Troubleshooter button. If the program still has trouble, though, move to Step 3.
 6. In the Compatibility Mode section, select the Run This Program in Compatibility Mode For check box and select the program's desired Windows version from the drop-down list.

<http://www.dummies.com/how-to/content/how-to-run-older-programs-under-windows-8.html>

The .wav file does not play:

In one rare case the generated .wav file did not produce any sound when played by VLC.

The problem was solved by any one of the following:

- use a different media player (e.g. Windows Media Player)
- or move the ison (one note back or forward (e.g. np=pn instead of n=ppn)
- or change the voice code (eg. use CHOIR2 instead of CHOIR3).

21**Bibliography**

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Contact

You may download the latest Version/Build of the BZQ program and examples from the web site <http://bzquality.wordpress.com/>

For any questions or suggestions and for update information you are most welcome to contact the author stating your current e-mail address.

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