

Proprietary application for the management of laboratories and law firms BIO-Q_LK

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Abstract

Due to the high number of tasks, a Forensic Laboratory requires the use of information processing IT systems in order to ensure fast and efficient operation. A proprietary application has been developed using the Microsoft Access software for the purposes of routine laboratory and legal procedures, of the designation BIO-Q_LK.

Key words: base, set, laboratory, MS Access, VBA

Registration of tasks

The main purpose of the BIO-Q_LK application is to support the processing of tasks undertaken by a Forensic Laboratory at the request of law firms. The use of applications such as BIO-Q_LK allows laboratories to improve their operational efficiency (Boyar et al., 2021). The application was written in Microsoft Access, using Visual Basic for Applications (Mansfield, 2019). Microsoft Access is a part of the Microsoft Office package and operates in the Microsoft Windows environment. The BIO-Q_LK application is intended to ensure safety, due to the separation of the database file (BQD) from the operator's application (BQ). Each of these files is protected with a password. The BQD database can be archived at any moment with the creation of a spare copy, while its data remains inaccessible. Data can only be accessed using the BQ operator's application, which can only be activated on the operator's computer, which is protected using a password generated in the Windows environment. Following the activation of the BQ operator's application, the programme initiates the start screen (fig. 1).

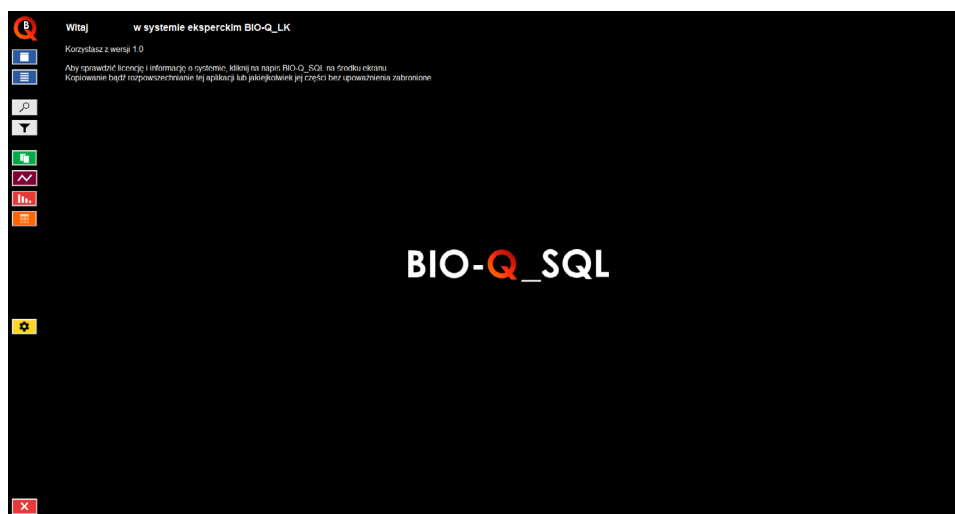












Fig. 1. The BIO-Q_LK start screen

Icons for accessing the individual functions of the application can be seen on the left of the screen (tab. 1).

Icon	Functions of the BIO-Q_LK application
	Opens a data form containing the view of a single task
	Opens a data sheet containing all tasks
	Data search
	Data filtering
	Opens the print preview of tasks depending on the applied filters
	Shows the current task workload assigned to individual employees
	Opens a statistical list of completed tasks
	Shows the planned schedule of task delivery deadlines
	Opens the administrative tool
	Closes the BIO-Q_LK application (upon further confirmation by the operator)

Tab. 1. Functions of the BIO-Q_LK application icons

When a data form containing a single task is opened, depending on the assigned level of authorisation the operator can work with all tasks (e.g. Manager), or only with the assigned tasks (e.g. Expert). An operator who has access only to his/her assigned tasks also has restricted access to the modification of data such as task number, date of receipt, change of expert, date of completion, or the agreed deadline. The above data can only be modified by an authorised person, the Manager. The view of a data form has been shown in fig. 2. An example of filled-in data has been shown in fig. 3. All tasks can be reviewed in the form of a data sheet – fig. 4.

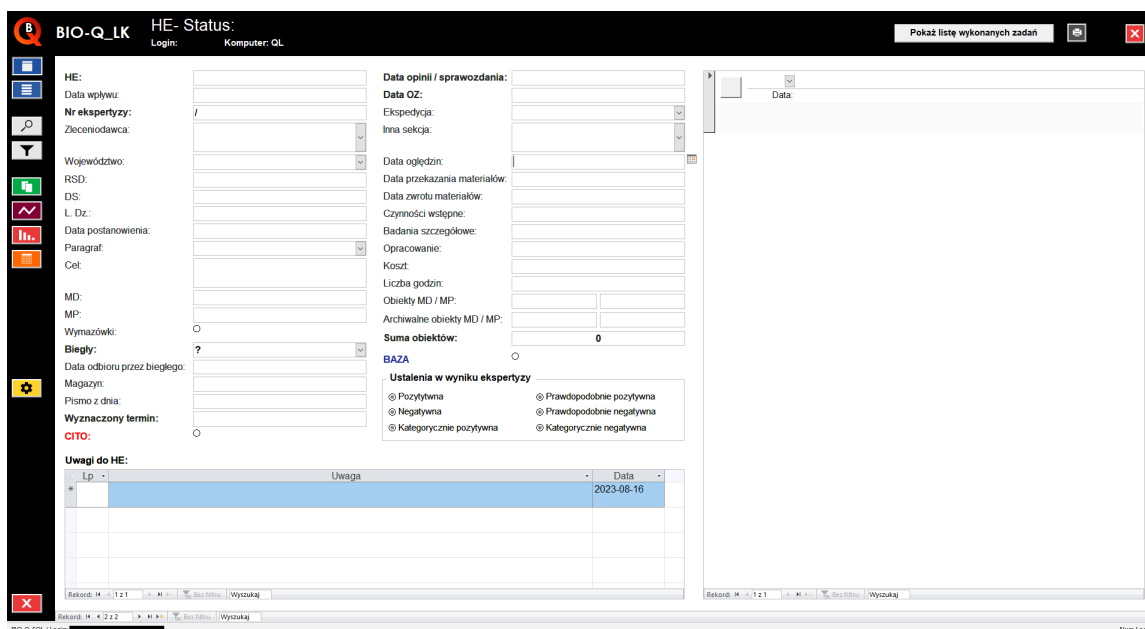


Fig. 2. A data form

BIO-Q_LK HE-1/23 Status: Z
 Login: Komputer: QL

HE: 1
 Data wpływu: 2023-01-02
 Nr ekspertyzy: 1/23
 Zleceniodawca: KGP WARSZAWA
 Województwo: mazowieckie
 RSD: RSD-1/2023
 DS: Ds. 1/2023
 L. Dz.: 1/2023
 Data postanowienia: 2023-01-01
 Paragraf: 279 § 1 kk
 Cel: kradzież z włamaniem do domu mieszkalnego
 MD: 1
 MP: 1
 Wymazówki:
 Biegły: ?
 Data odbioru przez biegłego: 2023-01-02
 Magazyn: III-1
 Pismo z dnia: 2023-01-02
 Wyznaczony termin: 2023-03-01
 CTIO:

Data opinii / sprawozdania: 2023-01-30
Data OZ: 2023-01-30
 Ekspedycja: EKS+MIAT
 Inna sekcja:
 Data ogłoszeń: 2023-01-05
 Data przekazania materiałów:
 Data zwrótu materiałów:
 Czynności wstępne: 2023-01-05
 Badania szczegółowe: 2023-01-09
 Opracowanie: 2023-01-23
 Koszt: 1 000,00 zł
 Liczba godzin: 10
 Obiekty MD / MP: 1 1
 Archiwalne obiekty MD / MP:
Suma obiektów: 2

BAZA
Ustalenia w wyniku ekspertyzy
 Pozytywna Prawdopodobnie pozytywna
 Negatywna Prawdopodobnie negatywna
 Kategorycznie pozytywna Kategorycznie negatywna

Uwagi do HE:

Lp	Uwaga	Data
1	przeprowadzono rozmowę z prowadzącym	2023-03-02
2	przesłano mail pocztą służbową	2023-03-03
*		2023-08-16

Fig. 3. An example of a data form filled in with task data

HE	I	Status	Nr X	Biegły	Data wpływu	Zleceniodawca	Województwo	RSD	DS	L. Dz.	Data postanowienia	Paragraf	Cel	MD	MP
1		Z	1/23	?	2023-01-02	KGP WARSZAWA	mazowieckie	RSD-1/2023	Ds. 1/2023	1/2023	2023-01-01	279 § 1 kk	kradzież z włamaniem	1	1

Fig. 4. A data sheet containing all tasks

Both the task form window and the data sheet allow the user to search for any information. The operator can also filter data depending on the selected scope, e.g. tasks received in a given month, a list of tasks assigned to a given expert, classification on the basis of ordering clients, etc.

Each task can be supplemented with notes referring to information such as: a discussion with the person in charge, sending an official e-mail, the reception of a letter, the forwarding of evidence or reference material, as well as any other additional information.

To improve the efficiency of office work, the list of tasks can be printed out at any time depending on the task number, the date of reception or the date of completion. A paper printout example has been shown in fig. 5.

HE	Zleceniodawca	RSD	MD	§	Biegły	Pokwitowanie w kancelarii
Data wpływu		Data dokum.	MP	Inna Sekcja	Data i podpis	
	Lp U	Uwagi do HE				
Lp MDMP	Materiał dowodowy / Materiał porównawczy				Uwagi do MD/P	
1	KGP WARSZAWA	RSD-1/2023	1	279 § 1 kk		
02.01.2023		2023-01-01	1		2023-01-02	
Pismo z dnia:		2023-01-02		Wyznaczony termin:		2023-03-01
1	przeprowadzono rozmowę z prowadzącym					
2	przesłano mail pocztą służbowa					



Fig. 5. The preview of an archive printout

An expert can supplement the data for each task by introducing the dates of performed actions, which may include:

- the date of visual inspection,
- the date of handover and reception of materials,
- preliminary actions,
- detailed examination,
- the date of documentation.

The management of 'to do' activities

The management of tasks as a planning, monitoring, reporting and ultimately the completion process also enables the user to differentiate the tasks in terms of their complexity - from a low to high level (UV Riss et al., 2005). In the BIO-Q_LK application, the operator can add tasks in the 'to do' task management window (fig. 6). For each introduced task the user can select the task status (high, medium, low, none), the date of completion and optionally the task description. Upon deadline expiry, the task management window informs of such an instance and indicates the sequence of actions on the basis of their priority. The application also enables the review of completed tasks (fig. 7).

Pokaż listę wykonanych zadań



▶	<input type="checkbox"/>	średni	▼	analiza LR	
	!	Data:		2023-02-01	
	<input type="checkbox"/>	wysoki	▼	wykonać opinię	
	!	Data:		2023-03-01	
*	<input type="checkbox"/>		▼		
		Data:			

Fig. 6. The 'to-do' task manager with the consideration of date of completion and priorities

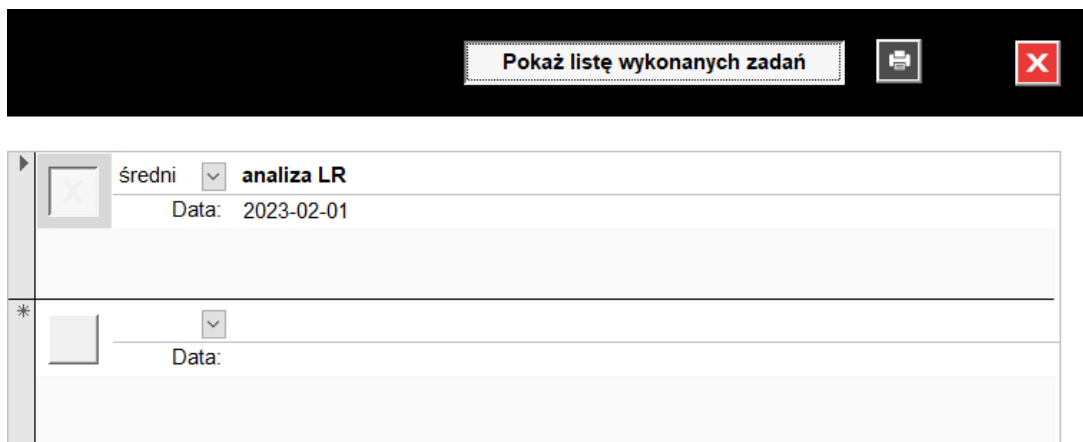


Fig. 7. A list of completed tasks in the 'to-do' task manager

Statistical data

The introduction of data related to the agreed task completion deadline, its costs, the number of hours for completion, as well as the total number of evidence and/or reference material items, allows the user to create statistical data lists in user-defined scopes. The operator can print out the statistical forms or analyse them using a spreadsheet.

The number of tasks assigned to individual experts, and therefore their workload, can be checked using the 'Current task workload assigned to individual employees'. The operator can obtain information on the number of tasks assigned to individual experts (of outstanding X), the number of evidence material items (MD) and the number of reference material items (MP), as well as their total (MD+MP) - fig. 8.

Biegły	Σ zaległych X	MD	MP	Σ(MD+MP)	ΣO
	60	62	3	65	0
	36	70	11	81	5
	1			0	0

Fig. 8. The 'current task workload assigned to individual employees' form

The statistical list form provides information on the number of tasks completed by individual experts, the total time needed for the formulation of opinions, the number of examined evidence and reference material items and the total number of objects (fig. 9).

BIEGLY	ΣX	P	N	KP	PP	PN	KN	ΣH	MD	MP	MDA	MPA	Σ(MD+MP)	Σ(MDA+MPA)	ΣO
	1	1						10	1	1	0	0	2	0	2

Fig. 9. Statistical list: the number of tasks carried out on 2023-01-30 (illustrative data - acc. to fig. 3)

An effective analysis of tasks assigned to individual experts can be performed following the activation of the 'Total number of tasks in terms of planned deadlines' form. The operator receives information on the number of tasks planned for each month of a given year. This enables the effective monitoring of task completion deadlines and task completion (fig. 10).

Biegły	Rok	sty	lut	mar	kwi	maj	cze	lip	sie	wrz	paź	lis	gru
	2023												

Fig. 10. 'Total number of tasks in terms of planned deadlines' form

Conclusions

The BIO-Q_LK proprietary application allows its users to effectively manage laboratory/legal tasks at Forensic Laboratories of the Voivodeship Police Headquarters, as well as - following the modification of the user interface - at Forensic Medicine Departments and Centres, or in other laboratories. The application requires MS Access for operation, otherwise it can be used with Access Runtime, which is free and can be downloaded from the Microsoft website. All tests carried out on the beta version of the application up to this point have demonstrated its effectiveness in accessing data with the maintenance of full IT security.

Source of figures and tables: the author.

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