

Original Research Article

Design and Build an Electronic Archiving System Using Visual Basic Language

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Abstract: Visual Basic provides a variety of tools and features that facilitate the design and construction of an electronic archiving system in an effective and integrated manner, which increases the efficiency and effectiveness of the archiving and data management process. In Visual Basic, electronic archiving applications can be seamlessly integrated with existing systems in the organization, which reduces confusion and disturbances in daily operations. The work focuses on designing and implementing an electronic archiving program based on Visual Basic. We have built a highly efficient program based on Visual Basic to organize electronic archiving with the aim of saving effort and time for workers in the archiving units for official documents and correspondence. Through the research, we demonstrate the ability of Visual Basic to transform paper mail work into electronic archiving characterized by transparency, speed, and no delay in delivering documents and preserving them from damage due to their storage in the database and the possibility of retrieving them at any time. It also reduces the burden on people responsible for archiving, mail and documents. Visual Basic's API can be easy to use and suitable for non-tech-savvy users. The cost of building and designing electronic archiving applications using Visual Basic can be lower compared to custom development solutions or using off-the-shelf commercial systems, reducing capital expenditures.

Keywords: Design and Build System, Electronic Archiving, and Visual Basic Language.

INTRODUCTION

Due to the daily addition in the size of institutions and documents and papers they hold across all fields. The wish of these institutions to sort their data on an automated manner where it helps to save many efforts and time also ensure the preservation of this data were the need of the mechanism to be followed to convert the paper archives into an electronic archive arose. It guarantees the protection of files and documents from loss and damage, which is typical for conventional archives, the possibility to search any file or document in more than a single way, for instance, using its name, number, topic, and the like, the rapid and direct access to any file or document in an unproblematic and convenient manner, together with the convenience of the actual searching and retrieval of documents. Likewise, the potential of the extension of updating the content of files or documents within a database that can be utilized any time [1]. Visual Basic is a programming language that is a true rival to the C++ family of languages, as Visual Basic dominates the programming of web applications, commercial applications, database applications, multimedia, most games, and the like. This is the reason that prompted Microsoft to release the new language #C, which is a twin of Visual Basic, except that it uses the rules of the C++ language in writing commands, which makes it easier for C++ programmers to move to it. The #G language also joined the (.NET) family in 2003, to entice Jafa programmers. But no matter how easy #C and #G are, Visual Basic is ahead of them in this field, as it is closer to the regular English language, and does not contain the many boring symbols that fill C and G#, such as ";", "++", "==", "||" and so on, which make the chances of errors when writing the programming code higher, and make the program more difficult to understand and less familiar when reading [2]. The Microsoft did not stop developing, the following year it released (VB.NET) 2003, and two years later it released. NET 2005, which narrowed the gap further

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between Visual Basic and #C by adding some missing capabilities such as redefining operators (Operator Overloading) [1]. The Visual Basic (VB) is a programming environment developed by Microsoft. The components of the Visual Basic language include a graphical user interface (GUI) that allows programmers to modify codes by adding codes to them, directing them, and determining their behavior and appearance to perform various programming instructions. The Basic language is easy to use and can be relied upon to design a prototype for programs that will later be designed using advanced and more difficult programming languages. Therefore, the Basic language was named the Rapid Application Development system. The most prominent uses of Visual Basic are the following: Designing executable files by programmers with the extension (.exe). Creating database programs. Programming Microsoft applications and programs; such as PowerPoint and Excel.

Using macros; which is combining several typical and repeated commands into one simple command; to facilitate repetitive routine tasks and tasks by creating and filling data tables and charts quickly. Conducting certain statistics for some companies using tables programmed using the BASIC language [3]. Visual Basic Language Visual Basic (abbreviated as VB) can be defined as a programming language created and developed by Microsoft, and it is the visual form of the BASIC language. It was developed by Professor John G. Kemeny and Professor Thomas Curtis. This language is characterized by its simplicity and ease of understanding. Many programmers consider it the starting point for learning programming, and it provides users with a set of tools that can be used to create applications with a graphical user interface (GUI). Visual Basic can be considered more than just a programming language; it includes a variety of libraries that are useful in creating entity-oriented programs. From all this development and for the benefit of the Visual Basic program for the subject of our research, which is electronic archiving, the need arose to touch on the program and electronic archiving, each separately. From this point of view, this will be what we will work on according to the plan followed to learn how to build and design an electronic archiving system based on the Visual Basic program [4]. In the literature there are several studies that research electronic archiving, including: the Visual Basic .NET was used, which is one of the Visual Basic versions. Their results were the design and continuous work on designing an electronic application based on the Visual Basic language to register students in its simplified form. They managed to obtain a product that clarifies the theoretical aspect in terms of what Visual Basic is and its designs.

A study on electronic archiving systems, where the study attempted to delve into electronic archiving to learn about it in a deeper way and clarify its concept, technical and administrative needs, importance, and positive role in developing the work of government institutions and companies [5].

There was a study on the concepts and issues of automated programs for document management and electronic archiving, where they reached the results that automated programs (a database designed in one of the approved programming languages to achieve a specific goal for the party wishing to design this program) are considered better than ready-made commercial programs, which the beneficiary obtains by paying a material fee, and are produced by companies. Specialized in information technology and programming, and in previously motivated programs subject to intellectual property legislation [6].

The problem of our research is that electronic archiving has become an urgent need in our current era, the era of modernity and development, as electronic archiving has replaced manual archiving, as systems are built for this purpose. In our research system or program, which is Visual Basic, a program with a graphical interface that helps in understanding and facilitating the work of archivists, the problem of our research is summarized in several questions, and the answer to them will be in what we will extract from the results of our research through working on it:

- **Firstly:** How can Visual Basic be used in the electronic archiving process.
- **Secondly:** How is the electronic archiving system built and designed using Visual Basic.

METHODS

The research adopts the descriptive approach based on describing how to design and build an electronic archiving system using Visual Basic language. A database is a collection of data organized in a systematic and logical manner that can be easily accessed and managed. Databases are essential to electronic archiving processes for several reasons: Databases are the backbone of electronic archiving processes, as they contribute to organizing and preserving data and ensuring its availability and ease of access at any time and from anywhere. By using modern data technologies such as relational databases and big databases, organizations can make the most of data, improve their operations, and make strategic decisions based on reliable and accurate analyses [7].

In this study, the focus was on how to deal with the Access database and link it to Visual Basic 6, where this is done through the ADO library and then displaying the data in the Data grid and linking the fields of the tables within the database to other objects such as: text box or label, etc.

RESULTS AND DISCUSSION

The first step is to design the database from within the project. We open the Visual Basic program, then choose the first option Visual Data Manager from the Add-Ins menu (the Visual Data Manager window will open), after that the (Visual Data Manager) window appears, and then we move to the next step, which is from the File menu we choose the new command, then Microsoft Access, and finally Version 7.0 MDB, as shown in Figure 1 [8].

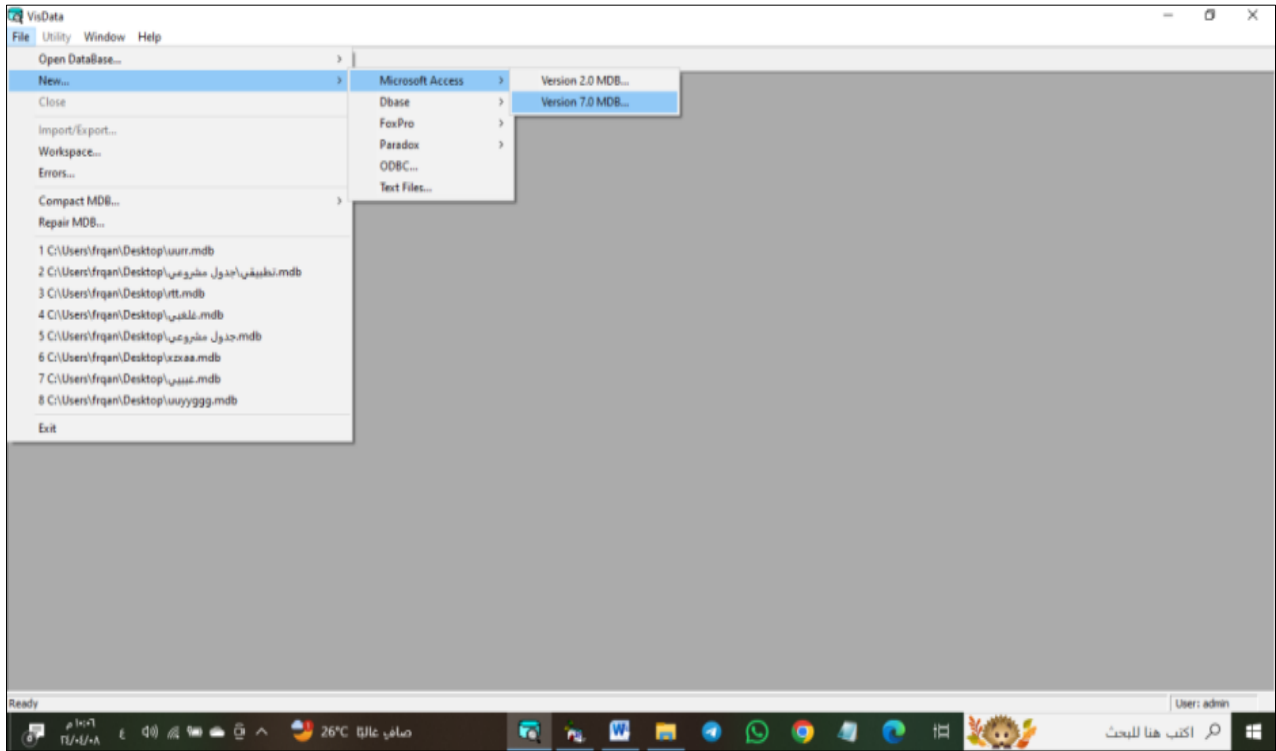


Figure 1: The Visual Basic program window of version 7.0 MDB

The second step will open a dialog box. We choose (Select Microsoft Access Database to Create). We write the name of the database that you want to create, then we click save to save the database. From here, the step begins through which the database that we will work on is created, which has the extension (mdb), as shown in Figure 2.

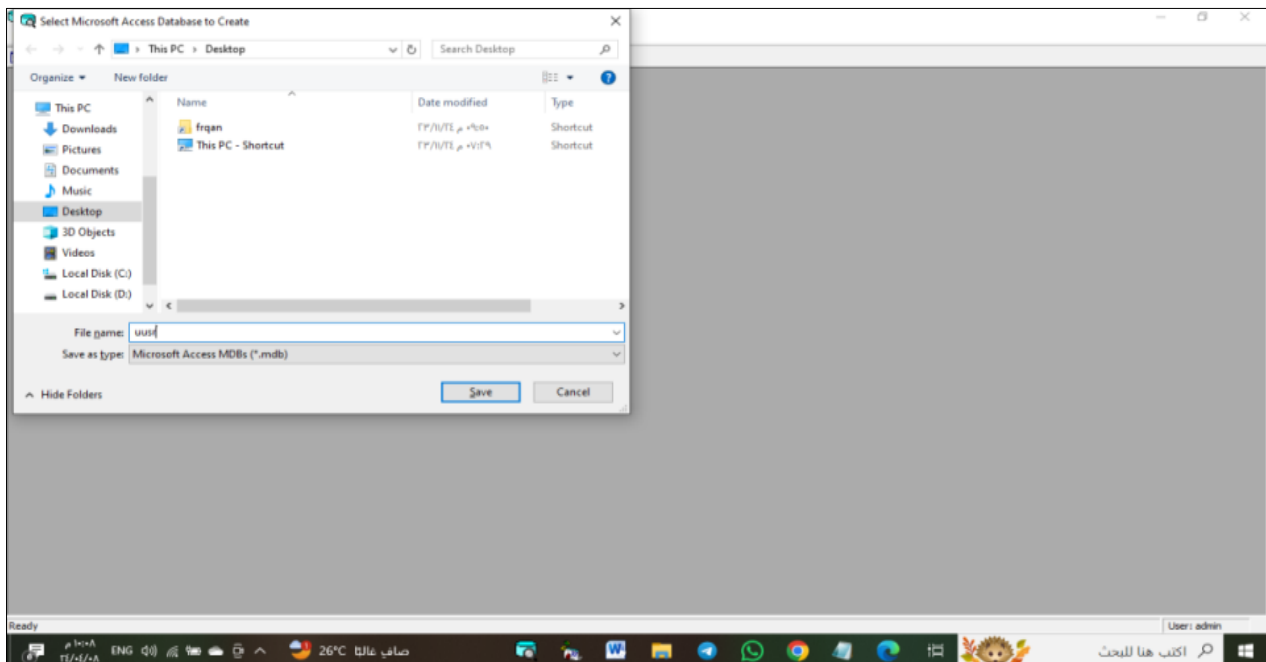


Figure 2: Create database

Then the Visual Data Manager window will appear, inside it is a small window titled Database Windows, with the properties icon. We right-click on the properties icon, a shortcut menu will appear from which we choose the new table command, as shown in Figure 3.

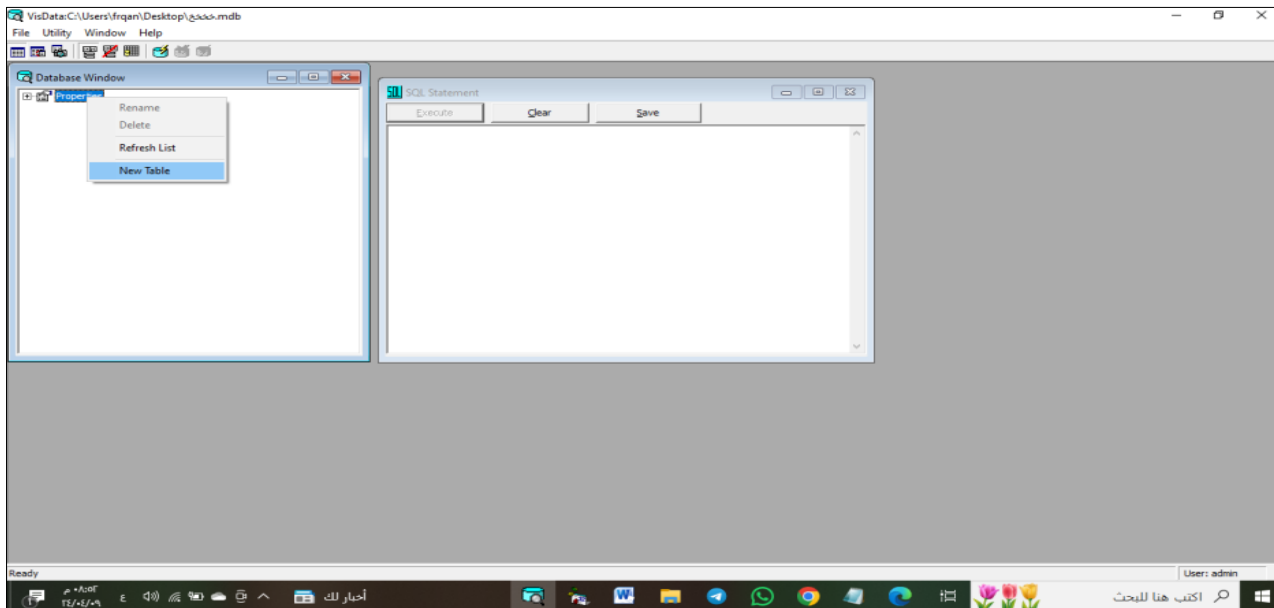


Figure 3: The new table command

After that, the table structure window will open to build a table. We write the name of the table in the Table name box. To add fields to the database, we choose the add field button. To delete an unwanted field, use the remove field button. The add field window will open to add and control the added field. We write the name of the field in the name box, as shown in Figure 4.

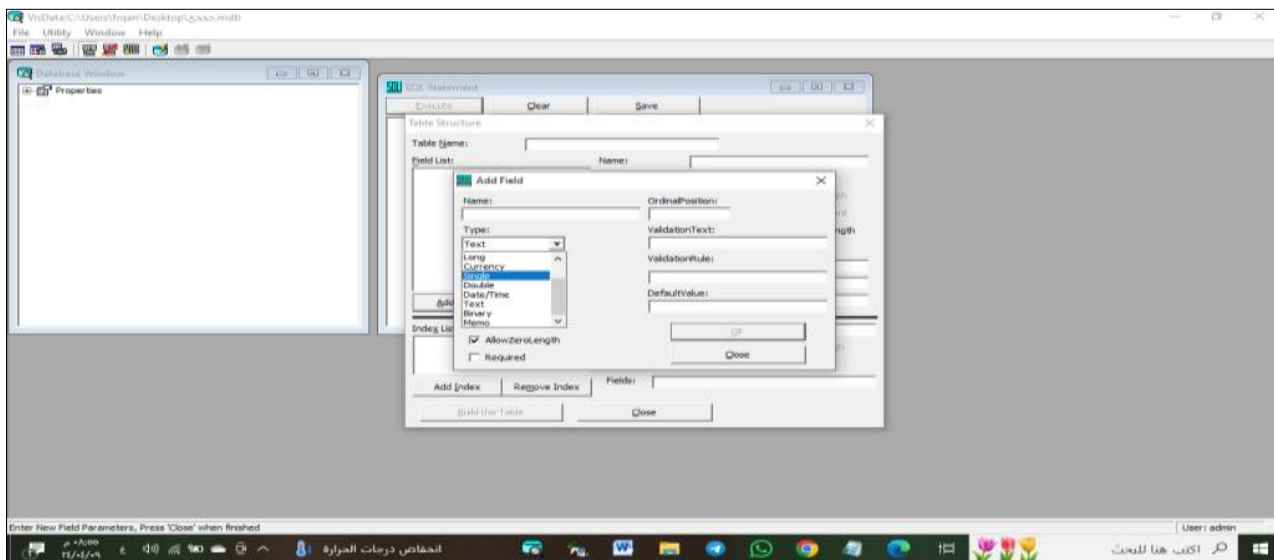


Figure 4: The table structure window

We open a list to specify the type of data that will be stored in this field from these types: Text, currency, and Date/Time. We can also specify the field size from the size box, and when finished, we choose OK, and then we repeat steps 7 to 9 when adding fields to the table, and when we finish to the point of implementing the desired database, where in the database we included the fields (ID, First Name, Last Name, Academic, Address, Date of birth, and Department). Then, we click close, then the Build the Table button, as shown in Figure 5 [9]. Thus, a database was easily created in Visual Basic. In this way, we created our own database consisting of the fields mentioned above. After all this, we link and design the Visual Basic program interface.

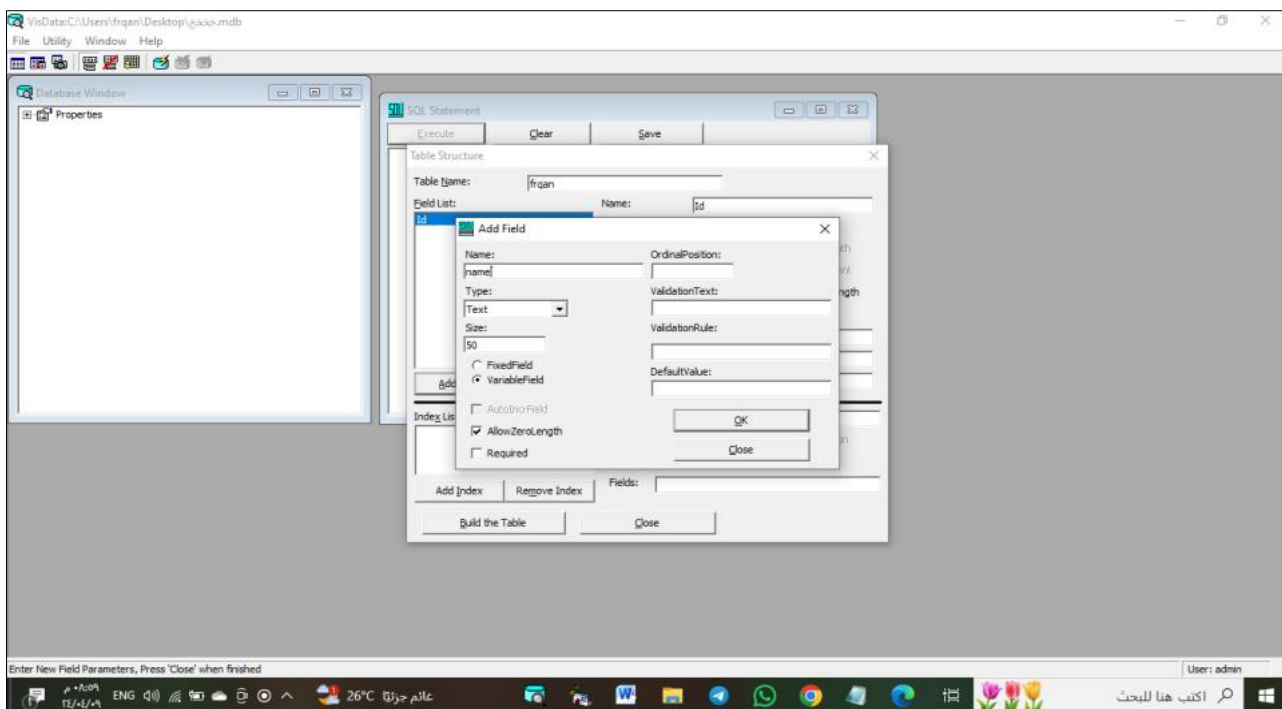


Figure 5: The database created in Visual Basic

In the next step, we create a program in Visual Basic 6.0, link the database to it. To achieve this, we open the Microsoft Visual Basic 6.0 program and create a new project "Standard EXE". The program opens the project and the workspace appears in front of you, called Form1. Where we will add the required tools from the toolbox, as well as add Text Boxes and three Labels according to what our work requires, which is archiving a specific group, as shown in Figure 6.

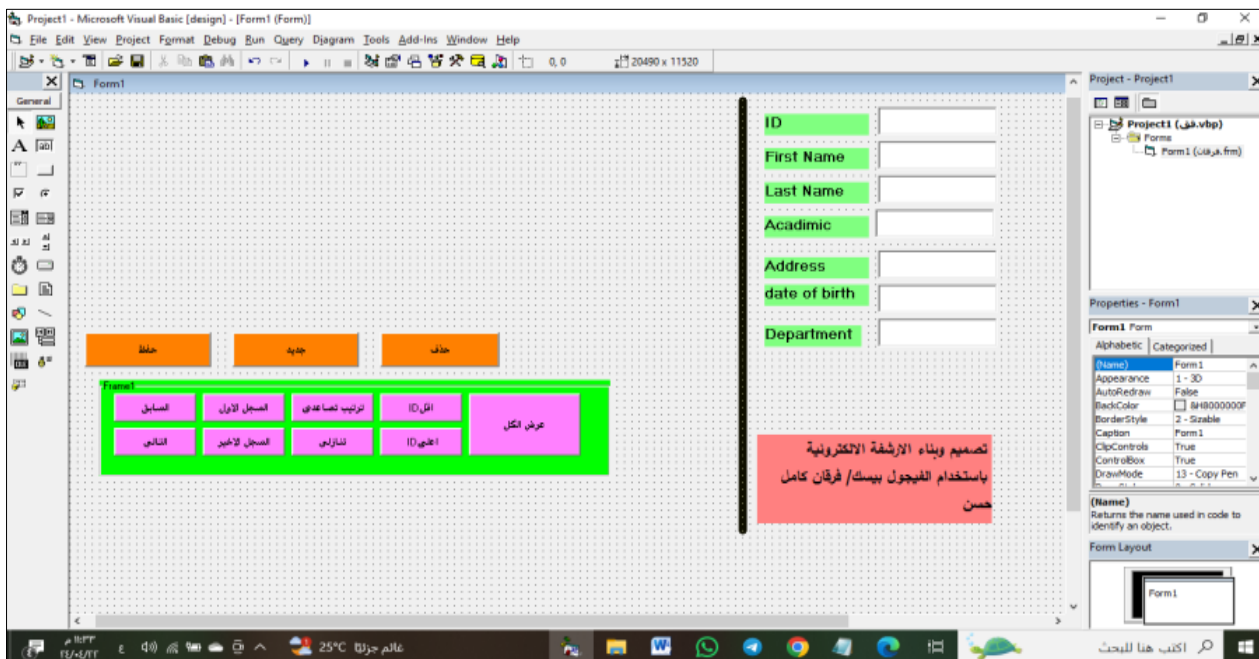


Figure 6: The create a program in Visual Basic 6.0

Then we right click in the empty space on the toolbox or "Ctrl+T" and choose "Components". A dialog box will appear with many options from the "Controls" tab page. Check "Microsoft ADO Data Control 6.0 (OLEDB)". Also check "Microsoft Data Grid Control 6.0 (OLEDB)", and the tool to add a file (pdf) from the "Acro Adobe PDF" tool, then click "ok." As shown in Figure 7. The new tools will appear in the toolbox. Place them on the form and adjust their size parameters to the size and shape that suits you.

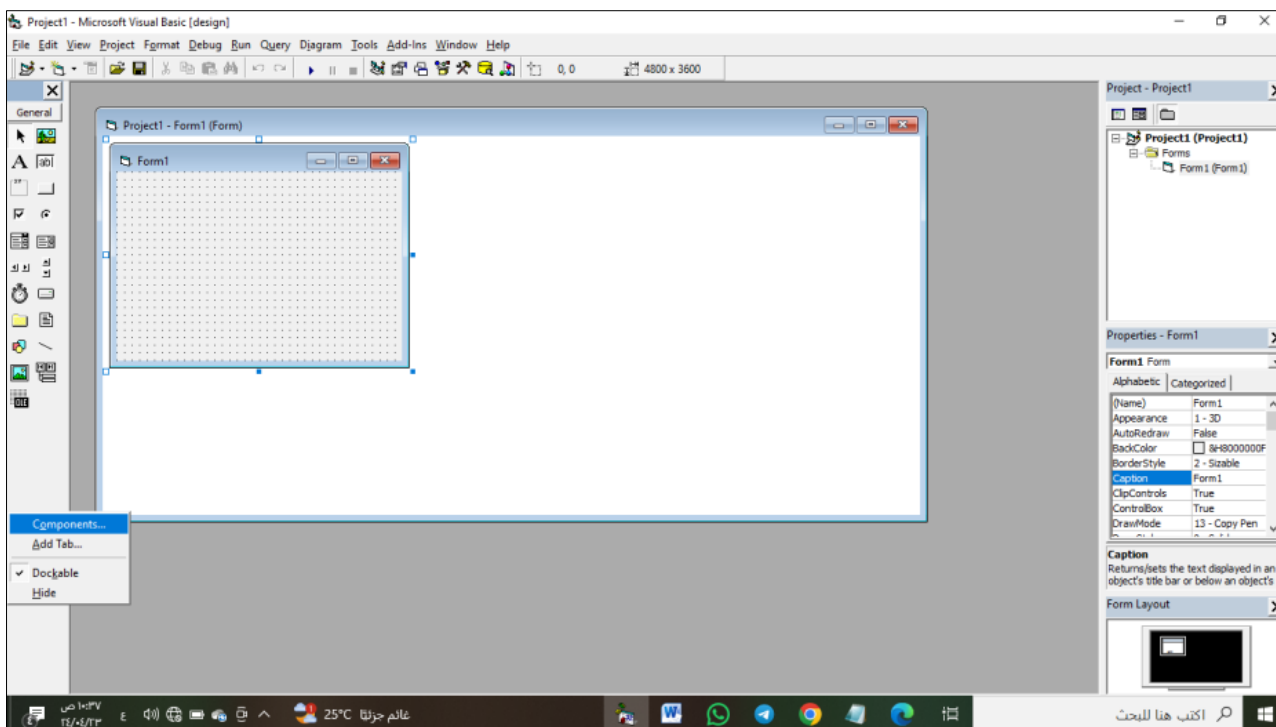


Figure 7: The create file in Visual Basic 6.0

To connect the database we created to the program, we click on the ADO tool, then go to the properties screen on your right and choose the “Custom” property. A small button with three dots appears, we click on it. A dialog box called “Property Pages” appears with tabs. From the “General” tab, we click the “Build” button, as shown in Figure 8 [10].

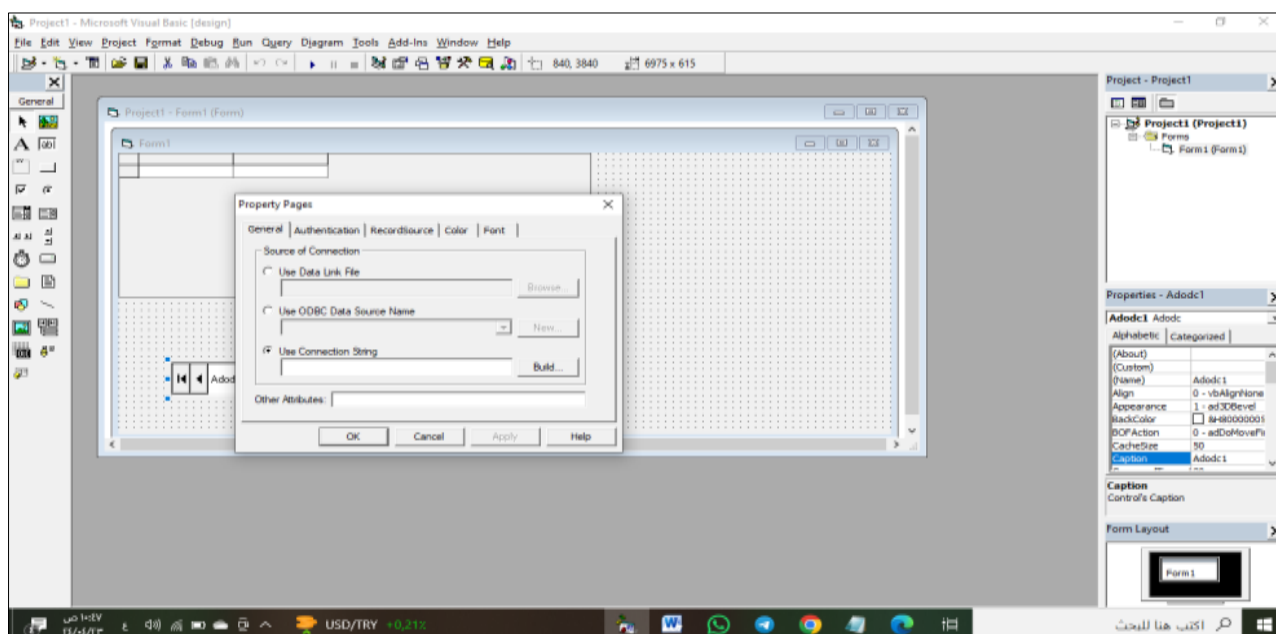


Figure 8: The connect database with Visual Basic program

Another dialog box called "Data Link Properties" appears with tabs and we will work on them in order. We choose "Microsoft Jet 4.0 OLE DB Provider" from them and click "Next". In the "Connection" tab, we click on the small button with three dots or in other words the "Browse" button, then go to the place where we save the database and open it, as shown in Figure 9.

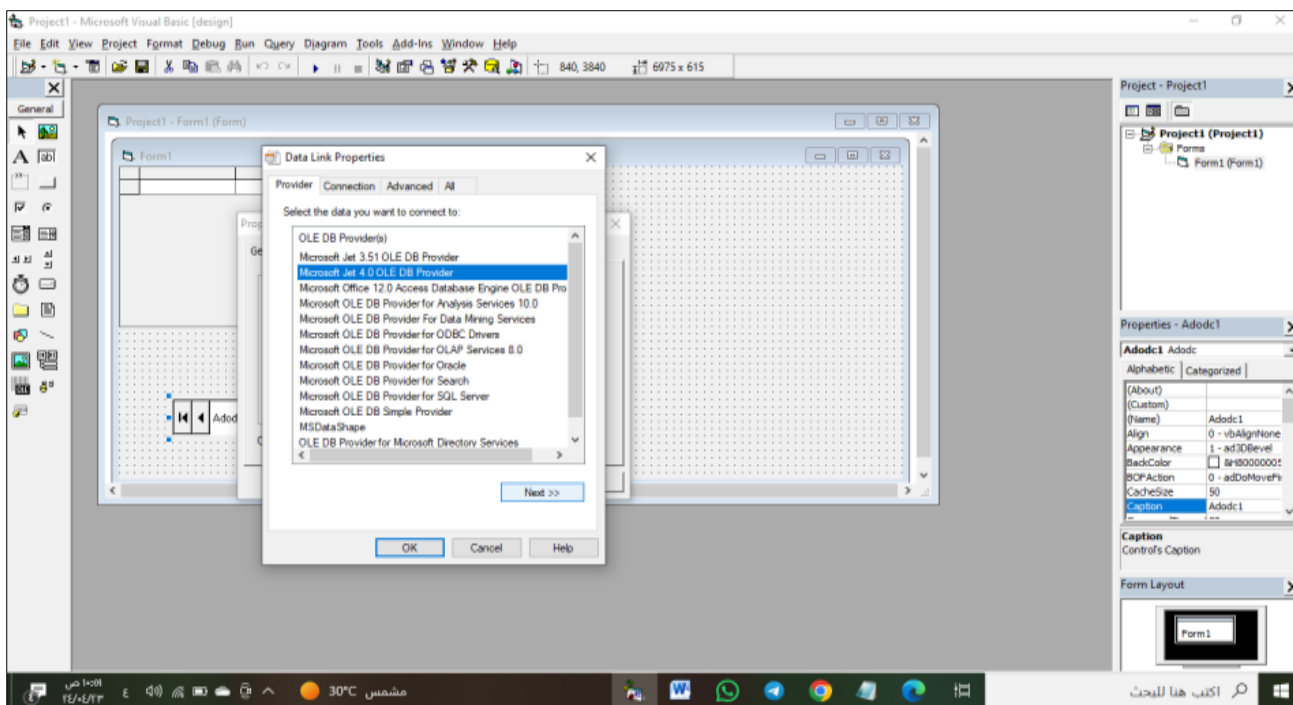


Figure 9: The connect completion between database and Visual Basic program

If the database is not protected by a password, we click on the "Test Connection" button to make sure the connection is correct. Then we connect the (Adodc1) tool to the (data grid) tool, and then we create the shape we want with the buttons we want to save, update and delete in the form of (commands), and then according to the number of fields we want to create, we enter the number of texts and labels that correspond to them and we adjust all their properties on the (Adodc1) tool and we create a toolbox that calculates (ascending order, descending order, smallest, largest, previous, next, first, last ... etc.), and then we add a command to link the (pdf) file and display it on the project screen and we do the final design of colors and so on the project and for each object we add its code and in a general and final form applied design the program code is: [11].



Figure 10: The final form of the database designed in the Visual Basic program

Program Code

```
Private Sub Command1_Click()  
On Error Resume Next  
Adodc1.Recordset.Update  
End Sub
```

```
Private Sub Command10_Click()  
On Error Resume Next  
Adodc1.RecordSource = "select * from frqan where id=(select min(id) from frqan)"  
Adodc1.CommandType = adCmdText  
Adodc1.Refresh  
End Sub
```

```
=====
```

```
Private Sub Command11_Click()  
On Error Resume Next  
Adodc1.RecordSource = "select * from frqan where id=(select max(id) from frqan)"  
Adodc1.CommandType = adCmdText  
Adodc1.Refresh  
End Sub
```

```
=====
```

```
Private Sub Command12_Click()  
Adodc1.RecordSource = "select * from frqan "  
Adodc1.CommandType = adCmdText  
Adodc1.Refresh  
End Sub
```

```
=====
```

```
Private Sub Command2_Click()  
On Error Resume Next  
Adodc1.Recordset.AddNew  
End Sub
```

```
=====
```

```
Private Sub Command3_Click()  
On Error Resume Next  
x = MsgBox("Are You sure to delete this record", vbYesNo
```

```
    If x = vbYes Then  
        Adodc1.Recordset.Delete  
    End If  
End Sub
```

```
=====
```

```
Private Sub Command4_Click()  
On Error Resume Next  
Adodc1.Recordset.MovePrevious  
End Sub
```

```
=====
```

```
Private Sub Command5_Click()  
On Error Resume Next  
Adodc1.Recordset.MoveNext  
End Sub
```

```
=====
```

```
Private Sub Command6_Click()  
On Error Resume Next  
Adodc1.Recordset.MoveFirst  
End Sub
```

```
=====
```

```
Private Sub Command7_Click()  
On Error Resume Next  
Adodc1.Recordset.MoveLast  
End Sub
```

```
=====
```



```
Private Sub Command8_Click()  
On Error Resume Next  
Adodc1.RecordSource = "select * from frqan order by id asc".
```

```
Adodc1.CommandType = adCmdText  
Adodc1.Refresh  
End Sub
```

```
Private Sub Command9_Click()  
On Error Resume Next  
Adodc1.RecordSource = "select * from frqan order by id desc"  
Adodc1.CommandType = adCmdText  
Adodc1.Refresh  
End Sub
```

CONCLUSIONS

We conclude from this study that it is possible to convert manual work into electronic work and abandon papers and paper archiving and rely on electronic archiving that preserves documents from damage and loss with the possibility of being able to retrieve data quickly. Research shows that using Visual Basic to build and design electronic archiving can be effective in achieving archiving goals in a distinctive way. It can also be noted that the application programming interface in Visual Basic can be easy to use and suitable for users who are not tech experts. Also, by using Visual Basic, electronic archiving applications can be integrated with existing systems in the organization seamlessly, which reduces confusion and disruptions in daily operations. Ultimately, the cost of building and designing electronic archiving applications using Visual Basic can be lower compared to custom development solutions or using ready-made commercial systems, which reduce capital expenditures. The designed system is also characterized by ease of operation, high efficiency, large storage capacity, and ease of understanding duties, which allow us to use it in all state institutions.

The method that was relied upon in the work includes more than one solution to reach the essence of the work, which is linking the Visual Basic program to an electronic archiving program in order to convert simple methods into advanced methods that can be worked on by the external user in an easier way due to the interfaces and facilities in the work. There is a method that could be through Visual Basic .NET and there is a method through Visual Basic 6.0, which we applied in our research. There are several methods, but this is the best method for writing the code and testing it more than once to ensure the reliability of the program. As for the benefit and protection, the program can be very protected by creating a programming code that protects the database, as if the database is lost, the program loses its identity and it becomes impossible to take information from it without the database or the place that archived it, and from it the confidentiality is added as something positive to the program.

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