

Implementing computer-based test for theory exams in tertiary institutions in Nigeria

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Abstract

The computer has penetrated and positively influenced all areas of human endeavor, and this is because of its potential of improving any system it is applied to. The education system is not left out in this global trend of systems automation. After improving lecture delivery, both in and out of the classroom, there has been the need for online assessment, resulting in the emergence of computer-based tests. Currently, a lot of objective type computer-based tests have evolved for online assessment. In the same light of improving the system, it is imperative that theory questions be assessed online as well, using the computer and this is the aim of this work. A theory online exam system was developed in the course of this work. Software was written by the author, using Microsoft Visual Studio 2015 and Microsoft SQL Server 2012. This Software has a client-server architecture, called Paperless Exam Ver. 1.0. The software was tested and found to be working. Two computers were set up, one being the server and the other, the student (client). Students and timed courses were added to the server with the *Admin Module*. These names were logged into the software, started an exam and submitted the scripts. The scripts were collected from the server for marking by the lecturer, using Adobe Acrobat Reader Pro and a Digital Pen/ Graphics Pen Tablet.

Keywords: Theory, paperless, computer-based, test, examination, online

Introduction

The present-day educational technologies and new learning methods evolve, lecturers are expected to adopt rich and exciting learning environments. Computers can convey reality of events and activities to a learner even years after, by way of videos, pictures and modeling software. With computer aided teaching, learning gets more interesting and even, the lecturer enjoys the exercise of disseminating knowledge to enthusiastic students. At the end of knowledge dissemination comes assessment and the computer is also another vital tool for assessing students on the respective courses taught.

For over a decade now, computer-based test has been referred to as “new frontier of testing” (Thompson et al, 2002) and the rate at which it has been embraced by schools has been so encouraging. According to Thompson, 2014, Computer-Based Testing (CBT) has grown from an interesting research topic to the accepted

format of delivering exams. “There currently is strong interest in CBT and advocates have identified many positive merits of this approach to assessment. In the education system, varieties of assessment and evaluation mechanisms are currently being used Portugal et al, 2015, Mingsirithum, and Sudsawad, 2012 and Kularbphetpong, 2014. In general, most instructors are conducting examinations based on the aptitude type of questions such as True-False type questions, Fill-in-the-Gap, Matching type of questions, Multiple Choice type questions or short answer type etc. This system will resolve some issues of the already existing examination systems, like answering of subjective questions, storing of the answer sheets, misplacement or loss of answer sheets. This system will also make the archiving of answer sheets a hassle-free process (Rustogi & Singh, 2011).

Though, a variety of *e*-assessment approaches and systems have been developed in recent times, yet lack of

flexible timing functionality to automatically log-off candidates upon expiration of allotted time, result integrity comprise, stand-alone deployment, lack of flexibility, robustness and scalability as well as human error are major limitations of the existing platforms (Fagbola et al, 2013). Evaluation, test, assessment, or examination is a term synonymously used as a measure of the level of knowledge acquisition by the trainees at the end of their learning period (Onyibe et al, 2015). It is obvious that the beginning of any innovation is prone to some teething problems, which is being experienced by computer-based test (CBT). All the factors militating against the successful implementation of CBT will give way with the advancement of technology.

This *Paperless Exam* software works in a client/server environment, with two modules – *Admin Module*, which runs only on the server (online/offline) and *Student Module*, which is installed on all the students' machines (workstations). The *Admin Module* is for managing the software while the *student module* is used to administer exams to students. The Admin configures the software by entering the courses, their duration, and the students' register for each course. The student goes into the exam hall, gets a hard copy of his/her question paper, and answers the questions by using the computer and digital pen/graphics pen tablet, with Microsoft OneNote as the writing pad. At the end of the allotted time for the exam, the student submits the script in pdf format to the server. *Paperless Exam VI.0* stores all the scripts for each course in a single Folder and this Folder is copied by Admin and given to the lecturer handling the course at the end of the exam, for marking.

Online Computer Based Tests have been able to address objective-type questions only. A typical test has both subjective and objective components.

Meanwhile, a complete test of the student's ability in a given course requires theory-type questions as well. Some questions (in engineering for example) involve calculations, while others (in arts, medicine, social sciences, etc.) need in-depth analysis of either a system or a scenario – all calling for theory-based answers. Hence, we need a system of answering theory questions online, to complete the current online testing system in our universities. Secondly, with the current method of keeping answer scripts in the office, there will always be need for more office space to be occupied by these scripts as exams are administered to students. These rooms are potential offices for lecturers. Moreover, paper is prone to destruction by way of fire outbreak or aging, if not well kept. The high cost of printing paper is another challenge to the system. This work is therefore aimed at implementing a paperless theory examination system. This will be achieved through identifying a system of writing with the computer that replaces the use of paper, developing a software package that takes the write up from a student and submits to a central repository and designing a hardware architecture that helps accomplish steps above.

At the end of the study, when this paperless exam system is deployed in a university or similar institution of higher learning, it would have solved the following problems, a. Saving the school huge cost of printing paper used for examination administration, b. The issue of missing exam scripts would be minimized, if not eliminated, c. Rooms used for storing exam scripts become useful offices for more lecturers, d. There would be easy archival and retrieval system of scripts when the need arises and e. Loss of records due to fire outbreak will not arise in the system anymore as the data is stored in the cloud.

1. Materials and methods

2.1 Hardware

Computer server

The setup is going to involve a computer network with high configuration server. The server will be used to server the questions and also house any database to be used in the department. A hard disk of 2TB will be needed and a RAM size of 32GB, 64GB or 1TB will be needed depending on the number of workstations, i.e., number of students to sit for examinations. It is this server that is going to be feeding the Thin Clients in the ICT centre.

Thin client computer

Thin Client computers are going to be used for individual workstations. This will help reduce setup cost and maintenance cost for the system. It should also have a good amount of RAM, say 2GB and a good graphics adapter.

Wired network

A wired network is going to be used with computer server acting as the only CPU in

the system. Depending on the arrangement desired, it could be a domain system or a workgroup network system, depending on the kind of administration to be implemented.

Huion graphics pen tablet

This is the main writing tool for the Paperless Exam. It has a feel like you are using a normal pen to write on paper. It is a Graphics Tablet for drawing and a digital pen for writing. It can also function as a mouse. While not in drawing mode, a touch with the tip of the pen is equivalent to left click on the normal mouse. A double tap with the tip of the pen means double-click. There is also a button (by the side) for right-click for triggering context menus. It has a dimension of 4 inch long and 2.2inch wide. It works well on OneNote and the combination of the two gives a beautiful write up.



Figure 1.1: Huion H420 graphics pen tablet

As you can see to the bottom right corner, it comes with 4 spare nibs which can be used to replace the tip of the pen. The tip remover is to the left of the nibs in the figure above. There are 3 buttons to the left of the Graphics Pen Tablet which may be configured to work with the software, in this case, OneNote.

The author made extensive research for over 3 years, looking for an affordable digital pen for students, suited for this exercise. Table 1 shows different pens and their costs as at 11th January 2019:

Table 1: Graphics/digital pen prices

S/N	Item Description	Cost (US \$)	Availability
1	Remarkable	599.00	Available
2	Phree Digital Pen	198.00	Out of Stock
3	Wacom Bamboo Pen	174.99	Only 2 left
4	Neo SmartPen	169.00	Available
5	Acecad Digimemo	102.26	Out of Stock
6	Intuos Digimemo	93.00	Available
7	Huion H420 Graphics Pen Tablet	51.04	Available

This part talks about all the hardware needed to carry out effective computer aided teaching in the department. Above are the associated hardware, ranging from a high-speed computer server, thin clients, to air mouse.

2.2 Software

Microsoft powerpoint, microsoft onenote and microsoft word

The computer aided teaching uses Microsoft PowerPoint and Microsoft OneNote. The Microsoft PowerPoint file is used for the teaching while OneNote is used to write on the screen (annotations). The beauty of the PowerPoint is that all possible videos and pictures can be projected for the students for more details. If there need for annotations, he may use the Huion H420 Graphics Pen Tablet or the Pen that comes with the dual boot Tablet/PC.

Paperless exam version 1.0

The software has two modules – the student module which is used to take the

examination, and the admin module where the exam is managed.

Database requirements for paperless exam

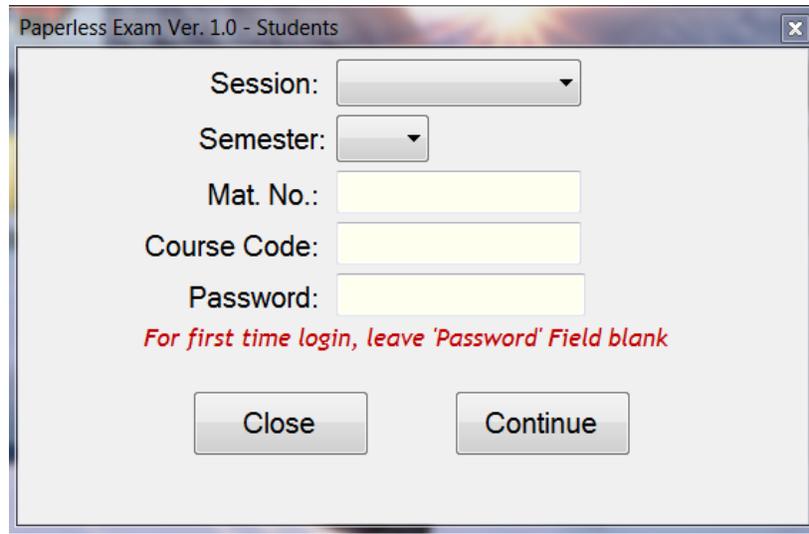
We are going to use Microsoft SQL Server 2012 database for this system because it is very rich and versatile when it comes database management. It is also secure – not just anybody can open a computer and see the contents of this database. You need to open it with a user name and password, which the database administrator will set at the time of setting it up.

2. Results and discussion

3.1 Microsoft OneNote 2013

The major software for writing the Paperless Exam under this arrangement is Microsoft OneNote 2013. A sample of a write up is shown below. This software is so versatile that it can be used to take notes and write any examination. The OneNote of Office 2016 gives beautiful pen strokes when the sensitivity of the pen is increased but this version still has some bugs.

Step 1 Student login



Paperless Exam Ver. 1.0 - Students

Session:

Semester:

Mat. No.:

Course Code:

Password:

For first time login, leave 'Password' Field blank

Close Continue

Figure 1.3 Login user interface for student module of paperless exam

The student is expected to input his/her:

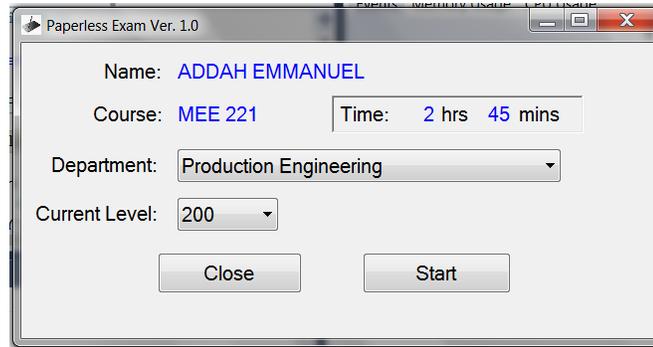
- 1) Academic Session
- 2) Semester
- 3) Mat. No.
- 4) 6-digit Course Code

Using the *Admin Module*, The Administrator of the software must have uploaded the names and Mat Nos. of all the students for any given examination into the server. This helps to ensure that only students who registered for a given course sit for the course.

The student is expected to click on the *Continue* Button after filling the above 4 fields (Figure 3.3). He/ She will be taken to a page to set the password, if that is the first time of using the software to write examination. Subsequently, this password will be used to sit for all examinations. After password set, the student is taken to the next step. On the other hand, if the student had once used the software, it would take him/her to the next step.

Step 2
Start exam

(a)



(b)

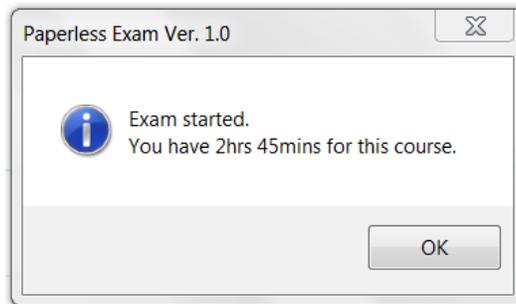


Figure 1.4: Student starts exam

The student selects his/her *Department* and *Course Level*. On clicking on the **Start** Button, a **Microsoft OneNote File** is saved in **My Documents** Folder for the student. The Filename contains the **Mat No., Course Code, Session** and **Semester**. This is the script for the examination where the student

will answer all the questions. All the scripts for a given course are stored in one Folder. Also, on clicking on the **Start** Button, a Form will appear with **Continue...** Button. On clicking on **Continue** Button, he/she is greeted with the time allotted to the paper as shown below.

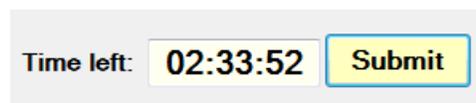


Figure 1.5: Exam started

A countdown for the paper starts and is displayed at the top of the screen. The

student is reminded of the spent after one hour and 30mins to the end of the examination.

Script submission

Once the Start Button is clicked, a countdown begins (Figure 4b). The student is notified of the remaining time for the paper at **one hour** and also, **30mins** to the end of the allotted time. The student is provided with a **Submit** Button at the top of the screen, next the examination timer. If the student is unable to submit his/her script before the end of the time, the system will submit it automatically, using FTP protocol.

The OneNote File will be uploaded to the server for the lecturer.

Paperless exam Ver. 1.0 (Admin Module)

This is the software module where management takes place. It is to be handed by members of the ICT unit in the department. This is the module that is responsible for:

- 1) Adding courses to examined
- 2) Adding students for a particular course
- 3) Setting of examination time
- 4) Copying answer scripts to be marked for lecturers.

The following are some of the screen shots of the admin module:

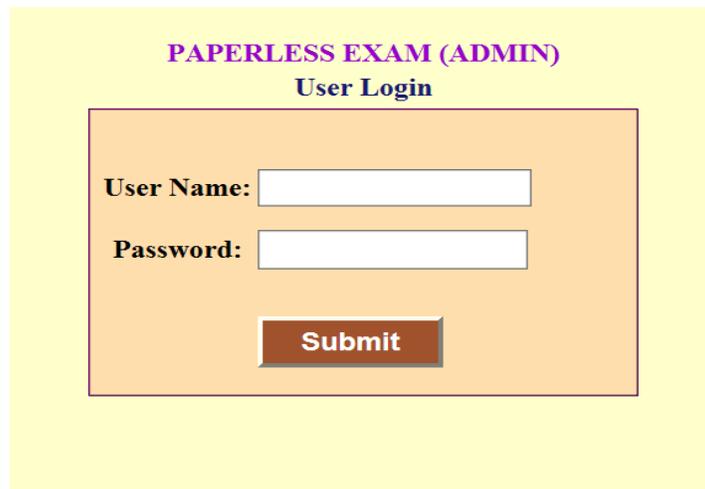


Figure 1.6 Paperless exam login page

The figure above is the initial page where the Admin logs into the software.

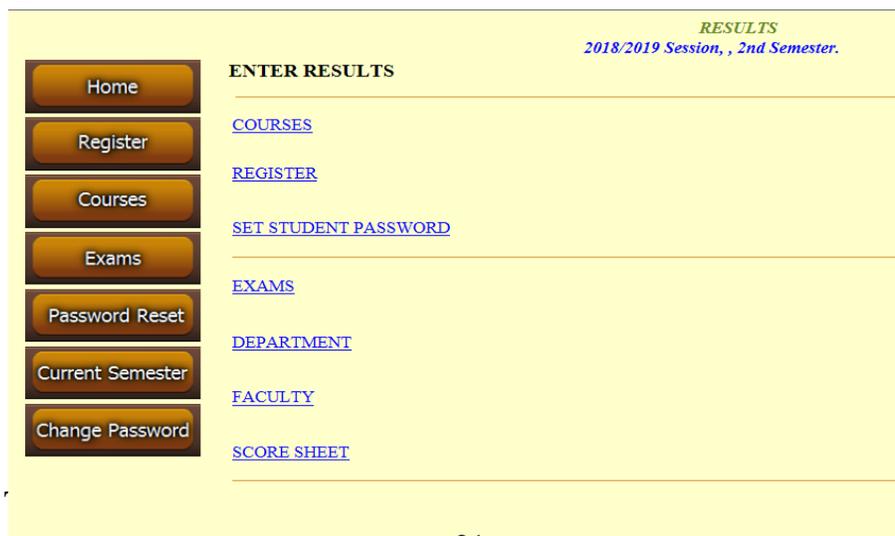


Figure 1.7 Paperless exam – Admin Home Page

After logging into the software, Admin is taken to the home page where he/she can carry out all the administrative tasks in the software.

PAPERLESS EXAM (ADMIN) - EXAM REGISTER
2018/2019 Session, 2nd Semester.

- Home
- Register
- Courses
- Exams
- Password Reset
- Current Semester
- Change Password

Mat. No:

Name
Surname First Name

Sex

Not Authorized

Submit

Search by Surname: **Search**

MAT NO.	SURNAME	FIRST NAME	SEX	NOT AUTHORIZED
ENG8901139	ADDAH	EMMANUEL		<input type="checkbox"/>
AGR9065433	AJAYI	BLESSING	Female	<input type="checkbox"/>
ART8901151	AYUBA	MARIA	Male	<input type="checkbox"/>
SSC4587795	EJIKA	ROLAND		<input type="checkbox"/>
MED8902254	JOHNSON	ABU	Male	<input type="checkbox"/>
ENG9025587	MARY	ABU	Female	<input type="checkbox"/>

Figure 1.8 Paperless exam – student register

It is the duty of the **Admin** to enter the student’s details into the database. For any student to write the examination, his/her **Mat. No.** must have been entered into the

database. This will ensure that registered for a given course are allowed to sit for the examination.

PAPERLESS EXAM (ADMIN) - COURSES
2018/2019 Session, 2nd Semester.

Home

Register

Courses

Exams

Password Reset

Current Semester

Change Password

Logout

Department:

Course Code:

Course Name:

Time (Hrs): Time: (mins)

Add Course

Search

	COURSE CODE	COURSE	TIME (HRS)	TIME (MINS)	SESSION	SEMESTER	NOT AVAILABLE
Edit Delete	MEE 201	MACHINE DESIGN	0	1	2018/2019	1	<input type="checkbox"/>
Edit Delete	MEE 221	MATERIALS SELECTION	2	45	2018/2019	1	<input type="checkbox"/>
Edit Delete	PRE 211	FOUNDARY PRACTICE	2	45	2018/2019	1	<input type="checkbox"/>
Edit Delete	MEE 202	MACHINE DESING 2	0	1	2018/2019	2	<input type="checkbox"/>

Figure 1.9 Paperless exam – courses

The above Form is where Admin enters the courses to be examined and sets time for each course.

Admin, who is one of the ICT personnel, will manage the software by:

- 1) Backing up the database
- 2) Maintaining the network
- 3) Supporting users during and after examination sessions
- 4) Reconfiguring the software whenever the need arises

3.3 Conducting examinations with paperless exam software

The following steps are taken to sit for a paperless theory examination:

Step 1: Question papers are given to the students. Meanwhile, in subsequent times, the questions will be in soft copy. A hard

copy is given for the first time to ensure a gradual transition to the paperless system.

Step 2: The student logs into Paperless Exam Ver. 1.0. (Timer starts counting). Some minutes will be added to the total time for the examination, to allow the student to go through the question paper, and log into the software.

Step 3: The student answers the required number of questions and submits to the server. To submit the script, he/she clicks on the **Submit** Button, which is to the right side of the timer, located at the top of the screen. If the examination times up and the student is unable to submit, the submission is done automatically by the software. The script is uploaded to the server through FTP protocol.

Limitations of this study

The major limitation of this work was the pen, but this has been taken care of. It took a period of 2 years to get a good and reliable digital pen. Once there is a computer network with windows technology, including the pen and OneNote software, the system will work well. One of the best digital pens in the market is XP Pen.

Conclusions

This paper has developed a paperless theory examination system which allows the lecturer to assess the student subjectively, rather than suggesting answers to the student to choose from, as in objective computer-based tests. It provides for a more thorough assessment and eliminates the possibility of guess work that may help the student pass such exams and lead to results that do not reflect the student's actual proficiency in the course. The students need to buy their own digital pen/graphics pen tablet. Once they are trained on how to use OneNote, they may sit for all their theory exams using the same writing pen throughout the program of study. Apart from saving the school the cost of paper for exams, it also saves the space in offices, meant for the archival of past exam scripts. Soft copies of scripts are more secure and more durable, as they are backed up and kept in at least 3 separate locations. The cost of implementation is low, because it sits on existing computer network infrastructure. The only equipment needed, is the computer server which houses both the application and the database. Another good thing about this system is that students and lecturers using it will undergo remarkable improvement in computer proficiency. This work may be extended to accommodate automatic grading instead of the lecturer grading the scripts. There should be an algorithm that will contain the keywords for a given question. A marking scheme created will then be used to grade the script for each

answer. By this arrangement, an automatic grading system is achieved.

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APPENDIX

SOURCE CODE FOR PAPERLESS EXAM VER. 1.0 (STUDENT MODULE) USING MICROSOFT VISUAL STUDIO 2015 (VB.NET) – WINDOWS APPLICATION

A few Forms have their source code shown below, for space consideration:

WELCOME PAGE

Imports System.Data

Imports System.Data.OleDb

Imports System.Windows.Forms

Imports System.Data.SqlClient

Imports System.ComponentModel

Public Class frmWelcome

Dim con As SqlConnection

Dim cmd As SqlCommand

Dim odr As OleDb.OleDbDataReader

Dim strSQL As String

Dim result1, result2, result3, result4, result5, result6, result7, result8 As Object

PrivateSub Label3_Click(sender As Object, e As EventArgs) Handles Label3.Click

EndSub

PrivateSub Button1_Click(sender As Object, e As EventArgs) Handles Button1.Click

If txtMatNo.Text = "" Then

MsgBox("Enter your Mat. No.", MsgBoxStyle.Information, "Paperless Exam Ver. 1.0")

txtMatNo.Select()

ExitSub

EndIf

If txtCourseCode.Text = "" Then

MsgBox("Enter the Course Code for this paper.",

MsgBoxStyle.Information, "Paperless Exam Ver. 1.0")
txtCourseCode.Select()

ExitSub

EndIf

Try

SaveSetting("fineStory", "tortoise", "primarySchool", UCase(txtMatNo.Text))
SaveSetting("fineStory", "tortoise", "secSchool", UCase(txtCourseCode.Text))

con = NewSqlConnection("Data Source=Mainserver;Initial Catalog=PaperlessExam;User ID=sa;Password=a_5j__0")
con.Open()

cmd = NewSqlCommand("Select Count(*) from Students Where MatNo='& txtMatNo.Text &''', con)
result1 = cmd.ExecuteScalar()

If result1 = 0 Then

MsgBox("Record not found. Please contact Admin.", MsgBoxStyle.Exclamation, "Paperless Exam Ver. 1.0")

Exit Sub

End If

cmd = NewSqlCommand("Select IsNull(NotQualified, 'False') from Students Where MatNo='& txtMatNo.Text &''', con)
result1 = cmd.ExecuteScalar()

If CBool(result1) Then

MsgBox("You are not authorized to take this examination. Please contact your course adviser.", MsgBoxStyle.Critical, "Paperless Exam Ver. 1.0")

Exit Sub

End If

```

cmd = NewSqlCommand("Select
Count(*) from Courses Where
CourseCode=" &
txtCourseCode.Text & """, con)
result3 = cmd.ExecuteScalar()

If result3 = 0 Then
MsgBox("Course not found. Make
sure there is a single" & vbCrLf
& "space between the letters and the
numbers.", MsgBoxStyle.Critical,
"Paperless Exam Ver. 1.0")
Exit Sub
End If

```

```

cmd =
NewSqlCommand("Select
ThisSession from Courses
Where CourseCode=" &
txtCourseCode.Text & """, con)
result4 = cmd.ExecuteScalar()

SaveSetting("fineStory", "tortoise",
"ThisSession", result4)

cmd =
NewSqlCommand("Select
Semester from Courses Where
CourseCode=" &
txtCourseCode.Text & """, con)
result5 = cmd.ExecuteScalar()
SaveSetting("fineStory", "tortoise",
"semester", result5)

```

Select Name of Student

```

cmd =
NewSqlCommand("Select
Surname + ' ' + FirstName + '
' + OtherNames As FullName
from Students Where
MatNo=" & txtMatNo.Text
& """, con)
result6 = cmd.ExecuteScalar()
SaveSetting("fineStory", "tortoise",
"myName", result6)

```

Exam Duration

```

cmd =
NewSqlCommand("Select
ExamDuration_Hrs from
Courses Where
CourseCode=" &
txtCourseCode.Text & """, con)
result7 = cmd.ExecuteScalar()
SaveSetting("fineStory", "tortoise",
"ExamHrs", result7)

```

```

cmd =
NewSqlCommand("Select
ExamDuration_Mins from
Courses Where
CourseCode=" &
txtCourseCode.Text & """, con)
result8 = cmd.ExecuteScalar()
SaveSetting("fineStory", "tortoise",
"ExamMins", result8)

```

Check for the password

```

cmd =
NewSqlCommand("Select
IsNull>Password, PasswordN
otSet') from Students Where
MatNo=" & txtMatNo.Text
& """, con)
result2 = cmd.ExecuteScalar()

con.Close()

```

```

If result2 = "PasswordNotSet" Then
MsgBox("Please set your
password to begin")
frmSetPassword.Show()

```

```

ElseIf txtPassword.Text = result2 Then
frmStart.Show()

```

```

Else
MsgBox("Wrong
password. Please try again.",
MsgBoxStyle.Information,
"Paperless Exam Ver. 1.0")
txtPassword.Select()

```

```

Exit Sub
End If

```

```
Me.Hide()
```

```
Catch ee AsException
    MsgBox(ee.Message)
```

```
End Try
End Sub
```

```
Private Sub cmdClose_Click(sender AsObject, e AsEventArgs) Handles cmdClose.Click
```

```
    If MsgBox("Do you want to exit this application?", MsgBoxStyle.YesNo + MsgBoxStyle.DefaultButton2 + MsgBoxStyle.Question, "Paperless Exam Ver. 1.0") = MsgBoxResult.Yes Then
```

```
End
End If
End Sub
```

```
Private Sub frmWelcome_Load(sender AsObject, e AsEventArgs) Handles MyBase.Load
    txtMatNo.Select()
End Sub
```

```
PrivateSub frmWelcome_Closing(sender AsObject, e AsCancelEventArgs) HandlesMe.Closing
```

```
    If MsgBox("Do you want to exit this application?", MsgBoxStyle.YesNo + MsgBoxStyle.DefaultButton2 + MsgBoxStyle.Question, "Paperless Exam Ver. 1.0") = MsgBoxResult.Yes Then
```

```
End
Else
    e.Cancel = True
```

```
End If
End Sub
End Class
```

TIMER FORM

```
PublicClassfrmTimer
```

```
Private timeEnd AsDateTime
```

```
Private timeDiff AsTimeSpan
```

```
Dim examTime AsInteger
```

```
PublicShared EndExamFormOpen AsBoolean = False
```

```
PrivateSub Button1_Click(sender AsObject, e AsEventArgs) Handles Button1.Click
```

```
    Button1.Enabled = False
```

```
If EndExamFormOpen = FalseThen
```

```
Dim ff AsNewfrmEndExam
```

```
    ff.Show()
```

```
EndIf
```

```
    frmClose2.Show()
```

```
EndSub
```

```
PrivateSub Timer1_Tick(sender AsObject, e AsEventArgs) Handles Timer1.Tick
```

```
    txtLeft.Text = examTime - 1
```

```
    examTime = txtLeft.Text
```

```
If examTime = 3600 Then
```

```
    MsgBox("Please make sure you answer your questions correctly."& vbCrLf &"You have one hour left for this examination.", MsgBoxStyle.Information, "Paperless Exam Ver. 1.0")
```

```
End If
```

```
If examTime = 1800 Then
```

```
    MsgBox("You have 30mins left. Complete your work, revise,"& vbCrLf &"and click on the 'Submit' Button at the top of the screen.", MsgBoxStyle.Information, "Paperless Exam Ver. 1.0")
```

```

EndIf
    timeDiff = timeEnd - DateTime.Now
Dim output As TimeSpan =
New TimeSpan(timeDiff.Hours,
timeDiff.Minutes, timeDiff.Seconds)
    txtRemaining.Text = output.ToString
If (timeDiff.Ticks < 0) Then
    Timer1.Stop()
Dim lastForm As New frmClose
    lastForm.TopMost = True
    lastForm.ShowDialog()
    Button1.Enabled = False
If EndExamFormOpen = False Then
Dim ff As New frmEndExam
    ff.Show()
End If
End Sub

Private Sub frmTimer_Load(sender
As Object, e As EventArgs)
Handles MyBase.Load

Me.Left =
(Screen.PrimaryScreen.WorkingArea.Width
- Me.Width) / 2 + Val(Me.Width)

Me.Top = 0

MsgBox("Exam started."& vbCrLf
&"You have "&
GetSetting("fineStory", "tortoise",
"TimeHrs") &"hrs "&
GetSetting("fineStory", "tortoise",
"TimeMins") &"mins for this
course.",
MsgBoxStyle.Information,
"Paperless Exam Ver. 1.0")

timeEnd = DateTime.Now
examTime =
GetSetting("fineStory", "tortoise",
"TimeHrs") * 3600 +
GetSetting("fineStory", "tortoise",
"TimeMins") * 60

Dim hour As Double =
System.Convert.ToDouble(GetSetting
("fineStory", "tortoise",
"TimeHrs"))

Dim minute As Double =
System.Convert.ToDouble(GetSetting
("fineStory", "tortoise",
"TimeMins"))

Dim second As Double =
System.Convert.ToDouble(0)

timeEnd = timeEnd.AddHours(hour)

timeEnd =
timeEnd.AddMinutes(minute)

timeEnd =
timeEnd.AddSeconds(second)

Timer1.Start()

End Sub
End Class

```