DEVELOPMENT OF AUDIT ASSIGNMENT TRACKING SYSTEM   PROTOTYPE

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2021

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A Master's Project submitted in fulfilment of the requirements for the Degree of Master of Information Technology
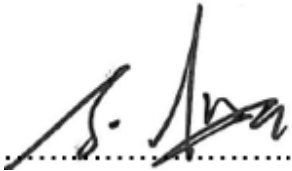
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2021

DECLARATION

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I hereby declare that this Master's Project is the result of my own work, except for quotations and summaries which have been duly acknowledged.

Signature: .... Date: 11/12/2021

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ABSTRACT

The aim of this research is to find a solution in assisting a private Bank's Information Technology Audit Unit which is facing issue with current arrangement of work from home, as there is no automated system/too; to assist them in their daily task. The Banks policy on restricting the movement of confidential file and data have also restrict the task that the auditors can perform remotely. The objective of this project is to assist or mitigate the issue faced while working from home by developing a working prototype of an audit management system. The methodology used in building the audit assignment tracking System which is a Prototype methodology will assist in understanding the needs of the audit team involved as the user will be involve actively in all the stages. The proposed system will resolve most of the issues faced by the Information audit team as the manual workflow will be transformed to automated process workflow.

Keywords: Automation, Process workflow and Internal Audit.

PEMBANGUNAN PROTOTAIP SISTEM PENJEJAKAN TUGASAN AUDIT

ABSTRAK

Matlamat penyelidikan ini adalah untuk mencari penyelesaian dalam membantu Unit Audit Teknologi Maklumat sebuah Bank swasta yang sedang menghadapi masalah dengan kerja harian dari rumah, kerana ketiadaan sistem yang dapat membantu mereka dalam tugasan harian mereka. Dasar Bank mengenai pergerakan fail dan data sulit juga telah menyekat tugas yang boleh dilakukan oleh juruaudit dari luar pejabat. Objektif projek ini adalah untuk membantu atau mengurangkan isu yang dihadapi semasa bekerja dari rumah dengan membangunkan sebuah prototaip yang mampu membantu dalam mengurus kerja harian pejabat audit. Metodologi yang digunakan dalam pembinaan sistem penjejakan tugasan audit adalah merupakan metodologi Prototaip yang akan membantu dalam memahami keperluan pasukan audit yang terlibat kerana pengguna akan terlibat secara aktif dalam semua peringkat pembangunan prototaip ini. Sistem yang dicadangkan akan dapat menyelesaikan kebanyakan isu yang dihadapi oleh pasukan audit kerana aliran kerja manual akan diubah kepada aliran kerja proses secara automatik.

Kata Kunci: Automasi, Aliran Kerja, Process dan Audit Dalaman

ACKNOWLEDGEMENT

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LIST OF ABBREVATIONS

BNM: Bank Negara Malaysia

CIA: Chief Internal Auditor

PDPA: Personal Data Protection Act.

File Server: Server dedicated to storage of files

COSO: Committee of Sponsoring Organizations of the Treadway Commission

COBIT: Control Objectives for Information and Related Technology

AP: Audit Program

ATS: Audit Assignment Tracking System

RMIT: Risk Management in Technology

CAMS: Compliance Auditing Management System

CHAPTER 1

INTRODUCTION

1.1 Research Background

COVID-19 pandemic has become an enormous issue for the world with impacts felt in the social and economic sector all around the globe. Once COVID-19 started spreading across the globe, thousands of individuals started facing severe health problems and death rates started to multiply (As of 31st July 2021 there were 4.2 million death worldwide reported as stated by www.worldometers.info). In Malaysia it-self the number of death case reported due to the Covid-19 as of 31st July 2021 stands at 9,184 people as published in www.worldometers.info. The sole way to put a stop to break the chain of the virus from spreading like a wild fire was to prevent/minimise all social and economic activities for indefinite amount of time, with this several countries around the world impose complete lock-down that still remains in some countries till today. In such situation most business activities, across all industries were utterly stopped or directed to work with minimal work force. This has affected a lot of industries either directly or indirectly. As other countries the Malaysian government have also announced the movement control order and this has led to the new norm of working for most industries that is working from home. Due to this new norm of working the idea to have an automated audit tracking tool was inspired. The project will focus on the internal audit department of a private bank in Malaysia. This private bank is located in Kuala Lumpur and has branches in most state around Malaysia and governed by the central bank of Malaysia; Bank Negara Malaysia. As per the guideline set by Bank Negara Malaysia (BNM) all finance institution must have its own internal audit department that will ensure the governance and

compliance of the bank according to rules and guidelines set by BNM. This private Bank too have its own audit team in ensuring governance and regulator's (Bank Negara Malaysia) requirement are adhered to in their daily business process. As the third line of defence for the Bank, the primary duties of Internal Audit Division is in ensuring that the Bank's management and operations are in compliance with all prevailing rules and regulations and support the Bank's interests and objectives. Internal Audit is accountable for ensuring the adequacy and proper implementation of internal control process.

In ensuring the compliance and guideline are meet the Internal Audit Division is guided by the guidelines provided by BNM. In ensuring that the guidelines are met the internal audit division will conduct their audit assignment base on Committee of Sponsoring Organizations of the Treadway Commission (**COSO**) framework with referencing to Control Objectives for Information and Related Technology **(COBIT 5)** activity. The COSO framework is how the audit engagement for the operational and IT audit will be conducted and there are five components within the COSO framework as detailed below;

   I.   Control Environment

  II.   Risk Assessment

 III.   Information and Communication

 IV.   Monitoring Activities

  V.   Control activities

Base on this five controls the audit activity will be designed with reference to COBIT 5 activity. COBIT 5 is based on five principles, meeting stakeholder needs, covering the enterprise end to end, applying a single integrated framework, enabling a holistic approach

and separating governance from management. Base on this five principles the audit activity will be created to ease the audit activity.

To make the explanation clearer please refer to table below:

Table 1.1: 5 Principles of COSO

COSO Reference	COBIT 5 Process Reference	COBIT 5 activity detail
Control Environment	EDM01	EDM01 is to ensure that there is Governance Framework Setting and Maintenance
	MEA01	MEA01 is about monitor, Evaluate and Assess Performance and Conformance
	APO01	APO01 is Managing the IT Management Framework
	APO07	APO07 is Managing Human Resources

Under the Control environment (COSO reference) the activity that will be carried to ensure that this control is in place the auditor will need to make reference to activity as per the COBIT 5 principles.

The private banks internal audit team consist of 36 strong member's. There are 6 units within the audit team; Branch and Investigation Audit, Head Office Audit, Credit Risk Audit, Shariah Audit, Information Technology Audit and Administration and Strategy.

Referring to Figure 1 below is the organization chart of the bank's internal audit team.
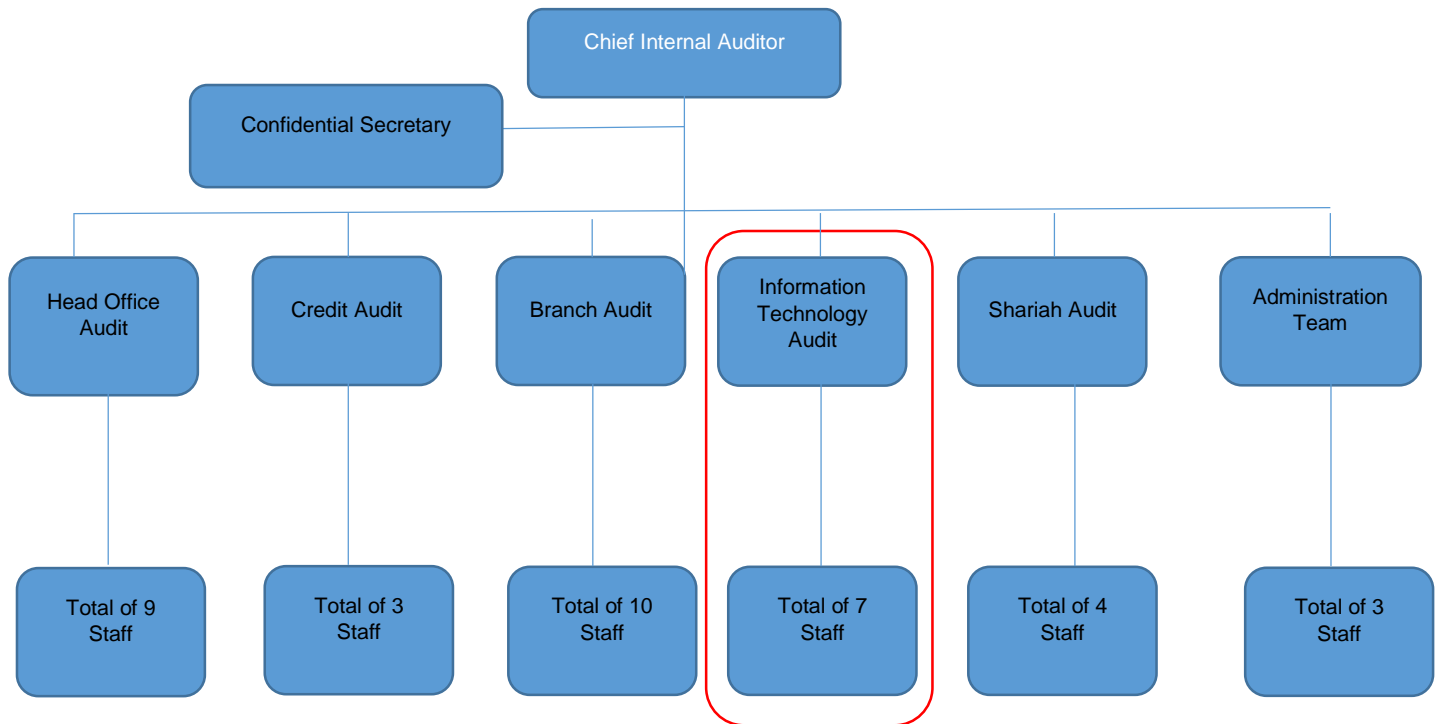
Figure 1.1: Organization Chart

(Source: Self-Created base on the standard structure)

All the respective team have their own Unit heads who will determine and plan the audit assignment for the year, which is called the Audit Plan. Apart from this team there are 3 administrative staff who handles the day to day administrative task and also in gathering of reports that are stored in the Bank's fileserver.

This office administration team will do the collection of reports and send them to the Board of Directors for their review and discussion on the findings.

The current work load for the audit team comes from the audit plan and also ad-hoc audit as requested by the regulator (Bank Negara Malaysia (BNM)).

The number of audit assignment is increasing over the year's and with the new regulatory requirement by Bank Negara Malaysia; Risk Management in Technology RMiT) policy which was introduced on 18 July 2019 and came to effect on 1st January 2020 (*RMit, BNM/RH/PD 028-98*) by Bank Negara have opened up new areas that need to be audited or roped in during audit assignment. Currently the audit assignment for the whole audit division for a year is around 80 to 90 audit assignment. The workload could increase when there are new requirement by the regulator, as such the ad-hoc assignment will increase. Since the research will be conducted around the IT audit team their current assignment for a year is around 21 to 27 assignments per year.

The audit assignment normally start with the supervisor assigning the team leader on which system that need to be audited. An audit assignment will be led by a team leader and assisted by team members and at times if the supervisor decided that the system is not that huge and can be covered by just the team leader then it will be a single person audit assignment.

The team leader will be given a specific time line ranging from two weeks till 4 weeks depending on the size of the team and complication of the system. For a small and simple system two weeks will suffice. This activity will be tracked by the supervisor as per the time work sheet that must be completed prior to the audit engagement.

Once the field work is completed the auditor need to submit the draft finding to the Supervisor. The draft finding will contain Part1, Part 2, and Part 3 as described in the box below;

Part	Part 1	Part 2	Part 3
Comprises	Executive Summary	System Overview	Detailed Audit Finding with evidence and recommendation. This section is where the auditee will write their response on the finding.
	Audit Rating and Results	Audit Objective	
	Summary of Audit Assessment	Audit Scope	
	Appreciation	Previous Reports	

This report will be provided to the supervisor for his review before it goes to the Chief Internal auditor (CIA) for final review. If there is any error or detail needed then the supervisor will pass back the report to the Team leader for rectification.

Once the supervisor have gone thru the reports the team leader need to send the part 3 i.e. the detailed audit finding report to the auditee as for them to response to the finding raised. On normal circumstances the auditee will be given 3 working days to provide the response.

Once all the response is compiled then the complete report will be presented to the CIA. Once the CIA have been briefed the auditee will be called for exit meeting. This is where the auditee will either disagree or accept the audit finding. They will present their case and try to counter the auditors finding.

Described on top is the brief description of how the process of generating the audit report works. Listed below are the list of reports/ checklist that will be used by an auditor in doing the assignment.

a) Audit Planning Memorandum (APM)

b) Time Work Sheet (TWS)

c) Cost Sheet

d) Audit Program

e) Part 1 & 2 report

f) Part 3 report.

1.2 Problem Statement

The increase number of audit work and ad-hoc assignment by the regulators (Bank Negara Malaysia) have also increase the need for an automated tool in assisting the auditors to complete the given task fast and efficiently. Discussed below are the problems occurring in in the internal audit division of the private bank and how the creation of a working prototype will assist to mitigate the problems from manual way of doing work:

1.2.1 Difficulty in accessing the files or information from home/remotely

During the pandemic COVID-19, the government have encourage organizations to accept the new norm of working culture; working from home. Working from home is defined as people working from their home or from other location of their choice other than the working area by payment which is provided by the employer (Reshma, P. S. Aithal, 2015). This new way of working were introduced to mitigate the risk of contracting COVID-19 while away from home especially during working hours at office. As such most organizations have adapted to this new norm and so does the private bank mentioned in this report. The private bank's top management have announced that at any given time there should only be 30% staff in the division as per the rules set by the government of Malaysia. However due to the nature of work as an auditor, the work requires an auditor to interact actively with the auditee and will need to review a lot of documents pertaining to the audit and due to this manual way of working some of the team member were still

required to be in office physically which will put the team to harm's way in contacting the virus. The access to file and information are limited as currently there is no system that allows them to access remotely as such the need arises for the staff to be physically attended at the office. The current practice of using emails and scanners in getting the document have made the work from home an issue as the staff will still need to travel to office in getting the information needed in order to complete the audit assignments. The other major concerning issue in working from home to the management is the adherence to Personnel Data Protection Act 2010 or PDPA. This act clearly defines the need to secure any customer related information from being breached or taken by any unrelated third party. Working from home have exposed the weakness in protecting the customer information as all data are either carried in hard copy or soft copy in the auditors laptop. This problem of carrying hard printed copy of documents home has increased the risk of exposing customer information or the private bank's confidential information to third party. Due to COVID-19 outbreak all the companies have adapted work from home options aligning with the government rules. They have acted vigorously during the situation and adapted the new trend of work from home very fast to avoid barriers while serving their clients (Tumin, 2020).However there were many challenges during this time as they have to adapt their own way of working along with to fulfil the changing needs as well. They re-design the total process and start reacting in faster way during the urgency (Ahmad et al. 2020).

1.2.2   Inefficiency of manual database system

This private banks audit division method of keeping their database of audit reports are conducted manually. This manual way of keeping database have introduced a lot of issue throughout the years where the tendencies of misplacing reports and working papers have

been experienced by the division. As per the BNM guideline a finance organisation must keep their reports for at least 7 years before disposing of the reports. The process of keeping the reports are done in 2 steps; the first step is where the administrator of the division will collect the signed final report from the supervisor via email, this is in soft copy. The second step is where the administrator collect the working paper which consist of all the checklist and evidence used in the audit assignment which comes in the form of printed hard copy. Whatever reports that have been collected vie the email will be stored in the banks Fileserver, dedicated to the audit division. Whereas the hard copy of the evidence and checklist will be bind in a paper file and kept in the file room in form of hard copy. This fileserver is only accessible via the intranet line (within Bank's network) and if the need arise to collect any reports the staff will have to be physically in attendance at the office. This has introduced a lot of issues to the auditors during the pandemic where they need to be physically at office. Another problem is the tendency to misplace the working papers and supporting documents during the manual hard copy submission to the office administration and thus the need to resubmit occurs. During the resubmission the auditors will face hard time as the original evidence will be missing and they will have to request from the auditee which will be cumbersome. Another concern that arise from this manual way of keeping and storing reports is the sharing of information. If there is a need to review all the working papers of previously conducted audit then the whole file which is in hard copy will need to be retrieved and some might be too old and the tendency to be damage is high.

Automated audit system helped in relieving the pressure and in doing error free works which maintained a smooth workflow (Capano et al.2020). Adoption of automation in the internal audit team automatically helps them in enhancing the abilities of identifying

doubtful transactions, which later helps the bank for reducing the reputational risk among the market. Adapting automation in auditing process can enhance the working speed including specified capabilities for monitoring all kinds of monetary transactions (Templeton et al. 2020).

1.2.3 Ineffective way of tracking the audit assignment progress

The banks current work process within the internal audit division is not suitable for the new norm of working from home as both the auditor and supervisor have difficulty in monitoring and tracking the productivity and the progression of given task. The process of tracking assignment is very crucial for the auditors and supervisor as he/she will need to know the completion level of each auditor's assignment in order to prepare the needed resources for the upcoming audit assignment, as so does the need to make sure that the given audit work is done on time. The supervisor will normally have a list of audit assignment planned and approved by the CIA for the year. So making sure that the audit assignments kick off and completed as planned is a crucial thing to the division. The current manual process have made it difficult for both the supervisor and auditor in keeping track of all the staff's or team members progress in conducting given audit assignment . During the old ways of working where all the staff were required to be in office, the supervisor will walk up to them an ask about the progress of the audit assignments. Now since the introduction of the new working process work from home, it has made it more difficult for the supervisor to keep track of the staff's progress. During the head of department meeting which is conducted once a week, the supervisor will need to update the progress of the audit assignment to the CIA.

1.2.4 Unproductive way of looking up for similar findings

In some cases the audit finding will be a recurring issue, where the same issue could have been raised previously by a different auditor. The finding could have been raised in the same audit entity or another audit entity. The current way of manual working process have limitation when the auditor need to access to any reference on the issue's which was highlighted and registered in the previous audit as it will be very cumbersome for the auditor to search the fileserver by going thru each individual report. This will be very time consuming and tedious task. Further to this as highlighted earlier the auditor will need to be physically in office as the fileserver is only accessible thru the office intranet. This issue is a problem to the auditors as they spend long hours searching for related files or working paper which is in hard copy. Due to this weakness in the process the auditors at times fail to see the response by the auditee in the previous audit and raise the same issue again which will make the auditor as not being very practical. Referencing to risk registered in previous audit highlighting a similar finding is also made difficult as of the manual database.

1.3 Research Objectives

The objective of the research has been identified and listed as below:

1. To study the issues and review past literature or studies on the audit assignment tracking system;

2. To develop a prototype of an audit assignment tracking system to solve the daily problems occurring in doing the work manually;

3. To test and ensure the designed prototype is able to work and solve the issues faced in manual way of working.

1.4 Research Question

There are many questions that need to be answered pertaining to the problems in doing work manually and the process involved in trying to automate and in migrating to the new automated system within the audit team as described below:

1. Are there enough studies conducted on audit assignment tracking system to show that it will improve the audit teams daily work process;

2. What functions are necessary for the proposed system to have in order for the system to be successful;

3. Will the management approve for the use of real data in order for the prototype to be tested according to real life scenario.

1.5 Significant of Research

This research is for the development of a working prototype of the audit assignment tracking system. This project outcome; the working prototype of the tracking system will be presented to the management of the private banks internal audit division once completed. If the system is accepted then the idea and workflow will be provided to the management for them to use it and present it to the vendor to assist them in their proposal for an automation audit tool. The research objective will be aimed in assisting to solve the issue faced by the internal audit team and more specifically towards the Information technology audit team. As such the research scope will be limited to the Information technology audit team. The proposed system will be tested by the Information technology audit team (Circled in red in Table 1).

The Information technology team which consist of 7 people has the primary task in auditing the bank's information system which includes both the infrastructure and system and ensuring the compliance is adhered too. The teams audit assignment will be conducted base on an Audit Program (AP) which is developed for each particular audit assignment. The AP is a checklist which cover's governance, security, and process.

The project scope will be limited to the IT auditor's team members only within the Bank's audit team. The said prototype system will be tested by limited user whom will access if for testing purpose and also the database size will also be limited for testing purpose only. There will be few sample of reports deposited in the proposed database. The functionality scope of the prototype audit assignment tracking system will be limited to following process:

1.5.1 Tracking of assignment schedule.

Tracking of assignment option in the prototype is where the Supervisor will be able to track the progress and completion of given audit task as per the schedule provided. This will help in managing the resources of the audit team, where the allocation of staff can be done properly and the productivity of the staff can also be tracked and also the supervisor can delegate and monitor the performance of the staff without the need to be in office. This as well will assist in reducing the number late reports as the tracking mechanism will trigger and notify the auditor on the given time frame.

1.5.2 Eliminate the manual way of file collection

This is where the supervisor can view the draft report and amend it immediately and leave comment for the staff to understand on why the changes were done. A template will be

provided in the system and the staff just need to key in the content of the report. By introducing this the problem of manual collection of files will be eliminated. Further to this all reports will be stored in the system database as such once it has been deposited then only the administrator can access the reports, this will secure the reports from unwanted tampering.

1.5.3 Access the system from home

The proposed system will enable an auditor to access the system from anywhere as long they have the internet connection and this will eliminate the need to be in office to do their task. The system will have a database of risk registers that will assist the auditors in getting the risk sample they need for their assignments.

This database will consist of all the risk that was highlighted during previous audit assignment. This will assist the auditors in getting reference for risk during their audit assignment. The proposed system will have a built in database where the auditor will just need to key in the keyword and search the database risk registered. This database will need to be updated frequently by the office administrator in ensuring the latest risk registers are updated. Risk registers are the master risk database where risk found in previous audits are kept for referencing.

1.6 Project schedule

Project schedule is where the timeline of the project is planned and organised in order to achieve the planned prototype development according to the planned time or date. The project schedule will also indicates what must be done according to the schedule, also identifying which resources must be utilized at what time or stage, and also when the

completion of the project. It is a timetable that outlines the start and end dates and also milestones that has to be achieved in order for the project to be completed successfully on time. The project schedule is a live document as it must be updated regularly to show the status of the project and also to achieve an improved understanding of the project's status.

Attached below is the Gant chart of the project which was developed during the project proposal.

AUDIT TRACKING SYSTEM

Project Lead: Thanasegaran
Project Budget: Estimated: $0.00 | Baseline: $0.00 | **Task Costs**: Estimated: $0.00 | Baseline: $0.00 | Actual: $0.00

WBS	Task Name	Priority	Resource	Start	Finish	Duration	Done	Percent Complete
1	Project Planning	NORMAL		Mon 04-Jan-21	Fri 15-Jan-21	12	✔	100%
2	Project Proposal	NORMAL		Wed 20-Jan-21	Mon 22-Mar-21	62	✔	100%
3	Requirement Specification	NORMAL		Fri 18-Jun-21	Mon 28-Jun-21	11	✔	100%
4	Prototype Development Stages	NORMAL		Mon 28-Jun-21	Tue 07-Sep-21	72		40%
5	Analysis	NORMAL		Tue 07-Sep-21	Mon 20-Sep-21	14		0%
6	Building Prototype	NORMAL		Sun 19-Sep-21	Thu 28-Oct-21	40		0%
7	User Testing	NORMAL		Thu 21-Oct-21	Tue 26-Oct-21	6		0%
8	Refining	NORMAL		Thu 28-Oct-21	Wed 03-Nov-21	7		0%
9	Testing by Limited User	NORMAL		Sat 30-Oct-21	Wed 03-Nov-21	5		0%
10	Go Live	NORMAL		Tue 09-Nov-21	Tue 09-Nov-21	1		0%

2021										
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
1	2	3	4	5	6	7	8	9	10	11

Project Planning
Project Proposal
Requirement Specific
Prototype Developmen
Analysis
Building Prototype
User Testing
Refining
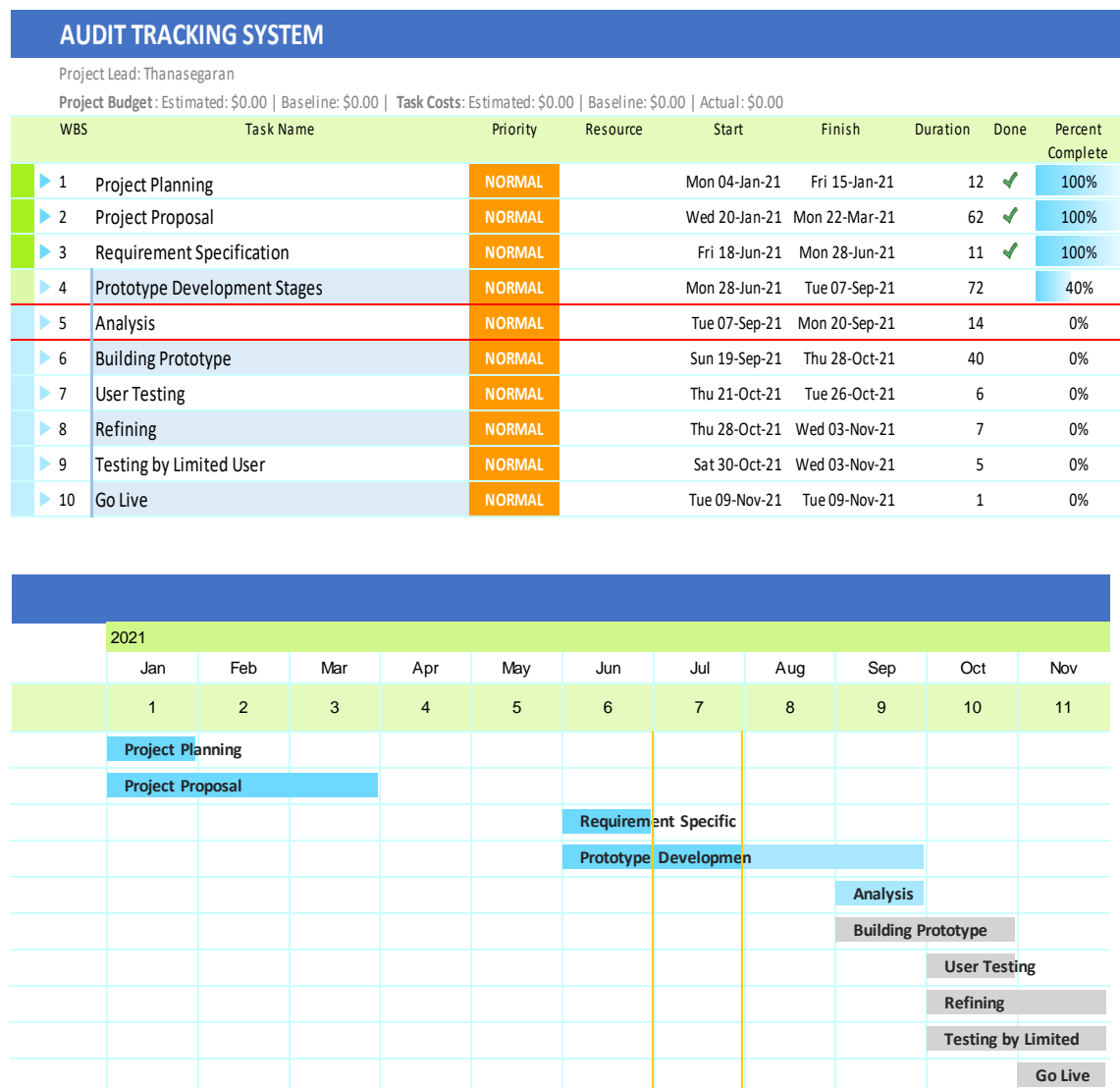Testing by Limited
Go Live

Figure 1: Gantt Chart of the Project

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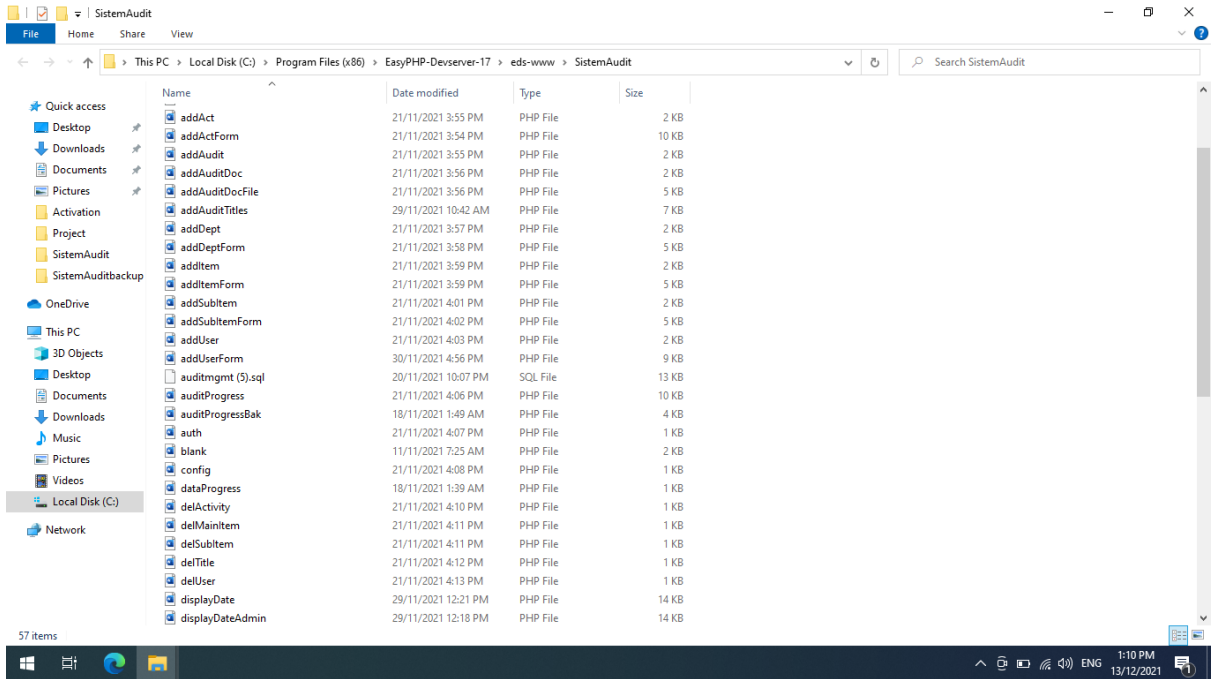WILL KENTON Reviewed by AMY DRURY   Updated Jul 1, 2020 (https://www.investopedia.com/terms/f/feasibility-study.asp)

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APPENDICES

APPENDIX A

The source codes folder

Sample source codes

1) **Source 1**
   Data Collection for new audit activity by Team Leader

```php
<?php
/*   Module : addActForm.php
   Related Module : addAct.php
   Version : 1
   Developer : Thanasegaran
   Application : Audit management tracking system
      Description : Data collection for new audit activity created by
                    team leader

*/
include "config.php";
include "auth.php";
    $arrd=array();
    $sqld="select * from dept order by title ASC";
    $resd=mysqli_query($conn,$sqld);
    while ($rowd=mysqli_fetch_array($resd)){
    $arrd[$rowd['recno']]=$rowd['title'];
    }

    $arritemx=array();
    $sqlaskx="select * from audit order by title ASC";
    $resaskx=mysqli_query($conn,$sqlaskx);
    while ($rowxx=mysqli_fetch_array($resaskx)){
    $arritemx[$rowxx['recno']]=$rowxx['title'];
    }

    $arritem=array();
    $sqlask="select * from mainitem order by item ASC";
    $resask=mysqli_query($conn,$sqlask);
    while ($rowx=mysqli_fetch_array($resask)){
    $arritem[$rowx['recno']]=$rowx['item'];
    }

    $arrsubitem=array();
    $sqlask2="select * from subitem order by item ASC";
    $resask2=mysqli_query($conn,$sqlask2);
    while ($rowx2=mysqli_fetch_array($resask2)){
    $arrsubitem[$rowx2['recno']]=$rowx2['item'];
    }
?>
<!DOCTYPE html>
<html lang="en">

<head>

  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1,
shrink-to-fit=no">
  <meta name="description" content="">
  <meta name="author" content="">
```

```
  <title>Add New Audit Activity</title>
<!-- Custom fonts for this template -->
  <link href="vendor/fontawesome-free/css/all.min.css"
rel="stylesheet" type="text/css">
  <link
href="https://fonts.googleapis.com/css?family=Nunito:200,200i,300,300i
,400,400i,600,600i,700,700i,800,800i,900,900i" rel="stylesheet">

  <!-- Custom styles for this template -->
  <link href="css/sb-admin-2.min.css" rel="stylesheet">

  <!-- Custom styles for this page -->
  <link href="vendor/datatables/dataTables.bootstrap4.min.css"
rel="stylesheet">
<link href="css/bootstrap.min.css" rel="stylesheet">
<link href="navbar-top-fixed.css" rel="stylesheet">
</head>

<body id="page-top">

  <!-- Page Wrapper -->
  <div id="wrapper">


    <!-- Content Wrapper -->
    <div id="content-wrapper" class="d-flex flex-column">

      <!-- Main Content -->
      <div id="content">

<?php
include "topbar.php";
?>

        <!-- Begin Page Content -->
        <div class="container-fluid">
          <!-- Page Heading -->

          <!-- DataTales Example -->
          <div class="card shadow mb-4">
            <div class="card-header"><h1 class="h3 mb-2 text-gray-
800">Add New Audit Stage</h1></div>
            <div class="card-body">

        <form name="frm" method="post" action="addAct.php">
        <div class="row">
        <div class="col-md-4">
        <label class="control">Department Concern :</label>
        <select class="form-control" name="dept">
         <?php
            $sqldept="select * from dept order by title ASC";
            $resdept=mysqli_query($conn,$sqldept);
            while ($rowd=mysqli_fetch_array($resdept)){
            ?>
            <option value="<?php echo $rowd['recno'];?>"><?php echo
$rowd['title'];?></option>
            <?php
            }
            ?>
        </select>
```

```
        </div>
        </div>

        <div class="row">
         
        </div>

        <div class="row">
        <div class="col-md-4">
        <label class="control">Audit Title :</label>
        <select class="form-control" name="title">
         <?php
             $sqlitemx="select * from audit order by title ASC";
             $resitemx=mysqli_query($conn,$sqlitemx);
             while ($rowx=mysqli_fetch_array($resitemx)){
             ?>
             <option value="<?php echo $rowx['recno'];?>"><?php echo
$rowx['title'];?></option>
             <?php
             }
             ?>
        </select>
        </div>
        </div>

        <div class="row">
         
        </div>

        <div class="row">
        <div class="col-md-4">
        <label class="control">Audit Stage :</label>
        <select class="form-control" name="mainitem">
         <?php
             $sqlitem="select * from mainitem order by item ASC";
             $resitem=mysqli_query($conn,$sqlitem);
             while ($row2=mysqli_fetch_array($resitem)){
             ?>
             <option value="<?php echo $row2['recno'];?>"><?php echo
$row2['item'];?></option>
             <?php
             }
             ?>
        </select>
        </div>

        <div class="col-md-4">
        <label class="control">Audit Sub-Stage :</label>
        <select class="form-control" name="subitem">
         <?php
             $sql3="select * from subitem order by item ASC";
             $res3=mysqli_query($conn,$sql3);
             while ($row3=mysqli_fetch_array($res3)){
             ?>
             <option value="<?php echo $row3['recno'];?>"><?php echo
$row3['item'];?></option>
             <?php
             }
             ?>
        </select>
        </div>
```

```
        </div>

        <div class="row">
         
        </div>

        <div class="row">
        <div class="col-md-4">
        <label class="control">Budgeted Hours :</label>
        <input  type="text" class="form-control" name="budget"
value="0">
        </div>
        </div>

        <div class="row">
         
        </div>

        <div class="row">
        <div class="col-md-4">
        <label class="control">Date :</label>
        <input type="text" class="form-control" data-date-
format="dd/mm/yyyy" id="dp1" name="datestart">
        </div>

        <div class="col-md-4">
        <label class="control">Initial :</label>
        <select class="form-control" name="initial">
         <?php
            $sql4="select * from members order by firstname ASC";
            $res4=mysqli_query($conn,$sql4);
            while ($row4=mysqli_fetch_array($res4)){
            ?>
            <option value="<?php echo strtoupper($row4['initial']."-
".$row4["staffno"]);?>"><?php echo strtoupper($row4['firstname']."-
".$row4['initial']);?></option>
            <?php
            }
            ?>
        </select>
        </div>
        </div>

        <div class="row">
         
        </div>

        <div class="row">
        <div class="col-md-4">
        <label class="control">Audit Status :</label>
        <!--<input  type="text" class="form-control" name="status">-->
        <select name="status" class="form-control">
        <option value="0">Completed</option>
        <option value="1" selected>On-Going</option>
        <option value="2">Pending</option>
        </select>
        </div>
        </div>

        <div class="row">
         
```

```html
        </div>

        <div class="row">
        <div class="col-md-12">
        <br/>
        <button class="btn btn-primary" type="submit"><i class="fa fa-
save"></i> Save New Audit Activity</button>
        </div>
        </div>
</form>
        <div class="row">
         
        </div>

             <div class="table-responsive">
                <table class="table table-bordered" id="dataTable"
width="100%" cellspacing="1">
                    <thead>
                      <tr>
                        <th>No</th>
                 <th>Department</th>
             <th>Audit Title</th>
             <th>Audit Stage</th>
                    <th>Audit Sub-Stage</th>
             <th>Initial</th>
             <th>Staff No</th>
             <th>Date</th>
             <th>Budgeted Hours</th>
             <th>Actual</th>
             <th>Operation</th>
                  </tr>
                </thead>
                <tbody>
                  <?php
        $sql="select * from auditactivity order by recno";
        $res=mysqli_query($conn,$sql);
        $i=1;
        while ($row=mysqli_fetch_array($res)){
        ?>
                <tr>
                <td><?php echo $i;?></td>
        <td><?php
        echo $arrd[$row['dept']];
        ?>
        </td>
        <td><?php
        echo $arritemx[$row['title']];
        ?>
        </td>
        <td><?php
        // echo $row['mainitem'];
        echo $arritem[$row['mainitem']];
        ?>
        </td>
        <td><?php
        // echo $row['subitem'];
        echo $arrsubitem[$row['subitem']];
        ?>
        </td>
        <td><?php echo $row['initial'];?>
        </td>
```

```php
            <td><?php echo $row['staffno'];?>
            </td>
            <td><?php echo $row['datestart'];?>
            </td>
            <td><?php echo $row['budget'];?>
            </td>
            <td><?php echo $row['actual'];?>
            </td>
            <td><a href="delActivity.php?rec=<?php echo
$row['recno'];?>" class="btn btn-danger"><i class="fa fa-
trash"></i></a></td>
                </tr>
              <?php
            $i++;
            }
            mysqli_close($conn);
            ?>
                </tbody>
              </table>
            </div>
          </div>
        </div>

      </div>
      <!-- /.container-fluid -->

    </div>
    <!-- End of Main Content -->

    <!-- Footer -->
    <footer class="sticky-footer bg-white">
      <div class="container my-auto">
        <div class="copyright text-center my-auto">
          <?php
// include "footer.php";
?>
        </div>
      </div>
    </footer>
    <!-- End of Footer -->

  </div>
  <!-- End of Content Wrapper -->

</div>
<!-- End of Page Wrapper -->

<!-- Scroll to Top Button-->
<a class="scroll-to-top rounded" href="#page-top">
  <i class="fas fa-angle-up"></i>
</a>

<!-- Bootstrap core JavaScript-->
<script src="vendor/jquery/jquery.min.js"></script>
<script src="vendor/bootstrap/js/bootstrap.bundle.min.js"></script>

<!-- Core plugin JavaScript-->
<script src="vendor/jquery-easing/jquery.easing.min.js"></script>

<!-- Custom scripts for all pages-->
<script src="js/sb-admin-2.min.js"></script>
```

```html
<script src="js/jquery-3.3.1.min.js"></script>
  <!-- Page level plugins -->
  <script src="vendor/datatables/jquery.dataTables.min.js"></script>
  <script
src="vendor/datatables/dataTables.bootstrap4.min.js"></script>
<script src="js/bootstrap-datepicker.js"></script>


  <!-- Page level custom scripts -->
  <script src="js/demo/datatables-demo.js"></script>
<script>
$('#dp1').datepicker("setDate",new Date());
$('#dp2').datepicker("setDate",new Date());
</script>
</body>

</html>
```

2) Source code 2
For the saving new audit stage and update system log by Team Leader

```php
<?php
/*   Module : addItem.php
   Related Module : addItemForm.php
   Version : 1
   Developer : Thanasegaran
   Application : Audit management tracking system
       Description : Saving new audit stage and update system logs
       created by team leader
*/

ob_start();
   //Start session
   session_start();
   require_once('auth.php');
   //Include database connection details
   require_once('config.php');
   //Connect to mysql server
   $link = mysqli_connect(DB_HOST, DB_USER, DB_PASSWORD);
   if(!$link) {
      die('Failed to connect to server: ' . mysqli_error());
   }

   //Select database
   $db = mysqli_select_db($link,DB_DATABASE);
   if(!$db) {
      die("Unable to select database");
   }


   $item =strtoupper($_POST['item']);
   //Create INSERT query
   $qry = "INSERT INTO mainitem(item) VALUES('$item')";
   $result = @mysqli_query($link,$qry);

   //Check whether the query was successful or not
   if($result) {
      $sql = "INSERT INTO logsistem (staffno,userid,utype,operation)
VALUES
('$_SESSION[SESS_MEMBER_ID]','$_SESSION[SESS_LAST_NAME]','$_SESSION[SE
SS_UTYPE]','INSERT NEW AUDIT MAIN AUDIT ITEM')";
      $result2 = @mysqli_query($link,$sql);
      header("location: addItemForm.php");
      exit();
   }else {
      die("Query failed");
   }
?>
```

3) Source Code 3
Creation of new user by the Team Leader

```php
<?php
/*   Module : addUserForm.php
   Related Module : addUser.php
   Version : 1
   Developer : Thanasegaran
   Application : Audit management tracking system
   Description : New audit user created by team leader
*/

include "auth.php";
require_once('config.php');
   $arritem=array();
   $arritem[0]="Admin";
   $arritem[1]="Supervisor";
   $arritem[2]="Team Leader";
   $arritem[3]="Team Member";



$sql2="select * from dept";
$res2=mysqli_query($conn,$sql2);
$arrdept=array();
while ($row2=mysqli_fetch_array($res2)) {
   $arrdept[$row2["recno"]]=$row2["title"];
}
?>
<!DOCTYPE html>
<html lang="en">

<head>

  <meta charset="utf-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-
scale=1, shrink-to-fit=no">
  <meta name="description" content="">
  <meta name="author" content="">

  <title>User Registration & Listing</title>

  <!-- Custom fonts for this template -->
  <link href="vendor/fontawesome-free/css/all.min.css"
rel="stylesheet" type="text/css">
  <link
href="https://fonts.googleapis.com/css?family=Nunito:200,200i,30
0,300i,400,400i,600,600i,700,700i,800,800i,900,900i"
rel="stylesheet">

  <!-- Custom styles for this template -->
  <link href="css/sb-admin-2.min.css" rel="stylesheet">
```

```html
    <!-- Custom styles for this page -->
    <link href="vendor/datatables/dataTables.bootstrap4.min.css"
rel="stylesheet">
    <link href="css/bootstrap.min.css" rel="stylesheet">
<link href="navbar-top-fixed.css" rel="stylesheet">
<script>
    function myFunction1(){
       var x1=document.getElementById("password");
       var y1=document.getElementById("cpassword");
       if ((x1.type=="password") && (y1.type=="password")) {
          x1.type="text";
          y1.type="text";
       }
       else {
          x1.type="password";
          y1.type="password";
       }
    }

    function myFunction(n){
       var x=document.getElementById("inputPassword"+n);
       if(x.type=="password") {
          x.type="text";
       }
       else {
          x.type="password";
       }
    }
    </script>
</head>

<body id="page-top">

  <!-- Page Wrapper -->
  <div id="wrapper">


    <!-- Content Wrapper -->
    <div id="content-wrapper" class="d-flex flex-column">

      <!-- Main Content -->
      <div id="content">
     <?php
     include "topbar.php";
     ?>

        <!-- Begin Page Content -->
        <div class="container-fluid">

          <!-- Page Heading -->

          <!-- DataTales Example -->
          <div class="card shadow mb-4">
             <div class="card-header"><h1 class="h3 mb-2 text-
gray-800">User Registration</h1></div>
```

```html
        <div class="card-body">
    <form id="loginForm" name="loginForm" method="post"
action="register-execM.php">
        <div class="form-row">
        <div class="col-md-4">
        <label class="control">User Name :</label>
        <input name="fname" type="text" class="form-control"
id="fname" size="30" style="text-transform:uppercase" required/>
        </div>

        <div class="col-md-4">
        <label class="control">User Initial :</label>
        <input name="initial" type="text" class="form-control"
id="initial" minlength="3" maxlength="4" size="30"
placeholder="Enter 3 characters. Maximum of 4 characters"
style="text-transform:uppercase" required/>
        </div>
        </div>
        <div class="form-row">
         
        </div>
        <div class="form-row">
        <div class="col-md-4">
        <label class="control">Staff Number :</label>
        <input name="staffno" type="text" class="form-control"
id="staffno" size="30" minlength="4" maxlength="6" style="text-
transform:uppercase"required/>
        </div>
        <div class="col-md-4">
        <label class="control">Login Name :</label>
        <input name="login" type="text" class="form-control"
id="login"  minlength="5" maxlength="6" size="30"
placeholder="Enter 5 characters. Maximum of 6 characters"
required/>
        </div>
        </div>
        <div class="form-row">
         
        </div>

        <div class="form-row">
        <div class="col-md-4">
        <label class="control">Password :<br/>*Enter 5
characters. Maximum of 6 characters</label>
        <input name="password" type="password" class="form-
control" id="password" minlength="5" maxlength="6"  size="30"
required/>
        </div>
        <div class="col-md-4">
        <label class="control">Re-type Password :<br/>*Enter 5
characters. Maximum of 6 characters</label>
        <input name="cpassword" type="password" class="form-
control" id="cpassword"  minlength="5" maxlength="6"
size="30"required/>
        </div>
        </div>
```

```html
        <div class="form-row">
        <div class="col-md-4">
        <input type="checkbox" class="control"
onClick="myFunction1()"> <i class="fa fa-key"></i> Show Password
        </div>
        </div>
        <div class="form-row">
         
        </div>
        <div class="form-row">
        <div class="col-md-4">
        <label class="control">User Type :</label>
        <select name="utype" class="form-control" size="1"
required>
        <option value="0">Administrator</option>
        <option value="1" selected>Supervisor</option>
        <option value="2">Team Leader</option>
        <option value="3">Team Member</option>
        </select>
        </div>
        <div class="col-md-4">
        <label class="control">Audit Unit :</label>
        <select name="dept" class="form-control" size="1"
required>
        <?php
            $sql="select * from dept order by title ASC";
            $res=mysqli_query($conn,$sql);

            while ($row=mysqli_fetch_array($res)){
            ?>
                    <option value="<?php echo
$row['recno'];?>"><?php echo $row['title'];?></option>
            <?php
            }
            ?>
        </select><br/>
        To Add Other Audit Units: <a href="addDeptForm.php"
class="btn btn-info">Click Here</a>
        </div>
        </div>
        <div class="form-row">
         
        </div>

        <div class="form-row">
        <div class="col-md-12">
        <br/>
        <button class="btn btn-primary" type="submit"><i
class="fa fa-save"></i> Save User</button>
        </div>
        </div>

        </form>

        <div class="row">
         
```
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```php
        </div>
        <div class="row">
        <h1 class="h3 mb-2 text-gray-800">User Listing</h1>
        </div>
            <div class="table-responsive">
              <table class="table table-bordered"
id="dataTable" width="100%" cellspacing="1">
                <thead>
                  <tr>
                     <th>No</th>
                     <th>Name</th>
                     <th>Initial</th>
            <th>Staff No</th>
            <th>User Type</th>
            <th>Audit Unit</th>
            <th>User Login</th>
            <th>User Password</th>
            <th>Operation</th>
                  </tr>
                </thead>
                <tbody>
                  <?php
        $sql="select * from members where ustat=1 order by
firstname ASC";
        $res=mysqli_query($conn,$sql);
        $i=1;
        while ($row=mysqli_fetch_array($res)){
        ?>
                  <tr>
                   <td><?php echo $i;?></td>
        <td><?php echo strtoupper($row['firstname']);?>
        </td>
        <td><?php echo $row['initial'];?>
        </td>
        <td><?php echo $row['staffno'];?>
        </td>
        <td><?php echo $arritem[$row['utype']];?>
        </td>
        <td><?php echo $arrdept[$row['dept']];?>
        </td>
        <td><?php echo $row['login'];?>
        </td>
        <td><input type="password" id="inputPassword<?php
echo $row['member_id'];?>" value="<?php echo $row['upass'];?>"
style="border:1px solid #fff;" size="7"> <i class="fa fa-key"
onClick="myFunction(<?php echo $row['member_id'];?>)"></i>
        </td>
        <td>
        <a href="delUser.php?rec=<?php echo
$row['member_id'];?>"><i class="fa fa-trash"></i>  Delete</a>
        </td>
                  </tr>
                <?php
        $i++;
        }
        mysqli_close($conn);
```

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```
                    ?>
                      </tbody>
                    </table>
                  </div>
                </div>
              </div>

          </div>
          <!-- /.container-fluid -->

        </div>
        <!-- End of Main Content -->

        <!-- Footer -->
        <footer class="sticky-footer bg-white">
          <div class="container my-auto">
            <div class="copyright text-center my-auto">
             <?php
  // include "footer.php";
  ?>
            </div>
          </div>
        </footer>
        <!-- End of Footer -->

    </div>
    <!-- End of Content Wrapper -->

  </div>
  <!-- End of Page Wrapper -->

  <!-- Scroll to Top Button-->
  <a class="scroll-to-top rounded" href="#page-top">
    <i class="fas fa-angle-up"></i>
  </a>

  <!-- Bootstrap core JavaScript-->
  <script src="vendor/jquery/jquery.min.js"></script>
  <script
src="vendor/bootstrap/js/bootstrap.bundle.min.js"></script>

  <!-- Core plugin JavaScript-->
  <script src="vendor/jquery-
easing/jquery.easing.min.js"></script>

  <!-- Custom scripts for all pages-->
  <script src="js/sb-admin-2.min.js"></script>

  <!-- Page level plugins -->
  <script
src="vendor/datatables/jquery.dataTables.min.js"></script>
  <script
src="vendor/datatables/dataTables.bootstrap4.min.js"></script>

  <!-- Page level custom scripts -->
  <script src="js/demo/datatables-demo.js"></script>
```

```
</body>

</html>
```