

## **1) Description of the problem:**

- **Brief Description of the business/organization**

The organization I worked with is a buying house which ***was established on 29<sup>th</sup> June 1989 at Bashundhara R/A in Dhaka.*** The founders John Wilson and Abdul Kamal had a powerful goal to provide an efficient, useful service to provide benefits of not only to the country but also to the garments company as well.

When they first started they were ***only*** a ***small business organization*** but as the years passed their company "***Tricell***" proved to be ***useful*** and efficient to the buying and selling of goods to the company. During the years they had earned enough finance and capital by selling shares to the public-an intelligent decision made by Abdul Kamal. Additionally profits were made selling goods at low prices.

Using their liquidity, they now have ***several branches*** in the capital city of Bangladesh with ***smaller outlets***.

Tricell is one of the most useful buying house which buys from the garments factory and sells them at fair reasonable prices so a ***good service*** can be enjoyed by several business organization in the country. There are now ***more than sixty thousand staff*** working in Tricell. They have proved their success providing these services and goods such as machinery, equipment and clothing to business organizations in Bangladesh.

### **Nature of the problems to be solved:**

Throughout their years of trading, Tricell has encountered some drawbacks by carrying out their employee pay management of their buying house manually. In addition there have been an advance in the technology of the 21<sup>st</sup> century as now many companies use better accurate methods of calculating their pay. In contrast Tricell have been backdated and they have encountered these major problems listed below:

**1. Typing errors (incorrect employees names)** :as everything is done manually, the worker becomes bored of storing employee names and hence makes a mistake recording that employee's name. The reason for this is making handwriting mistakes and proves to be a problem as valuable time is wasted searching for the employee's name who's name has been recorded incorrectly.

**2. Recording incorrect figures of pay:** The accountant in charge occasionally make mistakes of calculating the pay of the employees. This upsets the employee and lowers their productivity at work as their motivation is lowered and makes them feel unimportant to the company.

**3. Time Consuming :** Storing and recording all the employee information and recording all payment details manually is a very lengthy and time consuming task. This causes time to be wasted and increases the chances of making more mistakes.

**4. Not Environment Friendly :** Since Tricell employs a lot of workers for the buying house, they have to prepare many employee forms. This requires a lot of paper derived from our natural resource trees. Cutting down more trees creates more pollution. Not only papers are required for forms, but also payment slips and for other records so this is a problem for the economy. Furthermore it is against Environment friendly policies. Consumers prefer environment friendly business rather than not friendly to the environment. Also once these forms are no longer needed they are thrown away. Hence it adds more to our pollution problem.

**5. Productivity and Efficiency is low :** Creating an employee information form is very time consuming and even more to construct employee pay forms. Also when these forms need to be updated due to mistakes or additional information-a new one has to be made which is a problem and the old one will have to be replaced by the new ones. So this eats up time and efficiency is low as more time is taken to build up a form which suggests work is being done slowly.

**6. Not Well Protected :** As these forms are kept in large files and they are simply kept away in cabinets, someone might be able to unlock and access these files and these could be misused. Additionally if dangers such as earthquake/fire/disasters/war occur then these data and folders will be destroyed in the process. As a result these folders cannot be retained and all of these are lost.

**7. Hard to find records and data :** As all the work done is manual, all of these records are stored in files. A lot of files are being recorded each day and this creates a huge library. When a worker wants to find a an old record it takes a long time because he/she is not retrieving them from a database. Also it is difficult to move these records into emergency.

**8. Costly:** Many employees are needed to construct the payslips, also vast amount of papers are required so expenses are high at the end of the financial year.

The existing problems above will be solved if these suggested objectives are carried out successfully:

## **2) OBJECTIVES**

### **BUSINESS OBJECTIVES (BO.)**

In *Business Terms*

Table-2.1

Objectives briefly illustrated in business terms

<b>BO.1</b>	ACCURACY	To assure that the <b><i>information recorded is accurate</i></b> so mistakes are not an option and also conflicts and problems could be avoided between employees and employers. Accuracy is a big important factor in every business. The more accurate a business company is, the more productive it can be.
<b>BO.2</b>	INCREASED EFFECIECNY AND PRODCUTIVITY	Easier methods of <b><i>recording salary employee information and payment details</i></b> would be provided so work can be done much quicker which will increase efficiency. The more easier it is to make to make payslips and salary reports, the more quicker work will be done. This will not only increase efficiency but output as well.
<b>BO.3</b>	SAVES TIME	To prepare files of employees, payment details and files easily in short time so the tasks become <b><i>less time consuming</i></b> . Time is an important factor in business companies.
<b>BO.4</b>	ECO FRIENDLY	To make the process of recording payment data and employee information <b><i>environmentally safe</i></b> by reducing the use of paper and cutting down of trees-for the nature's benefit and consumers satisfaction as they prefer <b><i>environment friendly companies</i></b> . Consumers prefer firms that care about the economy. They like firms that take into account the external costs they would impose and how to reduce them. The business should therefore at any cost <b><i>pollute less</i></b> dump so that <b><i>external costs are reduced</i></b> .
<b>BO.5</b>	SECURITY	A secure system to be provided so that the payment, employee data and important information can be <b><i>stored safe and well protected unexpected dangers</i></b> . Also a system of recognition will be introduced. Members without authorization will not be able to access these files.
<b>BO.6</b>	ORGANIZATION	A well organised database will be constructed so that <b><i>records and data can be easily made available</i></b> due to any need or emergencies.
<b>BO.7</b>	PROFIT	In order to earn good amount of profits, the company should have a <b><i>smooth running system</i></b> that can produce payslips and salary reports quickly in time.
<b>BO.8</b>	EXPENSES	The business should keep their <b><i>working system as low cost</i></b> as possible so that they can earn a reasonable amount of profit at the end of the year.

**COMPUTER OBJECTIVES (CO.)**

In *Computer Terms*

<b>CO.1</b>	USER FRIENDLY	The system should be <b><i>user friendly</i></b> so it can be used easily.
<b>CO.2</b>	REDUCTION OF HUMAN ERRORS	The system to be used should be programmed so that it would be able to <b><i>minimize any possible accidental errors</i></b> made by the user.
<b>CO.3</b>	CUSTOMIZATION	The system provided should <b><i>allow the user to edit/add new or update the information</i></b> . So changes can easily made in any field or to payment details. To build and create an <b><i>organized database of employee information and payment details</i></b> . Throughout the system the <b><i>information should be easily displayed</i></b> about all present employees. Each employee will have their own form and these forms could be easily browsed.
<b>CO.4</b>	GENERATING PAYSLIPS QUICKLY	The system should be able to generate payslips as quickly as possible as this will <b><i>reduce time</i></b> and increase output and efficiency of the working system.
<b>CO.5</b>	GENERATIONG SALARY REPORTS QUICKLY	The system should be able to generate salary reports quickly so that it can be submitted on regular intervals so that <b><i>delays can be avoided</i></b> .
<b>CO.6</b>	REGULAR BACKUP OF DATA	Regular back up of important data of files should be made within the business. This will help <b><i>to overcome any unexpected dangers</i></b> such as earthquakes or loss of important files.
<b>CO.7</b>	DATA SECURITY	The system should be protected with an <b><i>username and password</i></b> . This will prevent unauthorized personnel from logging into the business.

Table-2.2

Objectives briefly illustrated in computer terms

### **3. Description of an existing system**

Since the issues of Tricell limited company has been pointed out, any older method of analysis could not be used. It is better to construct and build a new analysis. So I had to travel to Tricell's head management office and was decided that two methods of fact finding would be used:

- **Reviewing the existing employee information and payment forms .**
- **Interviewing the manager of the finance department.**

#### **How the system runs at present:-**

- Vast amount of papers are collected by the company each month so they can use it to prepare the forms of the employees.
- The forms are each constructed manually, drawn with hand and scale to make it accurate and acceptable.
- When the forms are ready the workers start to fill all the employee salary information fields like basic salary, allowances, overtime, available leave.
- After all the information has been filled out, the worker carefully adds the gross pay, deducts available leave, income taxes and finally calculates the net payment of that employee.
- After all the pay slips are done the workers submits these papers to the manager at the end of the month.

#### **Interviewing the manager of the finance department:**

Recently, I have visited the manager of the finance department Mr. Robert Williams. After our conversation, I was able to understand that he ***was not satisfied with this system and rather frustrated with its inefficiency.***

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

*Tricell Industries Ltd*

**Me:** Good morning Mr.Williams. How are you on this fine day?

**Williams:** I am very well, thank you.

**Me:** Excellent. So how are things going around here?

**Williams:** It's ok but I would have been better if it was improved.

**Me:** I see. So I am here to know and see about the lackings about this system and what needs to be improved. If you would, please tell me about how fast the current system is actually.

**Williams:** Well, to be honest it is actually slow at the moment. It takes a lot of time to construct it manually. However if it is not done tidily it is done a little bit faster but I am *hardly* be able to read it! Moreover untidiness creates problems and these problems leads to mistakes of *incorrect figures of pay*, incorrect name, etc. Even when it is done tidily still mistakes are made which is a major drawback!

**Me:** I can understand your frustration Mr.Williams, but has the time factor and organizing factor affects the functions of your business often or more than that?

**Williams:** Ofcourse it has. Not just more than twice, it occurs frequently and the time taken to fix it also *consumes more time* and hence *productivity per output decreases*. Since Tricell has a lot of employees and it's organisational structure has a wider span of control as its chain of command is short. Additionally they become upset getting paid *incorrect amounts plus waiting* so long to get it.

Name? Connor Williams  
Head Manager

Williams  
21-11-13

Fig- 3.1

Interview with the manager

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

Fig- 3.2  
Interview  
with the  
manager

Me: That is a problem.

Williams: Well sad to say that this is not only the problem I face. Also sometimes these workers **refuse** to work and complain. Their **motivation decreases** and due to these problems, they don't feel as an important member of the organisation which leads to an increase in inefficiency. Not only it disrupts business activity but also it creates a bad image of the business and harms the reputation of the business as well.

Me: One problem, leading to another. Bad image means bad business. I can see the problem here. So are there any other problems you have faced with the current system?

Williams: Well, yes there is in fact. The current system is fragile. The forms deteriorate after some time and waste also.

Me: well this system is being **problematic** indeed. Well enough of drawbacks. Are there any **benefits** of this system?

Williams: Well I would not count this as an advantage but **atleast** the work is being done continuously. The only good thing is it allows me to talk to my staff and I am a person who likes to chat. Also they know they can share any problems or talk to me freely time to time.

Me: Well thank you very much Mr.Williams about being so patient and honest to discuss about the current system. I am sorry if I have disturbed you

Williams: Oh no, not at all. I am hope I was able to tell you what you needed.

Name: Connor Williams  
Head Manager

Williams  
21-11-13

## **Questionnaires:**

### **For The Workers:**

**@Tricell Industries Ltd**

Please kindly take a moment and fill out the following questions in this form:

Q. How many hours do you work per day? 6 Hours

Q. Do you find the work easy/hard

Q. Is it interesting to do the work Yes/No

Q. How often do you make mistakes in constructing the form?

A Seven or eight times

Q. Are you willing to work manually or looking forward to automation?

A Yes, automation would make work easier

Q. Do you think automation is likely to benefit your role in this company?

Yes

Name: Salahuddin Salahuddin

Fig- 3.3

Questionnaires for the employees

### **For the managers**

**@Tricell Industries Ltd**

Please answer the following questions:

Q. Are you looking forward for the new system that will be introduced to the business? Yes/No

Q. Will this new system have an effect of the employees currently employed? Yes/No

If so justify your reasons Some will be promoted while others dismissed as most of the work would be done by computers.

Q. Will this new system be expensive? Yes/No

Q. Do you think the Computer aided payroll system improve the productivity and the efficiency of the business?

A Definitely, as it would take less time to produce pay slips

Q. Will workers be dismissed due to the new capital intensive method? Yes/No

Q. Apart from all the pros and cons will this system benefit you and the business in the long run meaning that this decision be successful? Yes/No

12/11/13

Name: Connor Williams

Williams

Fig- 3.4

Questionnaires for the managers

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Input Form:

This is the current input payslip form for the payment calculations of employees. Each form is constructed manually and the following diagram shows an input for an existing employee "Hassan Rafi"

TRICELL INDUSTRIES EMPLOYEE SALARY INFORMATION FORM					
Employee ID :	218				
Employee name:	Hassan Rafi				
Date:	13/09/13				
Department:	Human Resources				
Designation:	Manager				
Residence:	Dhaka				
No. Of Working Days:	24				
Days Present :	23	Days Absent:	1	Available Leave:	1
BASIC SALARY:	Six thousand taka only (6000TK)				

Fig- 3.5

Input form (employee information)  
constructed manually

**OutPut Form:**

TRICELL INDUSTRIES PAYSLIP		
EMPLOYEE NAME:	Hassan Rafi	
EMPLOYEE ID :	218	
DEPARTMENT:	Human Resources	
DATE:	13/09/13	
<b>Payment calculation:</b>		
Basic salary	TK 6000	
Overtime	TK 400	
All allowances (medical, (-) Transport, house)	TK (1200)	
Income tax (10%) (-)	TK(600)	
Bonus	TK 550	
Available leave deductions:	0	
Transportation (6%) (-)	TK (360)	
Net payment	TK 4790	
GROSS SALARY (HOME TAKE SALARY)		Four thousand seven hundred and ninety (Taka)

Fig- 3.6

Input form (employee payment information) constructed manually

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

### **Process:**

- 1) The form is constructed with each column and row being drawn by hand.
- 2) The fields are constructed using basic information such as name, employee number, etc.
- 3) The fields are filled in with the employee's payment details, such as basic salary, overtime, etc.
- 4) The total salary is calculated, including factors such as overtime, bonuses and various allowances.
- 5) The total amount of tax is deducted from the total salary. This includes national tax, taxes on allowances, etc.
- 6) The net pay is calculated and written down.
- 7) A copy is made for the employee. The original is kept by the financial department.
- 8) The payment form is stored in an alphabetical folder containing all employee payment forms.
- 9) The folder is stored in a cabinet in the accountant's office for reference during calculations and payments.

### **Result of Fact Finding:**

After concluding the fact finding analysis, it was clear to me that this system was too inefficient. The problems I found are as follows:

- Convenience Issues: The system made recording the information difficult. Furthermore, if this information was needed again, they would need to go through many other forms.
- Accuracy Issues: The handwritten figures and even the letters are occasionally difficult to read.
- Time Consuming: This process requires a great deal of time if it is to be made tidily. If it is not done tidily, the number of mistakes increases.
- Destructible: The forms could easily be damaged or even destroyed entirely. This would cause the business massive problems. Furthermore, the fact that it is made by hand means that it is possible for figures to become smudged.

**Flowchart showing how the forms are constructed and filled out:**

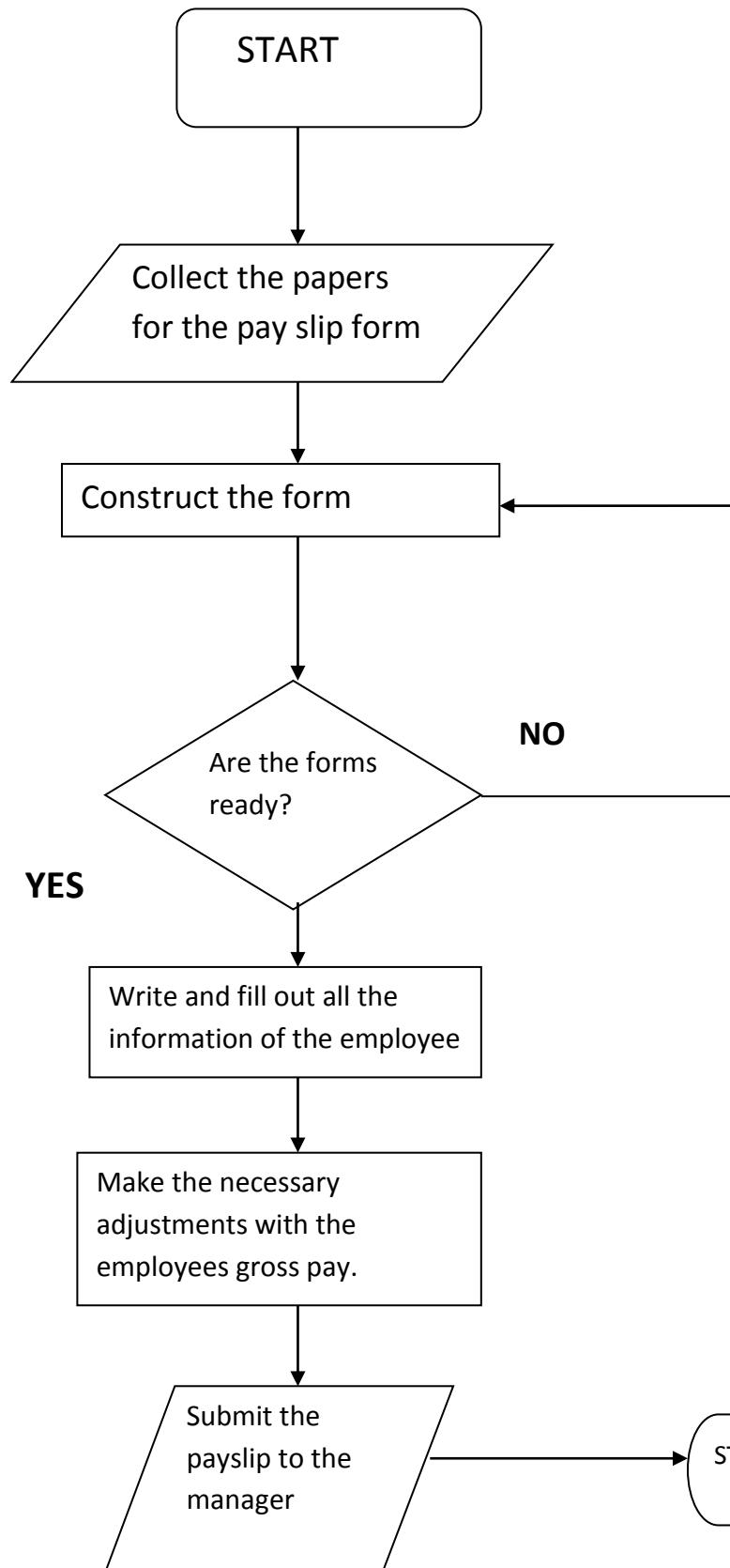


Fig- 3.7

Flowchart for existing system

## **4. Evaluation of existing solution**

No.	ADVANTAGES	DISADVANTAGES
<b>1.</b>	The accountant in charge does not have to be trained for the use of manual process.	Not environmentally friendly as all the records are done on paper. As Tricell have a lot of workers, lots of papers are used and they increase revenue expenditure.
<b>2.</b>	The process is not able to 'crash' as it would with an automated process.	Handwriting causes incorrect figures to appear resulting in incorrect payment to employees.
<b>3.</b>	The process can be done at any time/point even there is no electricity.	The files are not secure or could be even lost as anyone with access to the Accountant's office would be able to access them.
<b>4.</b>	Retraining costs will not have to be paid.	Files can be easily destroyed." Wear and tear" will also occur as the year passes.
<b>5.</b>	Senior employees are more comfortable with the manual system.	Writing out the records, payment slip manually makes errors as handwriting of the employee causes incorrect figures to appear resulting in incorrect payment to employees.
<b>6.</b>	No scope of viruses.	The payment forms of employees could be switched/misplaced.

Table-4.1

Advantages and disadvantages discussed of the manual system

## **Suggested Improvements**

### **\*Increase in specialization in one particular task:**

- More than one /two employees to create payment forms**

If there are more workers concentrating in creating payment forms then there are less chance of making mistakes as the worker now don't have to do all the work by himself. In addition the speed is now tripled as payment forms will be produced much quickly than before hence increasing efficiency and productivity.

However, there are some drawbacks. In order to carry this new process more workers will have to be employed thus increasing wage costs or switching employees from other posts to this job. So there are less people on that particular sector. But if this is done then it will be much better for the organization.

- More than one employee to create and organize records, files etc.**

This applies the same advantages. Less error will be made and accuracy will increase.

### **\*Organization of employee folders:**

Employee folders may be needed at any time of the business. But if it is not organized appropriately then it will be very difficult to find as there are lots of workers working under Tricell. So there should be individual employee folders. Individual employee folders for each employee could be used to hold their payment forms and other information in one file. The benefit of doing is that it makes searching for specific employee information much easier and makes the **entire system very organized** and also less time is wasted.

### **\*Restrictions on access to the storage of data, files records.**

The library of where files are stored could be locked with a key. Furthermore it should be a restricted area and only with those who have **authority** such as accountants, managers can **only**

## **5. Description of other possible solutions including the proposed solution**

Instituting computerized payroll systems within this business organization can bring forth positive changes, saving hours producing and updating physical payroll journals and records.

A computerized payroll system automatically calculates and prints paychecks based on a variety of rates, deductions and taxes . It stores employee data, such as names, addresses, social security numbers, pay rates and withholding allowances of each person.

Computerized payroll software automates many functions, which saves both time and resources. For example, it automatically calculates figures, such as employees' earnings, based on inputs. Though some data must be collected and input manually, such as new hire information, the computerized system keeps it organized so you can access and update it electronically as needed.

This system will **save both money and time**. Also the work will be much easier to do which will **increase efficiency and productivity**.

The process of storing information and making payroll forms will now be done using computers rather manually.

**Advantages are listed below along with objectives met (Pg 3).**

## **ADVANTAGES OF COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

<b>Faster</b>	Since this system is computerized, it is <b><i>much faster</i></b> than the manual process. An hour of work can be done in minutes with this system.	BO3
<b>Environmentally Friendly</b>	This system takes <b><i>very few paper</i></b> . Therefore making it <b><i>environmentally friendly</i></b> . Also it <b><i>reduces the expenses of business</i></b> of buying stationery, plus <b><i>less waste</i></b> is produced.	BO4
<b>Accuracy</b>	The system provides <b><i>clear figures and handwriting which is very easy to understand</i></b> . So misunderstanding and errors are vastly reduced. Additionally calculation mistakes are hardly ever made.	BO1
<b>Security</b>	Information and files are <b><i>well protected</i></b> using passwords. <b><i>Only authorized personnel</i></b> will be able to access files. Anyone without authorization <b><i>cannot gain access</i></b> .	BO5
<b>Classification</b>	The files are well organized into different sections and sub divisions. Files are classified from A to Z, age, levels of management etc. So it is now very <b><i>easy to view files</i></b> of an employee or manager. <b><i>Difficulty of finding files is reduced.</i></b>	CO4
<b>Pay check processing</b>	Computerized payroll system has direct-deposit capability, which <b><i>saves money spent</i></b> on live checks and reconciliation. Additionally, paycheck and pay stub generation occurs quickly, regardless of volume.	BO4
<b>Report Generation</b>	A computerized payroll system generates and prints payroll reports. If anyone want to double-check the payroll before printing paychecks/pay stubs, simply they have <b><i>the reference the corresponding reports</i></b>	
<b>Customization</b>	It is <b><i>very easy to update files and payment forms</i></b> when any changes are made.	BO6 CO1

Table-5.1

Advantages discussed of the automated system.

## DISADVANTAGES OF COMPUTER AIDED PAYROLL SYSTEM (CAPS)

Table-5.2

Disadvantages discussed of the automated system.

<b>Power loss</b>	It <b>requires the need to protect against data loss</b> through power failure or viruses, and the danger of hackers stealing data.
<b>Costly</b>	<b>It is very expensive to set up this system.</b> Some firms may not have the capital to introduce this system.
<b>Re-training</b>	Employees will have to be <b>trained to use this system.</b> Some employees are <b>afraid</b> to accept <b>new changes</b> in work or they may feel they will not be able to work well through the new changes.
<b>System Failure</b>	It is possible that the <b>system may crash</b> resulting in loss of all data.
<b>Computer Fraud</b>	Computer fraud is also a concern, and you need to instigate a system of controls for who has access to the information, particularly customer information. If there is a security breach and <b>data is stolen, management can be held personally liable for the loss of data.</b>

### Other possible solution:

#### **Internet Based Storage System [IBSS]**

Storing files in online is one of the best way to keep the files properly backed up. System failure may occur but cloud storage never fails and the files will always be available. Using IBBS would act like a cloud storage. Information will be stored on the server based on and the internet. **Nowadays most devices have cloud storage.** For example Microsoft's Operating System (OS) Windows 8 has "**Sky drive**", Apple's iphone has "**iCloud**". They all perform the same task as **IBBS**. The payment forms would have to be constructed either in computer and stored on the server or constructed by hand or scanned on to the computer. Using this process information can be stored and retrieved at any time easily. System failure will not be a problem if this is used.

The advantages and disadvantages of this system are as follows:

ADVANTAGES	DISADVANTAGES
<b>24/7 Available any time.</b>	<i>Information can be accessed at any time any location.</i>
<b>Material well Restricted</b>	<i>It is safe</i> as passwords are required to access information therefore making it locked.
<b>Easier</b>	It is easier than maintaining manual records of the employee's payment forms.
<b>Unexpected dangers</b>	If there is any hazardous event such as fire or earthquakes, there is <b><i>nothing to fear</i></b> as the information <b><i>can be accessed from the internet at any notice.</i></b>
<b>Reasonable</b>	Companies need only pay for the storage they actually use, typically an average of consumption during a month.
	<b>Internet connection is required</b>
	<b>Expenses</b>
	<b>Hacking</b>
	<b>Virus</b>
	<b>Maintainance</b>
	If there is <b><i>no internet connection</i></b> then data <b><i>cannot be accessed</i></b> or retrieved. It 100% relies on the internet.
	This system is not free as <b><i>monthly charges have to paid.</i></b> The more storage they need the more costly it is. For huge companies it is costly.
	It is possible for <b><i>hackers to bypass passwords</i></b> and username to gain access.
	It is possible for <b><i>viruses</i></b> to enter the pc and corrupt important data.
	It would often have to be maintained which takes a lot of <b><i>time and increase expenses</i></b> of the business.

Table-5.3

Advantages and Disadvantages of the other proposed solution

## **Comparisons of the solutions:**

<b>Manual system</b>	<b>IBSS</b>	<b>Automated system</b>
<ul style="list-style-type: none"> <li>✓ Employees do not need to be skilled to perform this task. They can work without training.</li> <li>✓ This system will not crash.</li> <li>✓ Labour can be easily gained as many people are available for this kind of tasks. Unskilled labour are always available.</li> </ul>	<ul style="list-style-type: none"> <li>✓ All the information stored are safe and secure</li> <li>✓ Important data can be gathered at any time.</li> <li>✓ Even if the system crashes the data can be downloaded from the server.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Eco-friendly</li> <li>✓ Time will be saved</li> <li>✓ Less errors</li> <li>✓ Productivity will increase.</li> <li>✓ <i>In the longer run business expenses will decrease.</i></li> <li>✓ Work done will be easier now.</li> </ul>
<ul style="list-style-type: none"> <li>✗ Resources are wasted as more wood are cut for papers and more waste is produced.</li> <li>✗ Silly mistakes are made</li> <li>✗ Handwriting may be unclear so it is hard to understand</li> <li>✗ Many workers are needed in this system</li> </ul>	<ul style="list-style-type: none"> <li>✗ Internet connection is required to use this system</li> <li>✗ Internet bills has to be paid monthly to use this feature.</li> <li>✗ The personnel will have to be taught well of how to handle this feature.</li> </ul>	<ul style="list-style-type: none"> <li>✗ Very expensive to set up</li> <li>✗ Employees will need to be retrained thereby increasing business costs</li> <li>✗ System may crash which will lead to loss of important and valuable data.</li> </ul>

Table-5.4

Comparisons highlighting the advantages and disadvantages of the manual system, IBSS and automated system.

## 6. ACTION PLAN

Action planning is a process which will help firms to focus their ideas and to decide what steps they may need to take to achieve particular goals that they have.

It involves:

- Identifying your objectives
- Setting objectives which are achievable & measurable.
- Prioritising your tasks effectively.
- Identifying the steps needed to achieve your goals.
- Using lists.
- Being able to work effectively under pressure.
- Completing work to a deadline.
- Having a contingency plan

The Action Plan is represented in the table below:

ACTIVITIES TO BE DONE	DURATION	DATE STARTED	DATE COMPLETED
<b>Feasibility Study</b> <ul style="list-style-type: none"> <li>□ Description of the existing system (including any problems and the projected costs)</li> <li>• Criteria (essential requirements and desirable features of the proposed system)</li> <li>• Solution (including development plan and cost/benefit analysis)</li> </ul>	5 days	2nd January 2014	8 <sup>th</sup> January 2014
<b>Analysis:</b> <ul style="list-style-type: none"> <li>• Making a description of a problem</li> <li>• Noting the objectives of the business</li> <li>• Understanding the current system</li> <li>• Making a description of the of the existing solution</li> <li>• Produce data flow diagram</li> <li>• Collect data from the current system</li> <li>• Fact Finding</li> <li>• Making a description of all other solutions</li> </ul>	17 Days	9 <sup>th</sup> January 2014	31 <sup>st</sup> January 2014
<b>Design:</b> <ul style="list-style-type: none"> <li>• Creating a system flow chart</li> </ul>			

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

<ul style="list-style-type: none"> <li>• Design the data capture forms/input forms</li> <li>• Creating a list of software needed</li> <li>• Creating a list of hardware needed</li> <li>• Produce any algorithms</li> </ul>	<b>10 Days</b>	<b>3<sup>rd</sup> February 2014</b>	<b>14th February 2014</b>
<b>Testing:</b> <ul style="list-style-type: none"> <li>• A testing strategy which must be followed</li> <li>• Gather test results for reviewing</li> <li>• Test with normal data</li> <li>• Test with abnormal data</li> </ul>	<b>4 Days</b>	<b>16<sup>th</sup> February 2013</b>	<b>19th February 2013</b>
<b>Implementation:</b> <ul style="list-style-type: none"> <li>• An explanatory method as solution that relates to the problem</li> <li>• An accurate method as a solution to the problem</li> <li>• Forming a Programming code for the software</li> </ul>	<b>9 Days</b>	<b>21<sup>st</sup> February February 2013</b>	<b>6th March 2013</b>
<b>Documentation:</b> <ul style="list-style-type: none"> <li>• User documentation</li> <li>• Technical documentation</li> </ul>	<b>10 Days</b>	<b>6<sup>th</sup>March 2013</b>	<b>19th March 2013</b>
<b>System Evaluation and Development:</b> <ul style="list-style-type: none"> <li>• An evaluation of all existing solutions and a final decision on which solution to implement.</li> <li>• Solution decided upon should be the most optimal choice which fulfills the most objectives for the business</li> <li>• Records of possible future Developments to be made on the solution that may occur due to future advances in technology.</li> <li>• Compare performance of the new system with performance of old system</li> <li>• Update hardware and software if necessary if company changes or legislation is introduced which affects how company operates.</li> </ul>	<b>12 Days</b>	<b>24<sup>th</sup> March 2013</b>	<b>8<sup>th</sup> April 2013</b>

Table-6.1

The action plan of the system showing the stages and points including the starting date and ending date.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Gnatt Chart

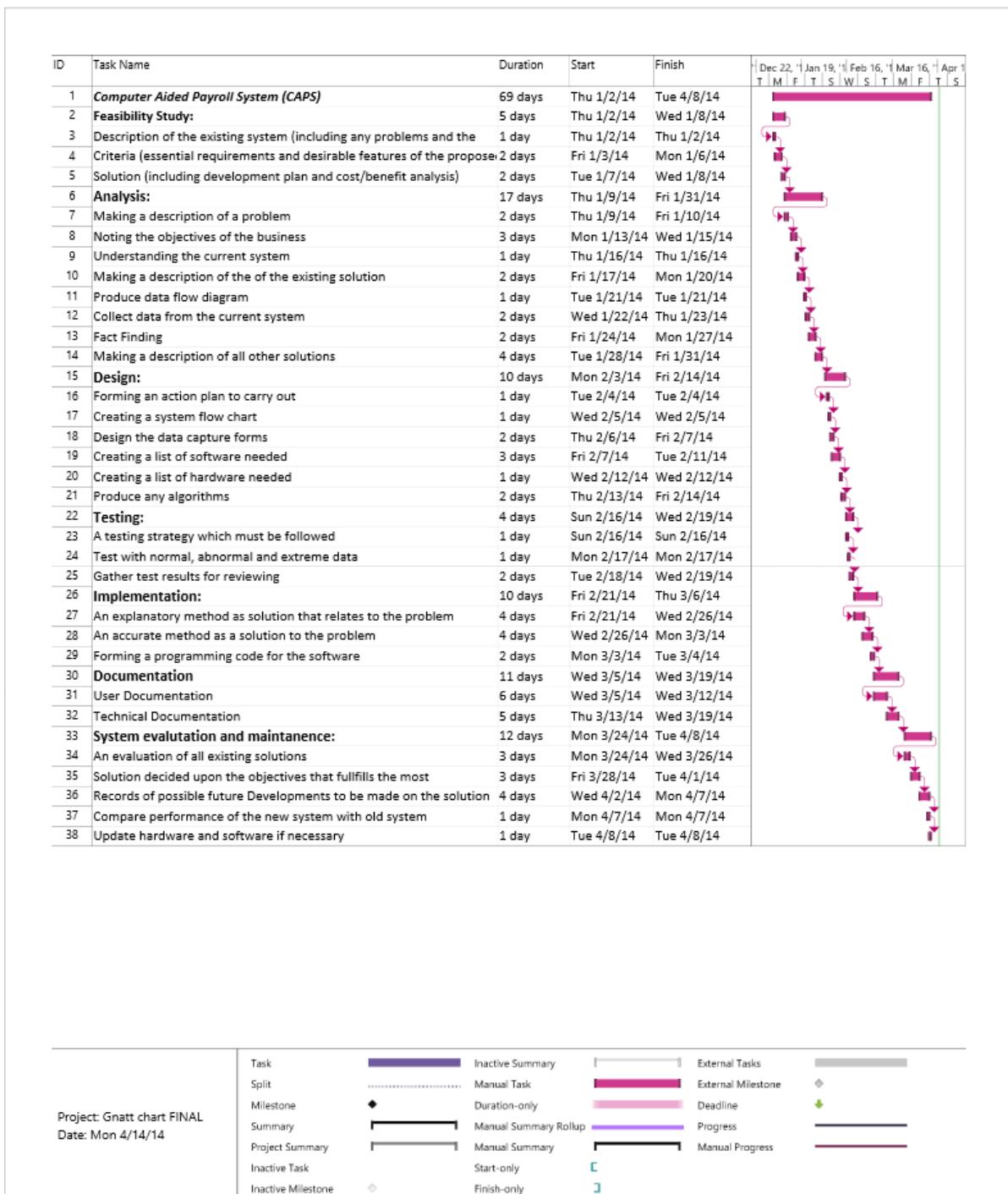
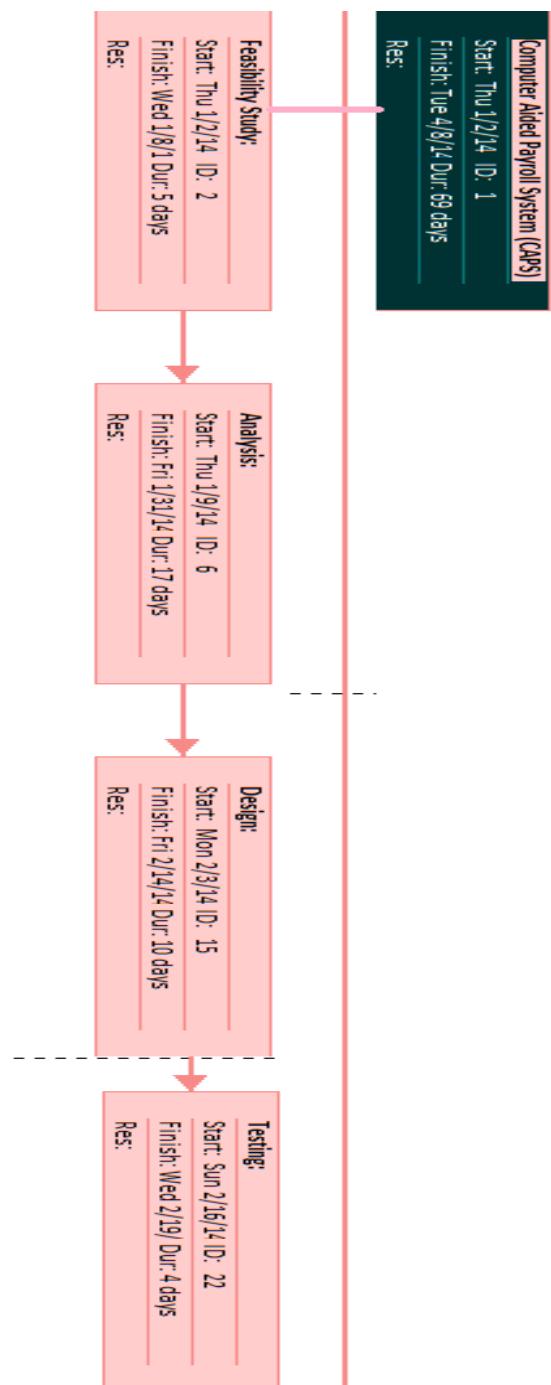


Fig-6.2 A detailed Gnatt Chart showing each stage with its duration

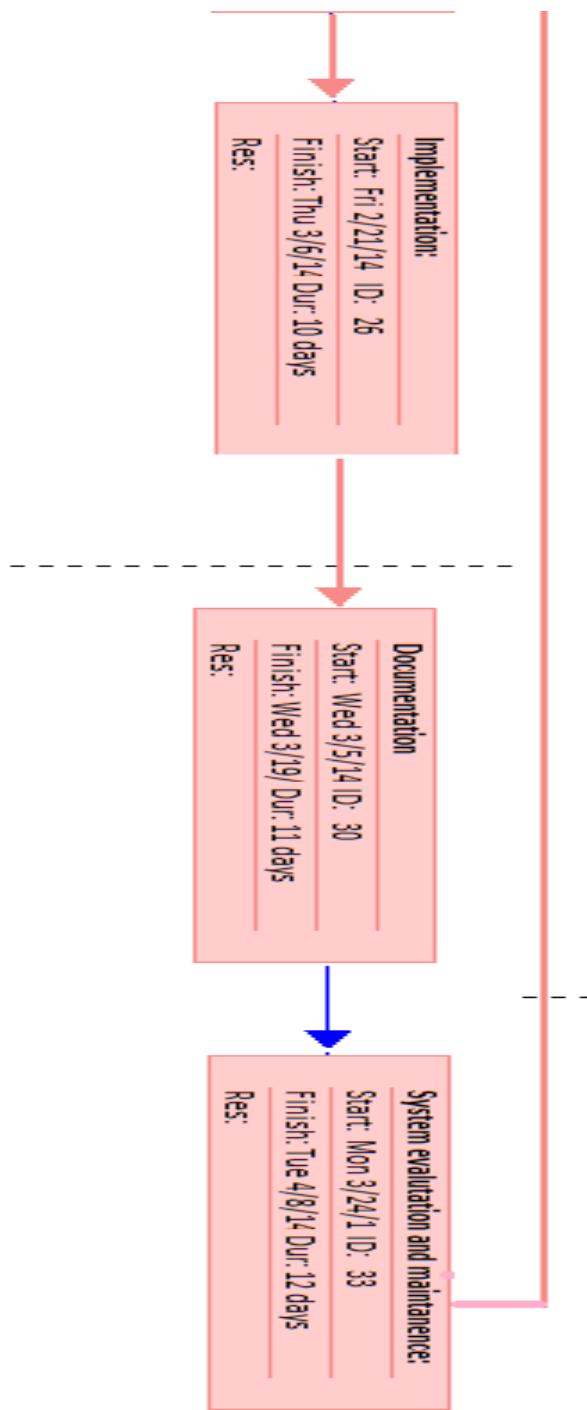
## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Network Diagram

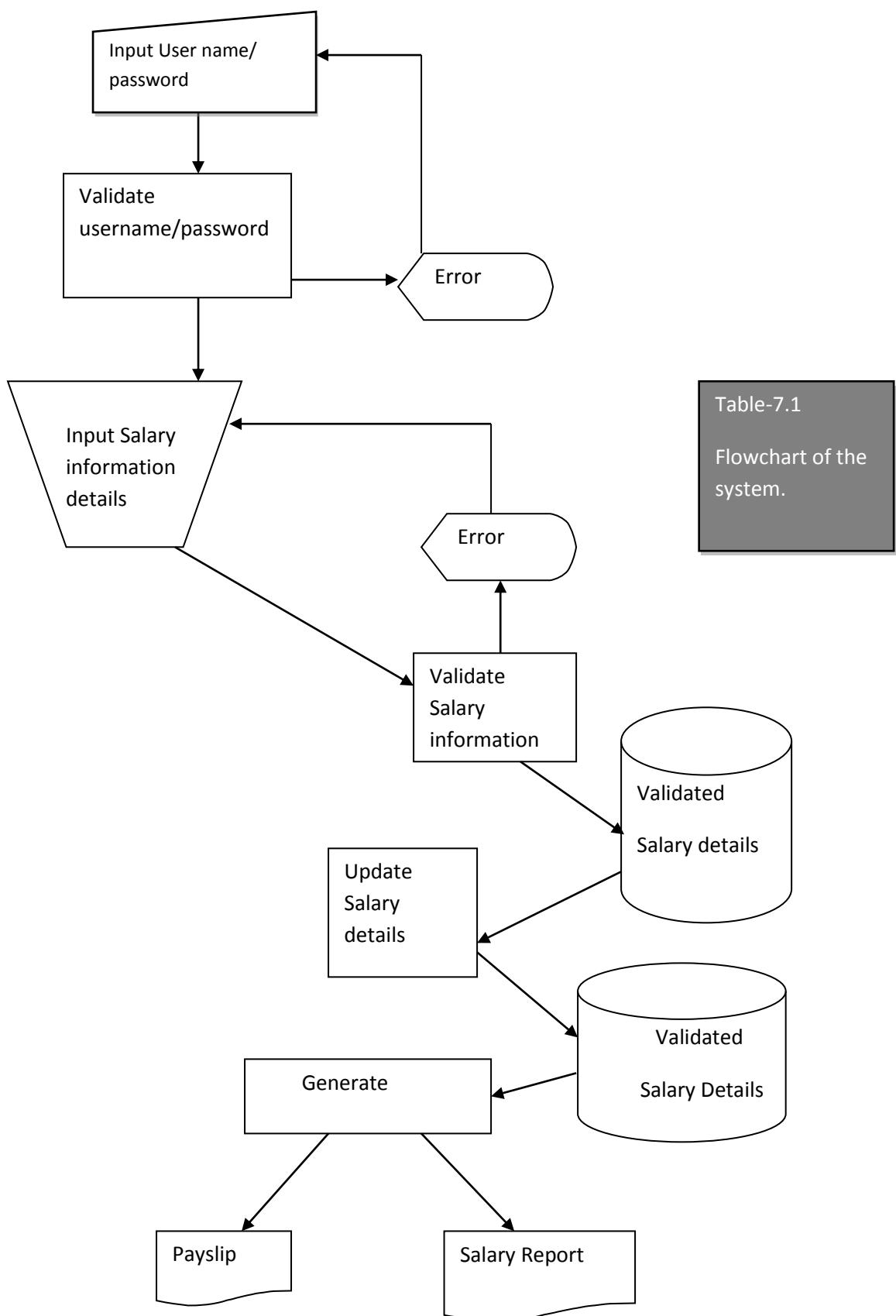
Fig-6.3 A  
detailed  
Network  
Diagram  
showing each  
stage with its  
duration.



## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

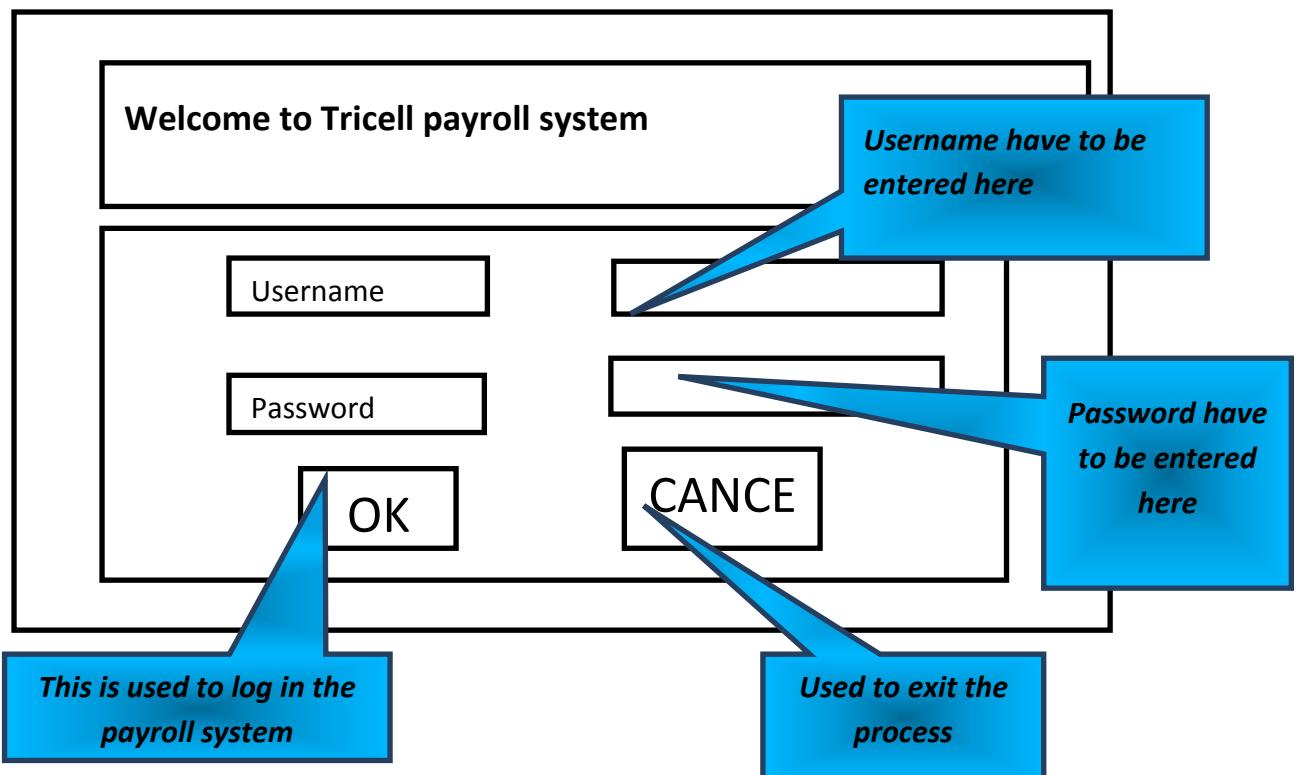


## 7. SYSTEM FLOWCHART



## 8. Description of the method of solution

### LOG-IN FORM:



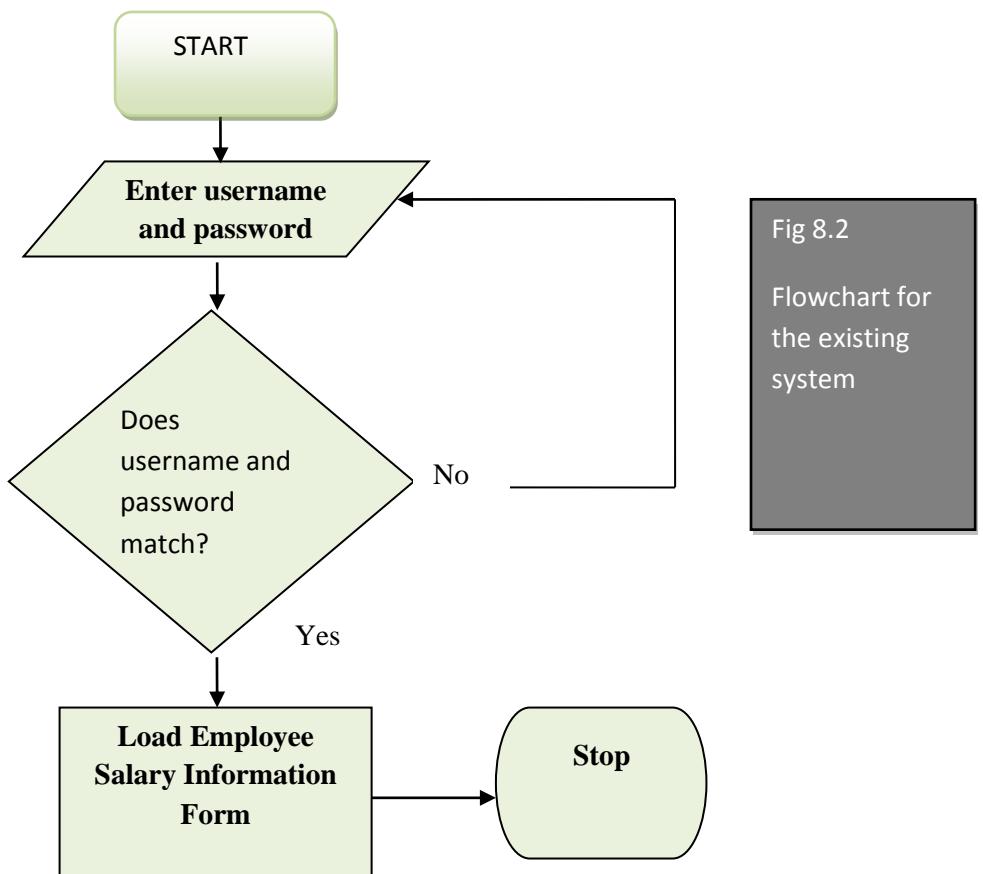
**Annotated screenshot pf runview and design view in page no,**

**Annotated coding is given in page no.**

Fig-8.1

Log in form of the Tricell payroll system.

**Flowchart for log-in**



## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**New employee Payment Form**

Automatically organised	Automatically set to the current	The basic salary without any deductions or tax.
ID		
NAME		
DEPARTMENT		
RESIDENCE		
Days worked		
RESIDENCE		
Present		
Absent		
		GROSS SALARY
A.LEAVE SALARY HOUSE ALLOWANCE MEDIACL TRANSPORT RETIREMEN T GRATUITY		
PROVADA N FUND FESTIVAL BONUS OVERTIME OTHERS TAX HTS		
Total take home salary of the employee after all the deductions have		

The number of days available on which an employee can take the day off.

Fig 8.3 Employee Salary information form

Additional sum which is paid for working extra hours.

Automatically calculated varied on Working days and days present.

Deleting a payroll form

Used to save the current displayed information in the form.

This form is printed out to the next form for producing payslip.

Going to the next payroll form of an employee

Used to exit the payroll form.

**Employee Salary Information Database Table (Design View)**

Design view of the employee

Name of field	Type	Description
Employer ID	Number	This is the ID of the employee assigned automatically by the system based on the number of existing forms.
Employer Name	Text	This is the name of the employee
Residence	Text	This refers to the place where the employee lives.
Designation	Text	The position or role the employee maintains. For example manager or director etc.
Department	Text	Different sections of a business are classified to different fields. This refers to the employee on which section he/she works. For example, Marketing, Human Resources etc.
No. of working days	Number	This is the number of the days the employee has to work. For example 24 or 25 days in a month.
Days Present	Number	This is the number of days an employee is present for working.

Providant Fund	Currency	A provident fund is created with a purpose of providing financial security and stability to elderly people. Employees contributes in these funds and the contributions are made on a regular basis (monthly in most cases). It is deducted from basic salary.
Festival Bonus	Currency	Festival bonus is when the employee paid an extra sum of money due to special occasions. For example "Christmas Eve" or "Eid'Ul'Fitr". It is added with Basic salary to find out gross salary.
Overtime	Currency	Overtime is when employees work more than their average hours of work and get paid more money for their extra work. It is added with Basic salary.
Others	Currency	"Others" are all the other types of expense or incomes for the employee.
Tax	Currency	There are many different types of taxes. For employees income taxes are charged. A certain percentage of income tax have to be paid from their basic salary. It is deducted from basic salary.
Payable salary	Currency	
Gross salary	Currency	This is take home salary. After all the deductions or additions have been made from basic salary, the rest is gross salary. Meaning total salary available for the employee. It is calculated automatically after all the calculations have been made.
Add, Save, Next, Previous, Delete,	Not Available	This allows the user to update the salary information details whenever required.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

Exit, Print		
-------------	--	--

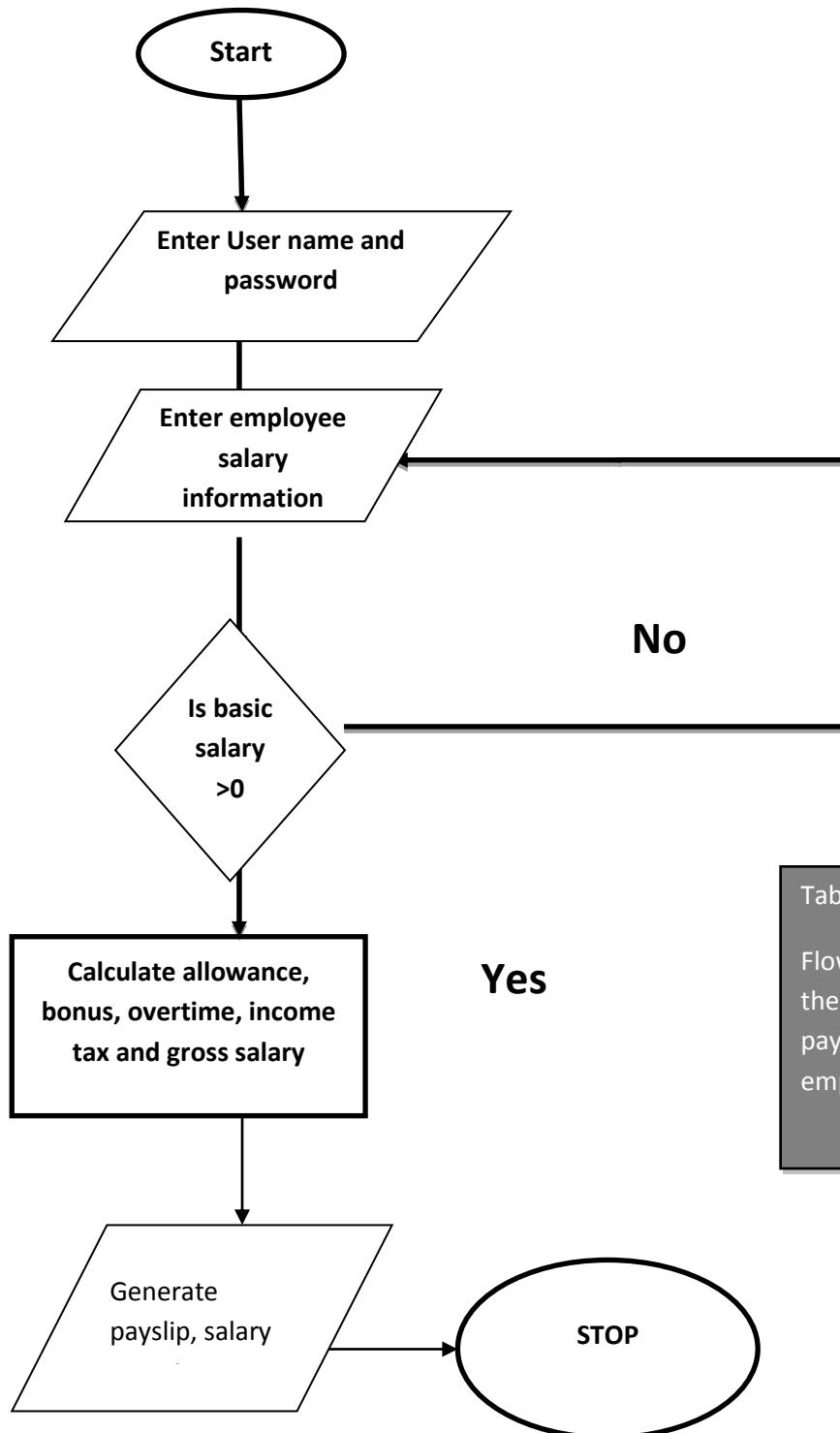
### **Employee Salary Information Database Table (Datasheet View)**

ID	Name	Department	Designation	Residence	Days Worked	Present	Absent	Available leave
2345	Ashiq	Administration	Manager	Sylhet	24	22	2	1
1970	Meekail	Marketing	Worker	Barisal	26	21	5	2

Date	Basic Salary	All Allowances	Transportation	Retirement	Gratuity	Provident Fund	Bonus	Overtime	Tax	Gross Salary
2/1 5/1 4	3400	1256	340	300	56	100	250	400	234	
12/3/14	4500	1390	450	590	89	200	500	900	234	

Table-8.5  
Datasheet view of the employee salary information database.

**A flowchart is represented showing the salarypayment process of an employee:**



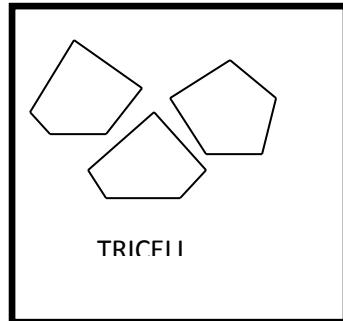
## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Outputs:**

Table-8.7

**Employee Salary Report:**

Employee Salary Report constructed manually.



Date/Time	Date/Time	Basic Salary	Basic salary
Employee	Employee ID	House	House
Employee name	Employee	Medical	Medical
Department	Department	Transport	Transportta
Designation	Designation	Gratuity	Gratuity
Residence	Residence	Providant	Providant
Working	Working days	Festival	Festival
Days Present	Days present	Overtime	Overtime
Days absent	Days absent	Others	Others
Available leave	Available leave	Tax	Tax
		Payable Salary	Payable Salary
		Gross Salary	Gross Salary

## 9. HARDWARE

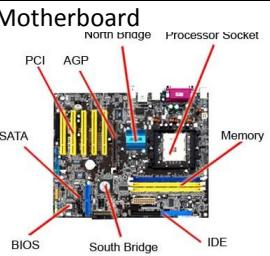
Hardware, in the computer world, refers to the physical components that make up a computer system.

There are many different kinds of hardware that can be installed inside, and connected to the outside, of a computer.

Here are some common individual computer hardware components that you'll often find inside a modern computer case :

Hardware:	Features:	Quantity	Reasons for using specified hardware:
Monitor 	<ul style="list-style-type: none"> <li>▪ LCD Monitor/</li> <li>▪ TV tuners</li> <li>▪ 1200x800 resolution</li> <li>▪ 256 Colors (32 bit)</li> <li>▪ Asus is recommended</li> <li>▪ Web Cams</li> <li>▪ Speakers</li> <li>▪ USB ports</li> <li>▪ Media Card Readers</li> <li>▪ Cable Management</li> </ul>	8 (one for each)	<ol style="list-style-type: none"> <li>1) LCD monitors are smaller in mass than CRD monitors and can be placed more space-effectively.</li> <li>2) To display the recorded information of tricell's employee forms and records.</li> <li>3) LCD monitors use less energy than standard CRD monitors thus resulting in more eco-friendly operation. It also reduces business expenses.</li> </ol>
Mouse 	<ul style="list-style-type: none"> <li>▪ Optical mouse with PS/2 capabilities and mouse wheel.</li> <li>▪ Preferable sample rate of 100 reports per second.</li> </ul> <p>Logitech is recommended.</p>	4	<ol style="list-style-type: none"> <li>1)To be able to interact with the computer.</li> <li>2)To select and activate the program and be able to enter the information.</li> <li>3)Optical mice are far more efficient than standard mice and remove the need of a mouse pad thereby saving costs</li> </ol>
Keyboard 	<ul style="list-style-type: none"> <li>▪ Standard 101/102-Key keyboard</li> <li>▪ Should be easy for the user to use (i.e, not strenuous on the wrists)</li> </ul> <p>Shortcut keys Helpful keyboard shortcuts</p>	4	<ol style="list-style-type: none"> <li>1)Used for typing information and communicating over the internet online.</li> <li>2)Handwriting is more clear and precise. Everyone will be able to understand it.</li> <li>3) Easily used.</li> </ol>

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

	<ul style="list-style-type: none"> <li>▪ GIGABYTE GA-EG43M-S2H Micro ATX IntelMotherboard</li> </ul>	4	<ol style="list-style-type: none"> <li>1. Is needed for a computer to operate and also contains critical components needed for the computer to continue functioning. It is also the main memory of the system and provides connectors for other peripherals..</li> <li>2. This particular mother-board was chosen because it is very efficient in terms of usage and power. It can increase or reduce its power according to the system's needs. This increases durability.</li> </ol>
 (RAM)	<ul style="list-style-type: none"> <li>▪ 2 x 2 GB DDR2 800 BUS Transcend</li> </ul>	4	<ol style="list-style-type: none"> <li>1. RAM is needed for a computer to function.</li> <li>2. It acts as a storage medium, storing many files being used on the computer. RAM is necessary for the computer to carry out different tasks.</li> <li>3. It improves a computers' performance.</li> </ol>
 Hard Disk	<ul style="list-style-type: none"> <li>▪ 320 GB hard disk</li> <li>Intel is recommended.</li> <li>Protect Backups</li> <li>Saves Power</li> </ul>	6	<p>1) 320 GB hardisk is needed or more as Tricell needs to store large amount of employee information, data, business transactions etc.</p> <p>2)The hard drive stores all information and a primary hard drive is needed for the computer to run.</p>
Processors	<ul style="list-style-type: none"> <li>Intel® dual-core technology</li> <li>Enhanced Intel SpeedStep® technology</li> </ul>	4	<p>A computer processor performs all the functions and tasks of all softwares and programs. The processor is the “brain” of the computer. It cannot function without this.</p> <p>Intel core 2 duo will enable high speed and smooth computer graphics.</p>

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

<p>Printers</p> 	<ul style="list-style-type: none"> <li>• Auto duplexing</li> <li>• Cloud print</li> <li>• Scanning features</li> <li>• Recommended monthly print limit: 2500- 10,000 pages</li> </ul>	2	<ol style="list-style-type: none"> <li>1) Laser Jet printers are capable of high-quality image output and run at a considerably fast rate..</li> <li>2) It is eco-friendly as it doesn't create sound pollution.</li> <li>3) Used to print out Pay Slips and other forms.</li> <li>4) A color printer is not needed. Therefore buying a standard black-and-white printer saves business cost.</li> </ol>
<p>Compact Disk (CD)/Digital versatile disk rom (DVD-ROM) (DVD Re-writer)</p> 	Sony is recommended.	4	<ol style="list-style-type: none"> <li>1. To read information from a CD/DVD</li> <li>2. To copy information to CD/DVD,</li> </ol>
<p>Battery Back Up (UPS)</p> 	Rahim Afroz 1200V12	4	<ol style="list-style-type: none"> <li>1. A UPS can ensure that a loss of power will not result in data loss as the computer will still be able to operate long enough for data to be saved and the computer to be safely shut down.</li> </ol>
<p>Blank DVD's</p> 	4.7 GB available	20	<ol style="list-style-type: none"> <li>1) For the use of storing information for backup.</li> </ol>

Table-9.1 Hardware requirements specifically explained

## **10. Software**

Type of Software	Software	Justification
<b>Operating System</b>	<b>Windows XP</b> <b>GUI (Graphical User Interface)</b> <b>User Friendly</b> <b>Online help available</b>	<p>An Operating System is needed for a computer to function properly.</p> <p>2) A computer with a known OS will be much easier to maintain than a computer with a less renowned one.</p> <p>3) The new operating system is very easy to use and navigate there by easing customization of files.</p> <p>4) There will be decrease in staff re-training as it is very simple and easy on how to operate windows 8.1.</p>
<b>Microsoft Office 2013</b>	<b>Microsoft Word, Access, Project, Outlook etc.</b>	<p>1) Microsoft Office is one of the best softwares for making forms, storing data, producing statistics. MS Office comes with more than seven softwares to present data in any format</p> <p>2) This is in the latest software version so recording and storing employee data has never been so easy.</p> <p>3) This will be used to store information of the employees and create a simple payslip to be able to print it later.</p>
<b>Anti-Virus</b>	<b>Kaspersky 2014</b> <b>Easily available in the internet</b>	<p>1) Keeping the computer safe from viruses is very important. Kaspersky is one of the best anti-virus softwares. This will prevent the computer from any virus and be immune to system failure.</p> <p>2) Anti Viruses can defend against malicious software and security threats such as spy bots or Trojans.</p>
<b>CD/DVD burn</b>	<b>Nero Essentials</b> <b>Too take regular backups</b>	<p>Nowadays DVD's are used to store information of business as a back up. Each of these contain 4.7 GB or 8.4 GB (dual-layer)</p> <p>Nero helps to burn these files into the blank</p>

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

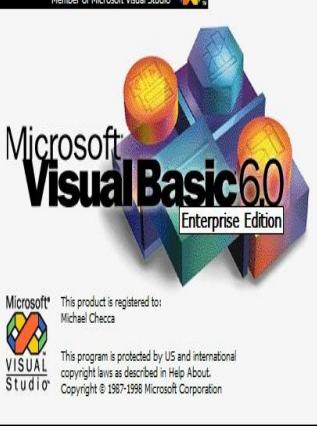
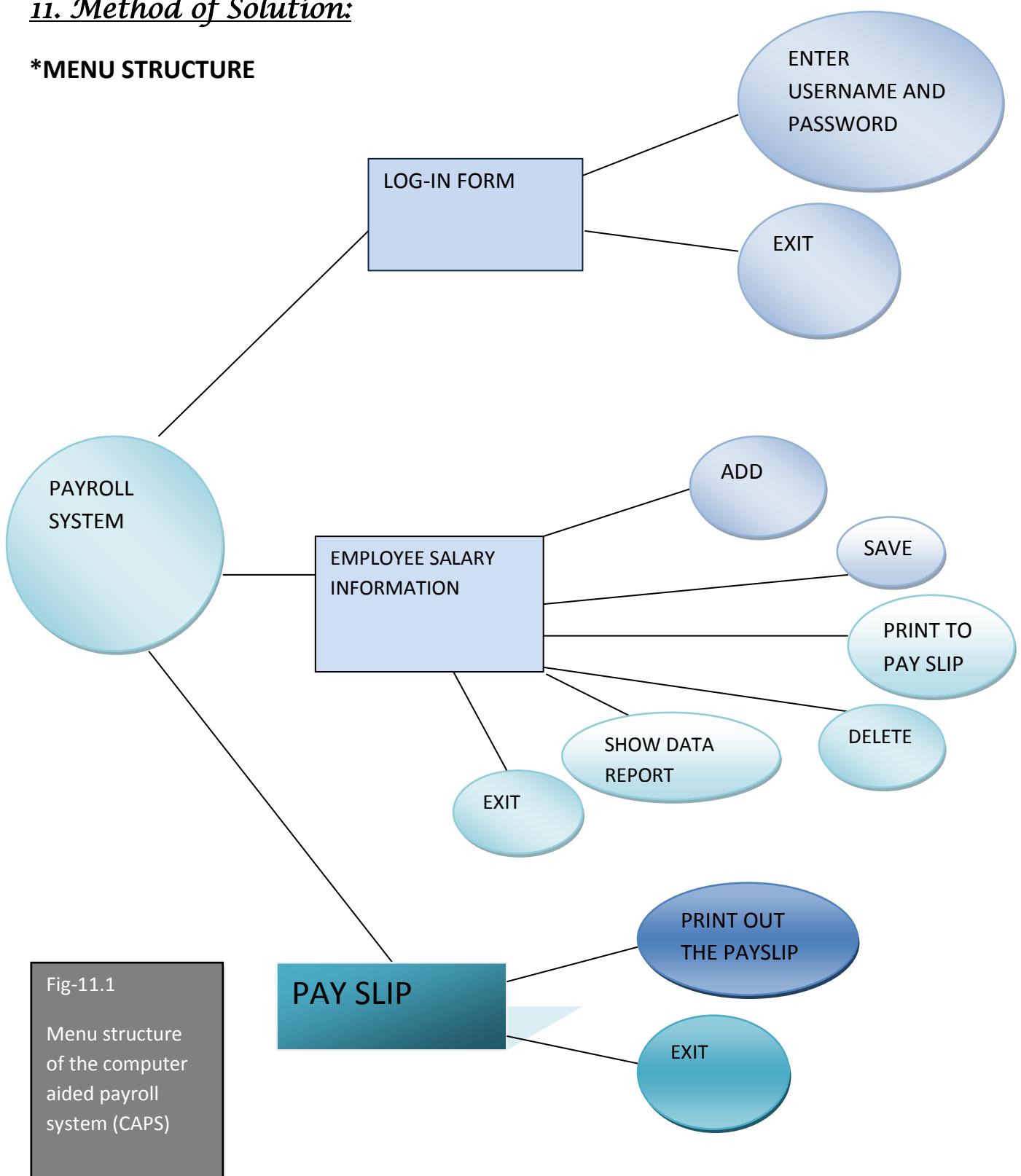
		DVD's to store information.  Nero is capable of handling multi-disc re writes thus increasing efficiency.
<b>Programming</b>	<b>Visual Basic 6.0 or higher (VB60)</b>  <p>This product is registered to: Michael Checa  This program is protected by US and international copyright laws as described in Help About. Copyright © 1987-1998 Microsoft Corporation</p>	Its interface and design makes it easy for beginners to use and understand with the correct guidance.  High Level language  Object Oriented programming language  Easy for beginners to use

Table-10.1 Software requirements specifically explained

**11. Method of Solution:**

**\*MENU STRUCTURE**



Explanation:- This shows the menu structure of the computer aided payroll system (CAPS) of Tricell's company. Starting into three main forms.

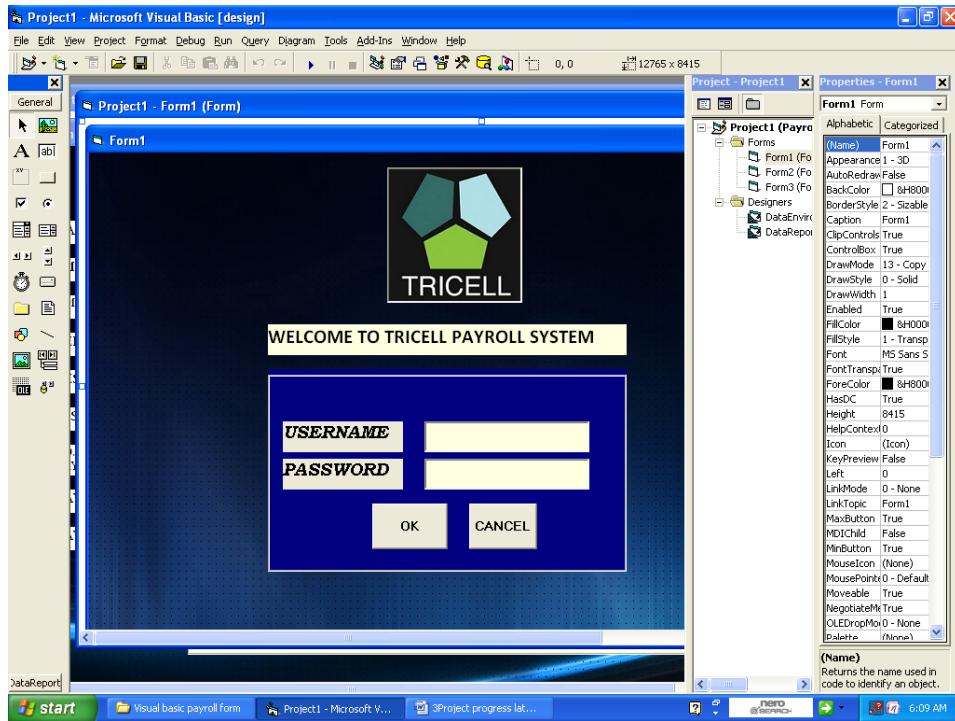
(Form1:- Logging in to the system Form2:- Inputting Employee Salary Information Form3:- Generating the Paysilp )

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

\*Inputs:

### 1) Login Form

#### 1.1 : DESIGN MODE:



Employees type in their username and password and click on the login button to enter the system. The purpose of this form is to provide security.

Fig-11.2  
Log-in form of CAPS  
(Design mode)

Objectives Achieved (OA) :- BO5 (Reference : page 5)

Note:- The coding of this system is shown on page no. 56

#### 1.2 : RUN MODE:



Fig-11.3  
Log-in form of CAPS  
(Run mode)

This form is used by the user to log into the system. The registered credentials are entered and, if correct, the user will log into the system.

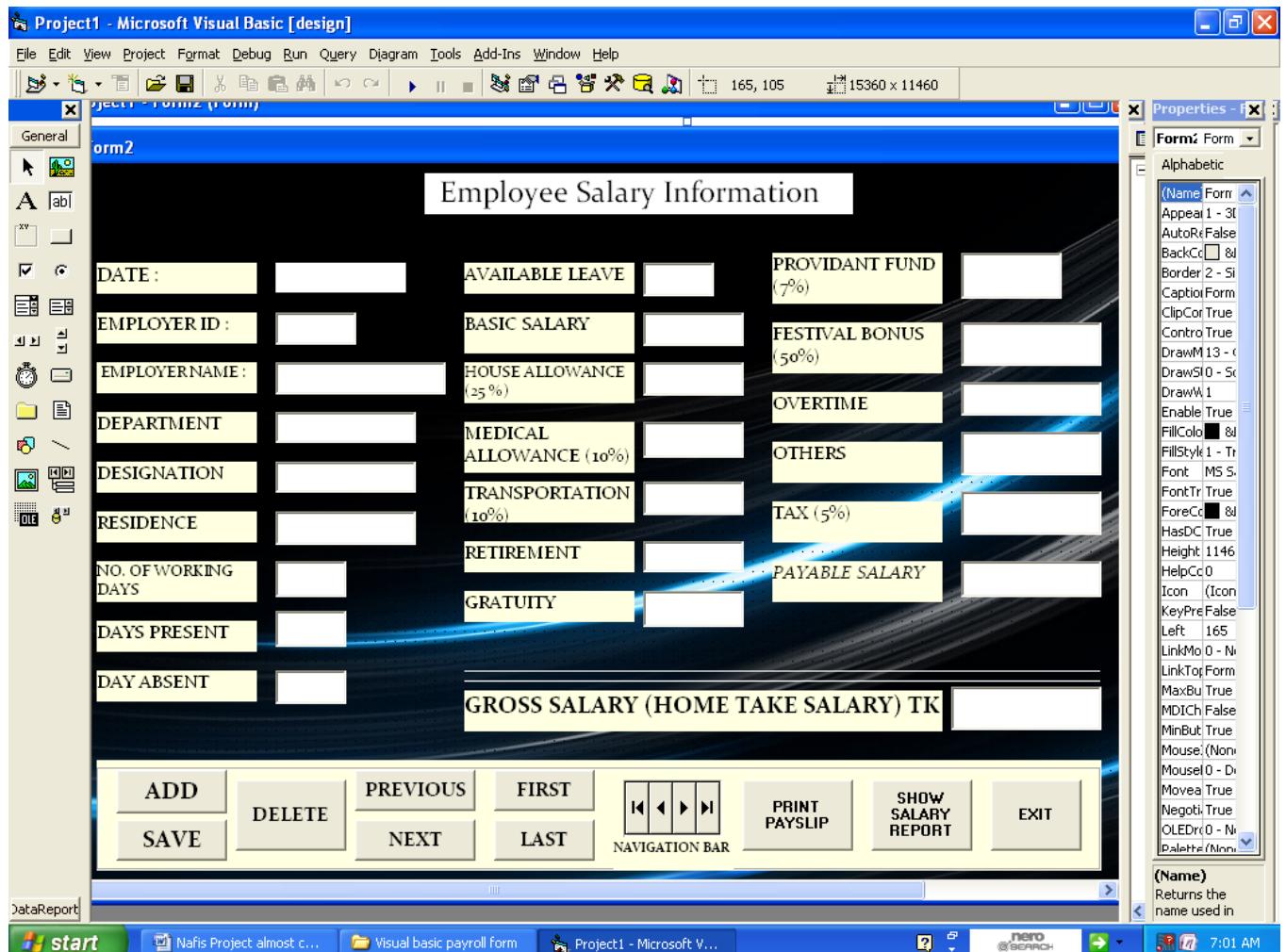
**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no 47)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Form 2

#### Employee Salary Information:

##### 2.1 : DESIGN MODE:



This is Form2 (the employee salary information form). It opens after the user has logged on to the system. This form requires all the employee details, salary, deductions, etc. The employee inputs all the data and payment details to produce the payslip

Fig-11.4

The employee salary information form of CAPS.

**NOTE:-**Annotated coding is shown in the “programming code section” (Reference:- page no 49 )

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

### **Employee Salary Information Form :**

#### **2.2 :RUN MODE:**

Form2

### Employee Salary Information

DATE :	2/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	329
EMPLOYER ID :	2377	BASIC SALARY	4700	FESTIVAL BONUS (50%)	2350
EMPLOYERNAME :	Alif Hossain	HOUSE ALLOWANCE (25%)	1175	OVERTIME	95
DEPARTMENT	Human Res.	MEDICAL ALLOWANCE (10%)	470	OTHERS	0
DESIGNATION	Advisor	TRANSPORTATION (10%)	470	TAX (5%)	235
RESIDENCE	Dhaka	RETIREMENT	500	PAYABLE SALARY	8696
NO. OF WORKING DAYS	25	GRATUITY	0	GROSS SALARY (HOME TAKE SALARY) TK 8696	
DAYS PRESENT	23				
DAY ABSENT	2				

**ADD**   **DELETE**   **PREVIOUS**   **FIRST**   **NEXT**   **LAST**   **NAVIGATION BAR**   **PRINT PAYSILP**   **SHOW SALARY REPORT**   **EXIT**

**NOTE:-**Annotated coding is shown in the “programming code section” (Reference:- page no 47-63 )

Fig-11.5

Employee Salary Information of CAPS  
(RUN MODE)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Outputs:Pay Slip

#### 3.1 : DESIGN MODE:

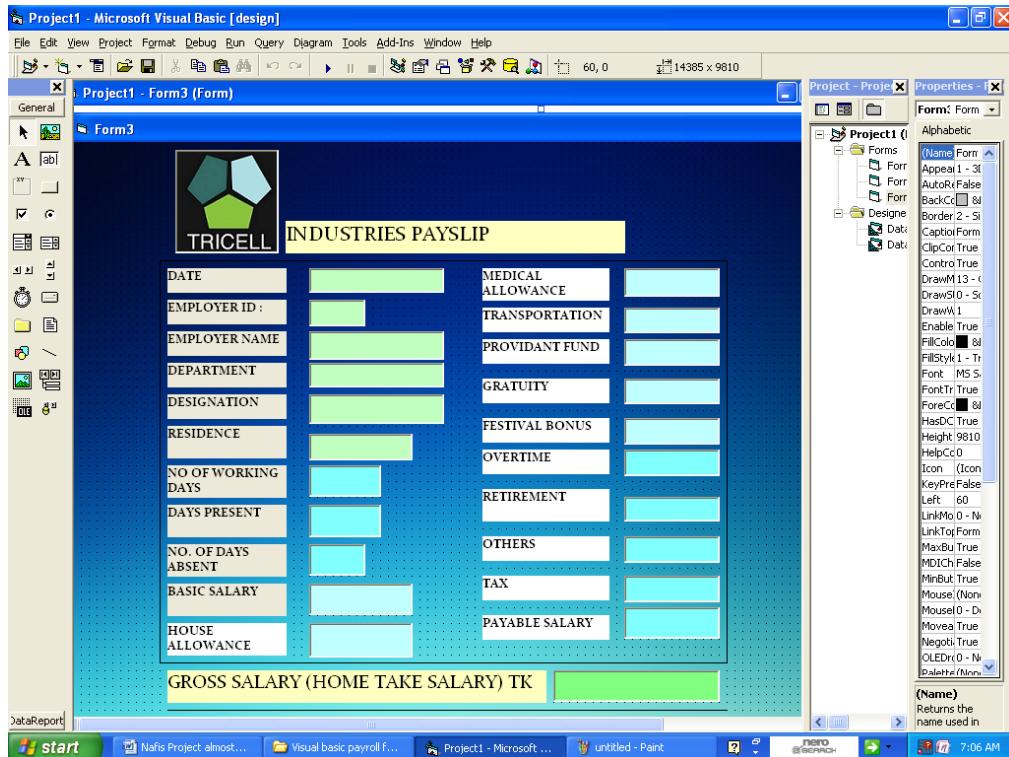


Fig-11.6  
Payslip of  
CAPS (Design  
mode)

This shows the design mode of form 3. This is the output that is processed from form 2. When the print pay slip button is clicked this will show.

**NOTE:-**Annotated coding is shown in the “programming code section” (Reference:- page no 60 )

**3.2 : RUN MODE:**

**INDUSTRIES PAYSPLIT**

DATE	12/01/2014	MEDICAL ALLOWANCE	500
EMPLOYER ID :	2344	TRANSPORTATION	500
EMPLOYER NAME	Nafis Awsaf	PROVIDANT FUND	350
DEPARTMENT	Marketing	GRATUITY	0
DESIGNATION	Manager	FESTIVAL BONUS	2500
RESIDENCE	Dhaka	OVERTIME	450
NO OF WORKING DAYS	25	RETIREMENT	0
DAYS PRESENT	24	OTHERS	69
NO. OF DAYS ABSENT	1	TAX	250
BASIC SALARY	5000	PAYABLE SALARY	9669
HOUSE ALLOWANCE	1250		

GROSS SALARY (HOME TAKE SALARY) TK 9669

This form appears if the user has clicked the SHOW PAY SLIP button. It displays the salary information in a format more fitting of a pay slip. The PRINT PAY SLIP button will initiate the process of printing and the BACK TO SALARY FORM button will take the user back to the employee salary information form.

Fig-11.7  
Payslip of CAPS  
(Run mode)

Annotated coding is shown in the “13.Programming code section” (Reference:-  
page no 55 )

**4: Output that is to be printed :**

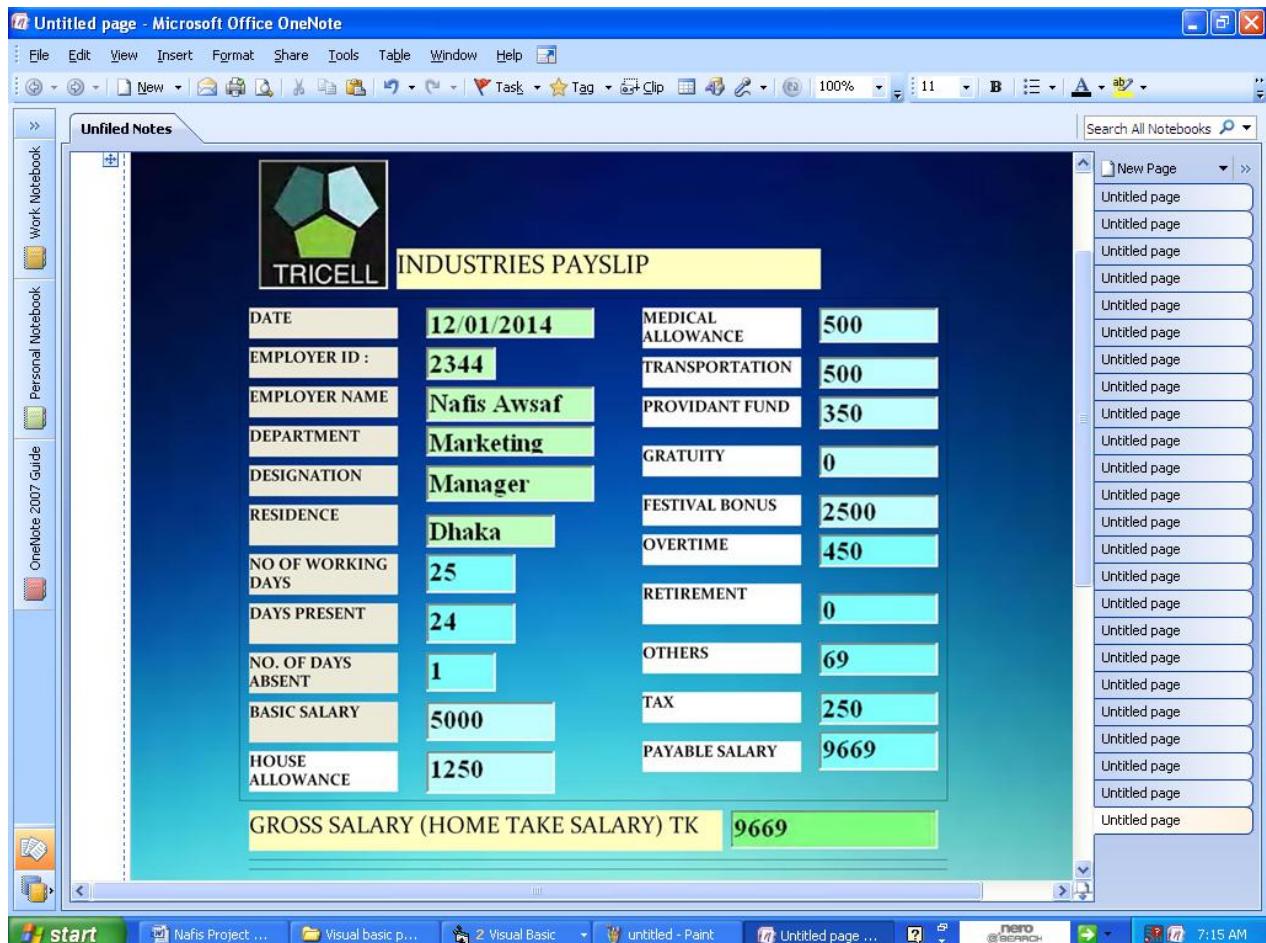


Fig-11.8

Output  
to  
be printed.

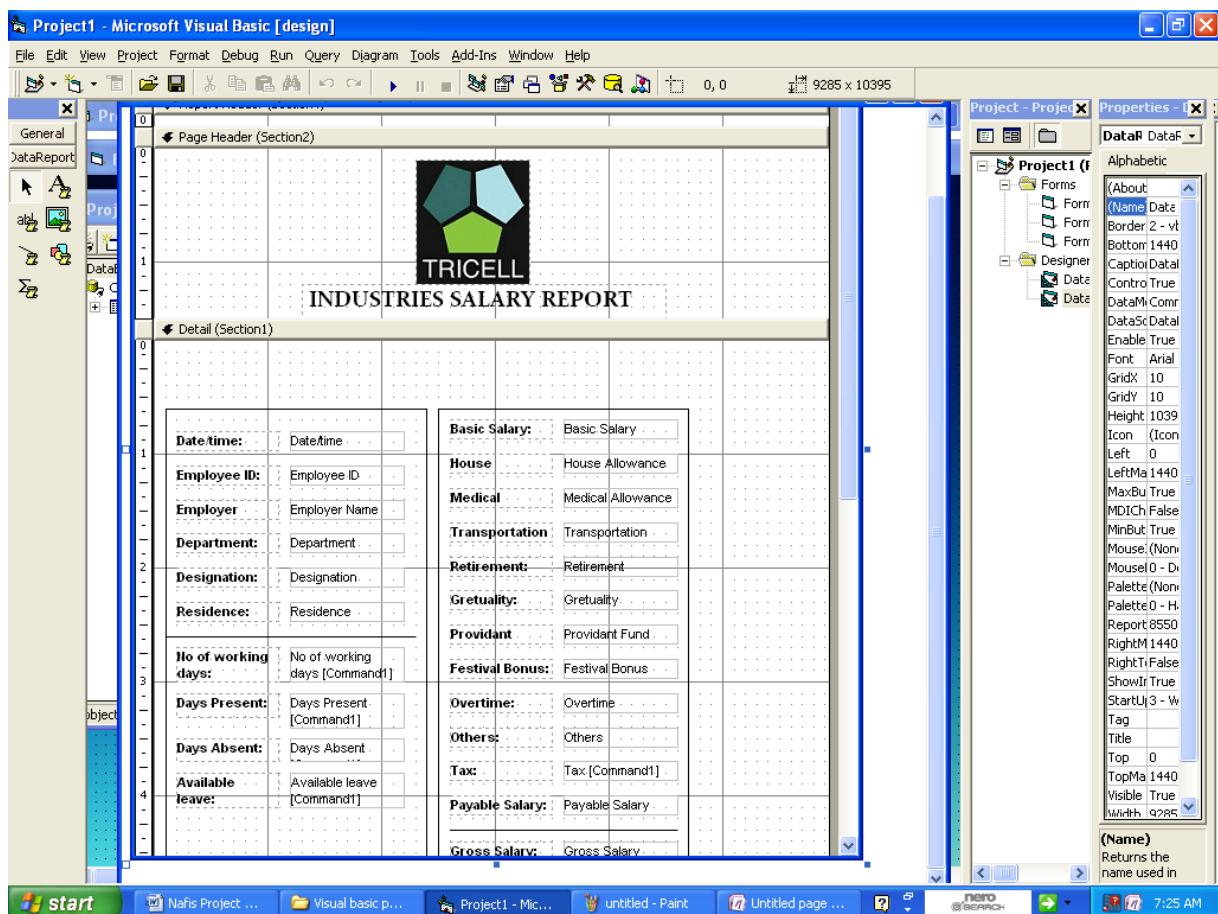
When the payslip has been generated, the printer connected to the computer will print this directly into a A4 sized paper and the payslip will be submitted to the manager.

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no,55)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Salary Report:

#### 5.1: Design mode



This is the salary report of the form. This will show when the show salary report button has been clicked.

Fig-11.9  
Salary Report of CAPS  
(Design mode)

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no 55 )

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

### **5.2:Run mode:**

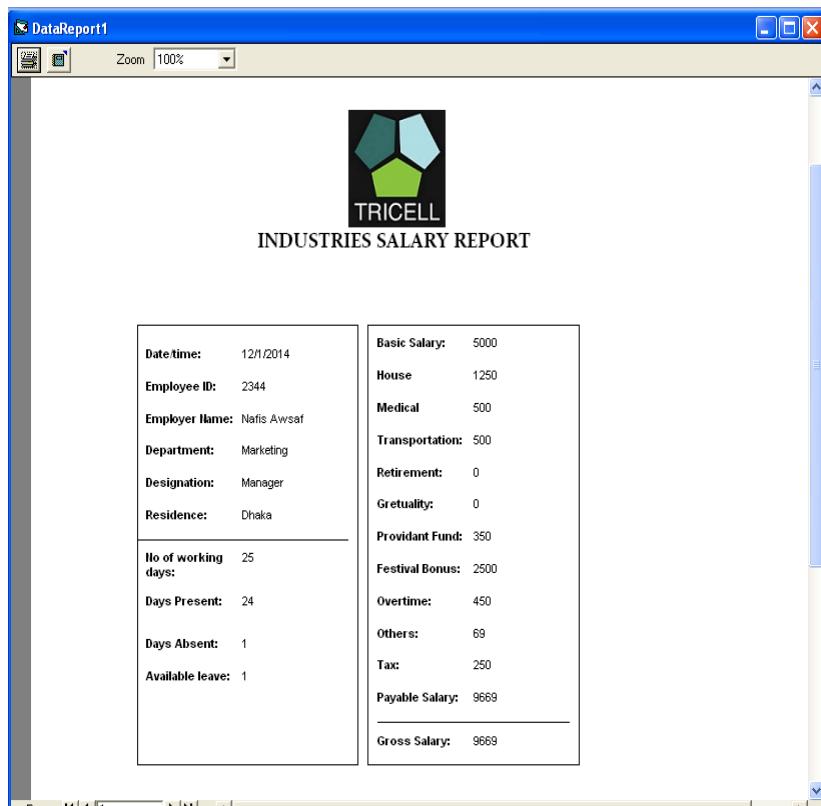


Fig-11.10  
Salary Report  
of CAPS  
(Run mode)

## **6: Database Tables :Username and Password Table**

## Design view

Fig-11.11  
Username  
and  
password  
s table

## **Data Sheet View :-**

	ID	Username	Password	Add New Field
	2	Nafis Awsaf	abczxc	
	3	1232344	dfghdf	
*	(New)			

Fig-11.12  
Username  
and  
passwords  
table  
(Datasheet  
view)

## **Employee Salary Information Table**

### **Design view**

The screenshot shows the Microsoft Access application window in Design view. The title bar reads "Employee Payslip : Database (Access 2000 file format) - Microsoft Access". The ribbon tabs are Home, Create, External Data, Database Tools, and Table Tools, with Table Tools selected. The Design tab is highlighted.

The main area displays "Table1" with the following fields:

Field Name	Data Type	Description
Employee ID	Number	
Employer Name	Text	
Department	Text	
Designation	Text	
Residence	Text	
No of working days	Number	
Days Present	Number	
Days Absent	Number	
Available leave	Number	
Basic Salary	Currency	
House Allowance	Currency	
Medical Allowance	Currency	

A context menu is open over the first row, showing options like Insert Rows, Delete Rows, and Lookup Column. The status bar at the bottom left says "Design view. F6 = Switch panes. F1 = Help." and the bottom right shows the date "Tuesday, April 08, 2014".

**Fig-11.13**  
**Employee  
Salary  
Table  
(Design  
view)**

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

The screenshot shows the Microsoft Access application window in Design view. The ribbon at the top has 'Table Tools' selected under the 'Design' tab. The main area displays 'Table1' with 12 columns: Field Name, Data Type, and Description. Below the table is a 'Field Properties' pane for the 'Medical Allowance' field, which is set to 'Currency'. A tooltip provides information about the field size. The status bar at the bottom indicates 'Design view. F6 = Switch panes. F1 = Help.'

Field Name	Data Type	Description
Medical Allowance	Currency	
Transportation	Currency	
Retirement	Currency	
Gretularity	Currency	
Provident Fund	Currency	
Festival Bonus	Currency	
Overtime	Currency	
Others	Currency	
Tax	Currency	
Payable Salary	Currency	
Gross Salary	Currency	
Date/Time	Date/Time	

Fig-11.14  
Employee Salary Table (Design view)

## DataSheet View:

The screenshot shows the Microsoft Access application window in Datasheet view. The ribbon at the top has 'Table Tools' selected under the 'Datasheet' tab. The main area displays 'Table1' with 9 columns: Employee ID, Employer Name, Department, Designation, Residence, No of working days, Days Present, and Days Absent. The status bar at the bottom indicates 'Datasheet View'.

Employee ID	Employer Name	Department	Designation	Residence	No of working days	Days Present	Days Absent
277	Katherine	Production	Advisor	Los Angeles	26	21	
345	Williams	Production	Director	Toronto	21	20	
567	Kumar	Accounting and F	Manager	Kolkata	25	22	
690	Hassan Rafi	Human Resource	Director	Chittagong	22	20	
1970	Meekail	Marketing	Worker	Barisal	26	21	
2344	Nafis Awsaf	Marketing	Manager	Dhaka	25	24	
2345	Ashiq Rahman	Administration	Manager	Sylhet	24	22	
2377	Alif Hossain	Human Resource	Advisor	Dhaka	25	23	
2568	Sabrina	Advertisement	Advisor	Khulna	24	24	
3029	Mehedi Hassan	Advertisement	Director	Dhaka	25	21	

Fig-11.15  
Employee Salary Table (Datasheet view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

Others	Tax	Payable Salary	Gross Salary	Date/time
\$0.00	\$297.50	\$10,888.50	\$10,888.50	
\$0.00	\$275.00	\$10,065.00	\$10,065.00	
	\$300.00	\$10,980.00	\$10,980.00	
	\$295.00	\$10,797.00	\$10,797.00	
\$0.00	\$170.00	\$6,412.00	\$6,412.00	
\$69.00	\$250.00	\$9,669.00	\$9,669.00	12/30/2013
\$0.00	\$225.00	\$8,475.00	\$8,475.00	
\$0.00	\$235.00	\$8,696.00	\$8,696.00	
\$100.00	\$245.00	\$9,701.00	\$9,701.00	
\$0.00	\$325.00	\$12,185.00	\$12,185.00	

Employee ID	Employer Name	Department	Designation	Residence	Basic Salary	House Allowance	Medical Allowance	Transportation
277 Katherine	Production	Advisor	Los Angeles		\$5,950.00	\$1,487.50	\$595.00	\$595.00
345 Williams	Production	Director	Toronto		\$5,500.00	\$1,375.00	\$550.00	\$550.00
567 Kumar	Accounting and Fi Manager		Kolkata		\$6,000.00	\$1,500.00	\$600.00	\$600.00
690 Hassan Rafi	Human Resources Director		Chittagong		\$5,900.00	\$1,475.00	\$590.00	\$590.00
1970 Meekail	Marketing	Worker	Barisal		\$3,400.00	\$850.00	\$340.00	\$340.00
2344 Nafis Awsaf	Marketing	Manager	Dhaka		\$5,000.00	\$1,250.00	\$500.00	\$500.00
2345 Ashiq Rahman	Administration	Manager	Sylhet		\$4,500.00	\$1,125.00	\$450.00	\$450.00
2377 Alif Hossain	Human Resources Advisor		Dhaka		\$4,700.00	\$1,175.00	\$470.00	\$470.00
2568 Sabrina	Advertisement	Advisor	Khulna		\$4,900.00	\$1,225.00	\$490.00	\$490.00
3029 Mehedi Hassan	Advertisement	Director	Dhaka		\$6,500.00	\$1,625.00	\$650.00	\$650.00

No of working days	Days Present	Days Absent	Available leave	Retirement	Gretuality	Providant Fund	Festival Bonus	Overtime
26	21	5	3	\$0.00	\$0.00	\$416.50	\$2,975.00	\$0.00
21	20	1	3	\$1,000.00	\$0.00	\$385.00	\$2,750.00	\$0.00
25	22	3	2	\$0.00	\$0.00	\$420.00	\$3,000.00	\$0.00
22	20	2	3	\$1,000.00	\$0.00	\$413.00	\$2,950.00	\$0.00
26	21	5	2	\$100.00	\$0.00	\$238.00	\$1,700.00	\$190.00
25	24	1	1	\$0.00	\$0.00	\$350.00	\$2,500.00	\$450.00
24	22	2	1	\$0.00	\$0.00	\$315.00	\$2,250.00	\$240.00
25	23	2	1	\$500.00	\$0.00	\$329.00	\$2,350.00	\$95.00
24	24	0	2	\$345.00	\$234.00	\$343.00	\$2,450.00	\$400.00
25	21	4	3	\$500.00	\$0.00	\$455.00	\$3,250.00	\$290.00

These  
are the  
employee  
payment  
information  
of the  
database

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no )

## 12. ACCURATE METHOD OF SOLUTION

Name of the Label	Purpose/use of the forms	Objectives achieved	Screen shot references of the objectives achieved	Reference: Page no. 3 in the analysis section)
Log in Form (Form-1)	Log-in forms allows secure access to the next form. Unauthorized personnel will fail to do so. It is also user friendly.	BO-5 CO-1	39	Table- 12.1This table shows the objectives achieved by the tables, forms.
Employee Salary Information (Form-2)	It is simple to use and thus saves time. All calculations are done automatically. The user simply needs to type the basic information and the rest will be done.	CO-3 BO-1 BO-2 CO-2	42	
Payslip (Form-3)	This represents the payslip of an employee. All the information are summarized easily and a quick analysis can be made as it is well represented. Additionally it saves resources and is eco friendly.	CO-4 BO-3 BO-4	44	
Employee pay Databasesheet	This allows for compact, easy to navigate and organized storage of all existing employee information.	CO-5 BO-6	46	

## INPUT FORMS:

### Log-in form



Fig-12.2 Shows the username and password form of CAPS.

This ensures and provides security to the system. It is also user friendly.

#### **Objectives achieved:**

(Pg- 5)

\***BO6 , CO1**

**For test results please go to page 67**

When username and password have been entered, it allows us simple and **secure access to the system**.

**For test results please refer to page: 67**

### Output : Payslip:

INDUSTRIES PAYSPLIT			
DATE	1/2/2014	MEDICAL ALLOWANCE	590
EMPLOYER ID :	690	TRANSPORTATION	590
EMPLOYER NAME	Hassan Rafi	PROVIDANT FUND	413
DEPARTMENT	Human Resou	GRATUITY	0
DESIGNATION	Director	FESTIVAL BONUS	2950
RESIDENCE	Chittagong	OVERTIME	0
NO OF WORKING DAYS	22	RETIREMENT	1000
DAYS PRESENT	20	OTHERS	
NO. OF DAYS ABSENT	2	TAX	295
BASIC SALARY	5900	PAYABLE SALARY	10797
HOUSE ALLOWANCE	1475		
GROSS SALARY (HOME TAKE SALARY) TK			
<b>10797</b>			

Fig-12.3 Shows the pay slip that is to be printed from inputting all the salary information in CAPS

This provides a well structured, clear accurate payslip of an employee on which everyone can understand easily. This reduces the need for paper and makes it environment friendly.

#### **Objectives Achieved:**

**(pg5)**

**BO4, BO5, CO4**

**For test results please go to page: 67**

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Employee Salary Information Form:

**Employee Salary Information**

DATE :	1/2/2014	AVAILABLE LEAVE	3	PROVIDANT FUND (7%)	413
EMPLOYER ID :	690	BASIC SALARY	5900	FESTIVAL BONUS (50%)	2950
EMPLOYERNAME :	Hassan Rafi	HOUSE ALLOWANCE (25%)	1475	OVERTIME	0
DEPARTMENT	Human Res.	MEDICAL ALLOWANCE (10%)	590	OTHERS	
DESIGNATION	Director	TRANSPORTATION (10%)	590	TAX (5%)	295
RESIDENCE	Chittagong	RETIREMENT	1000	PAYABLE SALARY	10797
NO. OF WORKING DAYS	22	GRATUITY	0	<b>GROSS SALARY (HOME TAKE SALARY) TK</b> 10797	
DAYS PRESENT	20				
DAY ABSENT	2				

**NAVIGATION BAR**

ADD    DELETE    PREVIOUS    FIRST    BACK    FORWARD    LAST    PRINT PAYSILP    SHOW SALARY REPORT    EXIT  
SAVE    NEXT

The pay of each employee is calculated automatically thereby reducing mistakes and saving time. Problems of unclear handwriting are solved also using it saves paper thereby making it environmentally friendly. **Objectives Achieved:- BO1,BO2,BO3,BO4,CO2**

**For test results please refer to page: 67**

Fig-12.4 shows the employee salary information for of CAPS.

### **Database Tables:**

\*\*\*They solve the problem of disorganised cabinets as all the information about employees is now stored in the database.

\*\*\*It is easier to find, search, organize all the information.

ID	Username	Password	Add New Field
2	Nafis Awsaf	abczxc	
3	1232344	dfghdf	
*	(New)		

Fig-12.5 Shows the database table of username and password.

Employee ID	Employer Name	Department	Designation	Residence	No of working days
277	Katherine	Production	Advisor	Los Angeles	26
345	Williams	Production	Director	Toronto	21
567	Kumar	Accounting and F	Manager	Kolkata	25
690	Hassan Rafi	Human Resource	Director	Chittagong	22
1970	Meekail	Marketing	Worker	Barisal	26
2344	Nafis Awsaf	Marketing	Manager	Dhaka	25
2345	Ashiq Rahman	Administration	Manager	Sylhet	24
2377	Alif Hossain	Human Resource	Advisor	Dhaka	25
2568	Sabrina	Advertisement	Advisor	Khulna	24
3029	Mehedi Hassan	Advertisement	Director	Dhaka	25
9678	Rakib Anwarul Haque	Human Resource	Head	Chittagong	30
*					

**Objectives achieved by all the database tables**

**(Pg. 3):**

**BO2**

**CO3**

**CO4**

**CO5**

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Outputs:

Salary Report

### Run view:

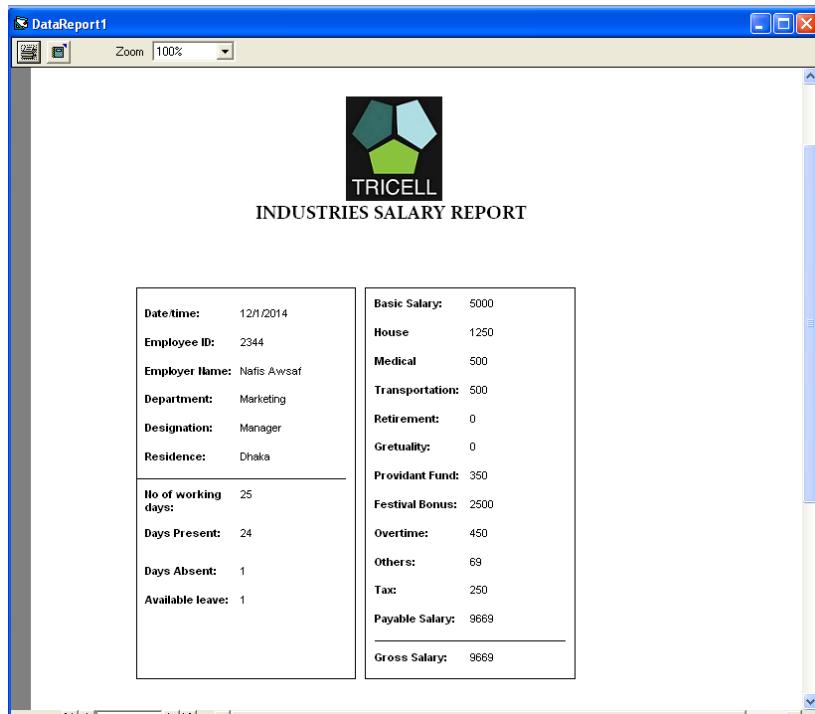


Fig-12.6 Shows the run view of the data report

It is easy to navigate and simple in structure. This is well organized and presentation is absolutely clear showing the payment details about the employee. Time is saved and human errors are reduced by this.

**Objectives achieved by the report (Pg 3) : CO1, CO2, CO4, CO5**

### Design view:

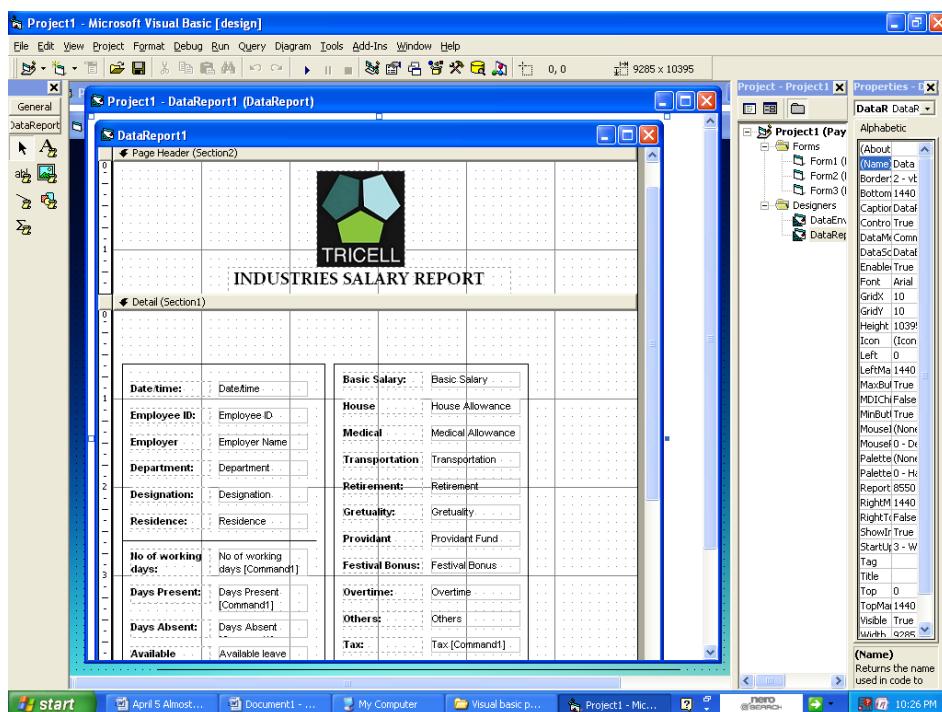


Fig-12.7 Shows the design view of the data report

### **13. PROGRAMMING CODE:**

**Microsoft Visual Basic 6.0 was used in order to build this system and be introduced to Tricell. The programming language used are shown below:**

### **Login Form:**

```
Private Sub Command1_Click()
If Text1 = "qwer13" And Text2 = "qwerty" Then
    Form2.Show
    Unload Me
Else
    MsgBox "Username or password is incorrect. Please try again"
End If
End Sub

Private Sub Command2_Click()
End
End Sub
```

This coding allows the user to log-in to the system in a secure way. If the correct username and password is entered, then the user is logged on to the employee salary information form. From there they can print their pay-slip. If the username and password is not successfully entered (mistakes or password forgotten) then the user will fail to log in to the system. When the wrong credentials are entered an error message will appear showing “the user name or password is incorrect, please try again”.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

(ADD)

```
Private Sub Command1_Click()  
Adodc1.Recordset.AddNew  
MsgBox "Record has been added successfully."  
Text2.SetFocus  
On Error Resume Next  
End Sub
```

This allows the user to add a new employee salary information form.

(SAVE)

```
Private Sub Command2_Click()  
Adodc1.Recordset.Save  
MsgBox "Record has been saved successfully."  
On Error Resume Next  
End Sub
```

This allows the user to save the existing employee salary information form that had been recently created or added.

(PREVIOUS)

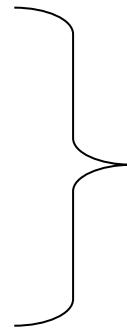
```
Private Sub Command5_Click()  
Adodc1.Recordset.MovePrevious  
On Error Resume Next  
End Sub
```

This allows the user to navigate to the previous form of an employee's salary information.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

(NEXT)

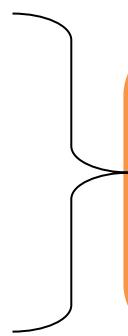
```
Private Sub Command4_Click()  
Adodc1.Recordset.MoveNext  
On Error Resume Next  
End Sub
```



This allows the user to navigate to the next form of an employee's salary information.

(FIRST)

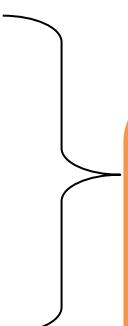
```
Private Sub Command6_Click()  
Adodc1.Recordset.MoveFirst  
On Error Resume Next  
End Sub
```



This allows the user to navigate to the first form of an employee's salary information.

(LAST)

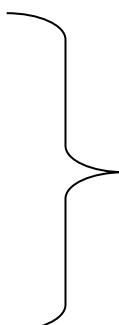
```
Private Sub Command7_Click()  
Adodc1.Recordset.MoveLast  
On Error Resume Next  
End Sub
```



This allows the user to navigate to the last form of an employee's salary information.

(DELETE)

```
Private Sub Command3_Click()  
Adodc1.Recordset.Delete  
MsgBox "Record has been deleted successfully"  
On Error Resume Next  
End Sub
```



This allows the user to delete the existing employee salary information form. The record is deleted from the database.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

(PRINT)

```
Private Sub Command8_Click()  
  
Form3.Text10.Text = Form2.Text10.Text  
  
Form3.Text11.Text = Form2.Text11.Text  
  
Form3.Text12.Text = Form2.Text12.Text  
  
Form3.Text13.Text = Form2.Text13.Text  
  
Form3.Text14.Text = Form2.Text14.Text  
  
Form3.Text15.Text = Form2.Text15.Text  
  
Form3.Text16.Text = Form2.Text16.Text  
  
Form3.Text17.Text = Form2.Text17.Text  
  
Form3.Text19.Text = Form2.Text19.Text  
  
Form3.Text20.Text = Form2.Text20.Text  
  
Form3.Text21.Text = Form2.Text21.Text  
  
Form3.Text6.Text = Form2.Text24.Text  
  
Form3.Text8.Text = Form2.Text26.Text  
  
Form3.Text1.Text = Form2.Text18.Text  
  
Form3.Text5.Text = Form2.Text2.Text  
  
Form3.Text3.Text = Form2.Text23.Text  
  
Form3.Text7.Text = Form2.Text6.Text  
  
Form3.Text2.Text = Form2.Text1.Text  
  
Form3.Text4.Text = Form2.Text28.Text  
  
Form3.Text9.Text = Form2.Text27.Text  
  
Form3.Show  
  
End Sub
```



This transfers all the information from the employee salary information form to the pay-slip form. When the user clicks the PRINT button the action is done.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

(EXIT)

```
Private Sub Command9_Click()
```

```
Unload Me
```

```
Form1.Show
```

```
End Sub
```

(EMPLOYEE NAME)

```
Private Sub Text2_KeyPress(KeyAscii As Integer)
```

```
KeyAscii = Asc(Chr(KeyAscii))
```

```
If KeyAscii = 32 Then Exit Sub
```

```
If IsNumeric(Chr(KeyAscii)) Or _
```

```
(KeyAscii>= 33 AndKeyAscii<= 45) Or _
```

```
(KeyAscii>= 47 AndKeyAscii<= 64) Or _
```

```
(KeyAscii>= 91 AndKeyAscii<= 96) Or _
```

```
(KeyAscii>= 123 AndKeyAscii<= 126) Then
```

```
KeyAscii = 0
```

```
MsgBox "Employee's name should be in letters!"
```

```
End If
```

```
End Sub
```

This generates an error message when a numerical character is entered in the employee name field.

(DEPARTMENT)

```
Private Sub Text1_KeyPress(KeyAscii As Integer)
```

```
KeyAscii = Asc(Chr(KeyAscii))
```

```
If KeyAscii = 32 Then Exit Sub
```

```
If IsNumeric(Chr(KeyAscii)) Or _
```

This generates an error message when a numerical character is entered in the department field.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

```
(KeyAscii>= 33 AndKeyAscii<= 45) Or _  
(KeyAscii>= 47 AndKeyAscii<= 64) Or _  
(KeyAscii>= 91 AndKeyAscii<= 96) Or _  
(KeyAscii>= 123 AndKeyAscii<= 126) Then  
KeyAscii = 0  
MsgBox "Department should be in letters!"  
End If
```

End Sub

### **(DESIGNATION)**

```
Private Sub Text28_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
If KeyAscii = 32 Then Exit Sub  
If IsNumeric(Chr(KeyAscii)) Or _  
(KeyAscii>= 33 AndKeyAscii<= 45) Or _  
(KeyAscii>= 47 AndKeyAscii<= 64) Or _  
(KeyAscii>= 91 AndKeyAscii<= 96) Or _  
(KeyAscii>= 123 AndKeyAscii<= 126) Then  
KeyAscii = 0  
MsgBox "Designation should be in letters!"  
End If
```

This generates an error message when a numerical character is entered in the Designation field.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

(RESIDENCE)

```
Private Sub Text28_KeyPress(KeyAscii As Integer)
KeyAscii = Asc(Chr(KeyAscii))

If KeyAscii = 32 Then Exit Sub

If IsNumeric(Chr(KeyAscii)) Or _
(KeyAscii>= 33 AndKeyAscii<= 45) Or _
(KeyAscii>= 47 AndKeyAscii<= 64) Or _
(KeyAscii>= 91 AndKeyAscii<= 96) Or _
(KeyAscii>= 123 AndKeyAscii<= 126) Then

KeyAscii = 0

MsgBox "Residence should be in letters!"

End If

End Sub
```

This generates an error message when a numerical character is entered in the Residence field.

(EMPLOYER ID) ERROR

```
Private Sub Text26_KeyPress(KeyAscii As Integer)
KeyAscii = Asc(Chr(KeyAscii))

If (KeyAscii>= 32 AndKeyAscii<= 47) Or _
(KeyAscii>= 58 AndKeyAscii<= 126) Then

KeyAscii = 0

MsgBox "Employee ID should be in numbers!"
```

This generates an error message when an alphabetical character is entered in the Employee ID field.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

End If

End Sub

(No. of working days)

```
Private Sub Text18_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
KeyAscii = 0  
MsgBox "No. of working Days should be in numbers!"  
End If
```

End Sub

(DAYS PRESENT)

```
Private Sub Text22_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
KeyAscii = 0  
MsgBox "Days Present should be in numbers!"  
End If  
End Sub
```

This generates an error message when an alphabetical character is entered in the number of working days field.

This generates an error message when an alphabetical character is entered in the number of days present field.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

(DAYS ABSENT)

```
Private Sub Text23_Click()
If Text22.Text = "" Or Text22.Text = "0" Or Text18.Text = "" Or Text18.Text = "0" Then
    MsgBox "The Working Days or Days Present fields are empty!"
End If
Text23.Text = Val(Text18.Text) - Val(Text22.Text)
End Sub
```

(AVAILABLE LEAVE)

```
Private Sub Text25_KeyPress(KeyAscii As Integer)
KeyAscii = Asc(Chr(KeyAscii))
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _
    (KeyAscii>= 58 AndKeyAscii<= 126) Then
    KeyAscii = 0
    MsgBox "Available Leave should be in numbers!"
End If
End Sub
```

(BASIC SALARY)

```
Private Sub Text10_KeyPress(KeyAscii As Integer)
KeyAscii = Asc(Chr(KeyAscii))
```

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

```
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
    (KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
    KeyAscii = 0  
  
    MsgBox "basic salary be in numbers!"  
  
End If  
  
End Sub
```

### (HOUSE ALLOWANCE)

```
Private Sub Text11_Click()  
  
If Text10.Text = "" Or Text10.Text = "0" Then  
  
    MsgBox "Please fill the Basic Salary field to calculate House Allowance"  
  
End If  
  
Text11.Text = (Val(Text10.Text) * 25) / 100  
  
End Sub
```

This generates an error message if there is an attempt to calculate House Allowance without filling the Basic Salary field.

### (MEDICAL ALLOWANCE)

```
Private Sub Text12_Click()  
  
If Text10.Text = "" Or Text10.Text = "0" Then  
  
    MsgBox "Please fill the Basic Salary field to calculate Medical Allowance"  
  
End If  
  
Text12.Text = (Val(Text10.Text) * 10) / 100  
  
End Sub
```

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

(TRANSPORTATION)

```
Private Sub Text13_Click()  
  
If Text10.Text = "" Or Text10.Text = "0" Then  
  
MsgBox "Please fill the Basic Salary field to calculate Transportation"  
  
End If  
  
Text13.Text = (Val(Text10.Text) * 10) / 100  
  
End Sub
```

(RETIREMENT)

```
Private Sub Text27_KeyPress(KeyAscii As Integer)  
  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
    (KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "Retirement should be in numbers!"  
  
End If  
  
End Sub
```

This generates an error message when an alphabetical character is entered in the Retirement field.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

(GRATUITY)

```
Private Sub Text14_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
KeyAscii = 0  
MsgBox "GRATUITY should be in numbers!"  
End If
```

This generates an error message when an alphabetical character is entered in the Gratuity field.

End Sub

(PROVIDANT FUND)

```
Private Sub Text15_Click()  
If Text10.Text = "" Or Text10.Text = "0" Then  
MsgBox "Please fill the Basic Salary field to calculate Provident Fund"  
End If  
Text15.Text = (Val(Text10.Text) * 7) / 100  
End Sub
```

This generates an error message if there is an attempt to calculate Provident without filling the Basic Salary field.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### (FESTIVAL BONUS)

```
Private Sub Text16_Click()  
  
If Text10.Text = "" Or Text10.Text = "0" Then  
  
MsgBox "Please fill the Basic Salary field to calculate Festival Bonus"  
  
End If  
  
Text16.Text = (Val(Text10.Text) * 50) / 100  
  
End Sub
```

This generates an error message if there is an attempt to calculate Festival Bonus without filling the Basic Salary field.

### (OVERTIME)

```
Private Sub Text17_KeyPress(KeyAscii As Integer)  
  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "Overtime should be in numbers!"  
  
End If  
  
End Sub
```

This generates an error message when an alphabetical character is entered in the Overtime field.

### (OTHERS)

```
Private Sub Text19_KeyPress(KeyAscii As Integer)  
  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then
```

This generates an error message when an alphabetical character is entered in the Others field.

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

```
KeyAscii = 0
```

```
MsgBox "Others should be in numbers!"
```

```
End If
```

```
End Sub
```

```
(TAX) *empty field
```

```
Private Sub Text20_Click()
```

```
If Text10.Text = "" Or Text10.Text = "0" Then
```

```
MsgBox "Please fill the Basic Salary field to calculate Tax"
```

```
End If
```

```
Text20.Text = (Val(Text10.Text) * 5) / 100
```

```
End Sub
```

```
(GROSS SALARY) *empty field
```

```
Private Sub Text24_Click()
```

```
If Text10.Text = "" Or Text11.Text = "" Or Text12.Text = "" Or Text13.Text = "" Or Text27.Text  
= "" Or Text14.Text = "" Or Text15.Text = "" Or Text16.Text = "" Or Text17.Text = "" Or  
Text19.Text = "" Or Text20.Text = "" Or Text21.Text = "" Then
```

```
MsgBox "The Basic Salary or House Allowance or Medical Allowance or Transportation or  
Retirement or Gratuity or Provident Fund or Festival Bonus or Overtime or Others Or Tax  
or Payable Salary fields are empty"
```

```
End If
```

```
If Val(Text25.Text) > 0 Then
```

```
'Text24.Text = (Val(Text21.Text) * Val(Text22.Text)) / Val(Text18.Text)
```

```
Text24.Text = (Val(Text21.Text) * Val(Text18.Text)) / Val(Text18.Text)
```

```
End If
```

```
If Val(Text25.Text) < 1 Then
```

```
'Text24.Text = (Val(Text21.Text) * Val(Text18.Text)) / Val(Text18.Text)
```

```
Text24.Text = (Val(Text21.Text) * Val(Text22.Text)) / Val(Text18.Text)
```

This generates an error message if there is an attempt to calculate Tax without filling the Basic Salary field.

This generates an error message if there is an attempt to calculate Gross Salary without filling the Basic Salary, House Allowance, Transportation, Retirement, Gratuity, Provident Fund, Festival Bonus, Overtime, Other, Tax Payable salary fields are empty

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

End If

End Sub

(GROSS SALARY)

```
Private Sub Text24_KeyPress(KeyAscii As Integer)
KeyAscii = Asc(Chr(KeyAscii))
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _
(KeyAscii>= 58 AndKeyAscii<= 126) Then
KeyAscii = 0
MsgBox "GROSS SALARY SHOULD BE IN MUNBERS!"
End If
End Sub
```

This generates an error message when an alphabetical character is entered in the Gross Salary field.

(HOUSE ALLOWANCE)

```
Private Sub Text11_KeyPress(KeyAscii As Integer)
KeyAscii = Asc(Chr(KeyAscii))
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _
(KeyAscii>= 58 AndKeyAscii<= 126) Then
KeyAscii = 0
MsgBox "HOUSE ALLOWANCE should be in numbers!"
End If
End Sub
```

This generates an error message when an alphabetical character is entered in the House Allowance field.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

### (MEDICAL ALLOWANCE)

```
Private Sub Text12_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "MEDICAL ALLOWANCE be in numbers!"  
  
End If  
  
End Sub
```

This generates an error message when an alphabetical character is entered in the Medical Allowance field.

### (TRANSPORTATION)

```
Private Sub Text13_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "Others should be in numbers!"  
  
End If  
  
End Sub
```

This generates an error message when an alphabetical character is entered in the Transportation field.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

### **(PROVIDANT FUND)**

```
Private Sub Text15_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "PROVIDANT FUND should be in numbers!"  
  
End If  
  
End Sub
```

This generates an error message when an alphabetical character is entered in the Provident Fund.

### **(FESTIVAL BONUS)**

```
Private Sub Text16_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "FESTIVAL BONUS should be in numbers!"  
  
End If  
  
End Sub
```

This generates an error message when an alphabetical character is entered in the Festival Bonus field.

### **(TAX)**

```
Private Sub Text20_KeyPress(KeyAscii As Integer)  
KeyAscii = Asc(Chr(KeyAscii))  
  
If (KeyAscii>= 32 AndKeyAscii<= 47) Or _  
(KeyAscii>= 58 AndKeyAscii<= 126) Then  
  
KeyAscii = 0  
  
MsgBox "Others should be in numbers!"  
  
End If
```

This generates an error message when an alphabetical character is entered in the Others field.

## 14. Test Plan

Field Name	Validation	Data used in Testing	Type of Data	Expected Result	Actual Result	Objectives achieved and test result
Username	Presence check	6989	Normal	Accepted	Accepted	OA: {BO5, BO4, BO6, BO2, BO1, CO2, CO3 CO4} TS: {77-90}
		-----	Abnormal	Rejected	Rejected	Page no.3 (Objectives)
		12345678910	Extreme	Rejected	Accepted	
Password	<ul style="list-style-type: none"> <li>• Presence check</li> <li>• Length check</li> </ul>	1234	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		987654321	Extreme	Accepted	Accepted	

**COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

For Employee payment form:

Field Name	Validation	Data used in testing	Data type	Expected result	Actual Result	Objectives and test results achieved
Employee Name	Presence Check	Hassan Rafi	Normal	Accepted	Accepted	<p>OA: {BO5, BO4, BO6, BO2, BO1, CO2, CO3, CO4}</p> <p>TS: {77-90}</p> <p>Page no.3 (Objectives)</p>
		----- ---	Abnormal	Rejected	Rejected	
		12345	Abnormal	Abnormal	Rejected	
		Mohammad Hassan Rafi Golamud din Rob	Extreme	Accepted	Accepted	
Number of days worked	Numeric Check Presence Check	23	Normal	Accepted	Accepted	
		----- ---	Abnormal	Rejected	Rejected	
		1080	Abnormal	Rejected	Accepted	
		31	Extreme	Accepted	Accepted	
Days Present	Presence check Numeric check	19	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		31	Extreme	Rejected	Accepted	
Basic Salary	Presence check Numeric check	15900	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		Fifteen thousand nine hundred	Abnormal	Rejected	Rejected	

**COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

Provident Fund	Presence check Numeric check	2400	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		Two thousand four hundred	Abnormal	Rejected	Rejected	
Medical Allowance	Presence check Numeric check	1900	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		One thousand nine hundred	Abnormal	Rejected	Rejected	
Transportation	Presence check Numeric check	2000	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		Two thousand	Abnormal	Rejected	Rejected	
Others	Presence check Numeric check	1000	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		--	Abnormal	Rejected	Rejected	
Festival Bonus	Presence check Numeric	1500	Normal	Accepted	Accepted	

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

	check	----- ---	Abnormal	Rejected	Rejected	
	<b>One thousand five hundred</b>		Abnormal	Rejected	Rejected	

Table-14.1 Each field of the employee salary information tested as normal, abnormal and extreme data.

## **15. TESTING RESULTS**

**Login form:**

**Normal Data**

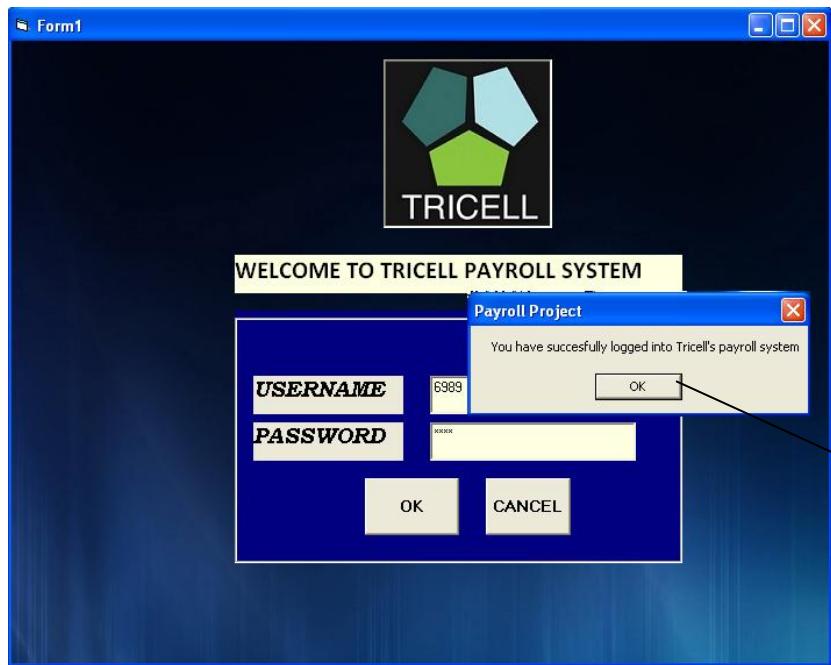


Fig name-15.1 Log-in form with normal data (run view)

Correct username and password have been entered.

When the correct credentials have been entered a message box appears showing the entry to the system have been successful.

**Objective achieved: BO5, BO6Page no. 3-4**

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- pg 57)

**Abnormal Data:**

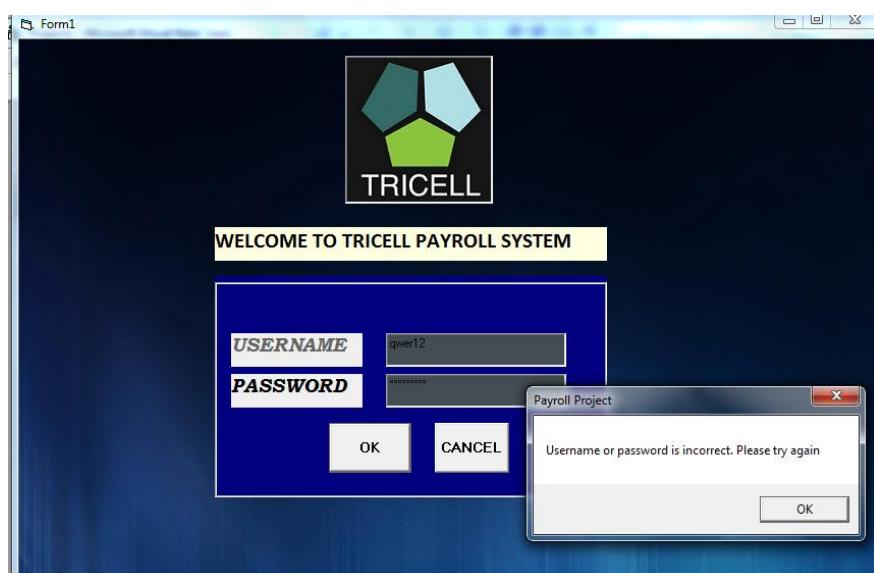
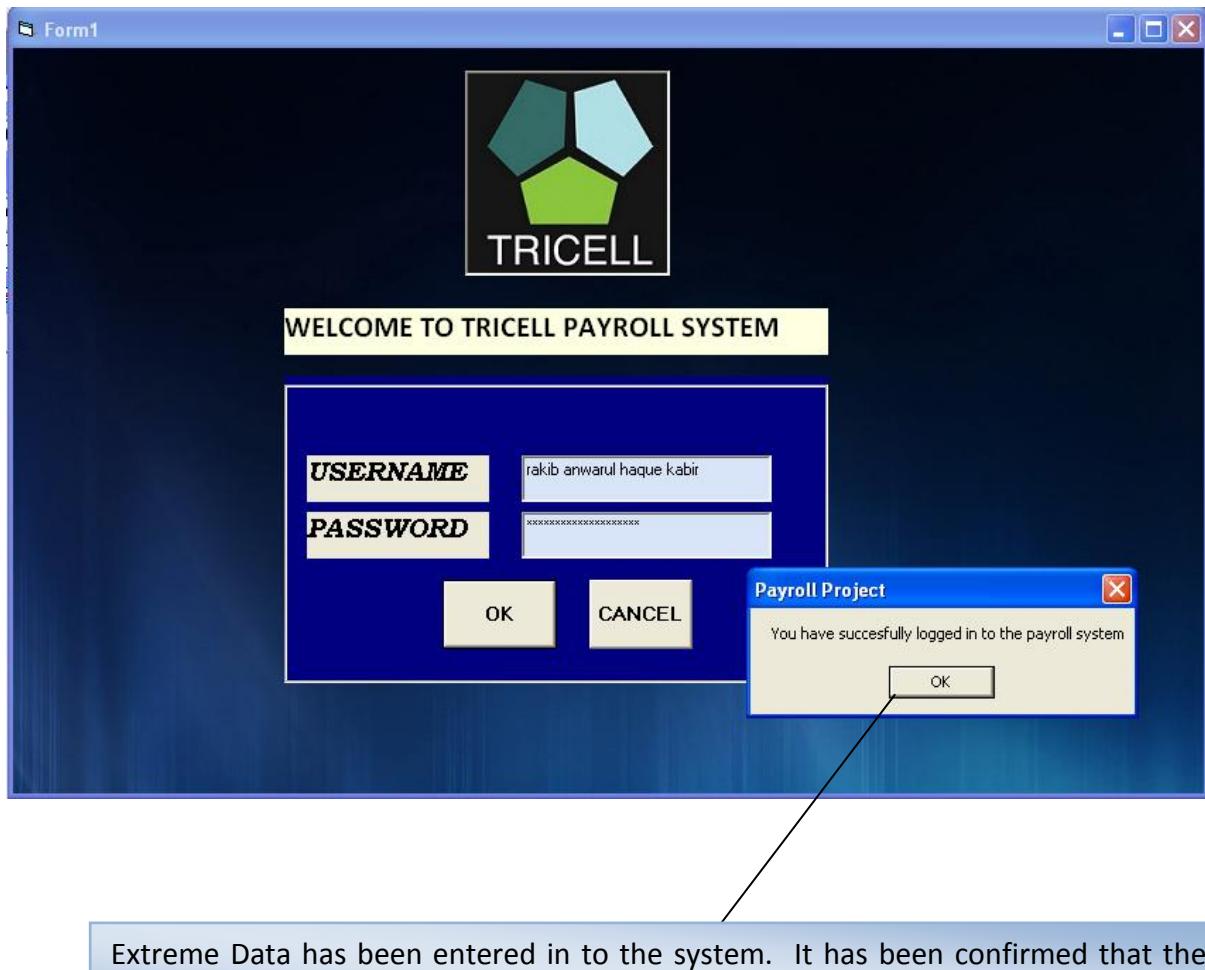


Fig name-15.2 Log-in form with abnormal data (run view)

Incorrect user name or password has led the system to show an error message showing incorrect username or password has been entered. The data is not accepted,

**Extreme Data:**



**Objective achieved: BO5, BO6**

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no, )

Fig name-15.3 Log-in form with extreme data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Employee Salary Information:

#### \*Normal Data:

Fig name-15.4 Employee Salary Information form with normal data (run view)

The screenshot shows the 'Employee Salary Information' form with various input fields for employee details and salary components. A message box in the center says 'Record has been added successfully.' with an 'OK' button. An orange arrow points from the text 'When the ADD button have been clicked a message box appears stating the record has been added successfully.' to the 'OK' button.

DATE :		AVAILABLE LEAVE		PROVIDANT FUND (5%)	
EMPLOYER ID :		BASIC SALARY		FESTIVAL BONUS (50%)	
EMPLOYER NAME :		HOUSE ALLOWANCE (25%)		OVERTIME	
DEPARTMENT		MEDICAL ALLOWANCE (10%)		OTHERS	
DESIGNATION		TRANSPORTATION (10%)		TAX (5%)	
RESIDENCE		RETIREMENT		Payroll Project	
NO. OF WORKING DAYS		GRATUITY		GROSS SALARY (HOME TAKE SALARY) TK	
DAYS PRESENT				Record has been added successfully.	
DAY ABSENT				<input type="button" value="OK"/>	
NAVIGATION BAR					
<input type="button" value="ADD"/> <input type="button" value="DELETE"/> <input type="button" value="PREVIOUS"/> <input type="button" value="FIRST"/> <input type="button" value="NEXT"/> <input type="button" value="LAST"/> <input type="button" value="PRINT PAYSUP"/> <input type="button" value="SHOW SALARY REPORT"/> <input type="button" value="EXIT"/>					

Fig name-15.5 Employee Salary Information form with normal data (run view)

When the ADD button have been clicked a message box appears stating the record has been added successfully. A new employee salary information form have been **added.** **Objective achieved:** CO3, CO1

**\*Pg no. (3-4)**

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page

The screenshot shows the 'Employee Salary Information' form with various input fields filled with data. A message box in the center says 'Record has been saved successfully.' with an 'OK' button. An orange arrow points from the text 'When the SAVE button have been clicked a message box appears stating the record has been saved successfully. The form that had been just added is now saved.' to the 'OK' button.

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (5%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYER NAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		Payroll Project	
NO. OF WORKING DAYS	25	GRATUITY		GROSS SALARY (HOME TAKE SALARY) TK	
DAYS PRESENT	24			9669	
DAY ABSENT	1			Record has been saved successfully.	
NAVIGATION BAR					
<input type="button" value="ADD"/> <input type="button" value="DELETE"/> <input type="button" value="PREVIOUS"/> <input type="button" value="FIRST"/> <input type="button" value="NEXT"/> <input type="button" value="LAST"/> <input type="button" value="PRINT PAYSUP"/> <input type="button" value="SHOW SALARY REPORT"/> <input type="button" value="EXIT"/>					

When the SAVE button have been clicked a message box appears stating the record has been saved successfully. The form that had been just added is now saved.

**Objective achieved:** CO3, CO1, BO6 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no,48 )

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GROSS SALARY (HOME TAKE SALARY) TK	9669
NO. OF WORKING DAYS	25				
DAYS PRESENT	24				
DAY ABSENT	1				

**Payroll Project**

Employee Salary information have been successfully updated and printed to payslip.

**Navigation Bar:** ADD, DELETE, PREVIOUS, FIRST, LAST, NAVIGATION BAR, PRINT PAYSILP, SHOW SALARY REPORT, EXIT, OK.

Fig name-15.6 Employee Salary Information form with normal data (run view)

When the **PRINT** button have been clicked a message box appears stating the record has been updated payslip successfully. When the OK button is clicked the payslip form appears.

### **Objective**

**achieved:** CO3, CO4, BO3 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 50,)

### **\*ABNORMAL DATA:**

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS	2500
EMPLOYERNAME :		HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GROSS SALARY (HOME TAKE SALARY) TK	9669
NO. OF WORKING DAYS	25				
DAYS PRESENT	24				
DAY ABSENT	1				

**Payroll Project**

Employee's name should be in letters!

**Navigation Bar:** ADD, DELETE, PREVIOUS, FIRST, LAST, NAVIGATION BAR, PRINT PAYSILP, SHOW SALARY REPORT, EXIT, OK.

Fig name-15.7 Employee Salary Information form with abnormal data (run view)

If a numerical character entered in the Employee Name field, this error message will appear.

### **Objective**

**achieved:** BO1, CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 48)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Form2**

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT			
NO. OF WORKING DAYS	25	GRATUITY		Payroll Project	
DAYS PRESENT	24			TABLE SALARY	
DAY ABSENT	1			9669	
GROSS SALARY (HOME TAKE SALARY) TK 9669					

NAVIGATION BAR

ADD    DELETE    PREVIOUS    FIRST    < >    PRINT PAYSPLIT    SHOW SALARY REPORT    EXIT  
SAVE    NEXT    LAST

dd

If an alphabetical character is entered in the Employee ID field, this error message will appear.

**Objective**  
**achieved:** BO1,  
CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 51)

Fig name-15.8 Employee Salary Information form with abnormal data (run view)

**Form2**

**Employee Salary Information**

DATE :		AVAILABLE LEAVE		PROVIDANT FUND (7%)	
EMPLOYER ID :		BASIC SALARY		FESTIVAL BONUS	
EMPLOYERNAME :		HOUSE ALLOWANCE (25 %)		(50%)	
DEPARTMENT		MEDICAL ALLOWANCE (10%)		OVERTIME	
DESIGNATION		TRANSPORTATION (10%)		OTHERS	
RESIDENCE		RETIREMENT		TAX (5%)	
NO. OF WORKING DAYS		GRATUITY		Payroll Project	
DAYS PRESENT				TABLE SALARY	
DAY ABSENT				Employee ID should be in numbers!	
GROSS SALARY (HOME TAKE SALARY) TK					

NAVIGATION BAR

ADD    DELETE    PREVIOUS    FIRST    < >    PRINT PAYSPLIT    SHOW SALARY REPORT    EXIT  
SAVE    NEXT    LAST

If an alphabetical character is entered in the Employee ID field, this error message will appear.

**Objective**  
**achieved:** BO1,  
CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 53)

Fig name-15.9 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME:	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		TABLE SALARY	
NO. OF WORKING DAYS	25	GRATUITY		9669	
DAYS PRESENT	24	Designation should be in letters!			
DAY ABSENT	1	<b>GROSS SALARY (HOME TAKE SALARY) TK</b> 9669			

**Payroll Project**

OK

ADD    DELETE    PREVIOUS    FIRST    NAVIGATION BAR    PRINT PAYSILP    SHOW SALARY REPORT    EXIT

If a numerical character entered in the Designation field, this error message will appear.

**Objective**

**achieved:** BO1,  
CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 52)

Fig name-15.10 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS	2500
EMPLOYERNAME:	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		TABLE SALARY	
NO. OF WORKING DAYS	25	GRATUITY		9669	
DAYS PRESENT	24	Residence should be in letters!			
DAY ABSENT	1	<b>GROSS SALARY (HOME TAKE SALARY) TK</b> 9669			

**Payroll Project**

OK

ADD    DELETE    PREVIOUS    FIRST    NAVIGATION BAR    PRINT PAYSILP    SHOW SALARY REPORT    EXIT

If a numerical character entered in the Residence field, this error message will appear.

**Objective**

**achieved:** BO1,  
CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 53)

Fig name-15.11 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GROSS SALARY (HOME TAKE SALARY) TK	9669
NO. OF WORKING DAYS	25	GRATUITY		TAKE SALARY	9669
DAYS PRESENT	24	Payroll Project			
DAY ABSENT	1	No. of working Days should be in numbers!			

**OK**

NAVIGATION BAR

ADD    DELETE    PREVIOUS    FIRST    BACK    FORWARD    LAST    PRINT PAYSILP    SHOW SALARY REPORT    EXIT  
SAVE    NEXT

If an alphabetical character is entered in the number of working days field, this error message will appear

**Objective achieved:**

**BO1, CO2 \*Pg no.  
(3-4)**

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 54)

Fig name-15.12 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GROSS SALARY (HOME TAKE SALARY) TK	9669
NO. OF WORKING DAYS	25	GRATUITY		TAKE SALARY	9669
DAYS PRESENT	24	Payroll Project			
DAY ABSENT	1	Days Present should be in numbers!			

**OK**

NAVIGATION BAR

ADD    DELETE    PREVIOUS    FIRST    BACK    FORWARD    LAST    PRINT PAYSILP    SHOW SALARY REPORT    EXIT  
SAVE    NEXT

If an alphabetical character is entered in the Days Present field, this error message will appear

**Objective achieved:**

**BO1, CO2 \*Pg no.  
(3-4)**

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 54)

Fig name-15.13 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT			
NO. OF WORKING DAYS		Payroll Project		ALARM	9669
DAYS PRESENT				The Working Days or Days Present fields are empty!	
DAY ABSENT	1			OK	
GROSS SALARY (HOME TAKE SALARY) TK 9669					
<input type="button" value="ADD"/> <input type="button" value="DELETE"/> <input type="button" value="PREVIOUS"/> <input type="button" value="NEXT"/> <input type="button" value="FIRST"/> <input type="button" value="LAST"/> <input type="button" value="NAVIGATION BAR"/> <input type="button" value="PRINT PAYSIP"/> <input type="button" value="SHOW SALARY REPORT"/> <input type="button" value="EXIT"/>					

If the working days field and days present field are empty then this error message will appear

**Objective achieved:**  
**CO2 \*Pg no. (3-4)**

**NOTE:-** Annotated coding is shown in the “programming code section”  
(Reference:- page no 55)

Fig name-15.14 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT			
NO. OF WORKING DAYS	25	Payroll Project		ALARM	9669
DAYS PRESENT	24			Available Leave should be in numbers!	
DAY ABSENT	1			OK	
GROSS SALARY (HOME TAKE SALARY) TK 9669					
<input type="button" value="ADD"/> <input type="button" value="DELETE"/> <input type="button" value="PREVIOUS"/> <input type="button" value="NEXT"/> <input type="button" value="FIRST"/> <input type="button" value="LAST"/> <input type="button" value="NAVIGATION BAR"/> <input type="button" value="PRINT PAYSIP"/> <input type="button" value="SHOW SALARY REPORT"/> <input type="button" value="EXIT"/>					

If an alphabetical character is entered in the Available Leave field, this error message will appear

**Objective achieved:**  
**CO2 \*Pg no. (3-4)**

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no 55)

Fig name-15.15 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GRATUITY	
NO. OF WORKING DAYS	25	Payroll Project		AVAILABLE SALARY	9669
DAYS PRESENT	24	basic salary be in numbers!			
DAY ABSENT	1	<input type="button" value="OK"/>			
GROSS SALARY (HOME TAKE SALARY) TK 9669					

**NAVIGATION BAR**

**ADD**    **DELETE**    **PREVIOUS**    **FIRST**    **NEXT**    **LAST**    **PRINT PAYSILIP**    **SHOW SALARY REPORT**    **EXIT**

If an alphabetical character is entered in the Basic Salary field, this error message will appear

**Objective achieved:**  
BO1, CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 60)

Fig name-15.16 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GRATUITY	
NO. OF WORKING DAYS	25	Payroll Project		AVAILABLE SALARY	9009
DAYS PRESENT	24	Retirement should be in numbers!			
DAY ABSENT	1	<input type="button" value="OK"/>			
GROSS SALARY (HOME TAKE SALARY) TK 9669					

**NAVIGATION BAR**

**ADD**    **DELETE**    **PREVIOUS**    **FIRST**    **NEXT**    **LAST**    **PRINT PAYSILIP**    **SHOW SALARY REPORT**    **EXIT**

If an alphabetical character is entered in the Retirement field, this error message will appear

**Objective achieved:**  
BO1, CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section” (Reference:- page no 57)

Fig name-15.17 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		TABLE SALARY 9669	
NO. OF WORKING DAYS	25	GRATUITY	GRATUITY should be in numbers!		
DAYS PRESENT	24		<input type="button" value="OK"/>		
DAY ABSENT	1	GROSS SALARY (HOME TAKE SALARY) TK 9669			

**Payroll Project**

**NAVIGATION BAR**

**ADD**    **DELETE**    **PREVIOUS**    **FIRST**    **LAST**    **PRINT PAYSILP**    **SHOW SALARY REPORT**    **EXIT**

If an alphabetical character is entered in the Gratuity field, this error message will appear

**Objective**

**achieved:** BO1,  
CO2 \*Pg no. (3-4)

**NOTE:-Annotated coding** is shown in the “programming code section”

(Reference:- page no 58)

Fig name-15.18 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		TABLE SALARY 9669	
NO. OF WORKING DAYS	25	GRATUITY	Overtime should be in numbers!		
DAYS PRESENT	24		<input type="button" value="OK"/>		
DAY ABSENT	1	GROSS SALARY (HOME TAKE SALARY) TK 9669			

**Payroll Project**

**NAVIGATION BAR**

**ADD**    **DELETE**    **PREVIOUS**    **FIRST**    **LAST**    **PRINT PAYSILP**    **SHOW SALARY REPORT**    **EXIT**

If an alphabetical character is entered in the Overtime field, this error message will appear

**Objective achieved:**  
BO1, CO2 \*Pg no. (3-4)

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 59)

Fig name-15.19 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY	5000	FESTIVAL BONUS (50%)	2500
EMPLOYERNAME:	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		Payroll Project	
NO. OF WORKING DAYS	25	GRATUITY		TABLE SALARY 9669	
DAYS PRESENT	24	Others should be in numbers!			
DAY ABSENT	1	<b>GROSS SALARY (HOME TAKE SALARY) TK 9669</b>			

**NAVIGATION BAR**

ADD    DELETE    PREVIOUS    FIRST    << >>    PRINT PAYSPLIT    SHOW SALARY REPORT    EXIT

If an alphabetical character is entered in the Others field, this error message will appear

**Objective achieved:**  
**BO1,CO2 \*Pg no.**  
**(3-4)NOTE:-**

Annotated coding is shown in the “programming code section”

(Reference:- page no 59)

Fig name-15.20 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS	2500
EMPLOYERNAME:	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		Payroll Project	
NO. OF WORKING DAYS	25	GRATUITY		TABLE SALARY 9669	
DAYS PRESENT	24	Please fill the Basic Salary field to calculate House Allowance			
DAY ABSENT	1	<b>GROSS SALARY (HOME TAKE SALARY) TK 9669</b>			

**NAVIGATION BAR**

ADD    DELETE    PREVIOUS    FIRST    << >>    PRINT PAYSPLIT    SHOW SALARY REPORT    EXIT

If the user attempts to calculate house allowance without filling the basic salary field the following message will appear

**Objective achieved:**  
**CO2 \*Pg no. (3-4)**

**NOTE:-** Annotated coding is shown in the “programming code section”  
(Reference:- page no 56)

Fig name-15.21 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	0	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GRATUITY	9669
NO. OF WORKING DAYS	25	GR.	Please fill the Basic Salary field to calculate Medical Allowance		
DAYS PRESENT	24		<input type="button" value="OK"/>		
DAY ABSENT	1				
<b>GROSS SALARY (HOME TAKE SALARY) TK 9669</b>					

**Payroll Project**

Please fill the Basic Salary field to calculate Medical Allowance

NAVIGATION BAR

If the user attempts to calculate medical allowance without filling the basic salary field the following message will appear.

### **Objective**

**achieved:**CO2 \*Pg

**no. (3-4)NOTE:-**

Annotated coding is shown in the “programming code section”

(Reference:- page no 57)

**Fig name-15.22 Employee Salary Information form with abnormal data (run view)**

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350	
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS (50%)	2500	
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	0	OVERTIME	450	
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	0	OTHERS	69	
DESIGNATION	Manager	TRANSPORTATION (10%)		RETIREMENT		
RESIDENCE	Dhaka	GRATUITY	0	GR.	Please fill the Basic Salary field to calculate Transportation	
NO. OF WORKING DAYS	25				<input type="button" value="OK"/>	
DAYS PRESENT	24					
DAY ABSENT	1					
<b>GROSS SALARY (HOME TAKE SALARY) TK 9669</b>						

**Payroll Project**

Please fill the Basic Salary field to calculate Transportation

NAVIGATION BAR

If the user attempts to calculate Transportation without filling the basic salary field the following message will appear.

### **Objective**

**achieved:**CO2

\*Pg no. (3-4)**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no65)

**Fig name-15.23 Employee Salary Information form with abnormal data (run view)**

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	0	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	0	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	0	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GROSS SALARY	9669
NO. OF WORKING DAYS	25	GRAND TOTAL		HOME TAKE SALARY	9669
DAYS PRESENT	24	Payroll Project			
DAY ABSENT	1	Please fill the Basic Salary field to calculate Providant Fund			
OK					
NAVIGATION BAR					
ADD	DELETE	PREVIOUS	FIRST	PRINT PAYSILP	SHOW SALARY REPORT
SAVE		NEXT	LAST		EXIT

If the user attempts to calculate Provident Fund without filling the basic salary field the following message will appear

**Objective**  
**achieved:** CO2 \* Pg no. (3-4)

**NOTE:-** Annotated coding is shown inthe “programming code section”

(Reference:- page no 68)

Fig name-15.24 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	0
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25 %)	0	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	0	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	0	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		GROSS SALARY	9669
NO. OF WORKING DAYS	25	GRAND TOTAL		HOME TAKE SALARY	9669
DAYS PRESENT	24	Payroll Project			
DAY ABSENT	1	Please fill the Basic Salary field to calculate Festival Bonus			
OK					
NAVIGATION BAR					
ADD	DELETE	PREVIOUS	FIRST	PRINT PAYSILP	SHOW SALARY REPORT
SAVE		NEXT	LAST		EXIT

If the user attempts to calculate Festival Bonus without filling the basic salary field the following message will appear

**Objective**  
**achieved:** CO2

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 68)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS (50%)	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	250
RESIDENCE	Dhaka	RETIREMENT		SALARY	9669
NO. OF WORKING DAYS	25	GRATUITY		GROSS SALARY (HOME TAKE SALARY) TK 9669	
DAYS PRESENT	24				
DAY ABSENT	1				

**Payroll Project**

Please fill the Basic Salary field to calculate Tax

OK

NAVIGATION BAR

ADD SAVE PREVIOUS FIRST LAST PRINT PAYSPLIT SHOW SALARY REPORT EXIT

If the user attempts to calculate Tax without filling the basic salary field the following message will appear

**Objective achieved:** CO2

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 69)

Fig name-15.25 Employee Salary Information form with abnormal data (run view)

**Employee Salary Information**

DATE :	12/01/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	350
EMPLOYER ID :	2344	BASIC SALARY		FESTIVAL BONUS	2500
EMPLOYERNAME :	Nafis Awsaf	HOUSE ALLOWANCE (25%)	1250	OVERTIME	450
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	500	OTHERS	69
DESIGNATION	Manager	TRANSPORTATION (10%)	500	TAX (5%)	0
RESIDENCE	Dhaka	RETIREMENT		SALARY	9669
NO. OF WORKING DAYS	25	GRATUITY		GROSS SALARY (HOME TAKE SALARY) TK 9669	
DAYS PRESENT	24				
DAY ABSENT	1				

**Payroll Project**

The Basic Salary or House Allowance or Medical Allowance or Transportation or Retirement or Gratuity or Providant Fund or Festival Bonus or Overtime or Others Or Tax or Payable Slary fields are empty

OK

NAVIGATION BAR

ADD SAVE PREVIOUS FIRST LAST PRINT PAYSPLIT SHOW SALARY REPORT EXIT

If the user attempts to calculate Gross Salary without filling the basic salary field the following message will appear

**Objective achieved:** CO2

**NOTE:-** Annotated coding is shown in the “programming code section”

(Reference:- page no 69)

Fig name-15.26 Employee Salary Information form with abnormal data (run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### Outputs: Employee Data Report: Design view and Run view

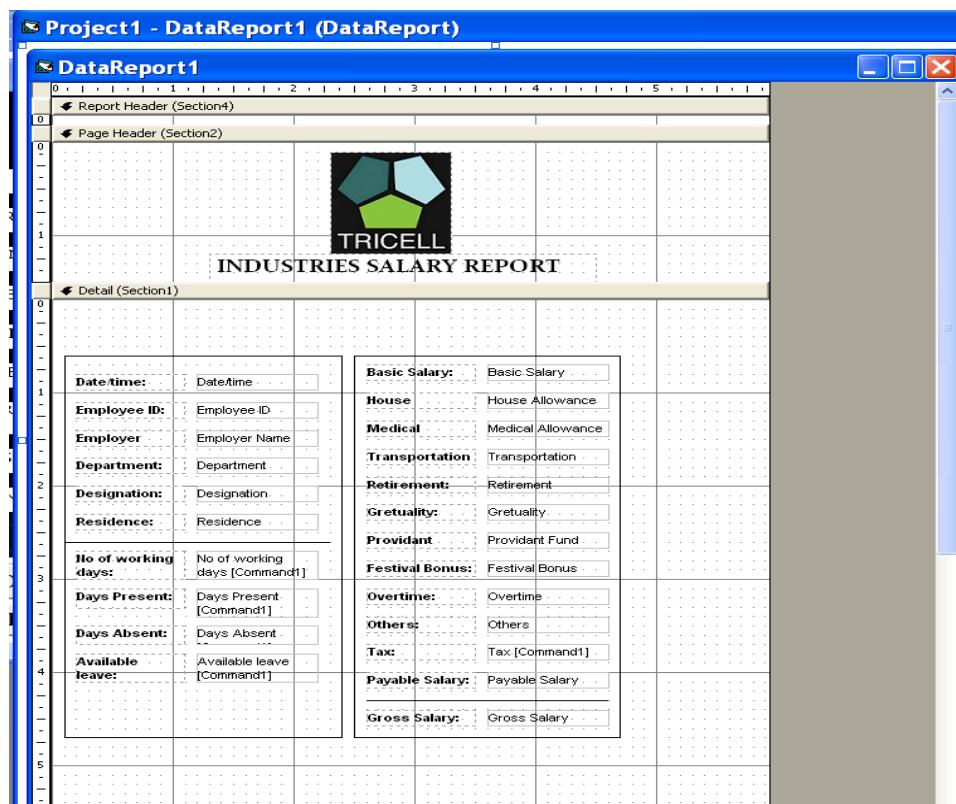


Fig name-15.27  
Employee Data  
Report Design View

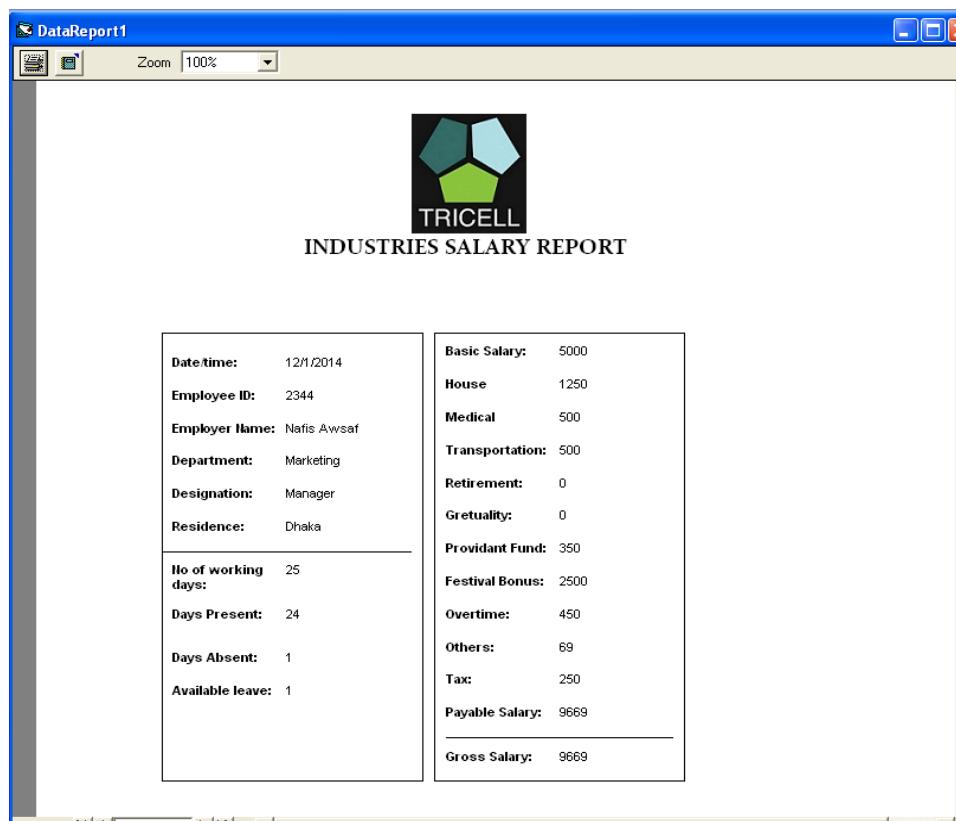


Fig name-15.28  
Employee Data  
Report Run View

## **16. Technical Documentation**

<b>#</b>	<b>CONTENTS</b>	<b>PAGE NO.</b>
1.	<b>Contents Page</b>	<b>1</b>
2.	<b>Menu Structure</b>	<b>2</b>
3.	<b>Data Structure</b>	<b>3</b>
4.	<b>Input Design</b>	<b>4</b>
5.	<b>Output Design</b>	<b>5</b>
6.	<b>Hardware Requirements</b>	<b>5</b>
7.	<b>Software Requirements</b>	<b>5</b>
8.	<b>Programming Codes</b>	<b>6</b>
9.	<b>System Flowcharts</b>	<b>7</b>
10.	<b>Testing</b>	<b>8</b>

Table-16.1 Documentation outlining all the points to each page.

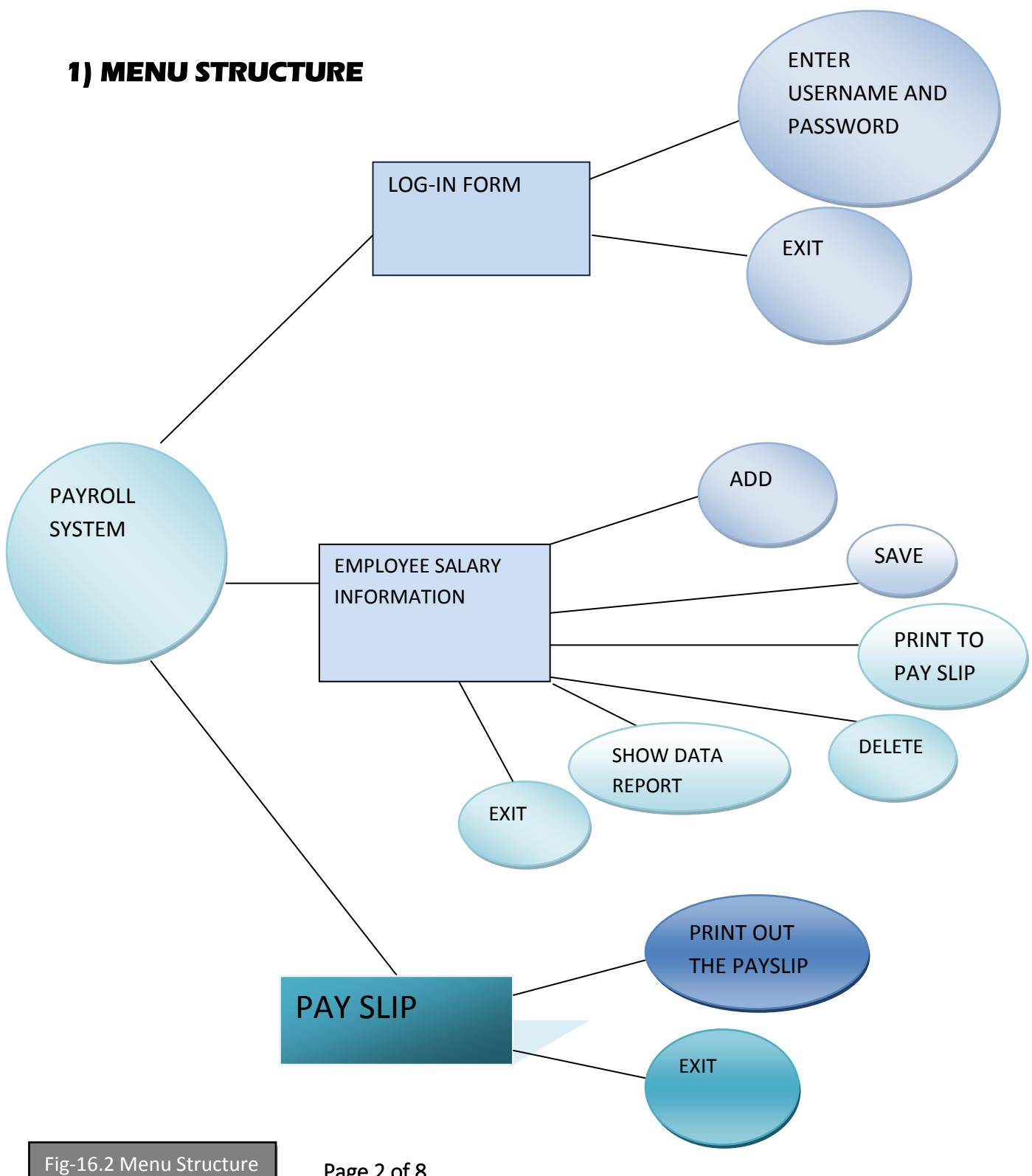


Fig-16.2 Menu Structure  
of CAPS

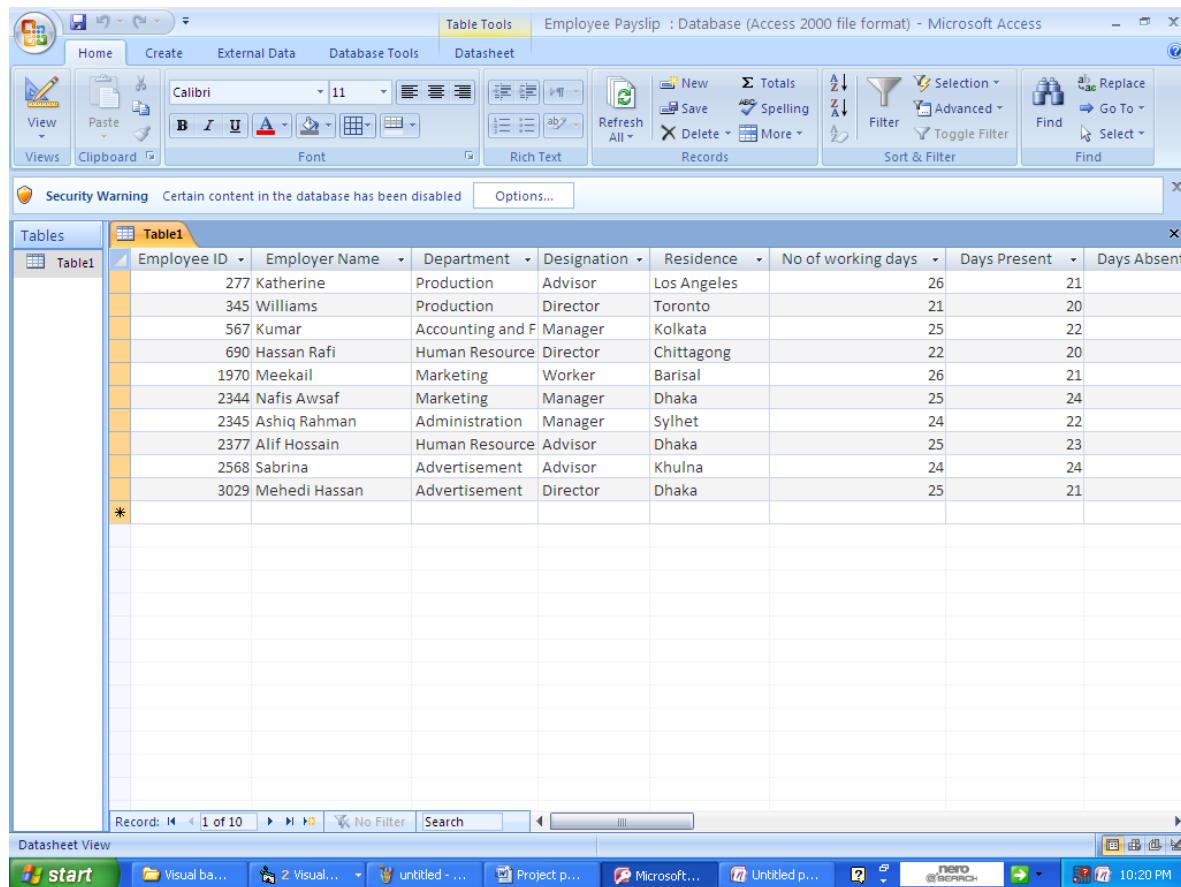
Page 2 of 8

Explanation:- This shows the menu structure of the computer aided payroll system (CAPS) of Tricell's company. Starting into three main forms.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

(Form1:- Logging in to the system Form2:- Inputting Employee Salary Information Form3:- Generating the Payslip )

### **3. Data Structure**



The screenshot shows the Microsoft Access application window titled "Employee Payslip : Database (Access 2000 file format) - Microsoft Access". The ribbon is visible at the top with tabs like Home, Create, External Data, Database Tools, and Datasheet. The Datasheet tab is selected. The main area displays a table named "Table1" with the following data:

Employee ID	Employer Name	Department	Designation	Residence	No of working days	Days Present	Days Absent
277	Katherine	Production	Advisor	Los Angeles	26	21	
345	Williams	Production	Director	Toronto	21	20	
567	Kumar	Accounting and F	Manager	Kolkata	25	22	
690	Hassan Rafi	Human Resource	Director	Chittagong	22	20	
1970	Meekail	Marketing	Worker	Barisal	26	21	
2344	Nafis Awsaf	Marketing	Manager	Dhaka	25	24	
2345	Ashiq Rahman	Administration	Manager	Sylhet	24	22	
2377	Alif Hossain	Human Resource	Advisor	Dhaka	25	23	
2568	Sabrina	Advertisement	Advisor	Khulna	24	24	
3029	Mehedi Hassan	Advertisement	Director	Dhaka	25	21	

For the rest of the database tables please go to page 43

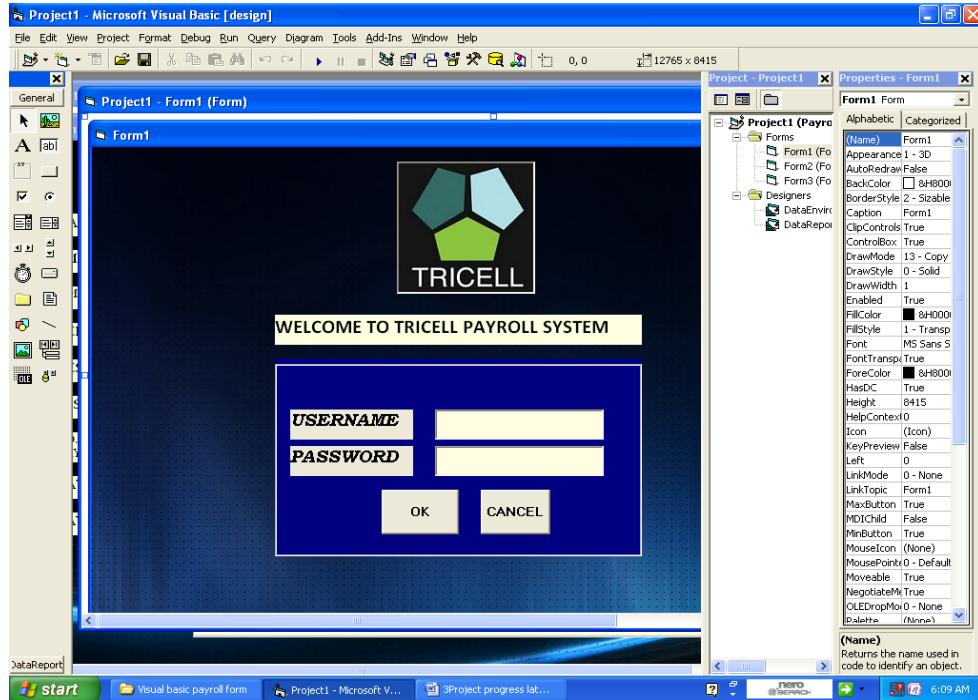
**Fig-16.3 Database table  
of the employees**

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

### 4. Inputs

Log in form

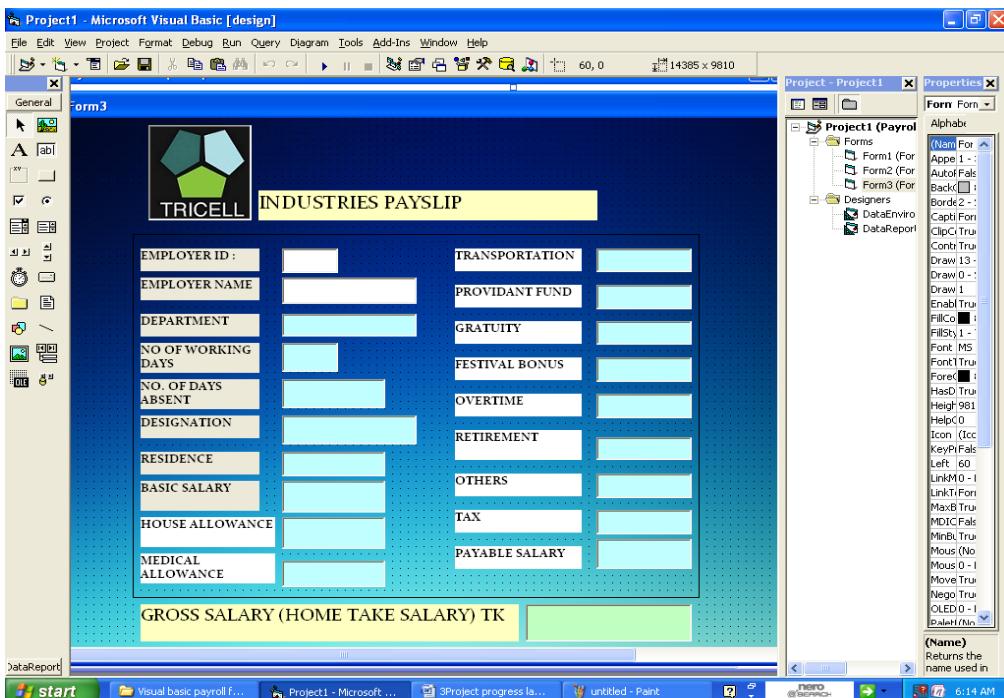
Design mode:



(For the rest  
of the inputs  
please go to  
page no (30-  
34))

Fig-16.4 Login form of  
CAPS (Design mode)

Outputs:



(For the rest  
of the inputs  
please go to  
page no (30-  
34))

Fig-16.5 Payslip form of  
CAPS (design mode)

## **5. Hardware Requirements**

## **6. Software Requirements**

(A full list of detailed requirements, features is illustrated on pages 25-30)

## **7. PROGRAMMING CODE:**

**Microsoft Visual Basic 6.0 was used in order to build this system and be introduced to Tricell. The programming language used are shown below:**

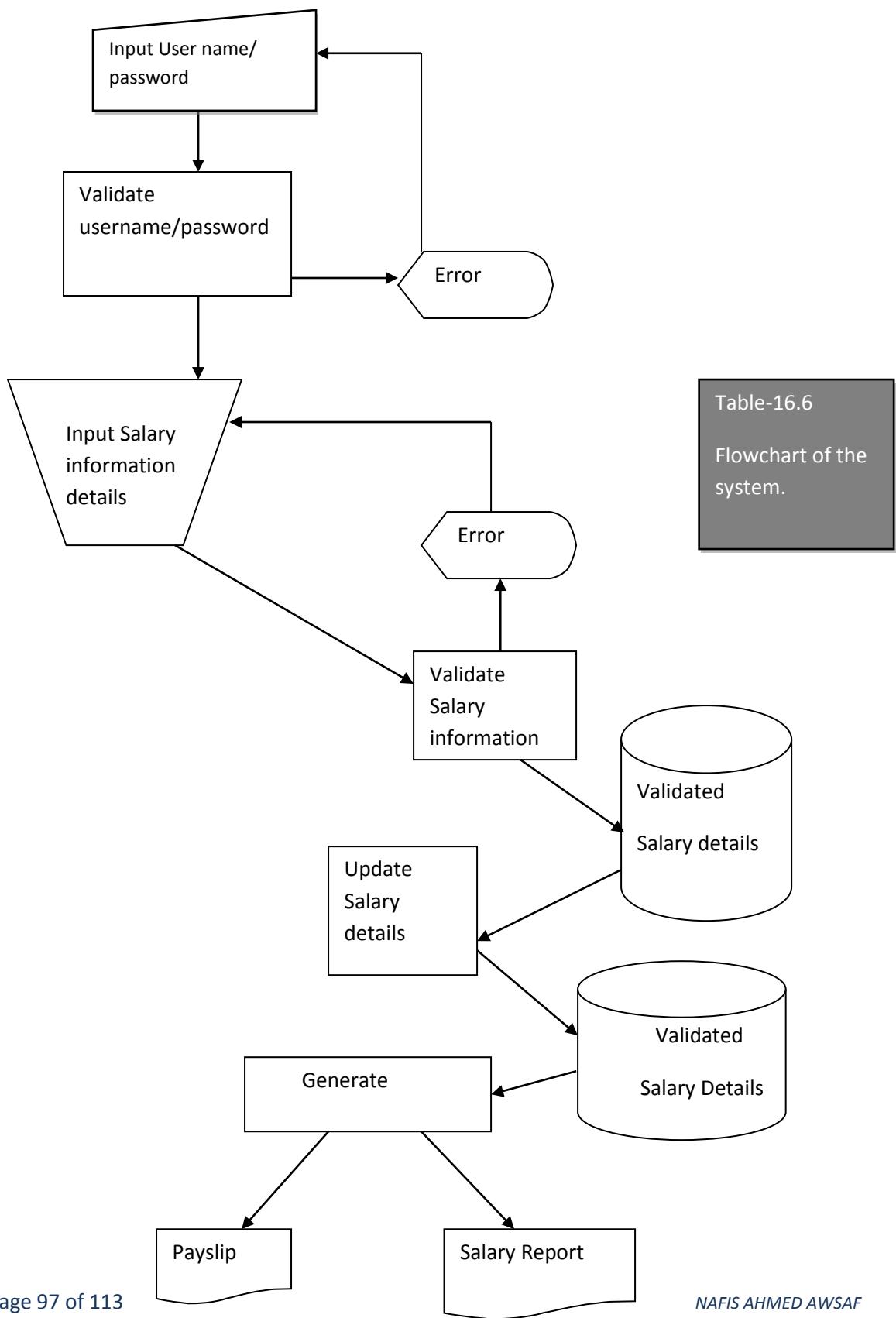
### **Login Form:**

```
Private Sub Command1_Click()  
  
If Text1 = "qwer13" And Text2 = "qwerty" Then  
  
Form2.Show  
  
Unload Me  
  
Else  
  
MsgBox "Username or password is incorrect. Please try again"  
End If  
  
End Sub  
  
  
Private Sub Command2_Click()  
  
End  
  
End Sub
```

This coding allows the user to log-in to the system in a secure way. If the correct username and password is entered, then the user is logged on to the employee salary information form. From there they can print their pay-slip. If the username and password is not successfully entered (mistakes or password forgotten) then the user will fail to log in to the system. When the wrong credentials are entered an error message will appear showing "the user name or password is incorrect, please try again".

(FOR the full programming codes please go to page no. 45-49)

## 8. SYSTEM FLOWCHART



## 9. TEST PLAN

Field Name	Validation	Data used in testing	Data type	Expected result	Actual Result	Objectives and test results achieved
Employee Name	Presence Check	Hassan Rafi	Normal	Accepted	Accepted	<p><b>OA:</b> {BO5, BO4, BO6, BO2, BO1, CO2, CO3, CO4}</p> <p><b>TS:</b> {74-101}</p> <p><b>Page no.2 (Objectives)</b></p>
		-----	Abnormal	Rejected	Rejected	
		12345	Abnormal	Abnormal	Rejected	
		Mohammad Hassan Rafi Golamuddin Rob	Extreme	Accepted	Accepted	
Number of days worked	Numeric Check Presence Check	23	Normal	Accepted	Accepted	
		-----	Abnormal	Rejected	Rejected	
		1080	Abnormal	Rejected	Rejected	
		31	Extreme	Accepted	Accepted	

Table-16.7 Each field tested with normal, abnormal and extreme data.

Page 7 of 8

## 10. Testing

### Normal Data:



Fig-16.8

Log-in form with normal data (Run view)

Correct username and password have been entered.

When the correct credentials have been entered a message box appears showing the entry to the system have been

### Abnormal Data:

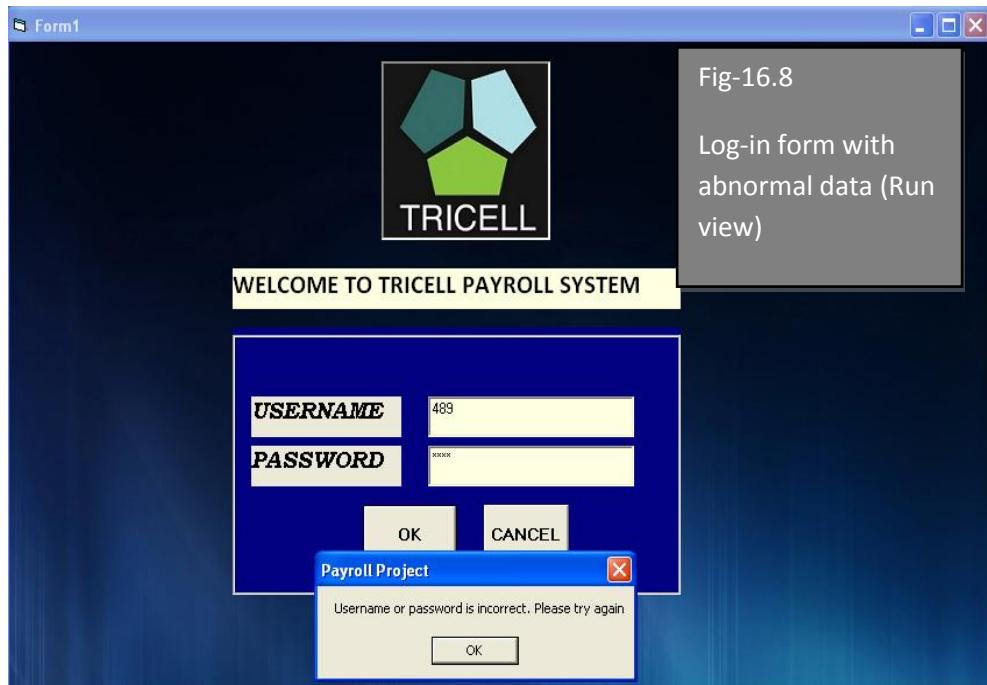


Fig-16.8

Log-in form with abnormal data (Run view)

When incorrect credentials have been entered a message box appears showing the entry to the system have been unsuccessful.

Incorrect username have been entered.

For full test results please go to page (63-91)

**Page 8 of 8**

## **17. User Guide**

### **1. Requirements (Hardware and software)**

For full hardware and software please go to page 25-30)

Setting up the system:

### **2. Starting up the system**

- 1) Make sure the power connections to the computer are properly set up.
- 2) Switch on the computer by first switching on the CPU, and then the monitor.
- 3) If there are multiple operating systems installed on the computer, select “**Microsoft Windows XP ©**” from the list that appears at start-up. This is because “**Microsoft Windows XP ©**” is the operating system that **CAPS** is compatible with. If there is no other operating system, the computer will start up automatically.
- 4) If a password is required to log on to an account, a screen will appear at start-up prompting you to enter the password. Enter the correct credentials requires and windows will quickly start up.
- 5) If installation is being done from a CD, insert the CD and open it from *My Computer*. Click on the exe file icon to start installation automatically.
- 6) Double-click on the **CAPS** icon (which should be kept on the desktop to make it easily accessible) to start the system.

### **3.Log in**



- 1) Enter the required username and password.
- 2) Click the OK button
- 3) This will take the user to the employee salary information form
- 4) Click CANCEL to exit the form.



Fig-17.1  
User guide  
explaining how to  
log-in to the system.

#### **4.Employee Salary information**

These balloons are showing what each field does so that the user can understand how to use the system easily.

The screenshot shows the 'Employee Salary Information' form (Form2). The form contains various input fields and calculated values. The calculated values include:

Category	Value
BASIC SALARY	4700
HOUSE ALLOWANCE (25%)	1175
MEDICAL ALLOWANCE (10%)	470
TRANSPORTATION (10%)	470
RETIREMENT	500
GRATUITY	0
PROVIDANT FUND (7%)	329
FESTIVAL BONUS (50%)	2350
OVERTIME	95
OTHERS	0
TAX (5%)	235
PAYABLE SALARY	8696
GROSS SALARY (HOME TAKE SALARY) TK	8696

Below the form is a navigation bar with buttons: ADD, SAVE, DELETE, PREVIOUS, NEXT, FIRST, LAST, NAVIGATION BAR, PRINT PAYSLIP, SHOW SALARY REPORT, and EXIT.

Fig-17.2

User guide explaining how to use the employee salary information form (run view)

#### **Uses:**

1) Click the ADD button to add a new employee salary form

2) Click the SAVE button to save the current form

3) Click DELETE to remove the employee form.

This is used when the employee works no longer in the company.

4) Click the PREVIOUS button to go back to the previous form of an employee.

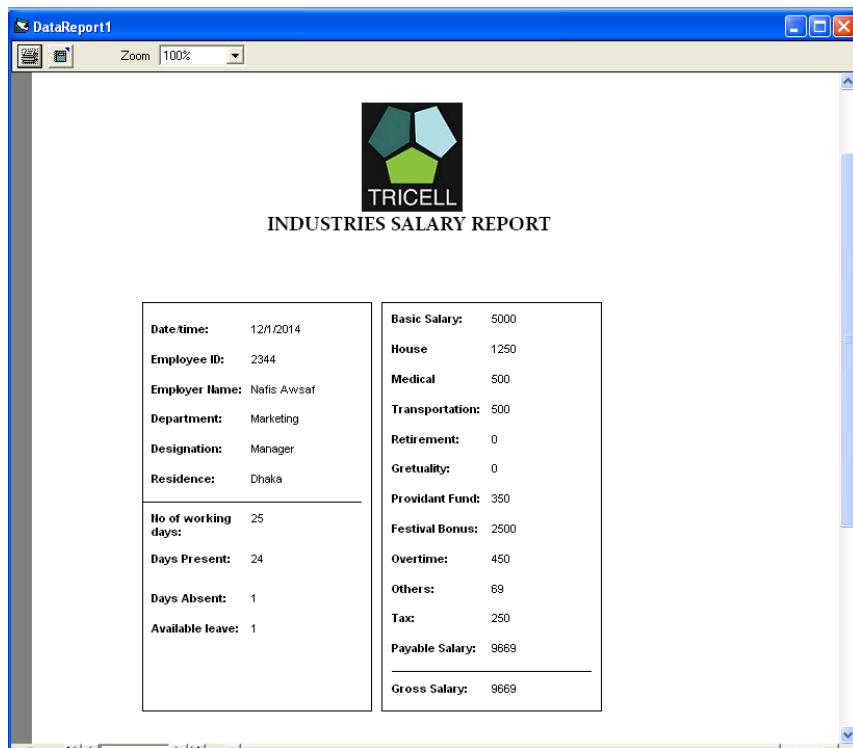
5) Click the NEXT button to go to the next employee Form

6) Use this bar to navigate back and forward between employee forms

7) Clicking this button would show the salary report of the form

8) Click Exit to end the form.

## **5. SALARY REPORT**



**Fig-17.3**  
Salary report of  
the employees.  
(Run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

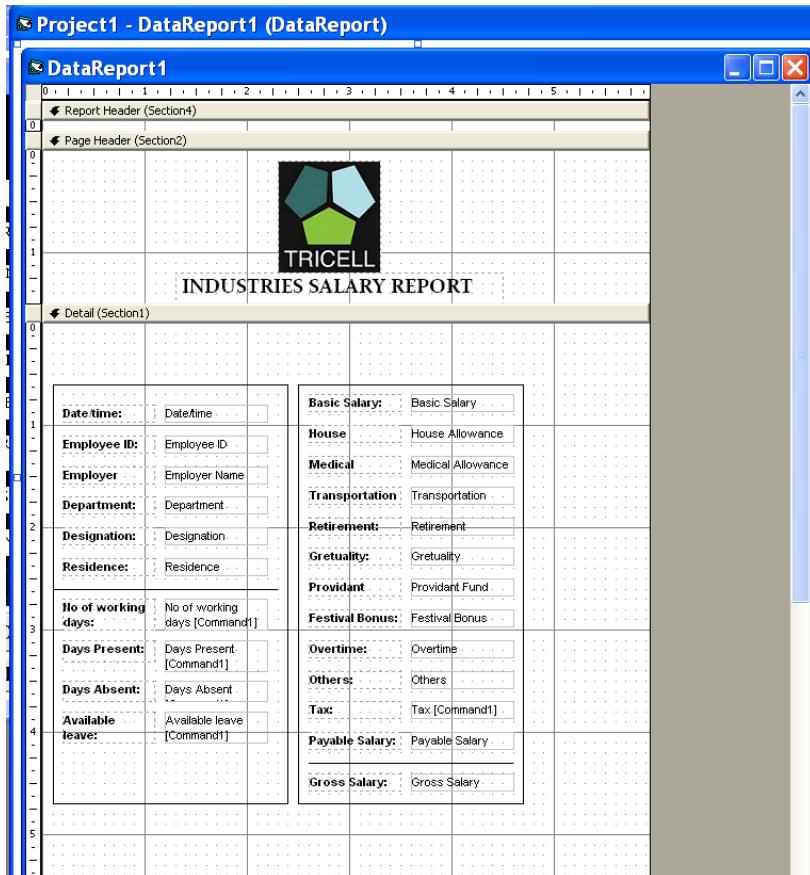


Fig-17.4

Salary report of  
the employees.  
(Design view)

## **6. GENERATING THE PAYSPLIT**

Employee Salary Information					
DATE :	2/1/2014	AVAILABLE LEAVE	1	PROVIDANT FUND (7%)	329
EMPLOYER ID :	2377	BASIC SALARY	4700	FESTIVAL BONUS (5%)	2350
EMPLOYER NAME :	Alif Hossain	HOUSE ALLOWANCE (5%)	1175	OVERTIME	95
DEPARTMENT	Human Res.	MEDICAL ALLOWANCE (10%)	470	OTHERS	0
DESIGNATION	Advisor	TRANSPORTATION (10%)	470	TAX (5%)	235
RESIDENCE	Dhaka	RETIREMENT (5%)	500	PAYABLE SALARY	8696
NO. OF WORKING DAYS	25	GRATUITY (0%)	0	GROSS SALARY (HOME TAKE SALARY) TK 8696	
DAYS PRESENT	23				
DAY ABSENT	2				
ADD    DELETE    PREVIOUS    FIRST    NAVIGATION BAR    PRINT PAYSPLIT    SHOW SALARY REPORT    EXIT					
SAVE    NEXT    LAST					

Fig-17.5

Employee Salary  
Information form  
(Run view)

## COMPUTER AIDED PAYROLL SYSTEM (CAPS)

**INDUSTRIES PAYSPLIT**

EMPLOYER ID :	2344	TRANSPORTATION	500
EMPLOYER NAME	Nafis Awsaf	PROVIDANT FUND	350
DEPARTMENT	Marketing	GRATUITY	0
NO OF WORKING DAYS	25	FESTIVAL BONUS	2500
NO. OF DAYS ABSENT	1	OVERTIME	450
DESIGNATION	Manager	RETIREMENT	0
RESIDENCE	Dhaka	OTHERS	69
BASIC SALARY	5000	TAX	250
HOUSE ALLOWANCE	1250	PAYABLE SALARY	9669
MEDICAL ALLOWANCE	500	GROSS SALARY (HOME TAKE SALARY) TK 9669	

Fig-17.6  
Payslip Of CAPS  
(Run view)

Click the PRINT button to transfer all the salary information to the pay slip form. The output is produced. Finally this pay-slip can be printed and handed out to the employee.

## 7. Reasons for error (Troubleshooting)

**Employee Salary Information**

DATE :	1/3/2014	AVAILABLE LEAVE	2	PROVIDANT FUND (%)	490
EMPLOYER ID :	123	BASIC SALARY	7000	FESTIVAL BONUS	3500
EMPLOYERNAME:	Willian	HOUSE ALLOWANCE (25 %)	1750	OVERTIME	0
DEPARTMENT	Marketing	MEDICAL ALLOWANCE (10%)	700	OTHERS	350
DESIGNATION	Manager	TRANSPORT (10%)	Payroll Project	AX (5%)	350
RESIDENCE	Dhaka	RETIREMENT (10%)	0	PAYABLE SALARY	13160
NO. OF WORKING DAYS	22	GRATUITY	0	GROSS SALARY (HOME TAKE SALARY) TK 13160	
DAYS PRESENT	17				
DAY ABSENT	5				

**OK**

Others should be in numbers!

**NAVIGATION BAR**

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## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

The screenshot shows a Windows application window titled "Employee Salary Information". The form contains various input fields for employee details and salary calculations. An error message box titled "Payroll Project" is displayed in the center, stating "Department should be in letters!" with an "OK" button. The form includes fields for Date (1/3/2014), Employer ID (123), Employer Name (Willian), Department (Marketing), Designation (Manager), Residence (Dhaka), No. of Working Days (22), Days Present (17), Day Absent (5), Available Leave (2), Basic Salary (7000), House Allowance (1750), Medical Allowance (700), Transportation (700), Providant Fund (490), Festival Bonus (3500), Overtime (0), Others (350), Tax (350), and Payable Salary (13160). Buttons at the bottom include ADD, PREVIOUS, FIRST, DELETE, NAVIGATION BAR, SAVE, NEXT, LAST, and EXIT.

**System will keep showing error messages whenever mistakes are made by the user.**

- 1) Whenever alphabetical characters are entered into fields which contains numbers (for example:- days present, basic salary, others) Error message will appear. These fields cannot contain alphabet.
- 2) Whenever Numbers are entered into fields that contain alphabets (for example:- Designation, employee name) Error message will appear. These fields cannot contain alphabets.

If still all the data are input correctly and the error message still pops up this might be a problem with the system. The system analyst should be contacted for immediate service.

**The employee searched was not found.**

- 1) The employee's name might have been mistyped. Check if the spelling is correct.
- 2) The employee's record might have been removed either accidentally or because the employee is no longer in the company.

**The employee payslip is not printing.**

The printer may not be connected. It should be verified whether the printer is connected or there are some problems with the installation software.

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## **18. SYSTEM EVALUATION AND DEVELOPMENT**

System evaluation is the process of assessing the performance of a **complete system** to discover how it is likely to perform in live market conditions.

There are several steps to evaluation:

- Defining personal trading goals. (**Objectives**)
- Questionnaires
- Step testing.
- Comparisons between the old and the new system
- Testing the accuracy of the system
- Calibration and final testing.

All of these steps form part of the trader's method and are carried out routinely for any system rules he wishes to review. Systems traders spend a proportion of their trading time trying to improve their existing systems and looking for new and different ideas

\* **Objectives Achieved**

**BUSINESS OBJECTIVES (BO.)**

In *Business Terms*

Table-18.1

Objectives briefly illustrated in business terms

<b>BO.1</b>	ACCURACY	To assure that the <b><i>information recorded is accurate</i></b> so mistakes are not an option and also conflicts and problems could be avoided between employees and employers. Accuracy is a big important factor in every business. The more accurate a business company is, the more productive it can be.
<b>BO.2</b>	INCREASED EFFECIECNY AND PRODCUTIVITY	Easier methods of <b><i>recording salary employee information and payment details</i></b> would be provided so work can be done much quicker which will increase efficiency. The more easier it is to make to make payslips and salary reports, the more quicker work will be done. This will not only increase efficiency but output as well.
<b>BO.3</b>	SAVES TIME	To prepare files of employees, payment details and files easily in short time so the tasks become <b><i>less time consuming</i></b> . Time is an important factor in business companies.
<b>BO.4</b>	ECO FRIENDLY	To make the process of recording payment data and employee information <b><i>environmentally safe</i></b> by reducing the use of paper and cutting down of trees-for the nature's benefit and consumers satisfaction as they prefer <b><i>environment friendly companies</i></b> . Consumers prefer firms that care about the economy. They like firms that take into account the external costs they would impose and how to reduce them. The business should therefore at any cost <b><i>pollute less</i></b> dump so that <b><i>external costs are reduced</i></b> .
<b>BO.5</b>	SECURITY	A secure system to be provided so that the payment, employee data and important information can be <b><i>stored safe and well protected unexpected dangers</i></b> . Also a system of recognition will be introduced. Members without authorization will not be able to access these files.
<b>BO.6</b>	ORGANIZATION	A well organised database will be constructed so that <b><i>records and data can be easily made available</i></b> due to any need or emergencies.
<b>BO.7</b>	PROFIT	In order to earn good amount of profits, the company should have a <b><i>smooth running system</i></b> that can produce payslips and salary reports quickly in time.
<b>BO.8</b>	EXPENSES	The business should keep their <b><i>working system as low cost</i></b> as possible so that they can earn a reasonable amount of profit at the end of the year.

**COMPUTER OBJECTIVES (CO.)**

In *Computer Terms*

Table-18.2

Objectives briefly illustrated in computer terms

<b>CO.1</b>	USER FRIENDLY	The system should be <b><i>user friendly</i></b> so it can be used easily.
<b>CO.2</b>	REDUCTION OF HUMAN ERRORS	The system to be used should be programmed so that it would be able to <b><i>minimize any possible accidental errors</i></b> made by the user.
<b>CO.3</b>	CUSTOMIZATION	The system provided should <b><i>allow the user to edit/add new or update the information</i></b> . So changes can easily made in any field or to payment details. To build and create an <b><i>organized database of employee information and payment details</i></b> . Throughout the system the <b><i>information should be easily displayed</i></b> about all present employees. Each employee will have their own form and these forms could be easily browsed.
<b>CO.4</b>	GENERATING PAYSLIPS QUICKLY	The system should be able to generate payslips as quickly as possible as this will <b><i>reduce time</i></b> and increase output and efficiency of the working system.
<b>CO.5</b>	GENERATIONG SALARY REPORTS QUICKLY	The system should be able to generate salary reports quickly so that it can be submitted on regular intervals so that <b><i>delays can be avoided</i></b> .
<b>CO.6</b>	REGULAR BACKUP OF DATA	Regular back up of important data of files should be made within the business. This will help <b><i>to overcome any unexpected dangers</i></b> such as earthquakes or loss of important files.
<b>CO.7</b>	DATA SECURITY	The system should be protected with an <b><i>username and password</i></b> . This will prevent unauthorized personnel from logging into the business.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

The Computer Aided payroll System (CAPS) has achieved its aims. It was thought to know the feedback of the employees. How they think of the new system set up. So here is a questionarie set up:

Please take a moment and kindly fill up the following set of questions about the new system set up :

Q. Do you feel comfortable using the new system? Yes/No → After retraining, it is very easy to operate

Q. Do you think the new system has increased the productivity of the business? Yes/No

Q. Are you being able to cope up with the new system? Yes/No → However, some may find it hard at first.

Q. Which system do you prefer?

A. Computer aided Payroll system than the manual one.

Q. Do you think any additional features are needed in this new system ?

A. Yes \_\_\_\_\_

Date : \_\_\_\_\_

2/2/14

Name: Rakib Hasan

Rakib

## **Effeciency**

-	Creating Payslips and Salary Report	Generating Payslips and Salary Report	Total time taken
<b>Old system</b>	12 min	18 min	25-30 min
<b>New system</b>	5 min	2 min	7-10 min

## **Accuracy**

-	Input (Processing payslips and salary report)	Output (Generating)
<b>Old system</b>	70%	80%
<b>New system</b>	90%	95%

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

The difference between “MANUAL” system and “AUTOMATED” system is that all the processing, calculations and storage of data is done automatically by the computer. The user will only have to operate the computer. In manual system everything is done by the workers, calculations, creating forms, updating forms etc.

### **Here is an overall comparison between the two:**

<b>Application</b>	<b>Payroll System</b>	<b>Manual system</b>
Storage	All the employee records are stored on the computer's free space.	A large amount of storage is needed to record all the employee forms.
Worker	Only one worker is required to do all the work.	More than one worker is used to construct payslips and employee salary information forms.
Resources	Resources are saved here. Only few papers are used in this system. For printing payslips only.	More resources such as wood to produce paper are needed in this system. A vast amount of papers are being used every week for the maintainence of the business.
Environmentally friendly	This system is environmentally friendly as Vast amount of papers are used using this system. Sometimes, multiple papers are needed just for one employee! This is against eco-friendly	This system is not environmentally friendly. Papers are not needed. Sometimes a few may be used for printing. This is eco friendly.
Wage levels	This system has less wage expenses. Less workers are needed as the system is automated. The main workers are the computers.	As this system is labour intensive, many workers work here. Even two or three workers are needed for a single task. So the wage levels are high of this system.
Expenditure	There are no expenses for stationery as all data is stored electronically.	Aside from wages, the expenditure of the businesss will increase as more stationery, computer parts, blank dvd's, hardisks will have to be bought to store and produce all the output of the business.

## **COMPUTER AIDED PAYROLL SYSTEM (CAPS)**

Back up	Information is backed up on CDs using the APS system. This is far less costly and not as easily destroyed as paper-means of backup.	Creating backups of information is expensive both in time and in cost. Furthermore, the original forms can be destroyed.
Time	The addition of a navigation bars allows quick, organized and simple navigation between employee salary forms. In addition, As the process is so simple, it takes much less time thereby reducing the pressure that the accountant must go through.	It is time consuming and difficult to go through all existing employee forms. Also, Due to time constraints, the accountant in charge of constructing the payment slip may make mistakes under the pressure.
Writing	Handwriting may cause figures to be misinterpreted therefore resulting in an underpaid or overpaid salary.	Handwriting is not a factor in the CAPS system as all text is entered in one format which is clear and precise.

### **Weaknesses of the Computer Aided Payroll System:**

1. An interruption of power or viruses can result in total data loss which can be devastating. This is why it is imperative that data is constantly backed up on CDs.
2. There is a chance of the system crashing which may or may not result in a loss of data.
3. The accountant will need to be trained in use of this system which will take time.
4. There may be a few bugs and errors in the system which may result in it being difficult to use and may require a system analyst to be called in.
5. Microsoft Access's databases are not well protected, which indicates that the databases can be accessed by unauthorized personnel if the computer is not password-locked.

## **19.Developments**

Technology is advancing everyday as it is providing more improved or new softwares and devices. Technological change occurs and it is better for firms to adjust into these new changes. The following is a list of available upgrades to Tricell :

**\**Cell phone attendance tracking system:*** This is when employees are authorized automatically by their cell phone being tracked down when they enter their office premises.

### **\*Online Facilities :**

- Online Capabilities: Currently, the CAPS is offline however if it could be fitted with ***online capabilities*** the overall functionality and ease of access would increase, allowing the accountant or owner to access the databases and system from remote locations.
- Pictures of Employees: Pictures of employees could be added to their forms so that it becomes ***much easier*** to determine each individual.
- Customised SAP EPP Module can be introduced for Accounting/ HR solution
- Oracle SQL server can be introduced