**Introduction of the project**

Water Billing System is the mini project developed using Php. Water supply is the one of the basic needs that each and every citizen of the country requires and is essential for the survival of the human beings. The person needs to pay the bill for the water that the people have used and pay for it. Sometimes there will be a long queue that one needs to wait in order to get the water supply bills paid. The water supply management system will help the local government and the private institutions to manage the water supply system in a better way. It will also help to get the billing and invoicing in a better way.

The features that can be included in the water supply management system are as follows:

* **People database management**: The database of the people who use the water supply from the local government must be organized in a good manner.
* **Online payment**: The facility of paying the water supply through online mode must be enabled to enjoy better payment facilities.
* **Pending bills**: Reminders can be sent to the people whose water supply bills are pending for months or years together.
* **Transparency**: The water supply management system will help to gain transparency between the government and the people of the city.
* **Status of the bills**: the people can have a look at the status of their bills at anytime from anywhere in the world.

The water supply management system will help in the smooth functioning and managing of the water supply system in the city very well. Sometimes people will not remember of the payment of the water supply bills. At that time through this application they will be to make online payment of the bills without any worry. This will be one of the project that will help the people and the local government in a broad way.

**Main functions of these modules are:**

**Managing Customer records**

a)      To create customer file

b)      To update customer file

c)      To generate Reports

d)     To search for customer information

**Managing the water tax bills**

a)      To create Bills file

b)      To update bills file

c)      To generate Reports

**Tracking bill status**

a)      To update payments

b)      To notify defaulters

c)      To generate Reports

**Menu design and integrating of all  modules**

a)      To display system banner.

b)      To process menu.

c)      Integration of all the modules

d)     To provide security

**Tools And Environment used**

* **FRONT END TOOLS :**

1. HTML5
2. CSS
3. JavaScript
4. JQUERY
5. DREAMWEAVER
6. ADOBE PHOTOSHOP

* **DATA BASE :**  MYSQL
* **SERVER :**  WAMP SERVER
* **LANGUAGE :**  PHP

**System analysis and design**

A System is the collection of interrelated components that works together to archive some common objective and system analysis is the specification as what the system required to do. It is a management technique which helps us in designing a new system or improving an existing system.

A system analyst should have various skills to effectively carry out the job specifically. These skills can be divided into two categories. These are interpersonal skills and technical skills interface of the analyst with people in business. They are useful in establishing trust, resolving conflict, and communication information. Technical skills on the other hand, focus on the procedures and techniques for operations analysis, system analyst and computer science.

**The interpersonal skills which are relevant to systems work are following:-**

1. **Communication:-**Communication isnot justreports,telephonic conversations, and interview. It is people talking, listening, felling, and reacting to one another, their experience and reaction. Some indicators of one another, their experience and reaction to the, their experience and reactions. Some indicator of climate of closed communication is defensive memos, excessive correspondence, and failure to speak up for fear of being identified. Therefore, opening communication channels are a must for system development.
2. **Understanding:-** Identified problems and assessing their remedies is one of the attributes of good system analyst. A system analyst should have the grasp of company goals and objective.
3. **Teaching:-** A system analyst should educate people in the use of computer systems, selling the system to the user and giving the support when needed.
4. **Selling: -** a system analyst should have selling ideas and promoting innovations in problem solving usingcomputer.

For system analysis we know that we operate in a dynamic environment where way of life is.

**To construct a system the following key elements must be considered:**-

**(1) Outputs and inputs:-** A major objective of a system is to produce an output that has value to its user. Whatever the nature of the output (goods, services, or information), it must be in line with the expectations of the intended user. Inputs are the elements (material, human recourses, information) that enter the system for processing. Output is the outcome of processing. A system feeds on input to produce output in much the same way that a business brings in human, financial, and material resources to produce goods and services. Output is a first step in specifying the nature, amount, and regularity of the input needed to operate a system. Input and processing design follow.

**Compare Output**

**ManagentControle**

**Services**

**Human** re

**Transformation**

**Standard of performance**

**Input**

**Processing** **Output**

**(2) The processor(s):-** The processor is the element of a system that involves the actual transformation of input into output. It is the operational component of a system.Processor may modify the input totally or partially, depending on the specifications of the output.

**(3) Control:-**The control elementsguide the system. It is the decision-making subsystem that controls the pattern of activities governing input, processing, and output. In an organization context, management of the bank as a decision-making body controls the inflow, handling, and outflow of activities that affect the welfare of the business. In a computer system, the operating system and accompanying software influence the behavior of the system.

**(4)Feedback:-**Feedback may be positive or negative, routine or informational. Positive feedbackreinforcestheperformanceofthe system. It is routine in nature. Negative feedback generally provides the controllerwithinformationforaction.Insystemanalysis,feedback is important in different ways. During analysis, the user may be told that the problems in a given application verify his/her initial concerns and justify the need for change. Another form of feedback comes after the system is implemented. The user informs the analyst about the performance of the new installation. This feedback often results in enhancements to meet the user’s requirements.

**(5)Environment:-**The environment is the “suprasystem” within which library operates. It is the source of external elements that impinge on the system. In fact, it often determines how a system must function such that the Bank’s environment, consisting of customers and others.

**(6)Boundaries and Interface:-**A system should be defined by its boundaries –the limits that identify its components, process, and interrelationships when it interfaces with another system.

**There are generally eight types of System analysis technique:-**

**1. Requirement technique**:-Requirement determination is generally done through Extensive study of the system includes the understanding of the goal. Process And constraints of the system for which information are designed. Several Forms are also designed and illustrated in the text of system analysis. There are no straight forward algorithms to elicit the requirement from the user. It is an iterative process, which the analyst use while interviewing several user groups. It is art rather then science.

**2. Diagramatictechnique:-**Data flow document flow diagrams represent penhaps most the most widely used diagramming technique of the system analyst. The document flow diagram graphically represents the various documents that flow across the system.: the information carried by the parerdocument must begenerated and proceed by proposed information system.

**3. Data flow diagram(DFD)**:- Data flow diagram is a powerful diagram that can be used to document the information flow.It also presents itself to be broken down in top down fashion .At the top level ,data flow are represented at the very abstract aggretted level .Each component of the data flow is further broken down to different levels,so that at each leval.We have just a few entities to concatenate on ,Dfd have developed a represention scheme to represent data store.Process(where some changes are made to system) and entities(the player in the game) and the actual information flows.

**4. Data Dictionry**:-Another powerful tool that is extensively used in system analysis in the data dictionary.DDs provides a detailed reference to every data item—the different names by which the the item is represented in different program modules, different data structure used to represent the item in different moduls.The mouule where the date item is generated ,where it is stored destroyed .In essence it provides a quick snaphot of every data item is generated ,where it is stored anddestroyed .In essence it provides a quick snaphot of every date item is used by the information system. In essence it provides a quick snaphshot of every data item used by the information system .It is very useful for conceltencychecks.system modification and completeness checking.While these techniques are general in nature and by the analyst in the different stages of the system life-cycle the following arespecific to some of the steps of the system life-cycle.

**5.Feasibility Report**:- A typical structure of the feasibility report will be under a preamble that sets the stage for the project followed by goals statement that quantity precisely the goals of the proposed information system. This is followed by a short narrative that describe in unambiguous yet jargon free Language the present system. This is understandable to any intelligent person not necessary a computer professional or a even a computer literate .the proposal alternative are then describe once again in a reasonably jagran free language .Bing a faebility study the alternative are unlikely to be detailed to the full extent. Untill full system is developed in its entirety, the full detail are unlikely to be known. Yet we can’t go ahead with the final system without doing a feasibly analyses. The detail of the system to be built may bum ford gradually from understood by the user as well as analyst. Based on ‘sketchy’ design of the proposed alternatives, an order of magnitude cost benefit study is preferred. The end-user decides a particular alternative that is worked out in detail for furtherimplementation. The detail design phase starts here.

**6. Detailed design:**- The detailed specifications are worked out followed by hardware/software plan. This constitutes system designs which once again need to be whetted by the user. Once this is done detailed system design starts. Effectively the analysis phase ends here and the design phase begins.It may involve substantial effort on the part of technical system analyst, hardware, software, communication specialists etc. a majorcomponent of the detailed system design is the database design actual coding is undertaken after the database design is completed.

**7. Database Design**: - DBMS permits efficient storage and manipulation of data files they do not cater to the structuring of the database themselves .There is the need for the right abstraction of data into the database so that any update/query operation captures the sprit of the data stored in the database. Normalization is used which leads to the decomposition in such a way that no information is lost due to processing of data. Database theory details further degrees of normalization including 4NF and 5NF. While theoretically sound, such further refinement add (?) like, if, any, to data modeling real world data. Since our text is primarily on information system and not on database theory we will not further elaborate an advanced normalization.

**8. System implimantitation**:- System implementation includes the detailed design of the process, their validation and thought checking. while the formal methods of proving program correctness are evolving ,they are still not useful to test out large commercial software to help information system planning .Many of the analysts useexperimental version using what is known as “Parallel runs ”. Here both the current system and proposed new system are run in parallel for a specified time period and the current system is used to validate the purposed system.

**Feasibility study**

Feasibility is the determination of the whether or not a project is worth doing. The process followed in making this determination is called a feasibility study. These types of study determine if a project can and should be taken. Once it has been determination that a project a feasible, the analyst can go ahead and prepare the project specification which finalizes project requirements. Generally, feasibility studies are undertaken within tight time constraints and normally culminate in a written and oral feasibility report.The contents and processed , postpone or cancel the project. Thus, since the Feasibility study may lead to the commitment of large resource, it becomes Necessary that it should be conducted competently and that no fundamental errors of judgment made.

**Types of feasibility:-**

**1. Technical feasibility**

**2. Operational feasibility**

**3. Economical feasibility**

**4. Social feasibility**

**5. Management feasibility**

**6. Legal feasibility**

**7. Time feasibility**

**1. Technical feasibility:-**Technical feasibilityinvolvesdetermining whether or not a system can actually be constructed to solve the problem at end. This is considered with specifying equipment and software that will successfully satisfied the user requirement. The technical needs of the system may vary considerable ,but might include:-

►The facility to produce outputs in a given time.

►Response time under certain condition.

►Ability to process a certain volume of transaction at a particular Speed.

►Facility to communicate data to distant location.

**2. Operational feasibility**:-Proposed projects are of course beneficial only if they can be turned into information system that will meet the organization’s operating requirement. Simply started, these tests offeasibility ask the system will work when developed and installed. There are there major barrier for implementation. It is related to human organizational and political aspects. The points to be considered are :-

►What change will be brought with the system?

►What organizational structures are distributed?

►What new skills will be required? Does the existing staff member have? These skills? If not, can they be trained in the due course of time?

**3. Economical feasibility**:- Economic analysis is the most frequently used technique for evaluating the effectiveness of a proposed system. More commonly known as cost/benefit analysis the procedure is to determine the benefits and saving that are expected from a proposed system and compare them with cost. If benefit out weights costs, a decision is taken to design and implementation the system.

**4. Social Feasibility**: - Social Feasibility is a determination of whether a proposed project will be acceptable to the people or not. This determination Typical examines the probabibality of the project being accepted by group directly affected by the proposed system change.

**5.Management feasibility**:- It is a determination of whether a proposed project will be acceptable to management. If management does not accept a project or gives a negligible support to it, theanalyst will tend to view the project as a non-feasible one.

**6. Legal feasibility**:- Legal feasibility is a determination of whether a proposed project infringes on known acts, Statutes, as well as any pending legislation. Although in some instance the project might appear sound, on closer investment it may be found to infringe on several legal areas.

**7. Time feasibility**:- Time feasibility is a determination of whether a project can be implementing fully with in a stipulated time frame .If a project takes too much time it is likely to be rejected.

**Development of software**

Software development may install purchased software or they may develop new, custom designed programs. The choice depends on the each option, the time available to develop software and the availability of programmers. Generally it has been observed that programmers are part of permanent staff in a big organization. In smaller organization, without programmers, outside programming services may be hired or retained on a contractual basis. Programmers are also responsible for documenting the program, providing an explanation of how and why certain procedures are coded in specific ways. Documentations is essential to test the program and carry on maintenance once the application has been installed.

1.**User Management Assessment**:- Evaluation of the attitudes of senior and user manager within the organization, as end-users.

2.**Development Performance:**- Evaluation of the development process in accordance withsuch yardsticks as overall development time and effort, conformance to budgets and standards and other project management criteria.Maintenance is necessary to eliminate errors in the working system during its working life and to tune the system to any variations in its working environment. Oftensmall system deficiencies are found as a system is brought into operations and changes are made to remove them. System planners mustalways plan forresource availability to carry out these maintenance functions. The importance of maintenance is to continue to bring the new system to standards.

**Design of the system**

The design of an information system produces the details that clearly describe how a system will meet the requirements identified during system analysis. Systems specialists often refer to this stage as logical design, in contrast to the process of developing program software, which is referred to as physical design.

**Devlepment of the softwere:-** Software development may install purchased software or they may develop new, custom designed programs. The choice depends on the each option, the time available to develop software and the availability of programmers. Generally it has been observed that programmers are part of permanent staff in a big organization. In smaller organization, without programmers, outside programming services may be hired or retained on a contractual basis. Programmers are also responsible for documenting the program, providing an explanation of how and why certain procedures are coded in specific ways. Documentations is essential to test the program and carry on maintenance once the application has been installed.

**Data flow digrame(dfd)**

A data flow diagram is a graphical technique that depicts information or data flow and the transforms that are applied as data move from input to output. A DFD therefore provides an indication of the transformation of data as it moves forward and it also depicts the functions that actually transform the data. The DFD is also called a bubble chart.

**Following notations are used in DFD**:-

This denotes an entity that is outside the system. It is not a part of the system and can be a machine, another software system, an rganization or a person. This entity interacts with the system only to the extent of providing some input to the system and receiving some outputs from the system.

This is a process or transform that receives the information received from the external entity, processes it or changes it in some way and then sends it to an external entity.

This arrow denotes a data object or the data item that is being sent either from one process to another or from an external entity to a process etc. It is essential to place an arrow on the data object because the direction of the arrow indicates the data flow. For example, in the figure above, data object A denotes information flow from external entity A to the system.

This represents a store or repository of data that is used by the software. This can be equated to a physical file or folder or notebook containing data that is used in manual systems.

##### PROCESS LOGIC OF THE PROJECT:-

###### **Pizza ordering system**

CusSearch

Table

customer

Distributor

Cussearch

Monthly Report

Weekly Report

Report

**D.F.D**

Context Level:-

Customer

Users

Water

Distributor

**CONCLUSION**

So, friends, this was all about online water billing system. You know the importance of this system in our day-to-day lives as we all prefer online ordering over ordering on phone. All these modules can be implemented in the web application .

**LIMITATION**

* It is not very big project for the online detail system
* It is not character based so to run it we need 32 or 64 bit windows operating system

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