

Indira Gandhi National Open University

PROJECT PROPOSAL(SYNOPSIS)

BCSP-064

ON

ONLINE BANKING SYSTEM

By

Kaustav Bhattacharya(176568741)

UNDER GUIDANCE

OF

Mr. Sanjeev Kumar

Submitted to the School of Computer and Information Science in
partial fulfillment of the Requirements for the degree of

Bachelor

Of

Computer Applications



Indira Gandhi National Open University

MaidanGarhi

New Delhi-110068

**SCHOOL OF COMPUTER AND INFORMATION SCIENCES
IGNOU, MAIDAN GARHI, NEW DELHI - 110 068**

II.	PROFORMA OF BCA PROJECT PROPOSAL (BCSP-964) (Project's Title and Guide's Details)
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Enrolment No.: 176568741..... Regional Centre Code: 37..... Study Centre: 39015 P

1. Name and Address of the student KAUSTAV BHATTACHARYA
Flat No. 101, Ground Floor, Shiva Sankalp, Industrial Area, Ghaziabad,
Uttar Pradesh - 201014..... Telephone No. 9888009115.....
E-mail: kaustavb71@gmail.com.....

2. Title of the Project ONLINE BANKING SYSTEM.....

3. Name and Address of the Guide SANTEEV KUMAR C/o KUNDAN KUMAR
285 - Ground Floor, Typam 3, Sec. 3, SADIQUE NAKAR
New Delhi - 110 049.....

4. Qualification of the Guide

Ph.D.	M.Tech.	B.Tech.	<input checked="" type="checkbox"/> MCA	Any other _____
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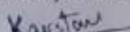
(Attach bio-data also)

Note : i. All the above mentioned Degrees must have been awarded in Computer Science/IT only
ii. A Guide should not guide more than 8 students of BCA at any point of time.)

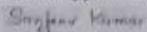
5. Industrial / Teaching experience of the Guide (in Years) 8+ years of experience as Software engineer

6. Software Used for this Project: JSP, MySQL, HTML, CSS, Bootstrap, JavaScript, Microsoft

(Note :
1. Use of Visual Basic and MS-Access as Front End and Back End respectively is forbidden. But, you are permitted to use Visual Basic with other Software. Also, you can use MS-Access with other software.
2. Use of C or C++ Programming Language for Project Related to Database Management is strictly forbidden.)


Signature of the Student

Date: 29/06/2020


Signature of the Guide

Date: 23-06-2020

Important: 1. Attach this Proforma along with Guide's Bio-data and Project Synopsis in the Project Report. 2. Not more than one student is permitted to work on a project.	
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For Office Use Only

<input type="checkbox"/>	<input type="checkbox"/>	Signature, Designation, Stamp of the Project Proposal Evaluator Date: _____
--------------------------	--------------------------	---

Approved Not approved

Suggestions for reformulating the Project:

5

Curriculum Vitae

Sanjeev Kumar

Qualification:- MCA

Experience:-10 Years 6 Months

Mobile No.:-+91-9718143197

Email:-sanjeev.srvstv@gmail.com

Objective				
<ul style="list-style-type: none"> ✓ To provide the valuable technical expertise in any technology in process-oriented organization with learning opportunities provide mean opportunity to grow personality and acquire knowledge. 				
Personal Skills				
<ul style="list-style-type: none"> ✓ Appetite to learn new things, a person waiting to take new challenging assignments that helpfully to utilize my skills and abilities. 				
Educational Qualifications				
Degree	School/College	University/Board	Academic year	
M.C.A	U.I.C.T New Delhi	I.G.N.O.U New Delhi	2012	
B.C.A	U.I.C.T New Delhi	I.G.N.O.U New Delhi	2010	
12 th	M.J.K College Bettiah Bihar	B.I.E.C Patna Bihar	2007	
10 th	Raj High School Bettiah Bihar	B.S.E.B Patna Bihar	2005	
Professional Experience				

- **Indian Council of Medical Research(ICMR),Medical Enclave, Near AIIMS Delhi-110029**
Working as a **Computer Programmer (Grade-B)** on Burden Of Non-communication Diseases Project from (04-September-2017 to Till Date)
- **National Council of Educational Research and Training Sri Aurobindo Marg, New Delhi-110016**, worked as a **Project Fellow(IT)** on **Adolescence Education Programme** funded by **United Nation Population fund Association (UNFPA)** From(01-July-2014 to 03-September-2017)
- **Stucare Solutions Private Limited, 553,3rd floor Aggarwal, Chamber-III Veer Savarkar Block Sakarpur, Delhi-110092** Worked as **Software Developer** from (01-January-2010 to 30-June-2014)

Sanjeev Kumar

Professional Expertise	
Programing Languages	Web-based technologies : CORE PHP5, Java Script,Python JQUERY, Angular JS, Moodle, Drupal, Wiki, OJS, PHP-BB,PHP,WordPress, Joomla, CakePHP,CoreJava, Advance Java(Hibernate + Spring),Struts, Hibernate, Visual Basic, C, C++ and Java, Unified Modeling Language (UML),SAP business software applications,
Databases	ORACLE 11g,MY SQL (5.0+ above), PL/SQL,SQL, Sequel, SQLi, Sql Server,Maria DB
Web Technology	Wordpress,Drupal,HTML, DHTML,XHTML,XML,XSLT,CSS,AJAX,Angular JS, BOOTSTRAP Node JS, React JS, Tarafom,Cloud Front, Git Hub,OOPS, MVC, WCF, Concepts,Symphonic, BeanStalk,Jira, Phpununit,AWS etc.
Web Servers	Apache,Wamp 8.1,Xamp 1.8,2,3 Lamp 0.0.12
PHP Frameworks	Zend,CakePHP,Codeigniter
Web Services used Technology	Zend Framework, Codeigniter, Amazon Web Services(AWS)
Build Tool	Phing
Editor's	Eclipse,Netbeans>Editplus,Dreamweaver
Open Source Software(CMS)	Drupal 6,7,8,Wordpress,Joomla,Magento
Browser Scripting	JavaScript, AJAX, JQuery, JSON
Mobile apps	Android,ios Iphone
Documentary Skill	Algorithm Design and Understand, SRS
Testing Skill	Software Testing and Test Cases & Unit Testing
Outside of PHP	PG Degree in Computer Application with Above 9 years experience IT Experience in Software Development and knowledge of designing and developing client/server applications, skill in application programming and systems analysis and related programming support functions and should have the proven knowledge of relational database management software such as MS SQLserver and Oracle/ERP/accounting software in IT/ICT Systems implementation. Should have experience in development and implementation of web based applications and mobile applications Expertise in MS office including Word, Excel Power Point and Ms-Outlook. Good oral and written communication skills both in English and Hindi Above 9 years experience in IT System Implementation Experience in managing large scale technology implementation or health programs in Government Experience of working with Government/Government Organizations Experience in mobile technology for community health or nutrition (Health) programs Experience in managing a technical team Lead the L-2 Support Team; provide directions to the members for ensuring technical support issues are addressed satisfactory and promptly Support Ministry in technical discussions and technical analyses. Support in resolving complex problems. Interface with

Sanjeev Kumar

	NIC/NICSI and Infrastructure team in regards to implementation of ICT-RTM. Monitor the work being done by the Infrastructure team. Support the NNRC-CPMU in planning for scale up of ICT-RTM. Support the NNRC-CPMU in creating complex custom data analyses. Conduct refresher training of Central-government-level and State-level CAS users, as needed. Support the maintenance of the CAS System and certain, minor updates of CAS content enable through that CAS web administration site like users of CAS system, using the CAS web administration site. Any other related activities of the project that may be assigned by the Executive Director. <ul style="list-style-type: none"> • OS: Windows, Linux, SPSS, Biog, UML Analysis Software, IRT(Core PHP and J2EE, Facebook API Bulk SMS API, TwitterAPI, LinkedInAPI, GoogleAPI, Off page optimization, OnPage optimization, Upgrade of Sites in Drupal with Custom theme integration with custom plugin development in both technologies(Drupal & Wordpress), IRT, Agile/Responsive Designs, Code Integration, Code Optimization and validations, Web Development, Web Maintenance and UI Integration, OOPs concepts, experience in writing PL/SQL queries, to be a good team player.
Operating Systems	Proficient in LINUX (Ubuntu 12+) operating system using all open source software, Fedora, Windows, Foundations and practices under WINDOWS/LINUX/UNIX platforms, MAC.

Web Developer (PHP,Drupal Developer) With Ecommerce Experience And Strong Background In open Source Technologies Including,

Drupal 8, Drupal 7,6 Linux ,Platform ,MySQL ,Jquery Apache ,PHP, Wordpress

1. Experience In database design software engineering and development.
2. Proven ability to jump in new project and learn New Technologies quickly.
3. Extensive Drupal Experience and very active in the Drupal community Developing New modules.
4. Experience With ecommerce on Drupal Utilizing Ubercart and Drupal commerce.
5. Support Developer & Maintainer of Drupal Modules.
6. Payment gateways

Projects
<p>1. ICMR Employees Paybill Software online (http://bic.icmr.org.in/paybill/index.php)</p> <p>Role : Team Member(Developer)</p> <p>Description: The Indian Council of Medical Research (ICMR), the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest and largest medical research bodies in the world. The ICMR is funded by the Government of India through the Department of Health Research, Ministry of Health ICMR Employees Paybill Software online providing Monthly Salary Slip of all employees of ICMR along with individual login id & Password.</p> <p>Environment: Core PHP, MySql, Ajax, JS, Jquery, HTML, CSS</p>

Santosh Kumar

Responsibilities:

- Developing the code as per the requirements.
- Handled different types of issues.
- Writing code and Integrate the modules

Tools: Eclipse**OS:**Linux using open source software (Ubuntu 13.4+LTS)**2. NIMS Employees Paybill Software online****(<http://14.139.60.53/paybillnims/Loginindex.php>)**<http://218.248.6.39/nutritionatlas/dashboard/cd.php><http://218.248.6.43:8080/CountWhatYouEat/Home.do>**Role :** Team Member(Developer)

Description: *National Institute of Medical Statistics (NIMS)* is one among 28 institutes of Institutes of Indian Council of Medical Research, (ICMR), New Delhi & known as National Institutes of Medical Statistics(**NIMS**). The Institute came into existence in the year 1977 with the mandate of the Institute to provide technical expertise on research methodology, NIMS Employees Paybill Software online providing Monthly Salary Slip of all employees of NIMS along with individual login id & Password.

Environment::-Core PHP, MySql, Ajax, JS, Jquery, HTML, CSS, Java Script.**Responsibilities:**

- Developing the code as per the requirements.
- Handled different types of issues.
- Writing code and Integrate the modules

Tools: Eclipse**OS:**Linux using open source software (Ubuntu 13.4+LTS)**3 . Adolescence Education Programme****(<http://www.aeparc.org/>)****Role :** Team Member(One Developer),Complete developed website & reply of student using it's admin panel

Description: India is home to 253 million adolescents; young people in the age group of 10-19 years who comprise 21% of the country's population (*Census, 2011*). Not only does this cohort represent India's future in the economic realm, but its experience, attitudes and behaviours will largely determine whether India is able to realize the vision of an equitable civil society envisaged in its constitution. National Council of Educational Research and Training (NCERT) and the United Nations Population Fund (UNFPA) is organising the Youth Festival (NYF) -2016 under the Adolescence Education Programme(AEP) on the theme, 'My School – My Space..!', from 5 to 8 December, 2016 at NCERT, New Delhi. This document contains important instructions and guidelines regarding the event.

Concise V...

Environment: , Drupal 7,PHP,,HTML,CSS,jquery MySql,phptemplate,AJAX, Javascript.
Responsibilities:

- Developing the code as per the requirements.
- Handled different types of issues.

Tools: Eclipse.

OS:Linux using open source software Ubuntu 13.4+ LTS

Developed & Launched Several Drupal Sites including:

Role : Team Member(Three Developers)

Description:-IAS100.IN **IAS100.in** is online portal for Civil Services exam preparation, ias test series for prelims and mains in hindi and english, updated ias study material, upsc Data Analytic Solution (WWW.IAS100.IN) is developed for basic and advanced Statistical Computing and Graphics mechanism. Like mean, mode, median etc. All based on R (programming language).

Environment: PHP5, SQL engine, JQuery, Ajax,JS, MySQL,Apache,Tomcat etc.

Responsibilities:

- Developing the code as per the requirements.

Tools: Eclipse

OS:Linux using open source software Ubuntu 13.4+ LTS

4. NIMS(nims-icmr.nic.in/NIMS/index.jsp)

Role : Team Head (Two Developer)

Description: The project is being developed for **National Institute of Medical Statistics** is a is one of the permanent institutes of Institutes of Indian Council of Medical Research, (ICMR), New Delhi & known as National Institutes of Medical Statistics(NIMS).The Institute came into existence in the year 1977 with the mandate of the Institute to provide technical expertise on research methodology, programme evaluation, mathematical modeling, data analysis etc. It also provides technical assistance to institutes throughout india. Institute for Research in Medical Statistics (IRMS), an institute of Indian Council of Medical Research, established in 1977 will be known as National Institute of Medical Statistics (NIMS) from 9th November 2005.

Environment: JSP,HTML,CSS,JQUERY,,JS,Flash

Responsibilities:

Developing the Code as per the requirements of client.

- Involved in developing the library for company
- issues resolving
- integration of chart in project module as per requirements

Tools: Eclipse

OS:Linux using open source software Ubuntu 13.4+ LTS

Ca...
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Hobbies	Computer Programming, Reading Computer Books along with PMA Books, Ready for Learn something New Technology or others, Travelling, Developed Creativity in software development, Problem Solving skill in Project flow issues, Good in analytical skills and quick problem solver.												
Achievements	<ul style="list-style-type: none"> ✓ Best Year of the employee. ✓ Best Month of the employee. <p><i>This resume is only for BCA/MCA I year Project Guide documents not for other purpose</i></p>												
Personal Information	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>Father's Name</td><td>Shri Ravindra Kumar Shrivastava</td></tr> <tr> <td>Date of Birth</td><td>5th Jan 1991</td></tr> <tr> <td>Local Address</td><td>Sanjeev Kumar C/o Kundan Kumar, House.Number:-285, Ground Floor, Type-3, Sector-3, Sadique Nagar Delhi-110049.</td></tr> <tr> <td>Language</td><td>English, Hindi</td></tr> <tr> <td>Marital Status</td><td>Single</td></tr> <tr> <td>Contact No</td><td>+91-9718143197, +91-8178103225</td></tr> </table>	Father's Name	Shri Ravindra Kumar Shrivastava	Date of Birth	5 th Jan 1991	Local Address	Sanjeev Kumar C/o Kundan Kumar, House.Number:-285, Ground Floor, Type-3, Sector-3, Sadique Nagar Delhi-110049.	Language	English, Hindi	Marital Status	Single	Contact No	+91-9718143197, +91-8178103225
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Language	English, Hindi												
Marital Status	Single												
Contact No	+91-9718143197, +91-8178103225												


Date:-10.06.2020

Sanjeev Kumar
Signature of the Guide



इन्दिरा गांधी राष्ट्रीय मुक्त विश्वविद्यालय
INDIRA GANDHI NATIONAL OPEN UNIVERSITY

STUDENT EVALUATION DIVISION

Maidan Garhi, New Delhi - 110 068

Master of Computer Applications

STATEMENT OF MARKS

8952

MCA 073206076
SANJEEV KUMAR
PRAGATI MARKETING BHOLA BABU
MARKET COMPLEX TEEN LALTAN RD
WEST CHAMPARAN
BETTIAH 845438
BIHAR

CERTIFICATE NO.: AD 0004186

marksheet
This certificate is only for IGNOU
BCA/MCA Project Submission Guide JUNE 2012
document not for other purpose

DATE: 23/08/2012

TERM-END EXAM.: JUNE 2012

TERMINAL EXAM.: Sanjeev Kumar

COURSE CODE	CONTINUOUS EVALUATION		TERM-END EXAMINATION		WEIGHTAGE		M.M.	OVERALL MARKS		COURSE STATUS
	MKS OBT.	LG	MKS. OBT.	L.G.	25% of C.E.	75% of T.E.E.		MKS	L.G.	
CREDIT TRANSFER FROM BCA										
MCS031	85	A	40	D	21	30	100	51	C	SC
MCS032	82	A	42	D	21	32	100	53	C	SC
MCS033	85	A	40	D	21	30	50	26	C	SC
MCS034	80	A	40	D	20	30	100	50	C	SC
MCS035	87	A	40	D	22	30	100	52	C	SC
MCS041	86	A	40	D	22	30	100	52	C	SC
MCS042	84	A	40	D	21	30	100	51	C	SC
MCS043	83	A	40	D	21	30	100	51	C	SC
MCS051	88	A	40	D	22	30	100	52	C	SC
MCS052	89	A	68	B	22	51	50	37	B	SC
MCS053	87	A	44	D	22	33	100	55	C	SC
MCE003	90	A	40	D	23	30	100	53	C	SC
MCE004	89	A	40	D	22	30	100	52	C	SC
MCE011	87	A	43	D	22	32	100	54	C	SC
* STUDENT IS FROM BCA-MCA INTEGRATED SCHEME.										
COURSES OF 1st AND 2nd SEMESTER WORTH 36 CREDITS ARE EXEMPTED FOR STUDENTS OF BCA ADMITTED DIRECTLY TO 3RD SEMESTER OF MCA UNDER THE SCHEME OF INTEGRATED PROGRAMME. MARKS FOR THESE SEMESTERS ARE TRANSFERRED INTO THIS PROGRAMME AS "CREDIT TRANSFER FROM" BCA.										

LAB COURSES

COURSE CODE	CONTINUOUS EVALUATION		TERM-END PRACTICAL EXAMINATION				T.P.M. OUT OF 100	25% of C.E.	75% of TEPE	M.M.	OVERALL MARKS		COURSE STATUS	
	MKS OBT.	LG	MKS SEC-1	MKS SEC-2	MKS SEC-3	MKS SEC-4					MKS	L.G.		
MCSL036	86	A	20	25	20	#	65	B	22	49	100	71	B	SC
MCSL045	75	A	14	18	#	#	64	B	19	48	50	34	B	SC
MCSL054	89	A	22	13	#	#	70	B	22	53	50	38	A	SC

PROJECT WORK

COURSE CODE	CONTINUOUS EVALUATION		REPORT MARKS		VIVA MARKS		M.M.	OVERALL MARKS		COURSE STATUS	
	MKS	L.G.	MKS	L.G.	MKS	L.G.		MKS	L.G.		
MCS044	84	A			56			100	68	B	SC
MCS060	#	#			86			200	122	B	SC

MCA SUCCESSFULLY COMPLETED IN JUNE 2012 : MARKS = 1609/2800 WITH 57.45%.

For details see overleaf.

Sanjeev Kumar

P. Thapar

REGISTRAR (SED)

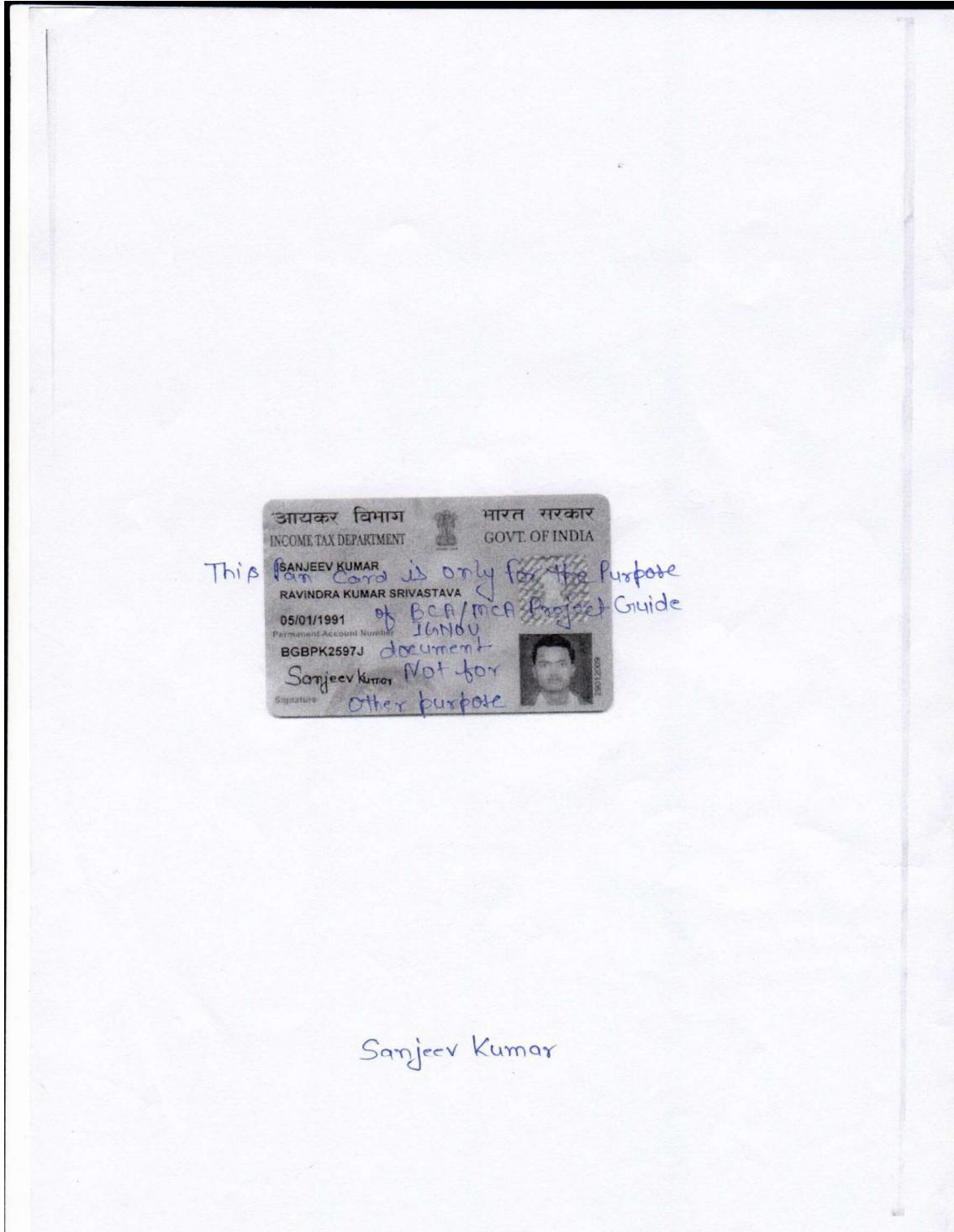


TABLE OF CONTENT

S.NO.	<u>CONTENT</u>	<u>PAGE NO.</u>
1.	TITLE OF PROJECT	12
2.	INTRODUCTION AND OBJECTIVES OF THE PROJECT	13-14
3.	PROJECT CATEGORY	15
4.	ANALYSIS	16-21
5.	COMPLETE STRUCTURE OF PROJECT	22-37
6.	TOOLS, SOFTWARE AND HARDWARE REQUIREMENTS	38
7.	ARE YOU DOING THIS PROJECT FOR ANY INDUSTRY/CLIENT? MENTION YES/NO. IF YES, MENTION THE NAME AND ADDRESS OF THE INDUSTRY OR CLIENT.	39
8.	FUTURE SCOPE AND ENHANCEMENT OF PROJECT	39

1. TITLE OF PROJECT

ONLINE BANKING SYSTEM



2. INTRODUCTION AND OBJECTIVES OF PROJECT

The “Online Banking System” project is a model Internet Banking Site. This site enables the customers to perform the basic banking transactions by sitting at their office or at homes through PC or laptop. The system provides the access to the customer to create an account, deposit/withdraw the cash from his account, also to view reports of all accounts present. The customers can access the banks website for viewing their Account details and perform the transactions on account as per their requirements. With Internet Banking, the brick and mortar structure of the traditional banking gets converted into a click and portal model, thereby giving a concept of virtual banking a real shape. Thus today's banking is no longer confined to branches. E-banking facilitates banking transactions by customers round the clock globally.

The primary aim of this “Online Banking System” is to provide an improved design methodology, which envisages the future expansion, and modification, which is necessary for a core sector like banking. This necessitates the design to be expandable and modifiable and so a modular approach is used in developing the application software. Anybody who is an Account holder in this bank can become a member of Bank Account Management System. He has to fill a form with his personal details and Account Number.

Bank is the place where customers feel the sense of safety for their property. In the bank, customers deposit and withdraw their money. Transaction of money also is a part where customer takes shelter of the bank. Now to keep the belief and trust of customers, there is the positive need for management of the bank, which can handle all this with comfort and ease. Smooth and efficient management affects the satisfaction of the customers and staff members,

indirectly. And of course, it encourages management committee in taking some needed decision for future enhancement of the bank.

Now a day's, managing a bank is tedious job up to certain limit. So software that reduces the work is essential. Also today's world is a genuine computer world and is getting faster and faster day-by-day. Thus, considering above necessities, the software for bank management has become necessary which would be useful in managing the bank more efficiently.

All transactions are carried out online by transferring from accounts in the same Bank or international bank. The software is meant to overcome the drawbacks of the manual system.

The OBJECTIVE is to prepare a software or application, which could maintain data & provide a user friendly interface for retrieving customer related details just in few seconds, with 100% accuracy. Software is completely computerized, so it is not time consuming process.

No paper work required & can be implemented further.

The application should also facilitate the addition of new Customer A/c, deletion of A/c and modification of existing customer A/C. Block transactions for any A/c by Freeze/Unfreeze facility. Show all or required transaction.

Any account can be opened with zero(0) balance also.

3. PROJECT CATEGORY

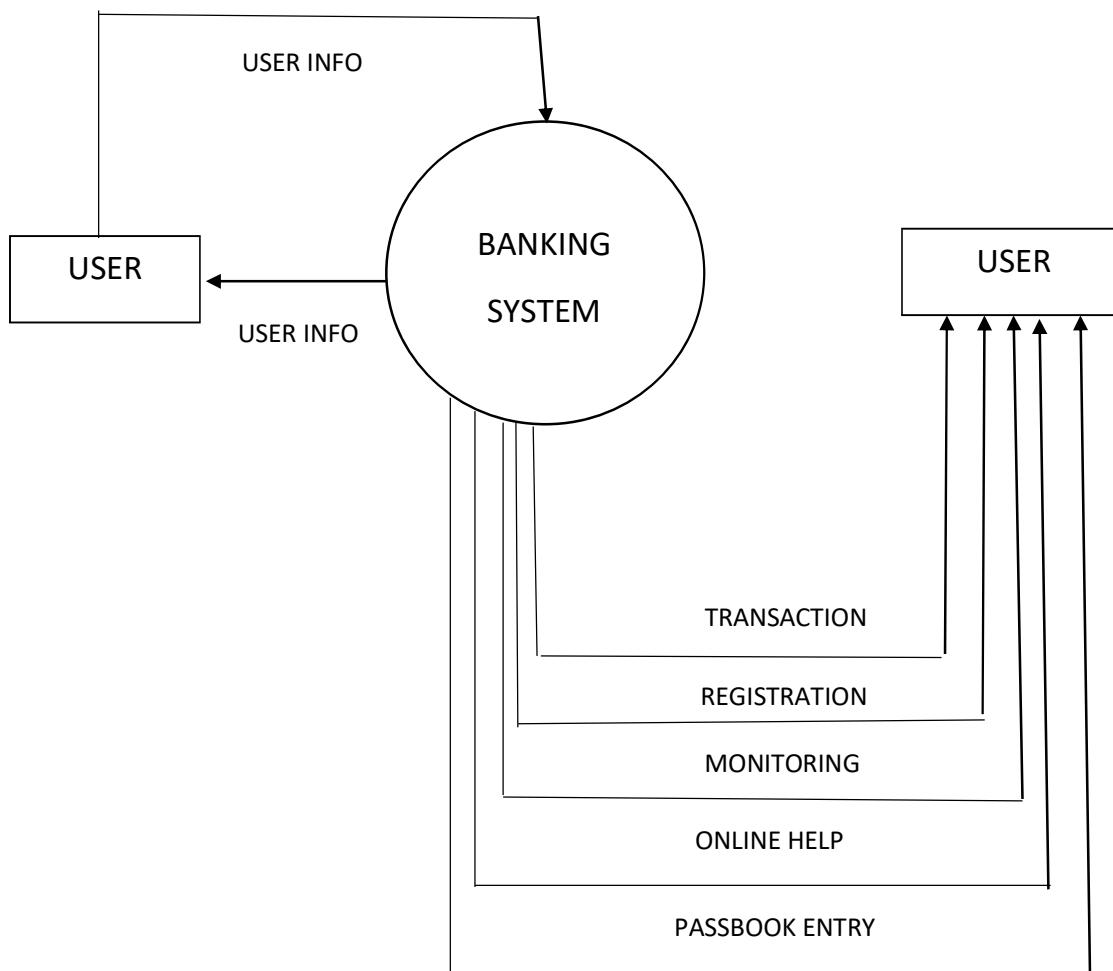
This project is under category of “**ONLINE BANKING SYSTEM**”. This project aims to provide improved functionality and better user interactive environment. With ‘HTML’ as a front end and JSP, Servlet and MySQL as a back end, this project falls in the category of Relational Database Management System (RDBMS) project.

HTML provides a fully user interactive windows based environment that helps user to learn the system in a better way. While MySQL on the other hand, provides better functionality and effectiveness to the system while maintaining the database records. And JSP and Servlet act as a bridge between the front-end and the database All the tables are being used in this project are inter-related and fully normalized, so this project “**ONLINE BANKING SYSTEM**” is a “Web Based Application Project” using Relational Database Management System (RDBMS).

Hibernate is also used, which is an ORM tool which maps the object containing the data to the relational database. It’s basically a tool for JAVA programming language and has many advantages over JDBC.

4. ANALYSIS

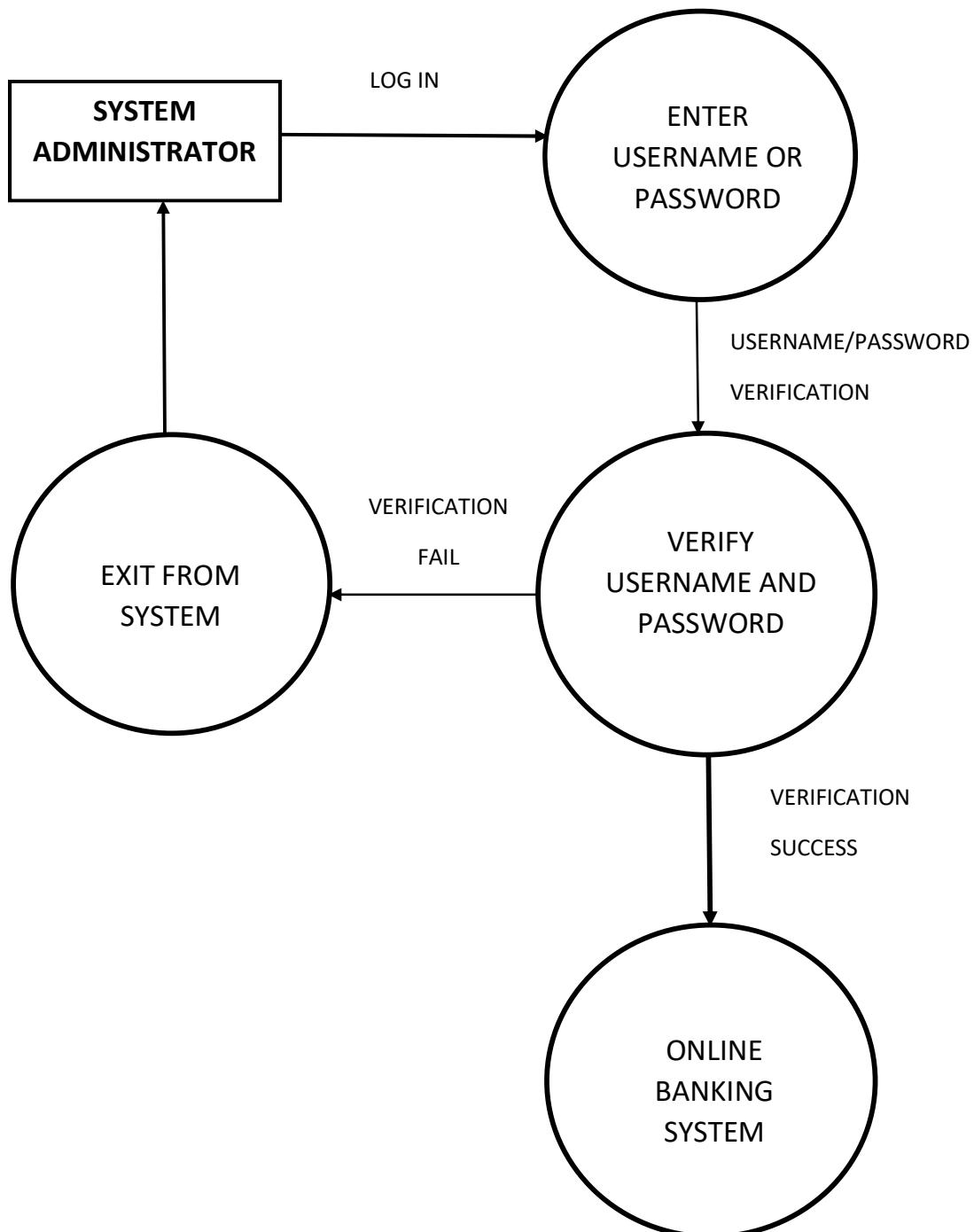
4.1) DATA FLOW DIAGRAM (DFD):



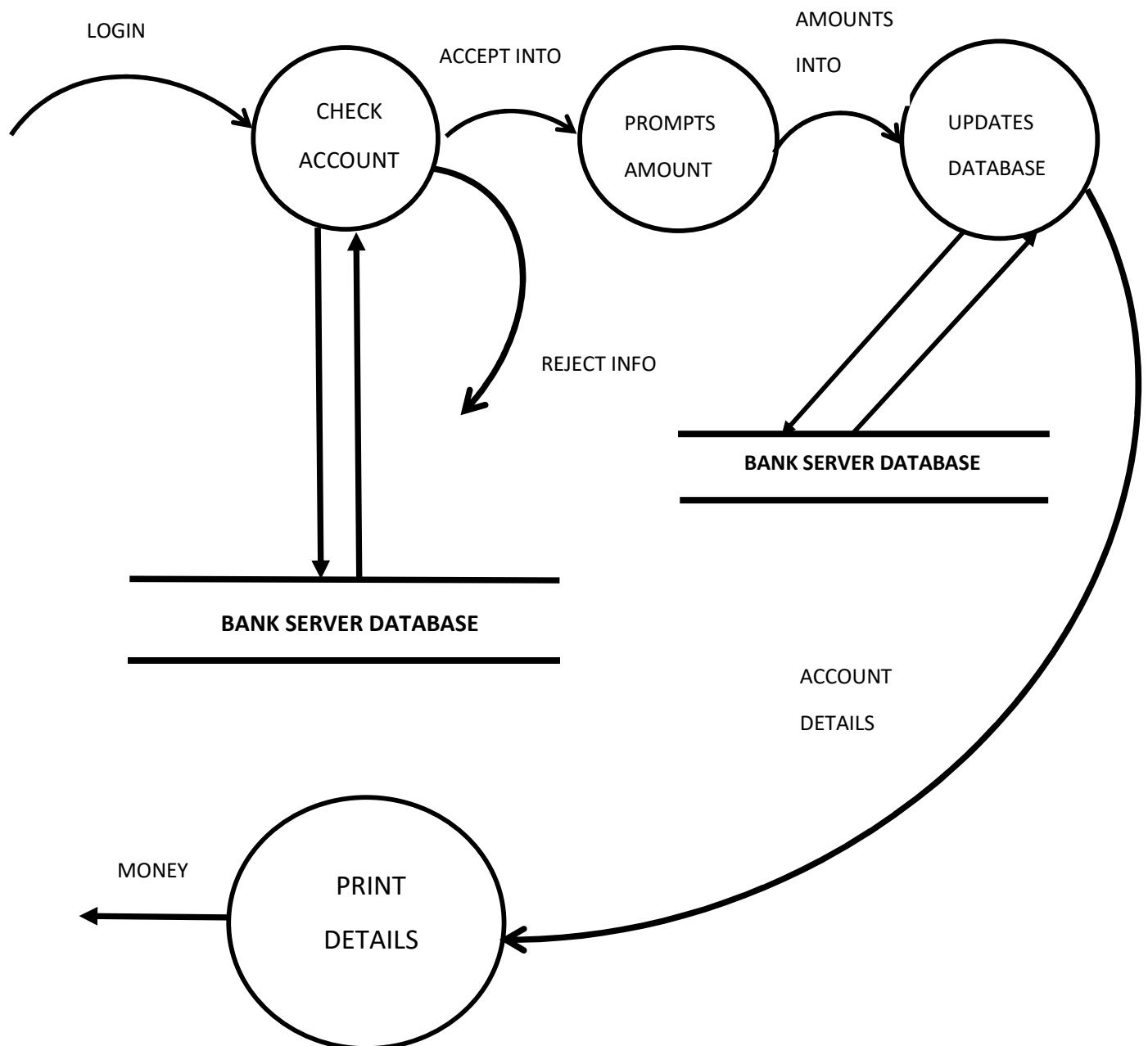
0-(Zero) Level DFD (Context Level DFD)

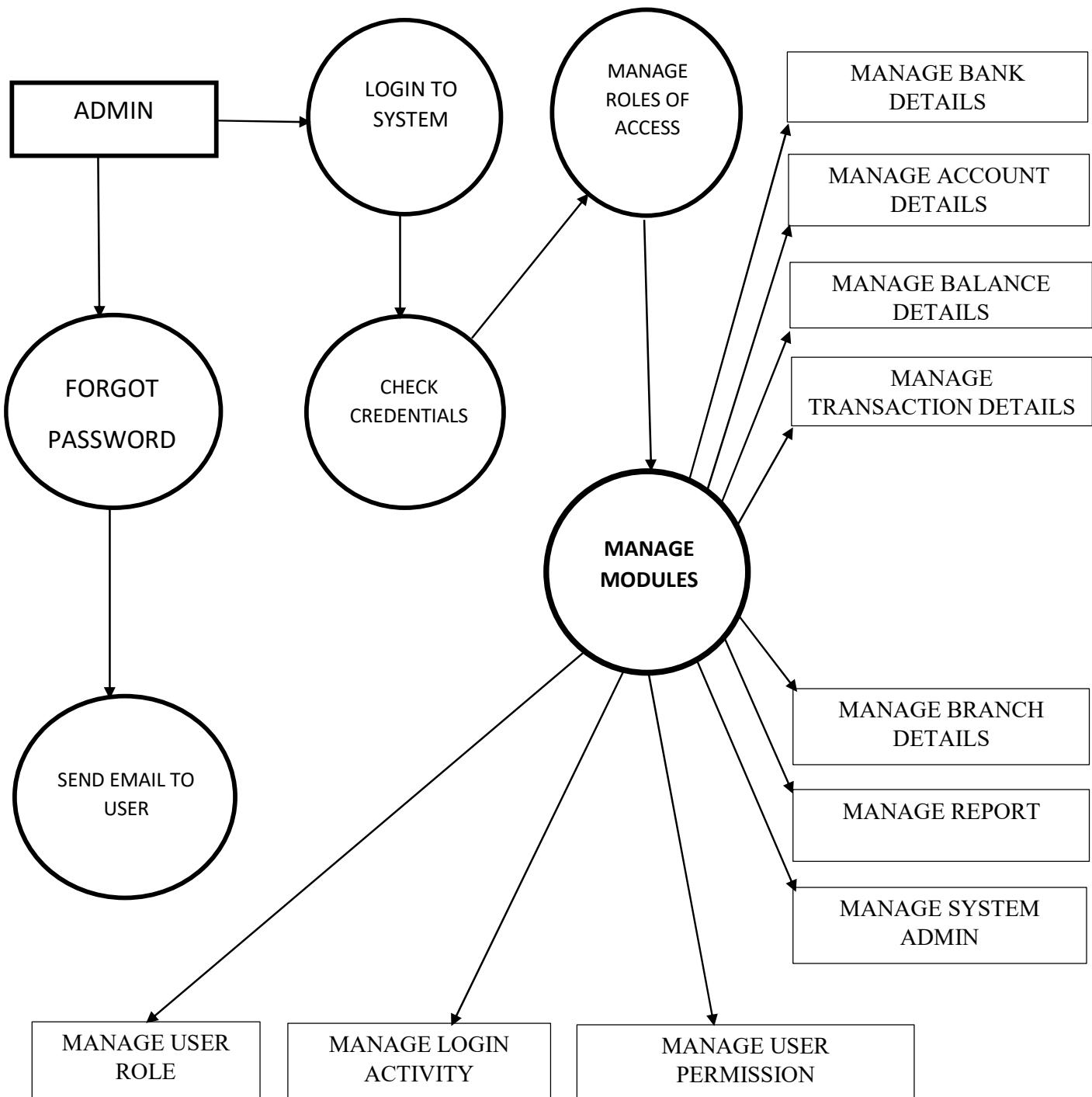
for ONLINE BANKING SYSTEM

First Level of Data Flow Diagram for
System Login in ONLINE BANKING SYSTEM of Admin Login Details

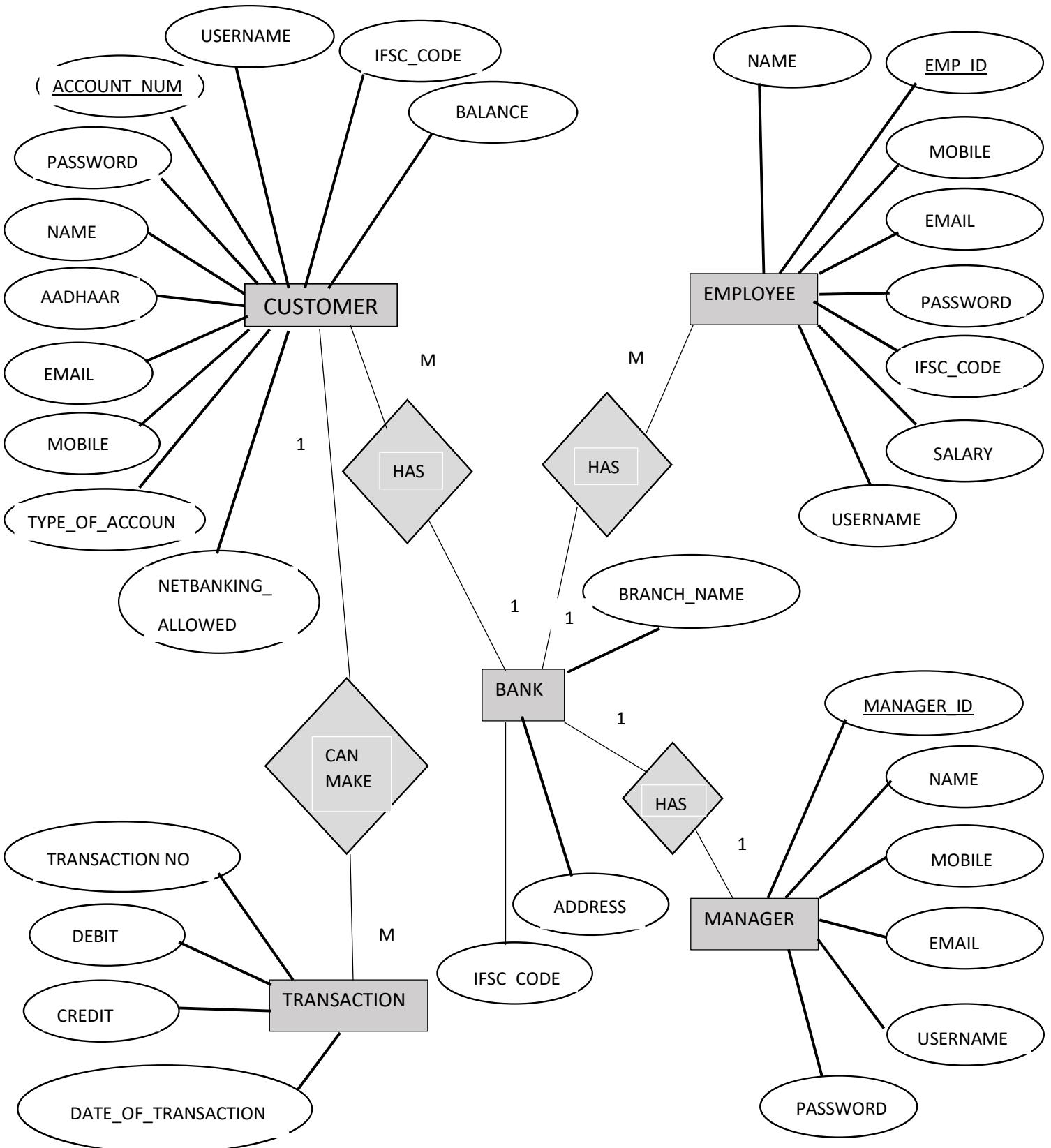


First Level of Data Flow Diagram for
CUSTOMER TRANSACTION in ONLINE BANKING SYSTEM

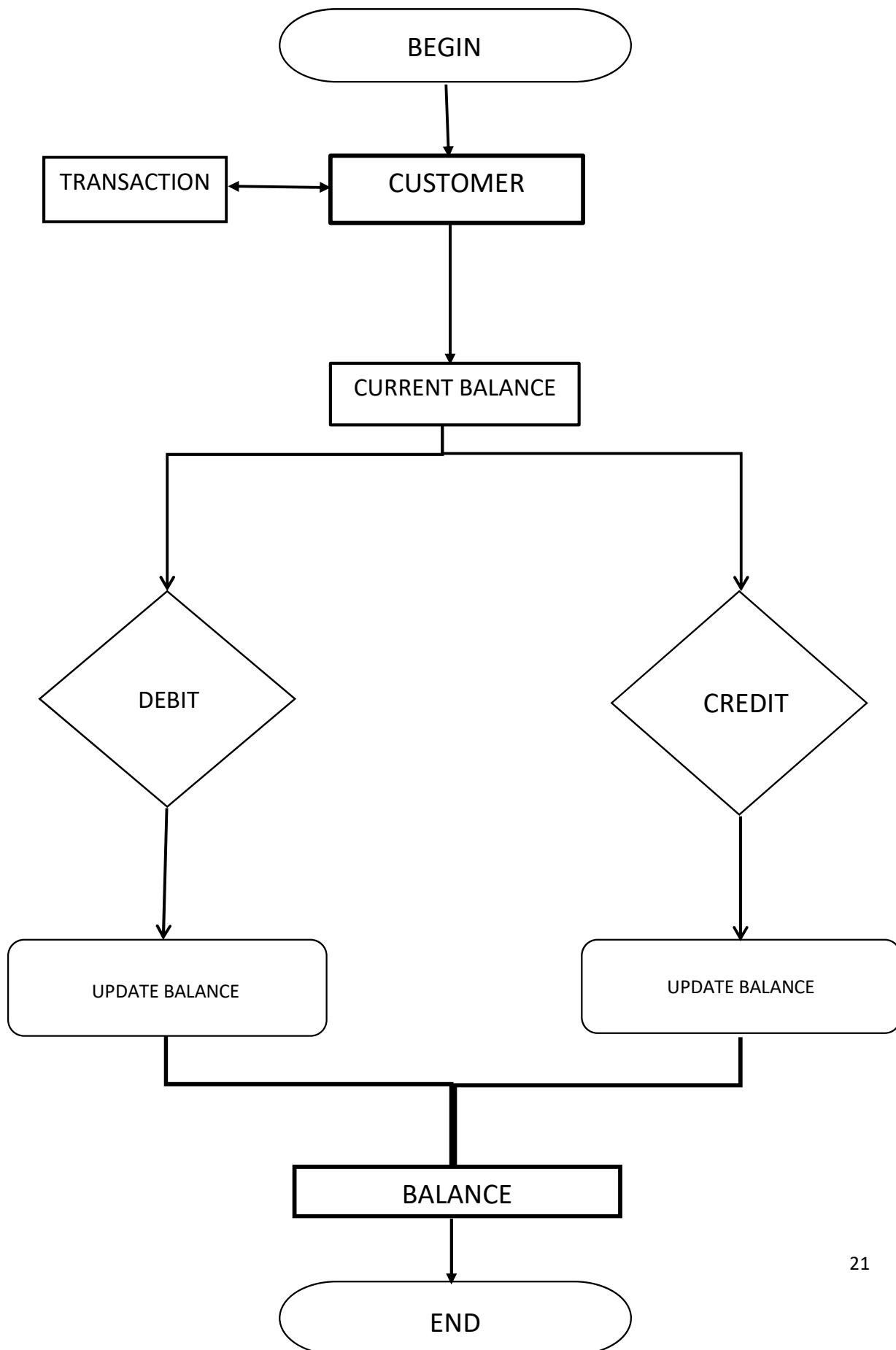


SECOND LEVEL DATA-FLOW-DIAGRAM**OF ONLINE BANKING SYSTEM**

4.2) ER-DIAGRAM



4.3) FLOWCHART



5. COMPLETE STRUCTURE OF PROJECT

5.1 NUMBER OF MODULES AND THEIR DESCRIPTION

The Online Banking System Project consists of 4 functional elements: *Customer transaction module, Employee Transaction Module, Manager Transaction Module and Developer/Administration Module.*

1. CUSTOMER TRANSACTION MODULE

An enhanced atomized system is developed to maintain customer transaction. Features include

- Creation of new Bank Customer
- Type of Customer: Savings, Current
- Account Opening Form/New Customer Sign Up Form
- Existing Customer Login Form
- Each Customer Uniquely identified by A/c no.
- Each customer having a unique User-id and Password
- Main Menu options are like:
 1. Account Summary
 2. Funds Transfer to Another A/c
 3. Customer Profile
 4. Logout
 5. Transaction Report

2. EMPLOYEE TRANSACTION MODULE

An enhanced atomized system is developed to maintain employee role.
Features include

- Employee Details
- Update Customer Details
- Remove Customer
- View All Transaction made by customer
- Freeze/Un-freeze Account
- Deposit into Customer Account

3. MANAGER TRANSACTION MODULE

An enhanced atomized system is developed to maintain manager role. Features include

- Manager details
- Update Employee Details
- Remove Employee
- List all Employee's

4. DEVELOPER/ADMINISTRATOR MODULE

An enhanced module which is used to maintain the entire banking software application. Features include:

- Add Manager
- Remove Manager
- View all bank system tables

5.2 DATA STRUCTURES OF PROJECT:

Table: CUSTOMER

Field	Type	Null	Key	Default
Account_number	Bigint	No	Primary	Null
IFSCCode	varchar	Yes		null
aadhaar	Varchar	yes		null
Balance	Double	yes		null
Date of creation	Date	yes		null
Email	Varchar	Yes		null
Mobile	Varchar	yes		null
Name	Varchar	yes		null
netBankingAllowed	varchar	yes		null
Pan	Varchar	yes		null
Password	Varchar	yes		null
Type_of_account	Varchar	yes		null
Username	Varchar	yes		null
IFSCcode_id	Int	yes	foreign	null

Table: BANK:

Field	Type	Null	Key	Default
Id	Int	No	Primary	Null
Address	Varchar	Yes		Null
Branch_name	Varchar	Yes		Null
IFSC	Varchar	Yes		Null
Employee_emp_id	Bigint	Yes	Foreign	Null
Customer account number	Bigint	Yes	Foreign	Null

Table: EMPLOYEE:

Field	Type	Null	Key	Default
Employee_id	Bigint	No	Primary	Null
IFSCcode	Varchar	Yes		Null
Aadhaar	Varchar	Yes		Null
Email	Varchar	Yes		Null
Mobile	Bigint	Yes		Null
Name	Varchar	Yes		Null
Salary	Double	Yes		Null
username	Varchar	Yes		Null
Password	Varchar	Yes		Null
IFSCcode_id	Int	Yes	Foreign	null

Table: MANAGER:

Field	Type	Null	Key	Default
Manager_id	Bigint	No	Primary	Null
Email	Varchar	Yes		Null
Mobile	Varchar	Yes		Null
Name	Varchar	Yes		Null
Username	Varchar	Yes		Null
Password	Varchar	Yes		Null
Id	Int	Yes	Foreign	null

Table: TRANSACTIONS:

Field	Type	Null	Key	Default
Transaction_no	Bigint	No	Primary	Null
Debit	Varchar	Yes		Null
Credit	Varchar	Yes		Null
Date_of_transaction	Varchar	Yes		Null

5.3 PROCESS LOGIC FOR EACH MODULE

Here in the project there will be a number of modules and each module is based on respective process logic. The process logic will be both, batch process and on line processing for the respective modules and related tables. For different query purpose the logic will be online type. But different updating processes will be batched type.

On-line process is the key-press-events of controls when a user(customer) try to write anything in the Bank Account Management System. If the user tries to make a transaction to another account after filling all the details in the respective form, then batch processing will occur. The manager, employee and admin module are also on-line process but in those modules, batch processing isn't that much frequent.

If a user exit from the system, then batch processing will save all the data in the table permanently and commits the tables of the database.

PLANNING AND SCHEDULING:

PROJECT CONTROL SYSTEMS

The purpose of controlling a project is to monitor the progress of the activities against the plans, to ensure that the goals are being approached and eventually achieved. Other aspects of control are to detect, as soon as possible, when deviations from the plan are occurring so that corrective action may be taken. Most project control techniques are based on breaking down the goal of the project into several Intermediate goals. Each Intermediate goal can turn be broken further. This process can be repeated until each goal can turn be broken further. This process can be repeated until each goal is small enough to be understood. We can plan for each goal individually – its resource requirements, assignments of responsibility, scheduling, etc.

Two general scheduling techniques are GANTT charts and PERT Charts as discussed below.

GANTT CHART:

A bar chart is perhaps the simplest form of formal project management. The bar chart also known as GANTT CHART is used almost exclusively for scheduling purpose and therefore controls only the time dimension of projects. Gantt chart is a project control technique that can be used for several purposes, including scheduling, budgeting and resource planning. A Gantt chart is a bar chart, with each bar representing an activity. The bars are drawn against a time line. The length of each bar is proportional to the length of time planned for the activity. Gantt chart can take different forms depending on their Intended use. They are best for resource scheduling. Gantt charts are useful for resource planning and scheduling. Gantt chart they show the tasks and their duration clearly. However they do not show Inter task dependencies plainly.

PERT CHART:

Unlike the bar chart, PERT can be both cost and a time management system. PERT is organized by events and activities or tasks. PERT has several advantages over bar charts and is likely to be used with more complex projects. One advantage of PERT is that it is a scheduling device that also shows graphically which tasks must be completed before others are begun. PERT enables the calculation of a Critical path. Each path and cost associated with each task along a path is calculated, and the path that requires the greatest amount of elapsed time is the Critical path. Calculation of the critical path enables project manager to monitor this series of tasks more closely. PERT controls time and cost during the project the project and also facilities finding the right balance between completing a project on time and completing it within budget. PERT recognizes that projects are complex that some task must be completed before other can be started and that the appropriate way to manage a project is to be defined and control each task. Because projects often fall behind schedule, PERT is designed to facilitate getting back schedule. PERT is based in part on the premise that subjective estimates of the total completion time for a project are usually greatly inferior to the sum of subjective estimates for each task. The PERT chart gives a graphical representation of this information.

Advantages of PERT

- It forces the manager to plan.
- It shows an Interrelationship among the tasks in the project, in particular, clearly identifies the critical path of the project, thus helping to focus on it.
- It exposes all possible parallelism in the activities and thus helps in allocating resources.
- It allows scheduling and simulation of alternative schedule.
- It enables the manager to monitor and control the project.

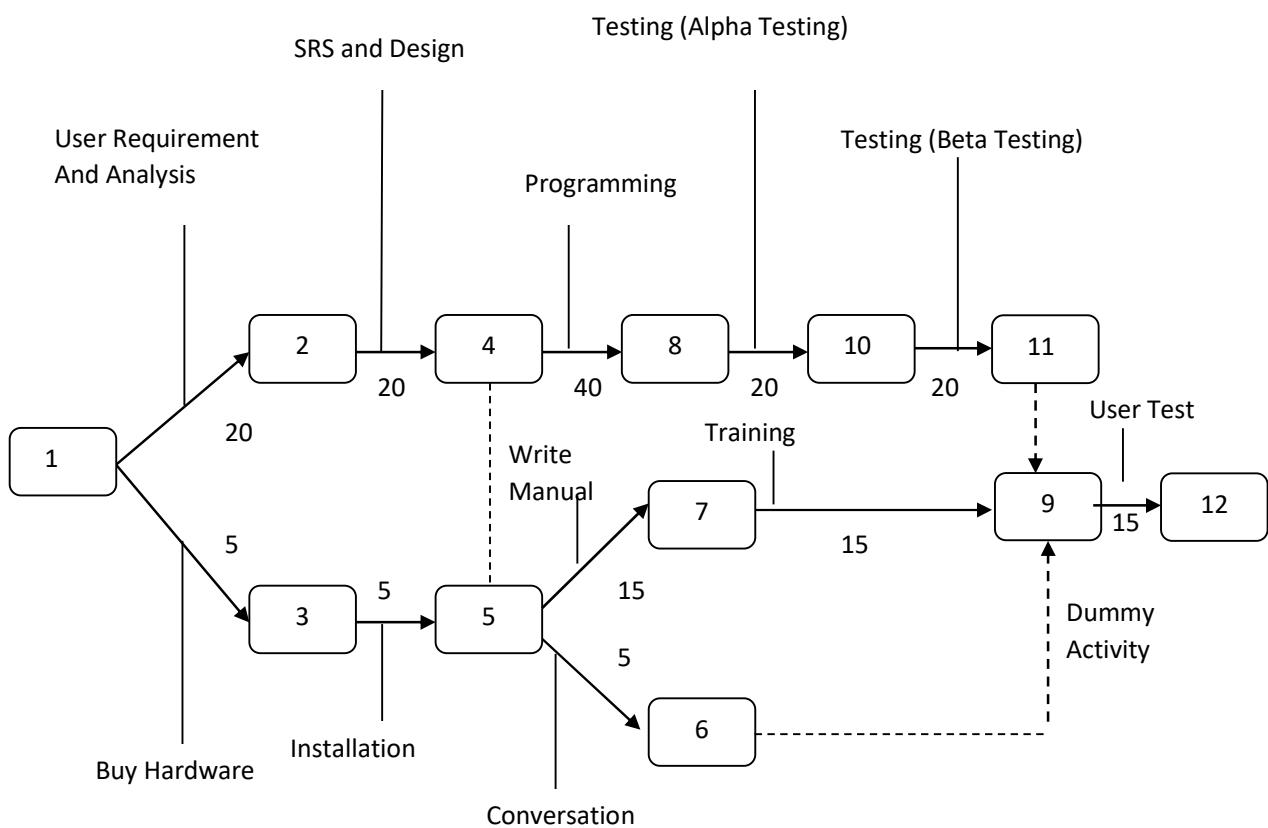
Despite these advantages, PERT is just a tool, and its use does not automatically guarantee the success of the project. Gantt chart can be derived automatically from PERT charts.

The charts are shown in figure A (Gantt chart) and B (PERT Chart).

GANTT CHART

<u>Work Tasks</u>	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
1. Gathering Information and Requirement Analysis						
2. SRS And Design						
2.1 Creating DFD						
2.2 ER-Diagram						
2.3 Data Dictionary Design						
3 Coding						
4. Testing						
5. Security						
6. Documentation						
7. Training						
8. Tests by User						

PERT CHART



SOFTWAR ENGINEERING APPROACH:

The field of software engineering is related to the development software in systematic manner unlike simple programs which can be developed in isolation and there may not be any systematic approach being followed. As there is large difference between programming and software engineering. As it provides models that lead to the production of well documented software in a manner that is predictable. For a mature process, it should be possible to determine in advance how much time and effort will be required to produce the final product. To develop successful software, I have to follow some models, which act as guidelines.

The model I have used is **Waterfall Model or Classic Life Cycle**. In this model first of all the existed system is observed. Then customer requirements are taken in consideration then planning, modelling, construction and finally deployment.

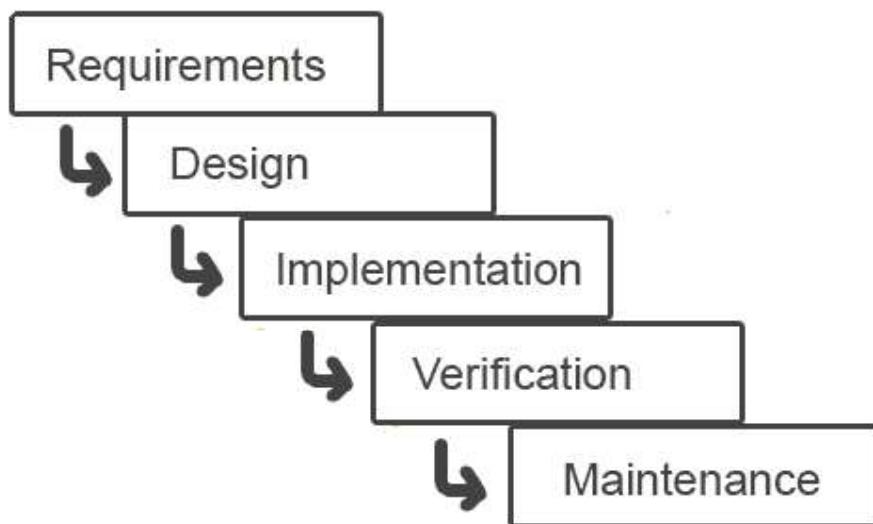


Fig.1. Waterfall Model

SYSTEM DESIGN:

INTRODUCTION:

System design is the specification of a detailed computer-based solution. (Bentley, L, D., & Whitten, J, L (2008)) Also known as physical design.

There were many techniques or approaches that are concerning to the aspect of the machine design and can be categorized as follow:

Model-Driven Approaches

Rapid Application Development (RAD)

Joint Application Development (JAD)

Internet is among the most method for conducting more and more transactions between suppliers and large business because of the speed, flexibility and efficiency that it includes. In this way, new market has been opened to the planet and diffusion of knowledge has been accelerated to the internet. Internet markets or online commercial business has been widely used. Since a special way to design the system must have been by the web-based system and implement it.

Nowadays, internet bank operating system widely used to increase demand of online banking transactions. Internet banking system is looking to provide the best value with highly available, fast, secure and safe to work with. System analysis can be used to analyze and design any system. In such a report, the framework of system analysis and design, system design and system architecture for internet banking system are discussed. Furthermore, about the system architecture is so important so it is among the most foundation of the system analysis and design is also discussed.

Many organizations consider information systems in order to produce useful information by capturing and managing data to employees, customers, suppliers and partners. It's important for his or her ability to compute or gain competitive advantage. Information systems can be classified by the functions such as

Transaction processing systems

Management information systems

Decision support systems

Executive information systems

Expert systems

Communication and collaborative systems

Office automation systems.

Various perspectives can view in information systems such as the players, business drivers, technology drivers and process. From the point of view of system stakeholder, the system analysts bridge the communication gap that can develop between system owners and users and also between designers and builders. System owners are usually executive managers for large systems and may be supervisors for small systems. Unlike system owners, costs and benefits of the system have a tendency to less concern by system users. You will discover two types of system users such as internal system users and external users.

For information systems, system designers are technology specialists such as Database administrators, Network architects, Web architects, Graphic artists, Security experts and Technology specialists. System users' business requirements and constraints are translated by system designer into technical solution. System builder is to create the system in line with the system designer's specifications. System designers and system builders will be the same in small system nonetheless they are often different jobs in large system. Application programmers, system programmer, database programmer, network administrators and security administrators are technical specialties. System owners, users, designers, and builders frequently have different perspective for building and using on any systems.

Steps of System design in Internet banking are as follow:

Firstly, the customer must request the URL.

Customer login the system, then the system checks User ID and Pin No.

After the system check User ID and Pin No. , then your system check that this customer is valid or not.

If it is valid, then that customer need to key in their OTP can access the machine so the customer can see the Main Menu page of the web banking website.

Then the customer can choose from many menus such as viewing USERNAME AND PASSWORDS, Funds Transfer, Payment, Trading and Investment Services, Opening New Account, Remittance, and Update Customer Profile and so forth.

For example, if the customer chooses the Funds transfer menu, then the customer need to choose Funds Transfer type such as Funds Transfer to My very own A/C, Funds Transfer to Other A/C and Funds Transfer to Other Bank.

Then customer needs to choose From Account, To Account and Amount.

After that, submit these details to the system.

And then ensure the detailed information and click Confirm button to accomplish the transaction.

Key in his/her iB Secure PIN(for OTP) to complete this transaction

After logout, customer needs to clear cache for security reason.

5.4 TESTING AND DEBUGGING:

Testing is the process of executing the program with the intent of finding errors and it establishes confidence that the program does what it is supposed to do. It can be done in many ways:

Unit Testing: It is testing of individual module. Before initiating unit testing, it must be ensured that the code is peer reviewed.

Integration Testing: It is performed after all the software units are combined together. The objective here is to test the software interfaces. Project team conducts the integration testing. Before entering integration testing, it may be ensured that code review and unit testing have been performed on the individual software modules.

System Testing: The software is compiled as product and then it is tested as a whole. This can be accomplished using one or more of the following tests:

- **Functionality testing** - Tests all functionalities of the software against the requirement.
- **Performance testing** - This test proves how efficient the software is. It tests the effectiveness and average time taken by the software to do desired task. Performance testing is done by means of load testing and stress testing where the software is put under high user and data load under various environment conditions.
- **Security & Portability** - These tests are done when the software is meant to work on various platforms and accessed by number of persons.

Regression Testing: Whenever a software product is updated with new code, feature or functionality, it is tested thoroughly to detect if there is any negative impact of the added code. This is known as regression testing.

5.5 REPORT GENERATION:

Any project or program is required what input it is giving. It is the input, which matters the most and any managements, which is decided for computerization of pay bills for their organization. Spending some money on it does the project designing of the organization. So a cost analysis is also involved to see what benefits the organization can get out of the project.

The Input of the project “**ONLINE BANKING SYSTEM**” has a Main Form containing the list of Different Forms i.e. admin/developer form, manager form, employee form, login form, new user form, personal information form, reporting form, review form, transaction form and many other forms. The Project also includes the salary description of the employees given to their details and the balance description, transaction report(s) of individual customer. The Current system has been made so versatile that any Organization can implement it.

Any project or program is required on what output it is giving. Output is compulsory for any organization for management to take the decision for computerization of their organization. Spending money on it, the organization needs in what respect the project can be benefited, which is possible by viewing the output. So a cost analysis is also involved to see what benefits the organization to give the output of the project.

The System has the facility to view different reports. It also contains the pages, which display the list of employees working in the Organization, their performances etc. which is the output of the project.

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6. TOOLS, SOFTWARE & HARDWARE REQUIREMENTS

We have a wide range of options of languages. From these options we can choose appropriate platform/ tools and languages for development of the project. Some of these are as follows :-

Project Category: Web-Based Application

SOFTWARE REQUIREMENTS:

IDE: NetBeans 8.0(or 11.2)

Front End: HTML, CSS, JavaScript, AJAX, Bootstrap

Programming Language: JAVA

Back End: JSP, Servlet, Hibernate

RDBMS: MySQL 8.10

Server: Apache Tomcat 8.0

Browser: Chrome, Firefox etc.(latest version)

Operating System: Windows 7 and above

HARDWARE REQUIREMENTS:

Processor : Intel Pentium, Core duo or more

Ram : 2GB or more

Cache : 512 KB

Hard-disk : 50 GB hard disk recommended

Monitor, Keyboard & mouse.

7. Are you doing this project for any Industry/Client? Mention Yes/No.

NO.

8. FUTURE SCOPE AND ENHANCEMENT OF PROJECT

This project was developed to fulfill user requirement, however there are lots of scope to improve the performance of the Banking System in the area of user interface, database performance, and query processing time. Etc.

So there are many things for future enhancement of this project. The future enhancements that are possible in the project are as follows.

- Interest calculation system is not implemented yet. It can be enhanced later.
- Linking and integration of any legacy system for accounting.
- Integration with other bank and government agencies through Web Services
- Connection to third-party OLAP applications
- Electronic Data Interchange (EDI) system for ATM machine
- Web Interface for net banking.
- In the area of data security and system security.
- Loan Account creation and management.

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