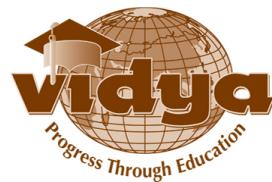


AUTOMATED OP COUNTER MANAGEMENT SYSTEM

A MINI PROJECT REPORT

BACHELOR OF TECHNOLOGY
in
COMPUTER SCIENCE ENGINEERING
of
UNIVERSITY OF CALICUT
by
AISWARYA KP (VEAOECS005)
AMRUTHA SUJITH (VEAOECS014)
ANUSREE BABURAJ (VEAOECS023)
JISNA K JOY (VEAOECS053)



(AN ISO 9001:2008 CERTIFIED INSTITUTION)

Department of Computer Science Engineering

Vidya Academy of Science & Technology

Thalakkottukara, Thrissur - 680 501

(<http://www.vidyaacademy.ac.in>)

April 2017

**Department of Computer Science Engineering
Vidya Academy of Science & Technology**

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(<http://www.vidyaacademy.ac.in>)



(AN ISO 9001:2008 CERTIFIED INSTITUTION)

Certificate

This is to certify that the Mini Project Report titled "**AUTOMATED OP COUNTER MANAGEMENT SYSTEM**" is a bonafide record of the work carried out by **AISWARYA KP (VEAOECS005), AMRUTHA SUJITH (VEAOECS014), ANUSREE BABURAJ (VEAOECS023), JISNA K JOY (VEAOECS053)** of Vidya Academy of Science & Technology, Thalakkottukara, Thrissur - 680 501 in partial fulfillment of the requirements for the award of **Degree of Bachelor of Technology in Computer Science Engineering** of **University of Calicut**, during the academic year 2016-2017. The Mini Project report has been approved as it satisfies the academic requirements in the respect of Mini Project work prescribed for the said degree.

Project Guide/Supervisor

Remya P S

Asst. Prof., Dept. of CSE

Signature :

Date :

Head of Department

Ms. Sunitha C

Prof., Dept. of CSE

Signature :

Date :

(Seal of Department of Computer Science and Engineering)

Acknowledgement

During the course of our mini project work several persons collaborated directly and indirectly with us. Without their support it would be impossible for us to finish our work. We wish to dedicate this section to recognize their support.

We want to start expressing our thanks, to our mini project guide **Remya P S**, Asst. Prof., Dept. of Computer Science Engineering, because of her valuable advice and guidance towards this work. We received motivation, encouragement and hold up from her during the course of work.

We are grateful to express our thanks to all the faculty members of our department for their support. We articulate our gratitude to all our friends for their support and help for this work.

We are thankful to **Ms. Sunitha C**, Head of Computer Science Engineering Department, and our Principal **Dr. Sudha Balagopalan**, for their sole co-operation.

Last, but not the least we wish to express our gratitude to God Almighty for his abundant blessings without which this effort would not have been successful.

Aiswarya K P, Amrutha Sujith, Anusree Baburaj, Jisna K Joy

B.Tech (CSE) (2014 Admission)

Vidya Academy of Science & Technology

Thrissur - 680 501.

Abstract

This project aims at reducing the human efforts at the OP counters of the Oncology Department-Government Medical College-Thrissur. Due to rush of patients, a difficulty in token assignment and registration of patients has been noticed, since registration of new patients and token assignment for both new and already registered patients are done in two different systems. Internet connection is also essential for the current software to work. By this project, we create a software platform where the administrator can do the registration of new patients and token generation for all the patients, whether new or already registered under a single system without using internet, thus reducing human efforts and time to get a controlled flow of patients.

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List of Symbols and Abbreviations

VAST Vidya Academy of Science and Technology

DFD Data Flow Diagram

SQL Standardized Query Language

ER Entity-relationship

Chapter 1

Introduction

We have developed an AUTOMATED OP COUNTER MANAGEMENT SYSTEM. It is a desktop application software which is implemented in JAVA platform. The aim of this project is to completely automate the OP counter of Oncology, Pulmonary and ART departments of Government Medical College, Thrissur and thereby reduce the difficulty in token assignment and registration of new patients. It serves as a software platform where the administrator can do the registration of new patients and token generation for all the patients, whether new or already registered under a single system without using internet. It is divided in to different modules based on the functions.

1.1 Problem Statement

The OP Counter is the place where the new patients gets registered and assigned with a unique identification number called OP number. Presently the OP counter has got two separate systems. One for enrolling new patients of ART, Pulmonary and Oncology department and another one for generating token for Cancer patients (patients of Pulmonary and ART department doesnt require token for consultation). After registration, they will be provided with a printed ticket called OP ticket. Cancer patients have to reach another nearby room and wait in queue to get their CR number (Cancer Registration number) which is a unique identification number for cancer patients).They will be provided with token only after CR number is assigned and written on their OP ticket by the staff there. Once they get the CR number, they have to take their OP ticket back to the OP counter again and wait in queue to get a token. Also token generation is done using web based software so if internet connection is lost, it cant be accessed. So current process of patient registration and token generation is difficult and inefficient as the patients have to

wander unnecessarily and the staff at the OP counter has to frequently switch between two systems for getting their work done.

1.2 Objectives

We intend to develop a software package compatible for Windows OS using Java IDE and MySQL which has a better interface. Our main aim is to incorporate the functionalities of the present two systems in to single software so that the work of the staff gets easier, efficient and faster. This will make people get all the requirements including the OP Ticket, CR number and Token from a single counter, thereby reducing human efforts and utilizing existing system resources efficiently.

- Staff in the OP counter can enroll new patients, update their information if needed and can generate token.
- Software can generate OP number and/or CR number according to their format and can assign it to patients.
- All required information are directly stored in database and are accessed from it.
- Analysis of the patients consulting could also be done with certain constraints

1.3 Description about the work

The software is mainly divided in to three modules based on its functionality. First module is solely intended for the registration of new patients and the second module serves two purposes, one is updating information of all patients if needed and other is token generation for cancer patients. The third modules is exclusively for the analysis purposes. It gives a detailed information regarding the details of the patient in various categories as how they are needed by the staff of the hospital. The software will be easy to use, efficient and will reduce human efforts of both staff and patients.

1.4 Chapter Summary

The Requirement Analysis and Feasibility Study are described in Chapters 2 and 3. The Description of Proposed System and its design along with DFD and ER diagram are given in Chapter 4. Chapter 5 gives the Implementation Details and the results. The chapter 6 shows Future Enhancements. The chapter 7 concludes the project.

Chapter 2

Requirement Analysis

2.1 Hardware Requirements

- Processor: Dual core
- Processor Speed: 1.70 GHz or above
- RAM: 2 GB or above
- Input Devices: Standard Keyboard and Mouse
- Output Devices: Monitor and Printer

2.2 Software Requirements

- OS: Windows 7 or above
- Front End: Java
- Back End: MySQL
- Tools: Netbeans

2.3 Functional Requirements

2.3.1 JAVA

Java is a high-level programming language developed by Sun Microsystems. Oracle acquired Sun Microsystems in January, 2010. Java is concurrent, class-based, object-

oriented and specifically designed to have as few implementation dependencies as possible. Java is object-oriented and this allows you to create modular maintainable applications and reusable code. Java is platform-independent. Java is designed to make distributed computing easy with the networking capability that is inherently integrated into it. Writing network programs in Java is like sending and receiving data to and from a file. Java is secure. Java considers security as part of its design. The Java language, compiler, interpreter, and run time environment were each developed with security in mind. Java puts a lot of emphasis on early checking for possible errors, as Java compilers are able to detect many problems that would first show up during execution time in other languages. Java is multithreaded. Multithreaded is the capability for a program to perform several tasks simultaneously within a program. In Java, multithreaded programming has been smoothly integrated into it, while in other languages, operating system-specific procedures have to be called in order to enable multithreading.

2.3.2 MySQL

MySQL is the world's most popular open source database, enabling the cost-effective delivery of reliable, high-performance and scalable Web-based and embedded database applications. It is an integrated transaction safe, ACID-compliant database with full commit, rollback, crash recovery, and row-level locking capabilities. MySQL delivers the ease of use, scalability, and high performance, as well as a full suite of database drivers and visual tools to help developers and DBAs build and manage their business-critical MySQL applications. MySQL is developed, distributed, and supported by Oracle. The MySQL database provides the following features:

- High Performance and Scalability to meet the demands of exponentially growing data loads and users.
- Self-healing Replication Clusters to improve scalability, performance and availability.
- Online Schema Change to meet changing business requirements.
- Performance Schema for monitoring user- and application-level performance and resource consumption.

- Platform Independence giving you the flexibility to develop and deploy on multiple operating systems.

2.3.3 Netbeans

NetBeans is a software development platform written in Java. The NetBeans Platform allows applications to be developed from a set of modular software components called modules. Applications based on the NetBeans Platform, including the NetBeans integrated development environment (IDE), can be extended by third party developers. The NetBeans IDE is primarily intended for development in Java, but also supports other languages, in particular PHP, C/C++, HTML5. NetBeans is cross-platform and runs on Microsoft windows Mac OS X, Linux, Solaris and other platforms supporting a compatible JVM. The NetBeans Platform is a framework for simplifying the development of Java swing desktop applications. The NetBeans IDE bundle for Java SE contains what is needed to start developing NetBeans plugins and NetBeans Platform based applications; no additional SDK is required. The platform offers reusable services common to desktop applications, allowing developers to focus on the logic specific to their application.

Chapter 3

Feasibility Study

A feasibility study is a preliminary study undertaken before the real work of a project starts to ascertain the likelihood of the projects success. It is an analysis of possible alternative solutions to a problem and recommendation on the best alternative. It, for example can decide whether an order processing be carried out by a new system more eficiently than the previous one. A feasibility study could be used to test a new working system, which could be used because: Within a feasibility study, six areas must be reviewed, including those of Economics, Technical, Schedule, Organizational, Cultural, and Legal.

3.1 Technological Feasibility

The assessment is based on an outline design of system requirements in terms of Input, Processes, Output, Fields, Programs, and Procedures. This can be quantified in terms of volumes of data, trends, frequency of updating, etc. in order to estimate whether the new system will perform adequately or not. Technological feasibility is carried out to determine whether the new project is capable than the existing system. Java is used to develop the project eficiently.

3.2 Economical Feasibility

Economic analysis is the most frequently used method for evaluating the effectiveness of a new system. More commonly known as cost/benet analysis, the procedure is to determine the benets and savings that are expected from a candidate system and compare them with costs. If benets outweigh costs, then the decision is made to design and implement the system. An entrepreneur must accurately weigh the cost versus benets before taking

an action. The cost/benefit is calculated in terms of Space or Time complexity. Since the project is developed in java language, it is platform independent.

3.3 Operational Feasibility

Operational feasibility is a measure of how well the proposed system solves the problems and takes advantages of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of a system development.

Chapter 4

Materials and Methods

4.1 Existing System and Challenge

Presently the OP Counter has got two separate systems. One system is used for enrolling the new patients which has got a very old interface. Then they will be given a printed ticket called as the OP Ticket (which includes the name, age, sex, date and a blank space named as CR number). Once the enrollment is successful, they have to reach another room nearby and wait in long queue to get their CR number. Only after they get this number, they will be given the token for consultation. Hence people have to wait in long queue to get this number assigned and write it on the OP Ticket by the staff there. Staff assigns the CR number (natural numbers) consecutively, in ascending order following the format (number/year). Once they get their CR number, they take the OP tickets to the counter back again and get their Tokens. Token Generation is another important function of the Counter. The second system is meant for the Token generation. People who come to hospital fall to two categories (one-already enrolled patients and other-new enrollment). Already enrolled patients will just need to show their OP Ticket only, which they will have received when they first took the enrollment. Thus, this systems web based software now accepts the CR number, Name and generates the tokens.

4.2 Proposed System

This project aims at completely automating the OP Counter at the Oncology Department, Government Medical College, Thrissur. We intend to develop a software package compatible for Windows OS using Java IDE and MySQL. Hence the two functionalities are combined into single software so that the work of the staff gets easier, efficient and faster.

This will make people get all the requirements including the OP Ticket, CR number and Token from a single counter. People need not wander unnecessarily and also wont need to wait in those long unnecessary queues anymore as all those functions will be provided in the new software package.

4.3 Design description

The total design phase of the project development is divided into various sub division modules and subsystems. This may include Module design, Database design, ER , UML and DFD.

4.3.1 Module Design

The project is divided into 5 modules which includes :-

1. New Patient Registration :-

The new patient could be registered under the following different sections and also for different categories of diseases as per each section is being handled for.

- (a) Casualty
- (b) OP
- (c) Speciality

2. Generate a new CR number

Based on the value of the attribute called Op Unit, this module assigns a unique CR number to all the enrolled patients. This is done only if the Op unit is oncology.

3. Generate Token number

Token is essential for all the Out Patients visiting the hospital. Hence this module is associated with the generation of token number. It is on the basis of this token the patients are allowed for consultation.

4. Update Patient Record

The receptionist is capable of updating the patient record using the key attribute called as the CR number.

5. Add previous medical session details-

If needed, the previous medical session details could also be added along with their records.

6. Analysis module

This module makes a complete analysis and count of the details in the database of the patient stored and reproduce it as and when needed upon the given constraints or conditions.

4.3.2 Database Design

Table Design

Field	Type	Comments
name	varchar(20)	NULL
cr number	varchar(10)	primary key
op number	bigint(8)	primry key
phone	bigint(11)	NULL
Address	varchar(50)	NULL
Age	int(3)	NULL
Previous visit	date	NULL
Date	date	NULL
Category	varchar(10)	NULL
gender	char(1)	NULL
Referenced by	varchar(11)	NULL
OP Unit	varchar(25)	NULL
Diagnosis	varchar(50)	NULL

Table 4.1: Patient Database

4.3.3 Entity Relationship(ER) Diagram

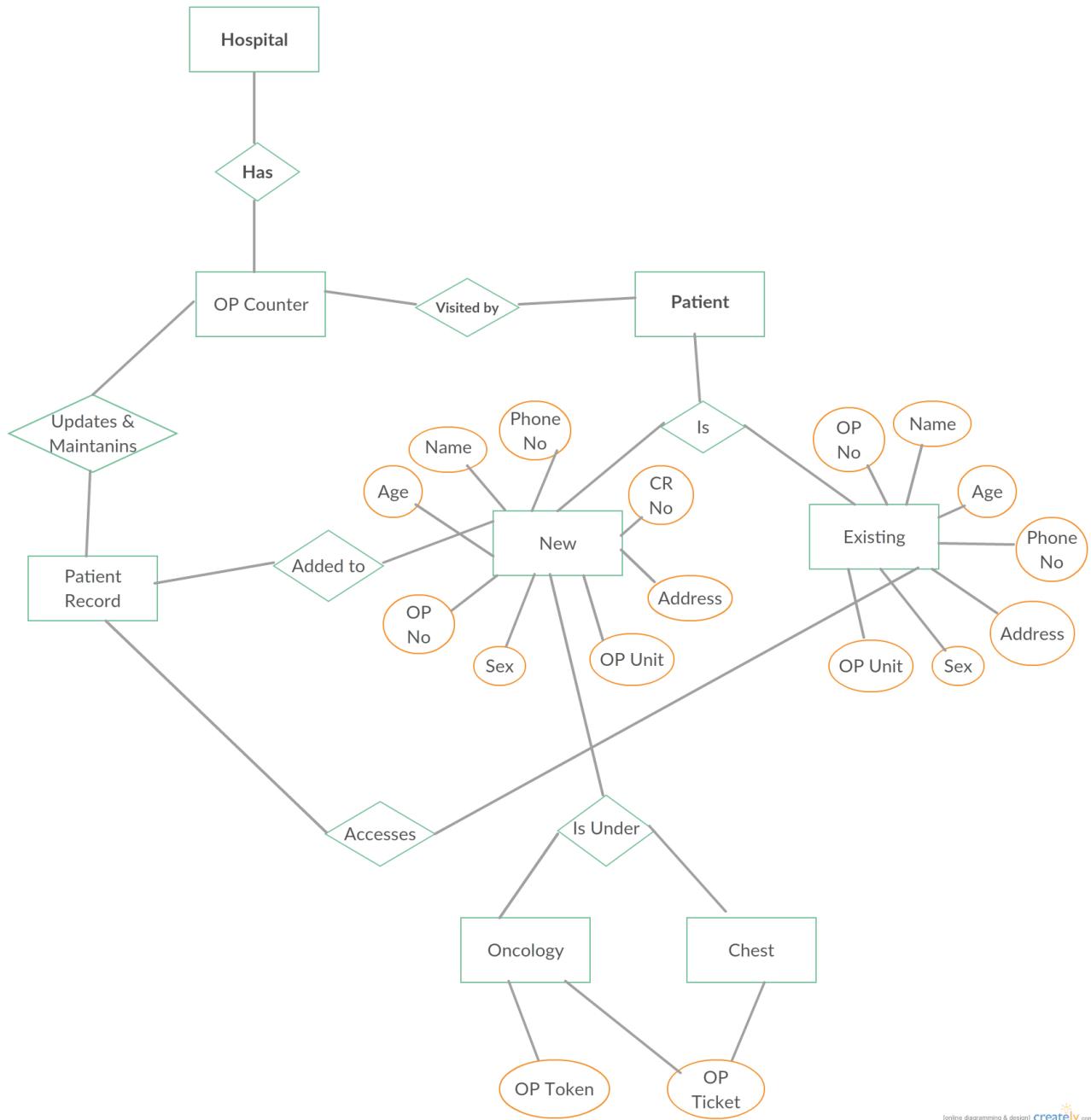
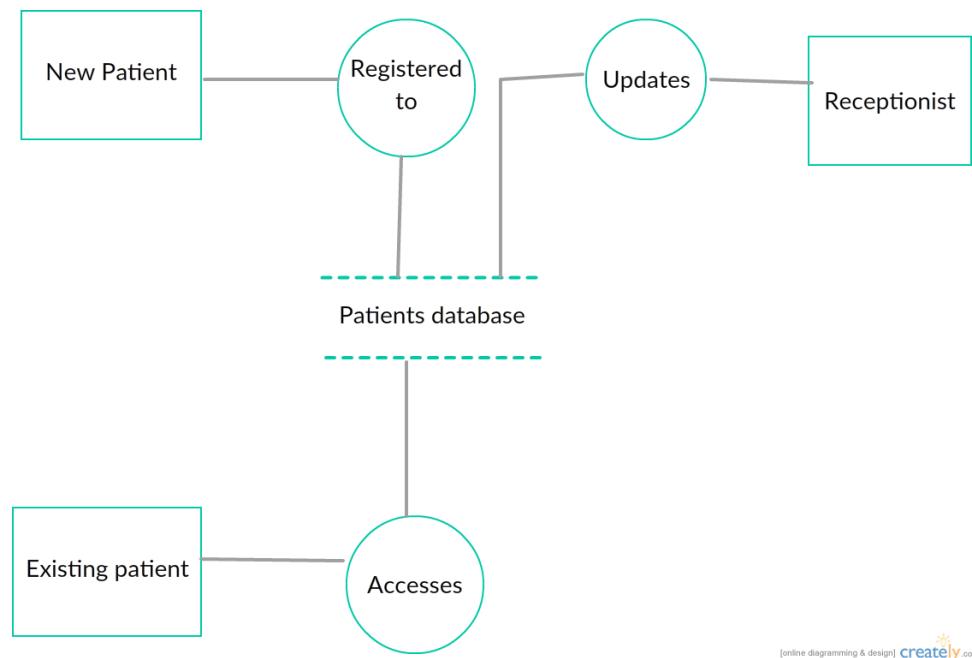

[online diagramming & design] createMyLogo.com

Figure 4.1: ER Diagram

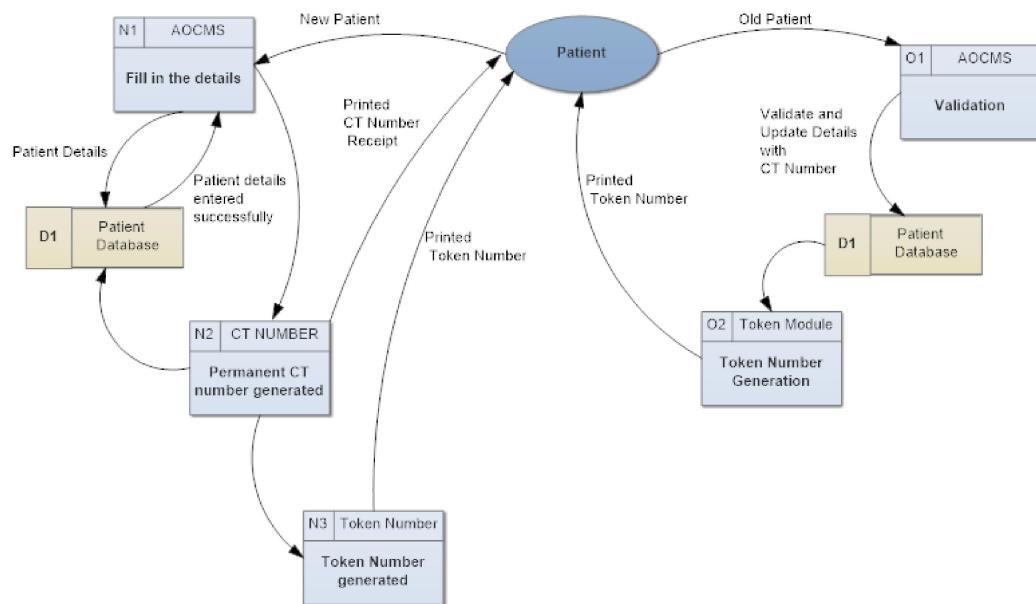
4.3.4 Data Flow Diagrams (DFD)



[online diagramming & design] [creately](https://www.creately.com).com

Figure 4.2: DFD Level 1

DATA FLOW DIAGRAM- AUTOMATED OP COUNTER MANAGEMENT SYSTEM



N(1,2,3): Modules for New Patient Registration
 O(1,2) :Modules for Old Patient Updates

Figure 4.3: DFD Level 2

4.3.5 Use Case Diagram

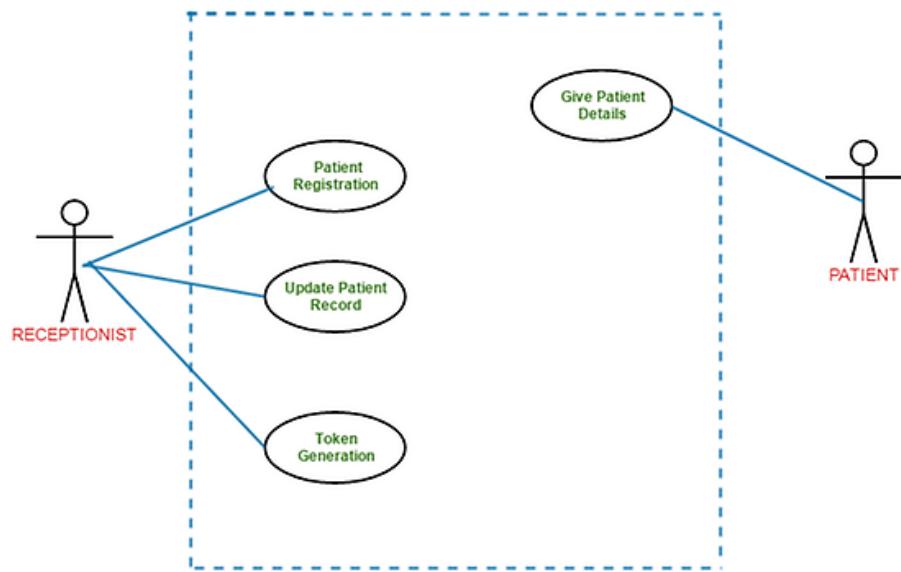


Figure 4.4: Use case diagram

Chapter 5

Results and Discussion

5.1 Implementation details and steps

A software implementation method is a systematically structured approach to effectively integrate a software based service or component into the workflow of an organisational structure or an individual end user. A proper implementation is essential to provide a reliable system to meet the requirements of the organizations. For an implementation to be successful, many tasks between different modules need to be accomplished in sequence. An improper installation may affect the success of the computerized system. There are several methods for handling the implementation.

5.1.1 Implementation Plan

The implementation plan includes a description of all the activities that must occur to implement the new system and to put it in to operation. It identifies the personnel responsible for the activities and prepares a time chart for implementing the system.

The implementation plan consists of the following steps.

- List all roles required for implementation.
- Identify all data required to build new roles during the implementation.
- List all new documents and procedures that go into the new system.

The implementation plan should anticipate possible problems and must be able to deal with them. The usual problems may include sharing a data item multiple times to the same user.

5.2 Testing

Testing is a critical aspect of Software Quality Assurance and represents the ultimate review of specification, design and coding. Testing is a process of executing a program with the intent of finding an error. A good test is one that has a probability of finding an as yet undiscovered error. The purpose of testing is to identify and correct bugs in the developed system. Nothing is complete without testing. Testing is vital to the success of the system. In code testing, the logic of the developed system is tested. For this, every module of the program is executed to find an error. To perform specification test, the examination of the specifications stating what the program should do and how it should perform under various conditions. Unit testing focuses first on the modules in the proposed system to locate errors. This enables to detect errors in the coding and logic that are contained within that module alone. Those resulting from the interaction between modules are initially avoided. In unit testing step each module has to be checked separately. System testing does not test the software as a whole, but rather than integration of each module in the system. The primary concern is the compatibility of individual modules. One has to find areas where modules have been designed with different specifications of data lengths, type and data element name. Testing and validation are the most important steps after the implementation of the developed system. The system testing is performed to ensure that there are no errors in the implemented system. Validation refers to the process of using the new software for the developed system in a live environment. The validation phase reveals the failures and the bugs in the developed system. By testing the code of the implemented software, the logic of the program can be examined. A specification test is conducted to check whether the specifications stating the program are performing under various conditions. Apart from these tests, there are some special tests conducted which are given below:

- Peak Load Tests: This determines whether the new system will handle the volume of activities when the mobile is at the peak of its processing.
- Storage Testing: This determines the capacity of the new system to store transaction data in the internal storage or on other files.
- Performance Time Testing: This test determines the length of the time used by the

system to process transaction data.

5.2.1 Test Cases

A Strategy for software testing integrates software test cases into a series of well planned steps that result in the successful construction of software. Software testing is a broader topic for what is referred to as verification and validation. Verification refers to the set of activities that ensure that the software correctly implements a specific function. Validation refers to the set of activities that ensure that the software that has been built is traceable to customers requirements.

- **Unit Testing:** Unit testing focuses verification effort on the smallest unit of software design that is the module. Using procedural design description as a guide, important control paths are tested to uncover errors within the boundaries of the module.
- **Integration Testing:** Integration testing is a systematic technique for constructing the program structure, while conducting test to uncover errors associated with the interface. The objective is to take unit tested methods and build a program structure that has been dictated by design.
- **Top-down Integration:** Top down integration is an incremental approach for construction of program structure. Modules are integrated by moving downward through the control hierarchy, beginning with the main control program.
- **Bottom-up Integration:** This method as the name suggests, begins construction and testing with atomic modules i.e., modules at the lowest level. Because the modules are integrated in the bottom up manner the processing required for the modules subordinate to a given level is always available and the need for stubs is eliminated.
- **Validation Testing:** At the end of integration testing software is completely assembled as a package. Validation testing is the next stage, which can be defined as successful when the software functions in the manner reasonably expected by the customer. Reasonable expectations are those defined in the software requirements specifications. Information contained in those sections form a basis for validation testing approach.

- System Testing: System testing is actually a series of different tests whose primary purpose is to fully exercise the computer-based system. Although each test has a different purpose, all work to verify that all system elements have been properly integrated to perform allocated functions.
- Security Testing: Attempts to verify the protection mechanisms built into the system.
- Performance Testing: This method is designed to test runtime performance of software within the context of an integrated system.

5.2.2 Test Performed

First, Unit testing was carried out on each of the modules to ensure their proper working. After the Unit testing phase, Integration testing was performed on the complete product by integrating the various modules. Moreover, all the pages were verified one by one to ensure correct redirection to the pages and that entries in the database was accurate. The entire system was checked for the simplicity of the user interface. This was followed by Validation, System and Performance testing.

5.3 Experimental Results

The result of our project revealed that our proposed application software proves to be a better alternative than the existing ones. This software is very user friendly and it drastically reduces the time lag for the completion of registration and/or token generation process. Our proposed software doesn't require internet connection. Using this system, analysis can be performed up on patient database based on different constraints or conditions, people will get all the requirements including the OP Ticket, CR number and Token from a single counter, thereby reducing human efforts.

5.3.1 Screenshots



Figure 5.1: Main page

This screenshot shows the 'NEW PATIENT' registration form. On the left, patient details are entered: Name (Jayanthi K), Phone No. (9999999999), Age (55), Gender (Female), Date (2017-06-04), and Address (abc House xyz Street, 123). On the right, the 'OP Unit' is set to 'Oncology', 'Category' is 'Casuality' (selected), and 'Diagnosis' and 'Reference' fields are empty. Below the form are two large boxes displaying '10029' (OP Number) and '21/2017' (CR Number). At the bottom are 'Back', 'Save and Generate Token' (highlighted in blue), and 'Clear' buttons. The footer again credits 'Vidya Academy Of Science And Technology'.

Figure 5.2: Registering New Patient in Oncology Casualty

AOCMS | NEW PATIENT | Government Medical College - Thrissur | _ | X |

Automated OP Counter Management System

Name: Jayanthi K	OP Unit: Oncology
Phone No: 9999999999	Category: <input type="radio"/> Casualty <input checked="" type="radio"/> OP <input type="radio"/> Speciality
Age: 55	Diagnosis: NULL
Gender: <input type="radio"/> Male <input checked="" type="radio"/> Female	Reference:
Date: 2017-06-04	
Address: abc House xyz Street, 123	

10029
OP Number

21/2017
CR Number

[Back](#) [Save and Generate Token](#) [Clear](#)

| Powered By: Vidya Academy Of Science And Technology |

Figure 5.3: Registering in Oncology OP

AOCMS | NEW PATIENT | Government Medical College - Thrissur | _ | X |

Automated OP Counter Management System

Name: Jayanthi K	OP Unit: Oncology
Phone No: 9999999999	Category: <input type="radio"/> Casualty <input type="radio"/> OP <input checked="" type="radio"/> Speciality
Age: 55	Diagnosis: NULL
Gender: <input type="radio"/> Male <input checked="" type="radio"/> Female	Reference:
Date: 2017-06-04	
Address: abc House xyz Street, 123	

10029
OP Number

21/2017
CR Number

[Back](#) [Save and Generate Token](#) [Clear](#)

| Powered By: Vidya Academy Of Science And Technology |

Figure 5.4: Registering in Oncology Speciality

AOCMS | NEW PATIENT | Government Medical College - Thrissur | _ X |

Automated OP Counter Management System

Name: Jayanthi K	OP Unit: ART
Phone No: 9999999999	Category: <input type="radio"/> Casualty <input checked="" type="radio"/> OP
Age: 55	Diagnosis:
Gender: <input type="radio"/> Male <input checked="" type="radio"/> Female	Reference: Private
Date: 2017-06-04	
Address: abc House xyz Street, 123	

10029
OP Number NULL
CR Number

[Back](#) [Save and Generate Token](#) [Clear](#)

| Powered By: Vidya Academy Of Science And Technology |

Figure 5.5: Registering New Patient in ART

AOCMS | NEW PATIENT | Government Medical College - Thrissur | _ X |

Automated OP Counter Management System

Name: Jayanthi K	OP Unit: Chest Pulmonary Medicine
Phone No: 9999999999	Category: <input type="radio"/> Casualty <input checked="" type="radio"/> OP
Age: 55	Diagnosis:
Gender: <input type="radio"/> Male <input checked="" type="radio"/> Female	Reference: Private
Date: 2017-06-04	
Address: abc House xyz Street, 123	

10029
OP Number NULL
CR Number

[Back](#) [Save and Generate Token](#) [Clear](#)

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Figure 5.6: Registering in Chest Pulmonary Medicine

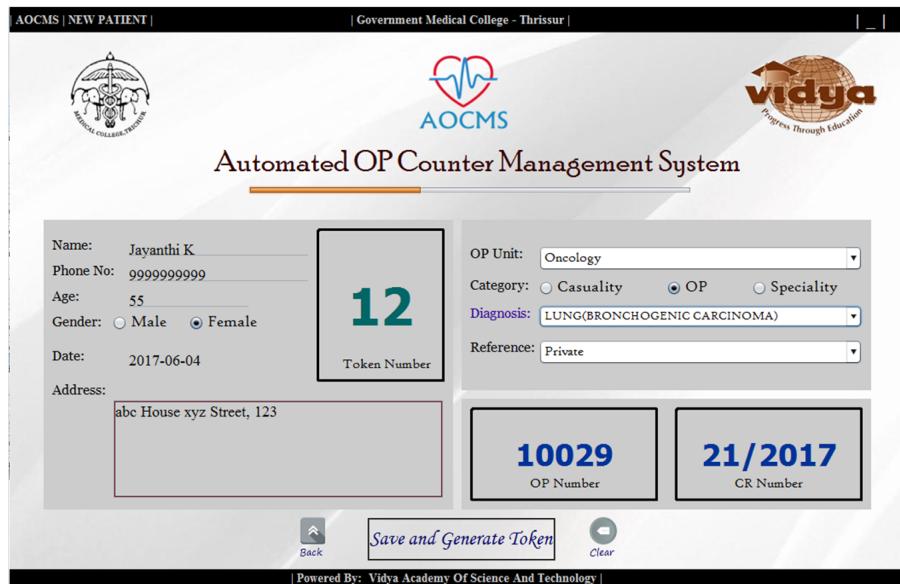


Figure 5.7: Generating of the Token for Oncology OP Patients

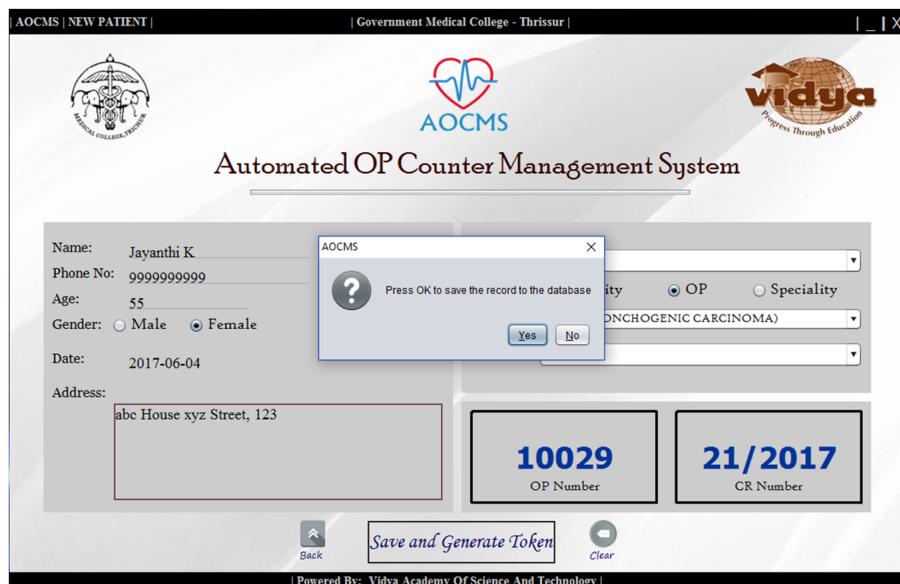


Figure 5.8: Saving data into the database

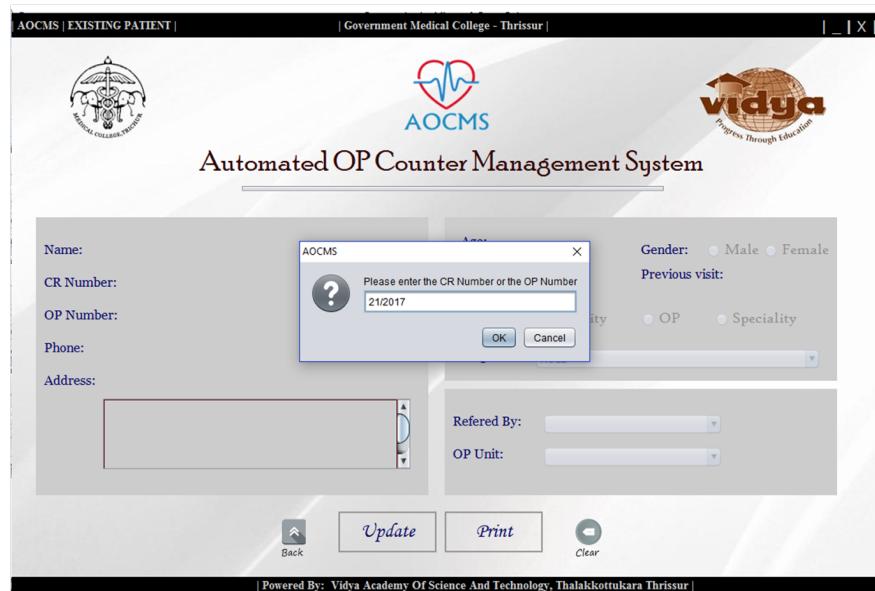


Figure 5.9: To Update the Records of an Existing Patient

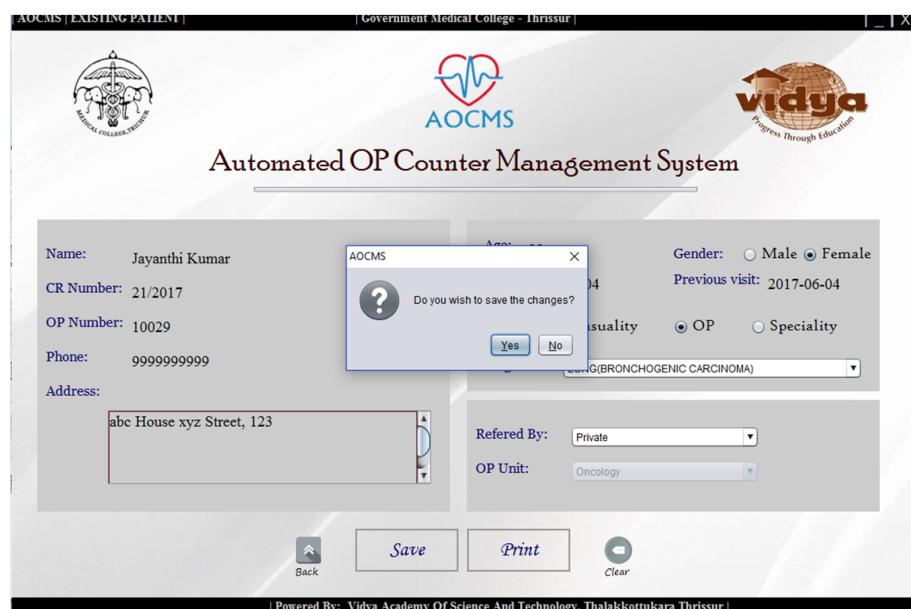


Figure 5.10: Finalising to save changes

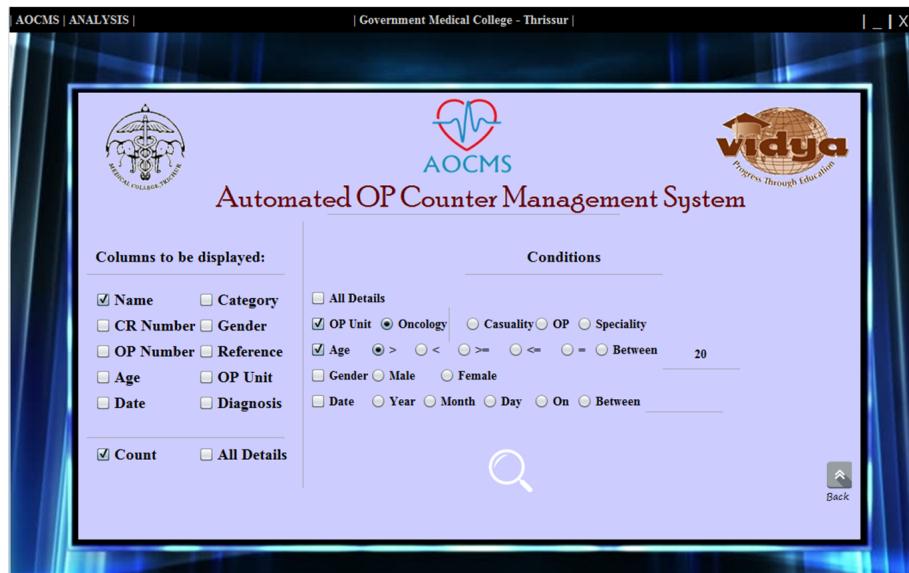


Figure 5.11: The Analysis Frame

Your Search Result:	
count(name)	count(op_unit)
21	21

Powered By: Vidya Academy Of Science And Technology, Thalakkottukara Thrissur |

Figure 5.12: Gives the count as per the constraint specified

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Name	Op_number	op_number	phone	Address	Age	Previous_Visit	Date	Category	gender	Referenced_By	OP_Unit	Diagnosis
2	Josiah K	1/2017	10000	763145986	xxxx 054 xx	57	2017-04-20	2017-05-03	Casualty	M	null	Oncology	NULL
3	Krishnadas S	null	10001	9963331144	Address	45	2017-04-27	2017-04-27	Casualty	M	Private	Chest Pulmonary Medicine	NULL
4	Jenny N	null	10002	0 Address	85	2017-04-27	2017-04-27	OP	F	Private	Chest Pulmonary Medicine	NULL	
5	Peter SD	2/2017	10003	0 address	34	2017-04-27	2017-04-29	OP	M	Government	Oncology	RECTOSIGMOID	
6	Mary T	3/2017	10004	9632030026	address	46	2017-04-27	2017-04-29	OP	F	Government	Oncology	LUNG(BRONCHOGENIC CARCINOMA)
7	Devaki S	null	10005	7766330022	address	56	2017-04-27	2017-04-27	OP	F	Private	Chest Pulmonary Medicine	NULL
8	Fahad F	null	10006	9301256432	address	46	2017-04-27	2017-04-27	Casualty	M	Government	Chest Pulmonary Medicine	NULL
9	Kumar D	4/2017	10007	7630124578	ADDRESS	65	2017-04-27	2017-05-03	Speciality	M	Others	Oncology	ORAL CAVITY- CHEEK MUCOSA
10	Ansar H	null	10008	0 address of	85	2017-04-27	2017-04-27	OP	M	Private	Chest Pulmonary Medicine	NULL	
11	Ansar S	5/2017	10009	7333330021	address	46	2017-05-02	2017-05-02	OP	M	Government	Oncology	LYMPHOMA (NHL, DLBC, HODGKIN'S DISEASE)
12	Neelima S	6/2017	10010	7300116699	address	46	2017-05-03	2017-05-03	OP	F	Government	Oncology	NULL
13	Meenakshi	7/2017	10011	7666330022	address	65	2017-05-03	2017-05-03	Speciality	F	Government	Oncology	NULL
14	KP Paul	null	10012	7963214569	address	33	2017-05-03	2017-05-06	Casualty	M	Government	Chest Pulmonary Medicine	NULL
15	Kala	8/2017	10013	0 address	54	2017-05-03	2017-05-03	Speciality	F	Government	Oncology	ORAL CAVITY- CHEEK MUCOSA	
16	kalara	9/2017	10014	0 address	45	2017-05-04	2017-05-04	Casualty	F	Private	Oncology	NULL	
17	Jalatha JH	10/2017	10015	0 address	71	2017-05-04	2017-05-04	OP	F	Government	Oncology	MAJUGNANT MELANOMA	
18	Famila D	11/2017	10016	7633001125	xxxx lane x	43	2017-05-05	2017-05-05	OP	F	Private	Oncology	ESOPHAGUS
19	Shivaranji	12/2017	10017	7999999999	0000000000	50	2017-05-05	2017-05-05	Casualty	F	Government	Oncology	SUBLINGUAL GLAND
20	Jeniffer JB	null	10018	0 bbb lane ac	34	2017-05-06	2017-05-06	OP	F	Government	ART	NULL	
21	Shivarajan	null	10019	0 address	62	2017-05-06	2017-05-06	OP	M	Others	Chest Pulmonary Medicine	NULL	
22	Raman H	null	10020	0 add	41	2017-05-06	2017-05-06	Casualty	M	Private	ART	NULL	
23	Neeraja KL	13/2017	10021	0 address	31	2017-05-06	2017-05-06	OP	F	Others	Oncology	RENAL CELL CARCINOMA(KIDNEY)	
24	Girish N	14/2017	10022	0 addr	38	2017-05-06	2017-05-06	OP	M	Government	Oncology	LEUKEMIA(ALL, AML, CML, CLL)	
25	Girija S	15/2017	10023	0 123cc	71	2017-05-06	2017-06-02	Speciality	F	Others	Oncology	SUBLINGUAL GLAND	

Figure 5.13: All details based Analysis Result

<p style="text-align: center;">GOVERNMENT MEDICAL COLLEGE Mulankunnathukavu, Thrissur, 680531</p>			
<hr/>			
OP TICKET			
<hr/>			
NAME	: Jayanthi K		
AGE	: 55		
SEX	: F		
DATE	: 2017-06-04		
<hr/>			
OP NUMBER	: 10029	CR NUMBER	: 21/2017
<hr/>			
<hr/>			
<p style="text-align: center;">Vidya Academy of Science & Technology P.O. Thalakkottukara Thrissur, Kerala 680501</p>			
<hr/>			

Figure 5.14: OP Ticket for New Patients

GOVERNMENT MEDICAL COLLEGE	
Mulankunnathukavu,	
Thrissur, 680531	
<hr/>	
TOKEN	
<hr/>	
NAME	:Jayanthi K
AGE	:55
CR NUMBER	:21/2017
<hr/>	
TOKEN NUMBER :12	
<hr/>	
Vidya Academy of Science & Technology	
P.O. Thalakkottukara	
Thrissur, Kerala 680501	
<hr/>	

Figure 5.15: Token for Patients

5.4 Performance Evaluation

Successfully tested the system under various environments. The modules used to register and update the patient records were tested with 100 per cent complete and desired output according to the specified formats. Also the modules of generating CR , OP and Token numbers were also tested . The package is hence designed to provide maximum user satisfaction and efficiency.

Chapter 6

Future Enhancements

This project has a very important role in the field of Data Analysis that every hospital today looks into. It has become vital for doctors or the hospital in charges to make a note of the number of patients diagnosing there and the number of people within different ages limits and with varities of diseases and getting admitted to various departments.

Hence plotting graphs as part of data analysis over an expanded vision is one of the important future enhancements possible over this.

Chapter 7

Conclusion

In the current work we developed a simplified automated OP Counter Management System. The problem was divided into different modules based on the functionalities. The solution system resolved all the inefficiencies in the existing system and also provided additional features to enhance the functioning. Focused mainly in providing better user interface to the users associated with the system.

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Department of Computer Science Engineering
Vidya Academy of Science & Technology
Thalakkottukara, Thrissur - 680 501
(<http://www.vidyaacademy.ac.in>)