AIRPORT MAINTENANCE SYSTEM

FOR

AIRPORT AUTHORITY OF INDIA,COIMBATORE AIRPORT, COIMBATORE.

PROJECT REPORT

Submitted in partial fulfillment of the requirements for the award of the degree of

M.Sc Applied Science Software Engineering,

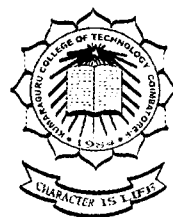**Bharathiar University,**

Coimbatore.

P- 1230

Submitted By

V.HEMALATHA

Reg. No. 0137S0033

Guided By

Rk . Kavitha
24|9|04

EXTERNAL GUIDE	INTERNAL GUIDE
Mrs. Jayshree,	Mrs.R.K.Kavitha, MCA, MPhil,
Senior Manager, Finance.	Lecturer.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

KUMARAGURU COLLEGE OF TECHNOLOGY

COIMBATORE – 641 006

KUMARAGURU COLLEGE OF TECHNOLOGY

(Affiliated to Bharathiar University)

Department of Computer science and Engineering

Coimbatore – 641 006

CERTIFICATE

This is to certify that the project work entitled

AIRPORT MAINTENANCE SYSTEM

Done By

V.HEMALATHA

Reg. No. 0137S0033

Submitted in partial fulfillment of the requirements for the award of the degree
M.Sc Applied Science Software Engineering of Bharathiar University.

Professor and Head

Internal Guide

Submitted for the University examination held on ..29.09.04...........

Internal Examiner

External Examiner

DECLARATION

I hereby declare that the project work entitled

AIRPORT MAINTENANCE SYSTEM

Done at

AIRPORT AUTHORITY OF INDIA,COIMBATORE AIRPORT,COIMBATORE.

And submitted to

KUMARAGURU COLLEGE OF TECHNOLOGY

In partial fulfillment of the requirements for the award of the degree

M.Sc. APPLIED SCIENCE (Software Engineering)

Do I do a report of work during my period of study in
Kumaraguru College of Technology, CBE – 641 006
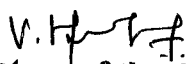
Under the supervision of

Mrs.R.K.Kavitha, MCA, MPhil,

Lecturer , Dept of Computer science & Engineering,

Kumaraguru College of Technology, Coimbatore.

Place: Coimbatore

Date: 24|09|04

V. H—T—
Signature of the Candidate

(V.HEMALATHA)

Staff in-Charge

Mrs.R.K.Kavitha, MCA, MPhil,

Lecturer , Dept of Computer science & Engineering,

Kumaraguru College of Technology, Coimbatore.

भारतीय विमानपत्तन प्राधिकरण
AIRPORTS AUTHORITY OF INDIA
राष्ट्रीय विमानपत्तन प्रभाग
NATIONAL AIRPORTS DIVISION
कोयम्बत्तूर COIMBATORE - 14

संदर्भ सं : भा.वि.प्रा. / रा.वि.प्रा. / सी.बी.
Ref No. : AAI / NAD / CB /

AAI/NAD/CB/ATC-OPS/04

दिनांक :
Dated :

September 14, 2004

<u>TO WHOMSOEVER IT MAY CONCERN</u>

This is to certify that Ms. V. Hemalatha pursuing her Masters in software engineering (7th Semester) at Kumaraguru College of technology has successfully completed her project work with **Airports Authority of India, Coimbatore Airport.**

We wish her all the very best in all her future endeavours.

(R.S. D'CRUZ)
उप महाप्रबंधक (विमानक्षेत्र)
Dy. General Manager (Aerodrome)
भारतीय विमानपत्तन प्राधिकरण
Airports Authority of India,
(विमान स्टेशन अड्डा कोयम्बत्तूर,
Coimbatore, Coimbatore, Co............

ACKNOWLEDGEMENT

CONTENTS

SYNOPSIS

The project entitled "AIRPORT MAINTENANCE SYSTEM" is developed for Airport authority of India, coimbatore airport.

This project has computerized operations of the aeronautical communication service. It includes several modules and has different forms. This project has three modules such as self accounting unit, runway service and airport maintenance. The function of self accounting unit is deduction and calculation of taxes. The runway service tells about the record maintenance of various departments. Some operations such as addition, deletion and updation will take place. An employee salary is based on overtime work. Airport maintenance gives the details of maintaing section for future reference. The details of cargo, passenger and schedules of flights are maintained by airlines and these details are submitted to airport for reference.

1.0 INTRODUCTION

1.1 PROJECT OVERVIEW

The Airport Maintenance system is for Airport Authority of India. This Airport Maintenance system unit govern the complete functionalities required for retrieving data from the database. This project is for the computerized operations of the Aeronautical communication service. The project "Airport Maintenance System" includes several modules and each module has different forms. The main function is deduction and cancellation of taxes. Tax deduction and calculations are sent to Airport Authority of India and to the required particular party. An employee working over time is calculated and the records are maintained for providing incentives. Commercial pass, vehicle pass and photo identity card are provided for employees and the validity depends upon the department. Visitors pass are provided for outsiders and details regarding their name and purpose have to be filled for future reference. Most specific act in an Airport system deals with maintenance which are classified as flight, passenger, cargo. Fuel, air and servicing of plane are the main ingredients of flight maintenance. Providing good comfort in all aspects and also encouraging them by giving gifts are the main procedure adopted in welfare maintenance. Exports and imports of goods are carried out by cargo maintenance.

1.2ORGANIZATION PROFILE

AIRPORT AUTHORITY OF INDIA:AN INTRODUCTION

The Airports Authority of India (AAI) was formed on 1st April 1995 by merging the international airports authority of India and the national airports authority with a view to accelerate the integrated development, expansion and modernization of the operational, terminal and cargo facilities at the airports in country.

AAI manages 11 international airports, 83 domestic airports and 28 civil enclaves. AAI also provides air traffic management services over entire Indian air space and adjoining oceanic areas with ground installations at all airports and 5 other locations to ensure safety of aircraft operations. AAI airports together handled almost 40 million passengers, 8,00,000 mt cargo and 4,68,000 aircraft movements during 1999-2000.

AAI invested rs. 15,120 millions in airport infrastructure during the 8th five year plan and more than twice, rs. 34,000 millions, is planned investment during the 9th five year plan. The airports at ahmedabad, amristar, Bangalore, goa, guwahati and Hyderabad, in addition to those at Mumbai, delhi, Calcutta, Chennai and thiruvananthapuram.

FUNCTIONS OF AIRPORT AUTHORITY OF INDIA

The following are the functions of the airports authority of India:

- o Control and management of the Indian airspace extending beyond the territorial limits of the country, as accepted by ICAO.
- o Design, development, operation and maintenance of international and domestic airports and civil enclaves.
- o Construction, modification and management of passenger terminals
- o Development and management of cargo terminals at international and domestic airports.
- o Provision of passenger facilities and information system at the passenger terminals at airports.

2.0 SYSTEM STUDY AND DESIGN

2.1 SYSTEM REQUIREMENT SPECIFICATION

The purpose of this document is to describe all unambiguous and specific software requirements, user characteristics, performance requirements , design constraints , software attributes and other issues relevant to airport management system. The scope of this document is the only one that describes the requirements of the system. It meant for use by the developers and will be the basis for validity of the final delivered system. Any changes made to the requirements in the future will have to go through a formal change approval process. The developer is responsible for asking for clarifications, wherever necessary. The developer is responsible for asking Clarifications, where necessary and will not make any alternatives without the permission of the client. Input design is very important because it is the means of capturing data needed by the system. If the data captured is error free then the effectiveness of the system will increase. The application enables the access of many users and the database is capable of handling multiple requests at the same time.

2.2 EXISTING SYSTEM

"Airport Maintenance system " project is for the computerized operations of the Aeronautical communication service. Basically they are maintaining all the information manually, so they need a computerized system to do their job easily. All the records are maintained by manually. Calculating the particular tax is very difficult and the takes more time to generate the result. Managing the written stocks are inefficient to get the accurate and good results. Corrections cannot be done easily. Manual maintenance causes various difficulties. An employee also needs to spend his more time in this work and need a great concentration and concern in each and every part. Thus the aim of this project is to reduce the employee work i.e. time consumption , to get a accurate result and to maintain the records easily.

3

2.3   PROPOSED SYSTEM

The proposed system of airport maintenance system helps to perform the tasks with minimum effort. All the required activities can be done easily without any strain. The quality of work performed by a machine is usually uniform, neat and more reliable than when it is done manually. The efficiency and accuracy is also increased in employing computers. The benefit of computerization is quick job completion. The updation and deletion can also be performed quickly and accurately. employee work i.e. time consumption, to get a accurate result, to maintain the records easily this airport maintenance system is used.

3.0 PROGRAMMING ENVIORNMENT

3.1 HARDWARE CONFIGURATION

PROCESSOR: PENTIUM IV

RAM : 128 MB

HARD DISK: 40 GB

DISPLAY: SAMSUNG 17"

KEYBOARD: 104 KEYS

3.2 DESCRIPTION OF SOFTWARE AND TOOLS USED

VISUAL BASIC 6.0:

Visual basic is a powerful programming system for developing sophisticated graphical applications for Microsoft windows environment. Its productivity has been enhanced by addition of a complete set of tools to simplify rapid application development. Applications developed using visual basic provides a true EXE file that uses a runtime dynamic-link library (DLL) which can be freely distributed. Calling powerful API functions available in visual basic optimizes application performance.

Accessing databases:

Visual basic provides a set of tools created and use structured data base systems to manage application data. These tools are Microsoft jet data base engine , the data control and the data access object(DAO)programming interface. Visual basic provides jet database, version 3.5 for 32-bit programming. The data control and data access objects are the interfaces used to connect to the jet database engine.

Working with databases:

A visual basic database application has three parts such as user interface, database engine and data store. Visual basic has been chosen as it provides a GUI based environment for creating user-friendly forms. Visual basic is an ideal programming language for developing sophisticated applications in window platform. The 'visual' part refers to the graphical user interface (GUI). Rather than writing numerous lines of code to describe the appearance and location of interface elements, you simply add rebuilt objects in to place on screen.

Beginners can create useful applications by learning a few keywords yet the power of the language allows professionals to accomplish anything that can be accomplished using another windows programming language. It makes use of graphical user interface (GUI) for creating robust and powerful applications. The GUI enables the user to interact with an application. This feature makes it easier to comprehend things in a quicker and easier way. In a GUI environment coding is similar to linear programming methods and it is highly interactive and user friendly. One of the interesting feature of visual basic is the integrated development environment (IDE).

FEATURES OF VISUAL BASIC:

*Compile a VB project to native for faster execution.

*Open multiple projects in the same instance of VB.

*ActiveX document boost the VB application to the intranet and intranet browser windows.

*Ability to do single, multiple, or document interface application.

*The new model allows us to programmatically extend the development environment and control project, events, code visual elements.

*The application wizard is new and the setup wizard has been enhanced to enable creating a dependency file for a standard projects.

*Command lines switches provide a way to control how VB executes.

*The recourses file allows you to collect all of the versions specify text and bitmaps for an application is one place.

*VB provides built- in templates for creating an about dialog box, option dialog box, or splash screen.

ORACLE:

ORACLE Corporation was the first company to offer a true relational RDBMS commercially, and has continually led innovation in the field of RDBMS. The ORACLE corporation strategy of offering an RDBMS that is portable, compatible and connectable results in a very powerful tool for users. you learn the basic concepts across various hardware and software platforms. The collection of tools, utilizes and application that constitute the ORACLERDBMS let you manipulate an ORACLE database. Many of these products are fourth generation language tools: they let you interactive screens to create application programs.

The ORACLE database was designed using the relational model and gives uses of many advantages, including the following

*A database structure that is easy to visualize and understand.

*The ability to create any number of temporary relationships between the tables.

*Freedom from concern about to query the database through the use of SQL.

*Tables are easy to visualize.

*Relational joins that provides temporary set of data from multiple tables in the model.

The ORACLE system uses the non-procedural structured query language (SQL) to communicate to database kernel. In 1986,the American National Standard Institute (ANSI) made SQL the standard for all DBMS.SQL is a query language used with IBM'S SQL/DS and DB2database systems on mainframes. SQL is a powerful query language so powerful, that all the application development tools that ORACLE provides are SQL based.

ORACLE provides the following advantages over the relational database.

*Direct SQL interface to the database through SQL*PLUS lets developers and user interact with the database and manipulate direct.

*The interactive forms developers SQL*PLUS lets our procedures prototype applications quickly. These prototypes can be used as the base units for the real Application.

Additionally, changes to these applications during development and maintenance can be accomplished in a very little time.

*The transferability of data from the files and formatted in to the table structure ORACLE database, using the utility SQL*Loader, reduces problems in the data conversion to ORACLE databases.

ORACLE UTILITIES:

Some of the most important ORACLE products and utilities available for PCs are as described below.

SQL*PLUS *** This programming tool and query platform allows users to directly manipulate database information using SQL.

SQL*FORMS***This collection of programming is used for creating, compiling and running interactive full screen forms.

SQL***MENU***This collection of programs is used for creating and running a standardized ORACLE menu system.

SQL***REPORTWRITER***Oracle's new report generator is a full-screen interactive report generation system for creating, compiling and running reports.

4.0 SYSTEM DESIGN

4.1 INPUT DESIGN

Input design is very important because it is the means of capturing data needed by the system. It's objective is to achieve the highest possible level of accuracy for the data captured as an input. Input design or form design of designing the screens .

Input design or form design consists of designing the screens for accepting the input. The user inputs are collected as screen entries. The screen has been designed in a way to provide GUI features to the users. The input screen are designed in a way as to control the amount of input required avoid delay and keep processing simple. The form layout is designed to be user friendly. Layout labels are made self-explanatory. Drop down lists are provided in the case of item selection. The user can choose from the valid data from the list provided thus avoiding erroneous data. Command buttons are provided for all activities that take place through the forms such as additions, deletions etc.

4.2 DATABASE DESIGN

TAX DEDUCTION:

FIELDS	DATATYPE	LENGTH
nam	Varchar	20
add	Varchar	30
dedctr	Varchar	20
panno	Number	10
natreofpmt	Varchar	10
payee	Varchar	20
frmdate	Date	10
todate	Date	10

TAX CALCULATION:

FIELDS	DATATYPE	LENGTH
nam	Varchar	20
add	Varchar	30
amtdetd	Number	8
place	Char	20
todte	Date	10

PASS ISSUSE:

FIELD	DATATYPE	LENGTH
nam	Varchar	20
desgn	Varchar	20
add	Varchar	30
prpse	Varchar	10
prpsrnme	Varchar	20
intime	Time	5
outime	Tim	5

PHOTO IDENTITY CARD:

FIELDS	DATATYPE	LENGTH
nme	Varchar	20
passno	Varchar	30
regno	Varchar	30
desgn	Varchar	20
oldno	Number	20
newno	Number	20
expdte	Date	10
ingnam	Varchar	30
frmdte	Date	10
todte	Date	10

DIRT FREE SERVICE:

FIELDS	DATATYPE	LENGTH
Incnam	varchar	30
Idno	number	20
Wrknme	varchar	30
Intme	time	5
Outme	time	5
Clths	varchar	10
Detl	varchar	10
Dmx	varchar	10
Wshsp	varchar	10
Detpwd	varchar	10
Lqud	varchar	10
Qnty	varchar	10
Ttl	varchar	10
Avlty	varchar	10

4.3 PROCESS DESIGN

Detailed design of a system includes developing prototypes, user interfaces and backend databases. For this phase, data flow diagram, ERD and system flow chart is used. DFD depict how data interact with a system. DFD'S are extremely useful modeling many aspects of business function became they systematically subdivide a task in to its basic parts, helping the analyst understand the system, which they are trying to model.

The main merit of DFD is that it can provide an overview of what data a system would process, what information of data are done, what files are used and where the results flow. The graphical representation of the system makers it a good communication tool between the user and an analyst, its difficult to represent the business process through verbal description alone. Here data flow diagram helps in illustrating the essential component of process and the way they interact.

DFD COMPONENTS

DFD's are constructed using four major components (a) external entities (b) data source (c) processes (d) data flows. External entities represent the sources of data that enter the system on the recipients of data that leaves the system. Data store represent stores of data within the system It may be a databases or individual files. Process represents activities in which data is manipulated by being stored or retrieved or transformed in some way. Data flows represent the movement of data between other components, for example a report produce by a process and sent to an external entity.

A circle is used to depict a process. Both the input and output are data flows. An arrow represents the data flows. External entities are represented by rectangles. Entities supplying data are known as sources and those that consume data are called as sinks.
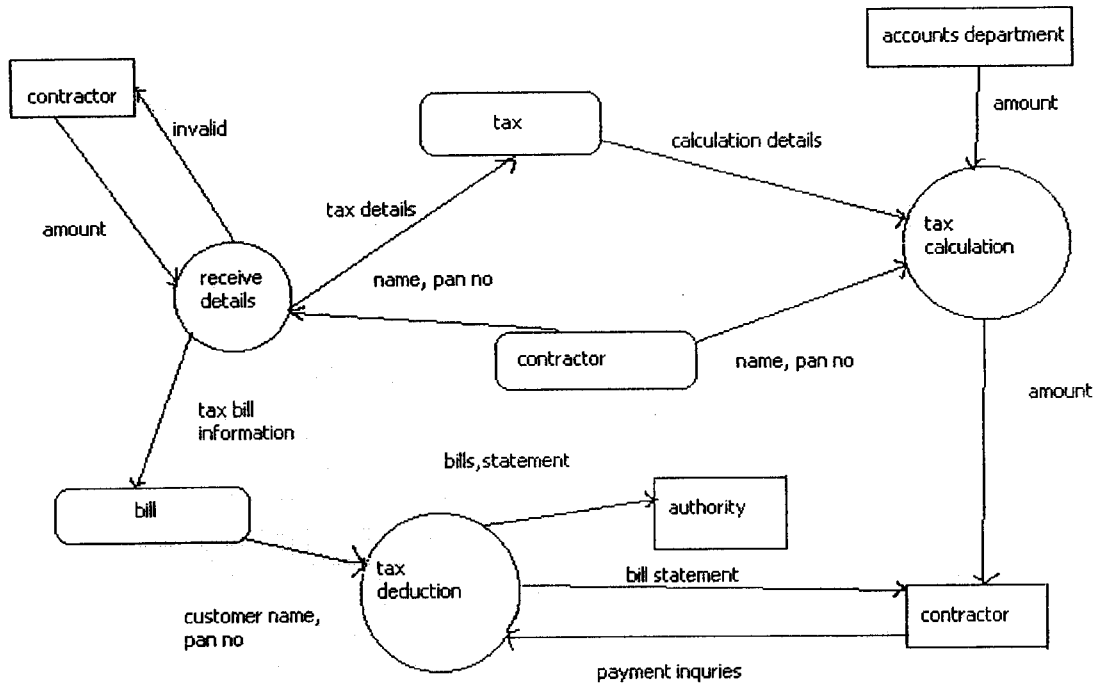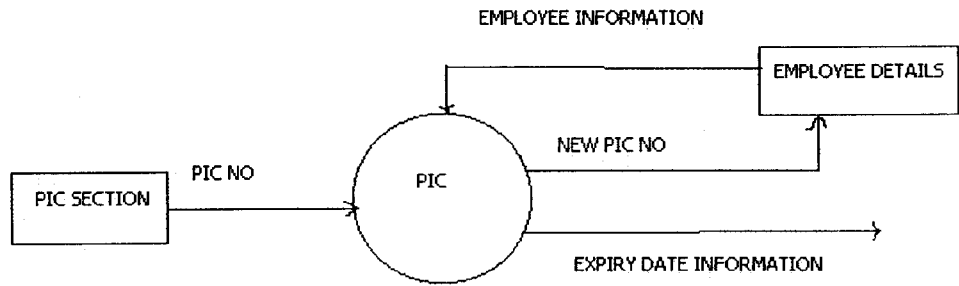
TAX CALCULATION AND TAX DEDUCTION

accounts department

contractor

invalid

amount

tax

calculation details

tax details

receive details

name, pan no

tax calculation

name, pan no

contractor

amount

tax bill information

bills, statement

bill

authority

tax deduction

bill statement

contractor

customer name, pan no

payment inquries

PHOTO IDENTIY CARD

EMPLOYEE INFORMATION

| EMPLOYEE DETAILS |

NEW PIC NO

| PIC SECTION | PIC NO → (PIC)

EXPIRY DATE INFORMATION

5.0 SYSTEM IMPLEMENTATION & TESTING

5.1 SYSTEM IMPLEMENTATION

This chapter gives a brief description of how the system deployed in the actual environment since there is now any existing system for this application a separate care should be given to test that the end users have reached these needs. The system also save memory by not allowing redundancy and it should help in easily quering. Before implementing the system, its forced in to many server testing phases. After the system clear all the tests, its released for implementation. The implementation type or the change over technique from the existing system is a step by process .i.e, the theoretical design is converted into working system.

The following processes were conducted in the implementation stage:

- Testing of developed modules with sample data.
- Correction of errors
- Testing the system to meet user requirements
- Changes were made according to user's suggestions

Implementation includes equipment installation and user training. For the system to begin operation, a sufficient number of users have been trained to the system. several hours were scheduled for a number of users so that they were able to fully understand the new system and had an opportunity to familiarize themselves with the various input screens and the generation of output. the change over is another important aspect of the implementation process and had to be handled carefully.

It allows the result to the new system to be compared with the old system before acceptance by the user, thereby promoting the user confidence.

5.2 SYSTEM TESTING

Software is only one element of a large computer based system. Ultimately software is imported with other system elements (eg new hardware) and a series of system integration and validation tests are conducted. System testing is actually a series of different tests whose primary purpose is to fully exercise the computers based system. Testing presents an interesting anomaly for the software development. A good test core is one that has a high probability of finding an as yet undiscovered error. A successful test is one that uncovers an as yet undiscovered error.

Testing for this system is done in three steps:

*Testing the function performance of each modular computers.

*Testing the interface of software and its function with live data.

*Testing for user acceptance and to see if all user requirement have been met.

Testing process takes application into two main parts:

UNIT TESTING:

In unit testing the modules of the system are tested as individual unit. Each unit has definite input and output parameters and often a definite single function.The test case were carefully designed during the process of coding and design. The errors uncovered were rectified, and the modules are tested will act the test cases to ensure that the corrective measure taken did not cause any inadvertent effects.

SYSTEM TESTING:

In system testing the system is tested as a whole; that is inter communication among the individuals units and functions of the complete system is used.

6.0 CONCLUSION

This project has been very useful and educative. The system has been developed for the conditions existing at present. A good amount of user friendly features have been incorpated in this system and it is possible for any user to exploit these features to get the maximum benefit. The system being flexible can be further enhanced as per user's requirements. The various reports generated by the system are useful. The complete design and development of the "AIRPORT MAINTENANCE SYSTEM" is presented in this dissertation. Since the requirements of any airport and their standard are charging day to day. The system has been designed in such a way that its scope and boundaries could be expanded in future with little modification. Accuracy comes to play where each and every inform action entered are stored and displayed in a few micro seconds.

OUTPUT TESTING:

The outputs are thoroughly tested by giving sample data, for which results are known. The outputs from the system are matched with that of the known values and the results are found to be accurate.

7.0 SCOPE FOR FUTURE DEVELOPMENT

The software has been developed with the present working condition and environments in mind. The current environment is a fast growing area and new features. New technologies and different work styles are expected. Hence the software has been developed with near future needs in mind and it has appropriate slots for any future modifications. Since a well known software(visual basic) has been used to get the various outputs, in the near future the encashment of this project will be easy. Since the manual work is completely computerized the laborers involved can be reduced to a certain extent. Similarly the time consumption is also reduced. The output which got is perfect. The accuracy and the efficiency is increased.

8.0 BIBILOGRAPHY

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SRI KRISHNA SWEETS.,CBE.

PAN / GIR NO of the PAYEE
07-PTL-08

FROM 01/01/03 TO 31/12/03

COMPANY CIRCLE

NATURE OF PAYMENT
CONTRACTOR

CMBAO-3057-F

PAN / GIR NO OF THE DEDUCTOR
AAACA-6412-D

22

DETAILS OF PAYMENT, TAX DEDUCTION AND DEPOSIT OF TAX INTO CENTRAL GOVERMENT ACCOUNT

Date of payment /credit	Amount paid / credited	Amount of income-tax deducted	Rate at which deducted	Date & Challan no. of deposit of tax into Central Goverment Account	Name of bank and branch where tax deposited
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01/02/03	300000	6000		01/03/03	
01/02/03	100000	2000		01/03/03	
01/02/03	100000	2000		01/03/03	
01/02/03	100000	2000		01/03/03	
01/02/03	300000	6000		01/03/03	
01/02/03	100000	2000		01/03/03	
01/02/03	100000	2000		01/03/03	
01/02/03	100000	2000		01/03/03	
Certified that a sum of Rs		30000			

AIRPORTS AUTHORITY OF INDIA

NATIONAL AIRPORTS DIVISION

COIMBATORE AIRPORT
ENTRY PASS

NON - TRANSFERABLE

NAME — N.Preethi

DESIGNATION AND
ADDRESS — Student

PURPOSE OF VISIT — Project work

NAME OF
PROPOSER — L.Kutti

TIME IN — 10.30

TIME OUT — 12.30

○ ARRIVAL LOUNGE
○ DEPARTURE LOUNGE

○ CHECK IN AREA
○ CARGO COMPLEX

○ FIRE STATION
◉ TECHNICAL BLOCK

| ADD | DELETE | UPDATE | EXIT |

24
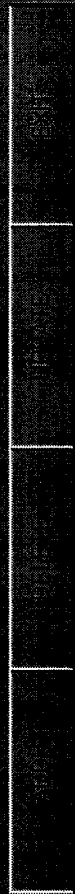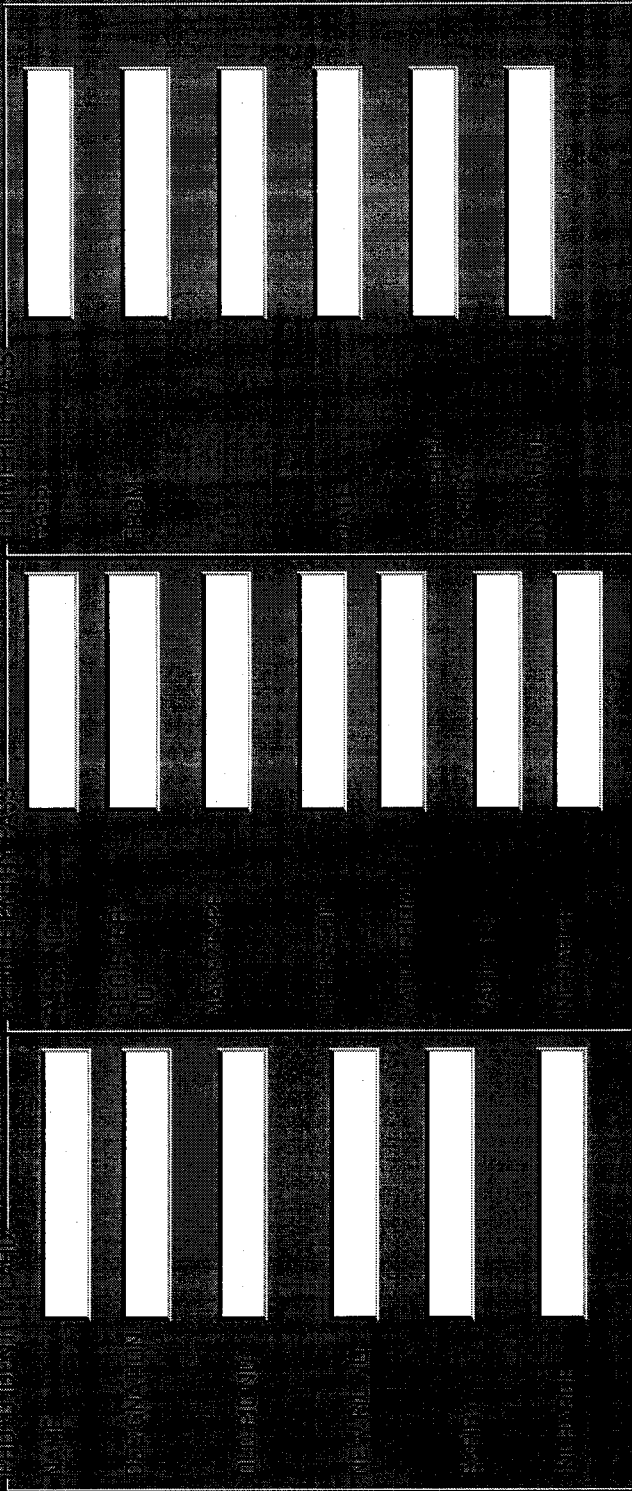
DIRT FREE SERVICE

INCHARGER

NAME [S.L.Karthick]

ID NO [D33dts45]

WORKER

NAME [M.Mari]

IN TIME [08.00] OUT TIME [05.00]

MATERIALS

QUANTITY

○ CLOTHES

○ DETTOL

○ DOMEX

⊙ WASHING SOAP

○ DETERGENT POWDER

○ LIQUID

REPORTS

TOTAL [10]

CLOTHES [   ]

DETTOL [   ]

QUANTITY [2]

DOMEX [   ]

WASHING SOAP [   ]

AVAILABILITY [8]

DETERGENT POWDER [   ]

LIQUID [   ]

EXTRAS

CLOTHES [   ]

DETTOL [   ]

DOMEX [   ]

WASHING SOAP [0]

DETERGENT POWDER [   ]

LIQUID [   ]

ADD   DELETE   UPDATE   REPORT   EXIT