Estd :2005

MALLA REDDY COLLEGE OF ENGINEERING

(Formerly CM Engineering College)

Approved by AICTE - New Delhi, Affiliated to JNTU - Hyderabad,Accredited by NBA & Accredited by NAAC.
ISO 9001:2015 Certified Institution, Recognition of College under Section 2(f) & 12 (B) of the UGC Act,1956.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

YEAR: 2022:2023

REGULATION: R18

COURSE NAME:

SOFTWARE

ENGINEERING

LABCOURSE CODE: CS505PC

YEAR AND SEM: III-II-Sem

TASK1:Passport AutomationSystem

AIM:Tocreate anautomatedsystemtoperform thePassportProcess

PROCEDURE:(I)PROBLEMSTATEMENT

Passport Automation System is used in the effective dispatch of passport toalloftheapplicants.Thissystemadoptsacomprehensiveapproachtominimize the manual work and schedule resources, time in a cogent manner.The core of the system isto get the online registration form (with detailssuchasname,addressetc.,)filledbytheapplicantwhosetestamentisverified for its genuineness by the Passport Automation System with respectto the already existing information in the database. This forms the first andforemost step in the processing of passport application. After the first roundof verification done by the system, the information is in turn forwarded to theregional administrator's (Ministry of External Affairs) office. The applicationis then processed manually based on the report given by the system, and anyforfeiting identified can make the applicant liable to penalty as per the law.Thesystemalsoprovidestheapplicantthelistofavailabledatesforappointmen t to 'document verification' in the administrator's office, fromwhich they can select one. The system forwards the necessary details to thepolice for itsseparateverificationwhose reportisthen presented totheadministrator. The administrator will be provided with an option to displaythe current status of application to the applicant, which they can view in theironline interface. After all the necessary criteria have been met, the originalinformationis addedto thedatabaseand thepassport issent totheapplicant.

(II) SOFTWAREREQUIREMENTSPECIFICATION:

INTRODUCTION

Passport Automation System is an interface between the Applicantand the Authority responsible for the Issue of Passport. It aims at improvingthe efficiency in the Issue of Passport and reduces the complexities involvedinit to the maximum possibleextent.

PURPOSE

If the entire process of 'Issue of Passport' is done in a manual mannerthen it would takes several months for the passport to reach the applicant.Considering the fact that the number of applicants for passport is increasingevery year, an Automated System becomes essential to meet the demand. Sothis system uses several programming and database techniques to elucidatetheworkinvolvedinthisprocess.AsthisisamatterofNationalSecurity,th esystemhas beencarefully verifiedand validatedin orderto satisfyit.

SCOPE

- The System provides an online interface to the user where they canfillintheirpersonaldetailsandsubmitthenecessarydocuments(maybe byscanning).
- Theauthorityconcerned withtheissueofpassport canusethissystem to reduce his workload and process the application in aspeedymanner.
- Provideacommunicationplatform betweentheapplicantand theadministrator.
- Transferofdatabetween thePassportIssuingAuthorityandtheLocalPoliceforverificationof applicant'sinformation.
- Users/Applicants will come to know their status of application andthedateinwhichtheymustsubjectthemselvesformanualdocumentve rification.

DEFINITIONS,ACRONYMS AND THEABBREVIATIONS

- **Administrator**

  Refers to the super user who is the Central Authority with the privilege tomanage the entire system. It can be any higher official in the RegionalPassportOfficeof Ministry ofExternal Affairs.

- **Applicant**

  Onewho wishes to obtain thePassport.

- **PAS**

  ReferstothisPassportAutomationSystem.

- **HTML**

  MarkupLanguageusedfor creatingwebpages.

- **J2EE**

  Java 2 Enterprise Edition is a programming platform java platform fordevelopingand runningdistributed javaapplications.

- **HTTP**

  HyperTextTransferProtocol.

- **TCP/IP**

  Transmission Control Protocol/Internet Protocol is the communicationprotocolused to connect hosts ontheInternet.

TECHNOLOGIESTO BEUSED

- HTML
- JSP
- JavaScript
- Java

TOOLSTOBEUSED

- EclipseIDE(Integrated DevelopmentEnvironment)
- RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRS includes two sections overall description and specific requirements**Overall Description** will describe major role of the system components andinter-connections.

SpecificRequirements willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

PRODUCTPERSPECTIVE

The PAS acts as an interface between the 'applicant' and the 'administrator'.This system tries to make the interface as simple as possible and at the sametime notriskingthe securityof data storedin.Thisminimizesthe timedurationin which theuser receives thepassport.

SOFTWAREINTERFACE

- **FrontEndClient** -Theapplicantand Administratoronline interfaceisbuiltusingJSPandHTML.TheAdministrator'slocalinterface is built usingJava.
- **Web Server** – Apache Tomcat application server (OracleCorporation).
- **BackEnd** –Oracle11gdatabase.

HARDWAREINTERFACE

Theserverisdirectlyconnectedtotheclientsystems.Theclientsystemshaveaccess to the databasein theserver.

SYSTEMFUNCTIONS

- SecureRegistrationofinformation bytheApplicants.
- Scheduletheapplicantsanappointmentformanualverificationoforiginaldocuments.
- PanelforPassport ApplicationStatus DisplaybytheAdministrator.
- SMSandMail updatesto theapplicantsbytheadministrator.
- Administrator can generate reports from the information and is theonlyauthorizedpersonneltoaddtheeligibleapplicationinformationtothedatabase.

USERCHARACTERISTICS

- **Applicant**

  Theseare thepersonwho desiresto obtain the passport andsubmittheinformation to thedatabase.

- **Administrator**

  He has the certain privileges to add the passport status and to approvethe issue of passport. He may contain a group of persons under him toverify the documents and give suggestion whether or not to approvethedispatch ofpassport.

- **Police**

  HeisthepersonwhouponreceivingintimationfromthePAS,perform a personal verification of the applicant and see if he has anycriminal case against him before or at present. He has been vetoedwiththepowertodeclineanapplicationbysuggestingittotheAdministratorifhefindsanydiscrepancywiththeapplicant.Hecommunicatesviathis PAS.

CONSTRAINTS

- Theapplicantsrequire a computerto submittheirinformation.
- Althoughthesecurityisgivenhighimportance,thereisalwaysachance of intrusion in the web world which requires constantmonitoring.
- Theuserhastobecarefulwhilesubmittingtheinformation. Muchcareisrequired.

ASSUMPTIONSANDDEPENDENCIES

- TheApplicantsandAdministratormusthavebasicknowledgeofcomputersand English Language.
- Theapplicantsmayberequiredtoscanthe documentsandsend.

(III) USECASEDIAGRAM:

ThePassportAutomationsystemusecases are:

1. Login
2. Registration
3. Verification
4. Checkstatus
5. Enquiry
6. DispatchPassport

ACTORSINVOLVED:

1. Applicant
2. PassportOfficer
3. Police

USE-CASENAME:LOGIN

Theapplicant loginto the systemto obtaina passport

USE-CASENAME:REGISTRATION

TheApplicant entershisnameanddetailsforapplyingaPassport.Theapplicantinitially givehis/her details forregistration.

USE-CASENAME:VERIFICATION

Thesystemverifiesthe applicantmandatoryinformationgivenbyhim/her.

USE-CASENAME:CHECKSTATUS

The Applicant tries to check the status in which category applied. The systemdisplaysthemessageto theapplicant.

USE-CASENAME:ENQUIRY

The police receive intimation from the PAS, perform a personal verificationof the applicant and see if he has any criminal case against him before or atpresent. He has been vetoed with the power to decline an application bysuggestingittotheAdministratorifhefindsanydiscrepancywiththeapplicant.He ecommunicates viathis PAS.

USE-CASENAME:DISPATCHPASSPORT

The administrator check or process the application which are submitted byapplicant .Process the application means the data which are given by theapplicantisprocessedtocreateapassportfortheapplicantandfinallydispatchest he passport to the applicant

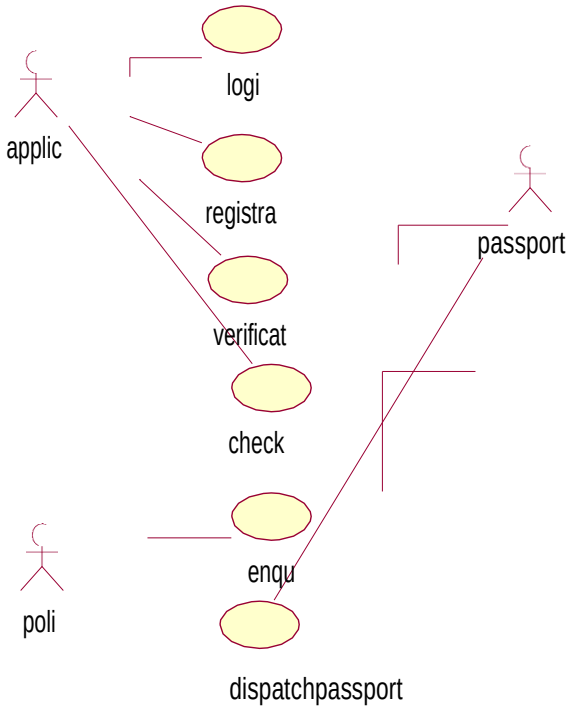


Fig.1.USECASEDIAGRAMFORPASSPORTAUTOMATIONSYSTEM

ACTIVITYDIAGRAM:

The activity diagram represents the series of activities that are occurringbetweentheobjects.FollowingisactivitydiagramwhichrepresentstheSoftwarepersonnel management system process.

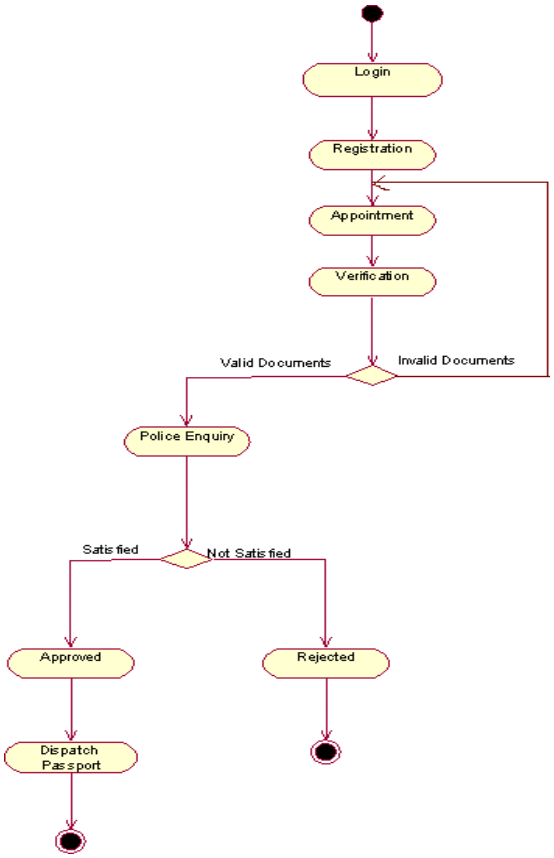


Fig.2.ACTIVITYDIAGRAMFORPASSPORTAUTOMATIONSYSTEM

CLASSDIAGRAM:

Theclassdiagramisreferredasobjectmodelinginthestaticanalysisdiagram. The main task of object modeling is to graphically show what eachobject will do in the problem domain. The problem domain describes thestructureand therelationships among objects.

ThePassportAutomationsystemclassdiagramconsistsoffiveclasses

1. Loginclass
2. Appointmentclass
3. Registrationclass
4. Authorityclass
5. Verificationclass

1) LOGINCLASS:

Itconsists of two attributes and two operations. The attributes areuser name, and password. The operations of this class are creating login ( ),signin ( ).

2) APPOINMENTCLASS:

The attributes of this classare appointment id,applicantid,date,time, and description. The operation of this class are get appointment ( ), getappointmentstatus ( ), Modify (), cancel().

3) REGISTRATIONCLASS:

The attributes are applicant id, name, dob, gender, birthplace, fathername,addr1,addr2,district,state,country,pincode,mobile,emailid,qualification.Theoperation areadd( ), modify( ),view().

4) AUTHORITYCLASS:

Theattributesofthisclassareofficered,name,designation,andpassword.Theoperations aresearch( ).

5) VERIFICATIONCLASS:

Theattributesofthisclassareverificationid,appointmentid,applicantid, officerid, statusid, description.The operationareverify().

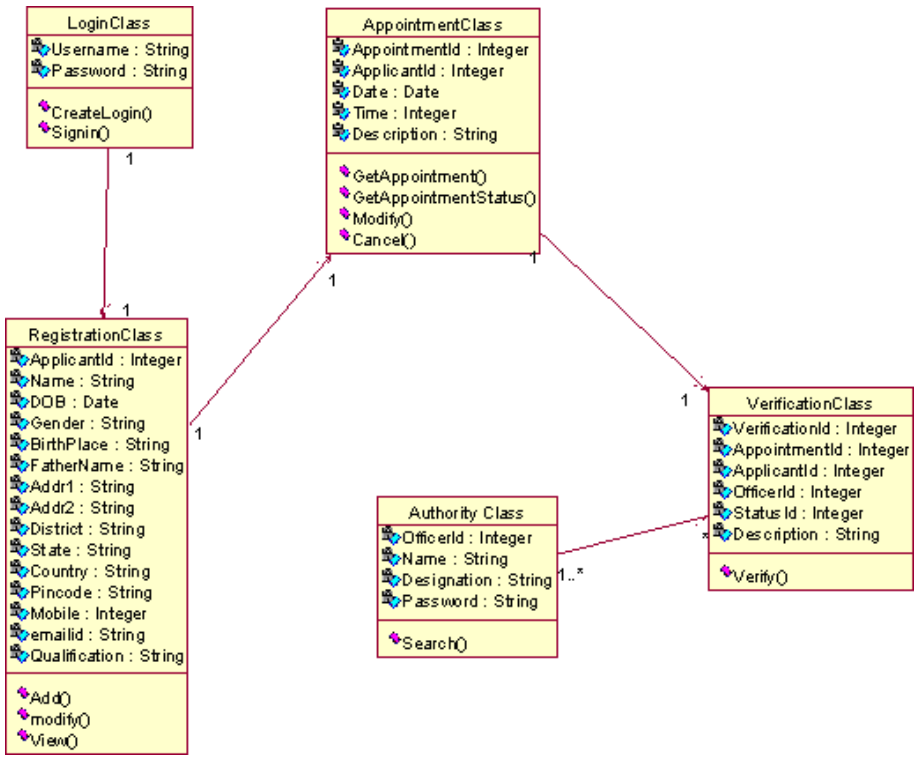


Fig.3.CLASSDIAGRAMFORPASSPORTAUTOMATIONSYSTEM

INTERACTIONDIAGRAM:

- A sequence diagram represents the sequence and interactions of agiven USE-CASE or scenario. Sequence diagrams can capture mostoftheinformation aboutthesystem.
- Mostobjecttoobjectinteractionsandoperationsareconsideredeventsandeventsincludesignals,inputs,decisions,interrupts,transitionsand actionsto orfromusersor external devices.
- An event also is considered to be any action by an object that sendsinformation.
- The event line represents a message sent from one object to another,inwhichthe“form”objectisrequestinganoperationbeperformed by the “to” object. The “to” object performs the operation using amethodthat the classcontains.
- It is also represented by the order in which things occur and how theobjectsin the system send messageto one another.
- The sequence diagram for each USE-CASE that exists when a useradministrator, check status and new registration about passportautomation system aregiven

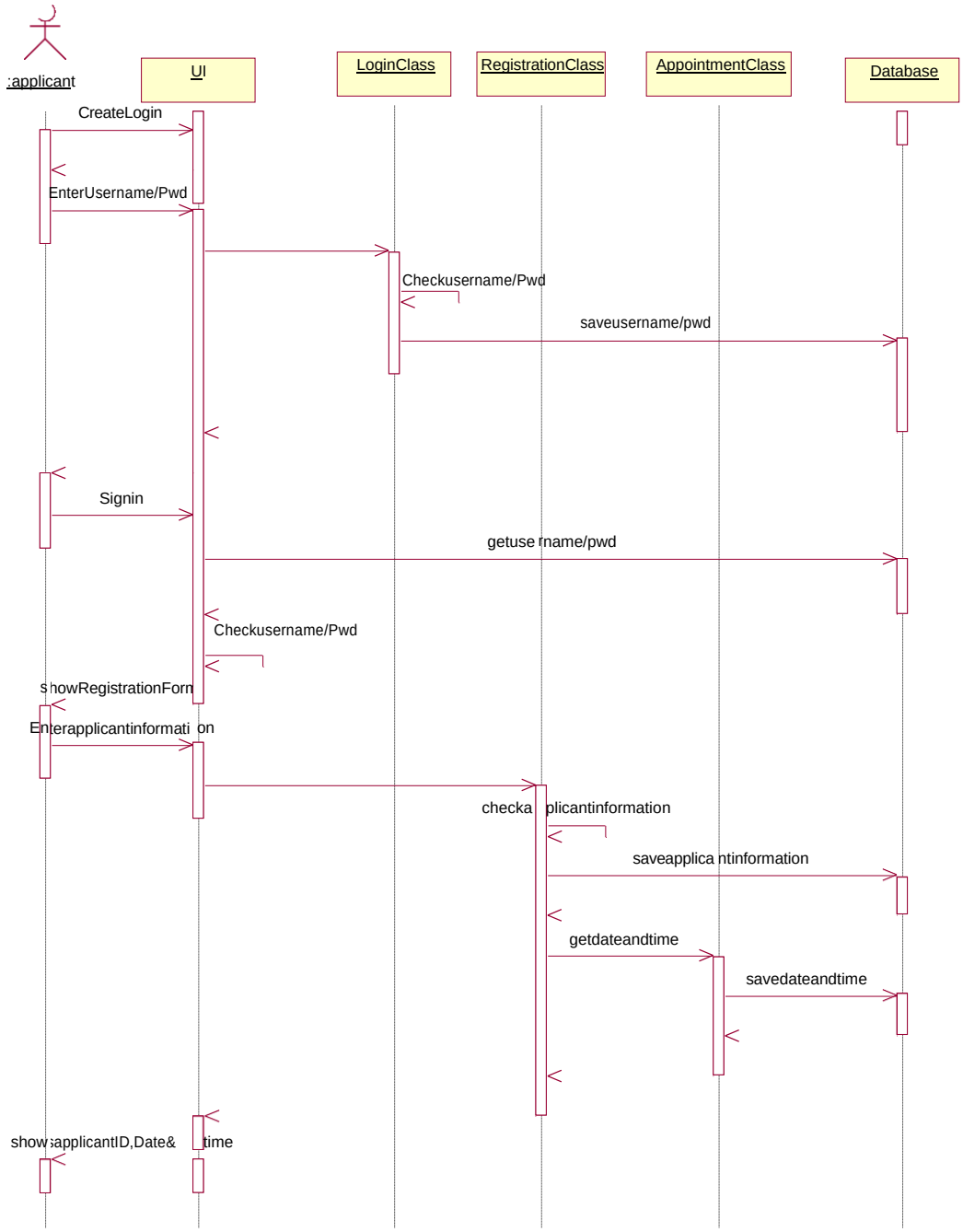


Fig.4.SEQUENCEDIAGRAMFORLOGINANDVERIFICATION

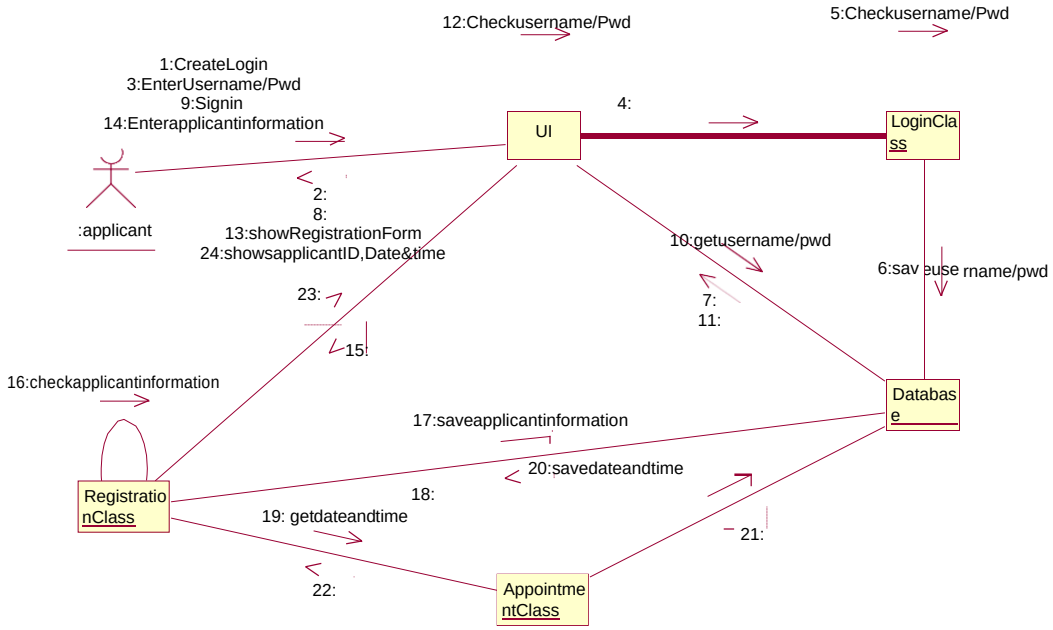


Fig.5.COLLABORATIONDIAGRAMFORLOGINANDVERIFICATION

- The diagrams show the process done by the Passport Authority to thePassportAutomationsystem. Theapplicanthas toenterhisdetails.
- The details entered are verified by the Passport Authority and theapplicantisapprovedifthedetailsmatchthenthepassportisdispatch,otherwiseanappropriateerrormessageisdisplayed.

STATECHARTDIAGRAM:

- Every object undergoes through some state and on receiving someeventthestategetschanged.Thistransitionofthestatecanberepresentedby thestatetransitiondiagram.

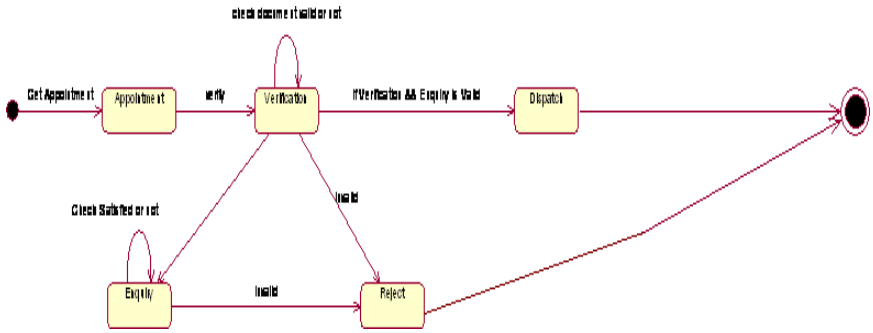


Fig.6.STATECHARTDIAGRAMFOR PASSPORTAUTOMATIONSYSTEM

DEPLOYMENTDIAGRAMANDCOMPONENTDIAGRAM

Deploymentdiagramsareusedtovisualizethetopologyofthephysicalcomponentsof asystemwherethesoftwarecomponentsaredeployed.

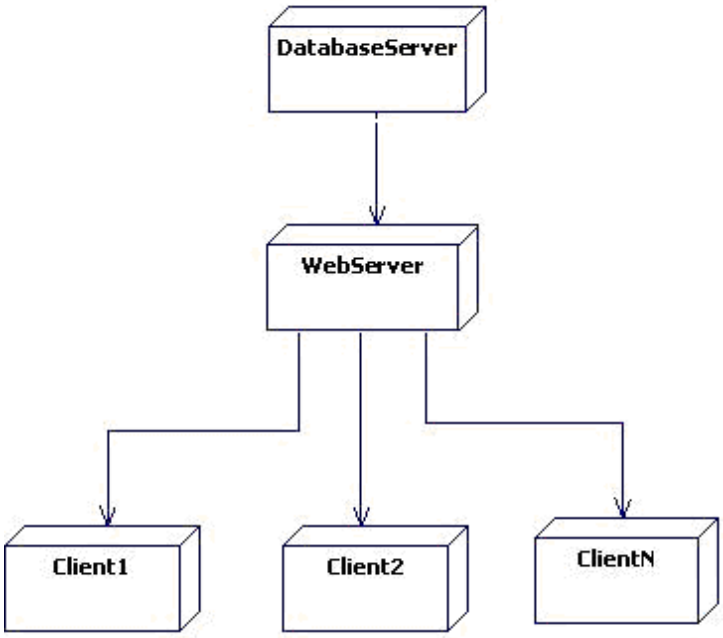
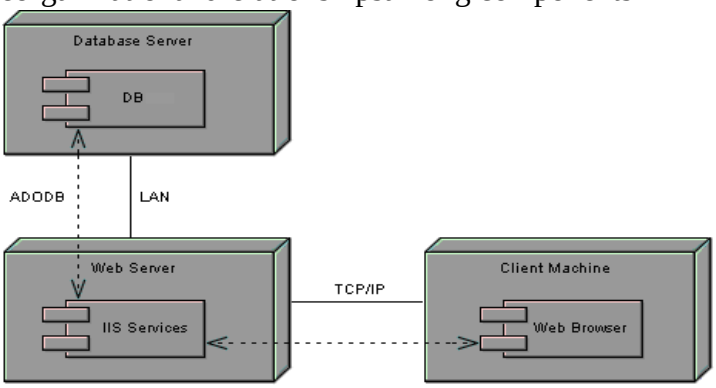


Fig.7.DEPLOYMENTDIAGRAMFORPASSPORTAUTOMATION SYSTEM

COMPONENTDIAGRAM

Componentdiagramsare usedtovisualizetheorganizationandrelationshipsamong components in



asystem.

Fig.8.COMPONENTDIAGRAMFORPASSPORTAUTOMATIONSYSTEM

TASK2:BOOK BANK SYSTEM

AIM: Tocreateasystemtoperformbookbank operation

PROCEDURE:(I)PROBLEMSTATEMENT:

ABookBanklendsbooksandmagazinestomember,whoisregisteredin the system. Also it handles the purchase of new titles for the Book Bank.Popular titles are brought into multiple copies. Old books and magazines areremoved when they are out or date or poor in condition. A member canreserveabookormagazinethatisnotcurrentlyavailableinthebookbank,so that when it is returned or purchased by the book bank, that person isnotified. The book bank can easily create, replace and delete informationaboutthetiles,members,loans andreservations from thesystem.

(II) SOFTWAREREQUIREMENTSSPECIFICATION:

INTRODUCTION

Book Bank is the interface between the students and Librarian. It aims atimproving the efficiency in the Issue of books or magazines and reduce thecomplexitiesinvolved in it to themaximum possible extent.

PURPOSE

If the entire process of 'Issue of Books or Magazines' is done in a manualmanner then it would take several months for the books or magazinestoreachtheapplicant.Consideringthefactthatthenumberofstudentsfor BookBankisincreasingeveryyear,anAutomatedSystembecomesessential to meet the demand. So this system uses several programming anddatabasetechniquestoelucidatetheworkinvolvedinthisprocess.Thesystemh as beencarefully verified andvalidated in orderto satisfyit.

SCOPE

The System provides an online interface to the user where they can fill intheirpersonaldetailsandsubmitthenecessarydocuments(maybebyscanning). The authority concerned with the issue of books can use thissystemtoreducehisworkloadandprocesstheapplicationinaspeedymanner.

DEFINITIONS,ACRONYMSANDTHEA BBREVIATIONS

- **Librarian** -Referstothe superuserwhoistheCentralAuthority who has been vested with the privilege tomanagetheentiresystem.
- **Student**-Onewho wishes toobtain theBooks orMagazines.
- **HTML** -MarkupLanguageusedforcreatingwebpages.
- **J2EE**-Java2EnterpriseEditionisaprogrammingplatformand it is the part of the java platform for developing andrunningdistributed javaapplications.
- **HTTP**-HyperTextTransferProtocol
- **TCP/IP** - Transmission ControlProtocol/InternetProtocolisthecommuni cationprotocolusedto connecthosts ontheInternet.

TECHNOLOGIESTO BEUSED

- Visual Basic
- Oracle11g

TOOLSTOBEUSED

- VisualBasicTools
- RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoveralldescriptionandspecificreq uirements.

Overall description will describe major role of the systemcomponentsand inter-connections.

Specificrequirements willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION:

It will describe major role of the system components and inter-connections.

PRODUCTPERSPECTIVE

TheSRSactsasaninterfacebetweenthe'Students'andthe'Librarian'.Thiss ystemtriestomaketheinterfaceassimpleaspossible and at the sametime not risking the security of datastoredin. This minimizes the time duration in which the user receives thebooksor magazines.

SOFTWAREINTERFACE

- **Front End Client** - The Student and Librarian onlineinterface is builtusing Visualstudio.
- **BackEnd**-Oracle11gdatabase

HARDWAREINTERFACE

Theserverisdirectlyconnected totheclientsystems.Theclientsystemshaveaccess to the databasein theserver.

SYSTEMFUNCTIONS

- SecureRegistrationofinformation bytheStudents.

- Librarian can generate reports from the information and istheonlyauthorizedpersonneltoaddtheeligibleapplicationinf ormationto thedatabase.

USERCHARACTERISTICS

- **Student** - They are the people who desire to obtain thebooksandsubmit theinformation tothedatabase.
- **Librarian** - Hehasthecertainprivilegestoaddthebooksandtoapproval of thereservation ofbooks.

CONSTRAINTS

- TheStudentsrequireacomputer tosubmittheirinformation.
- Althoughthesecurityisgivenhighimportance,thereisalwaysachanc e of intrusion in the web world which requires constantmonitoring.
- TheStudentshastobecarefulwhilesubmittingtheinfor mation.Much careis required.

ASSUMPTIONSANDDEPENDENCIES

- TheStudentandLibrarianmusthavebasicknowledgeofcom putersandEnglish Language.
- TheStudents mayberequiredto scanthe documentsandsend.

(III) USE-CASEDIAGRAM:

Thebookbankuse casesare:

1. book_issue

2. book_return
3. book_order
4. book_entry
5. searchbook_details

ACTORSINVOLVED:

1. Student
2. Librarian
3. Vendor

USECASENAME:SEARCHBOOK_DETAILS

The librarian initiates this use case when any member returns

orrequestthebook andcheckingif thebook is available.

Precondition: ThelibrarianshouldenterallBookdetails.

NormalFlow: Buildmessageforlibrarianwho searchthebook.

PostCondition: Send messageto respectivememberwho reserved thebook.

USECASENAME:BOOK_ISSUE

Initiatedbylibrarianwhenanymemberwantstoborrowthedesiredbook.

If thebook is available, thebook is issued.

Precondition: Membershouldbevalidmemberoflibrary.

NormalFlow: Selectedbookwill beissued tothemember.

AlternativeFlow: Ifbookisnotavailablethenreservedbookuse caseshouldbeinitiate.

PostCondition: Updatethecatalogue.

USECASENAME:BOOK_ORDER

Initiated by librarian when the requested book is not available in thelibraryat thatmoment. Thebook isreserved forthefuture and issuedtotheperson when it is available.

Precondition: Initiatedonlywhenbookisnotavailable.

NormalFlow: Itreservedthebookifrequested.

PostCondition: Mentiontheentry incatalogueforreservation.

USECASENAME:BOOK_RETURN

Invokedbythelibrarianwhenamember returnsthebook.

Precondition: Membershouldbevalidmemberoflibrary.

NormalFlow: Librarianentersbookidandsystem checksforreturn dateof the book. **Alternative Flow:** System checks for return date and if itreturnedlatefinemessagewill bedisplayed.

PostCondition:Checkthestatusofreservation.

USECASENAME:BOOK_ENTRY

Thepurchasebookuse-casewhennewbooksinvokeitormagazines areaddedto thelibrary.

Precondition: Not available or more copies are required.**Normal Flow:** Enter bookid, author information, publicationinformation,purchased date, prizeand numberof copies.

PostCondition: Updatetheinformationin catalogue.

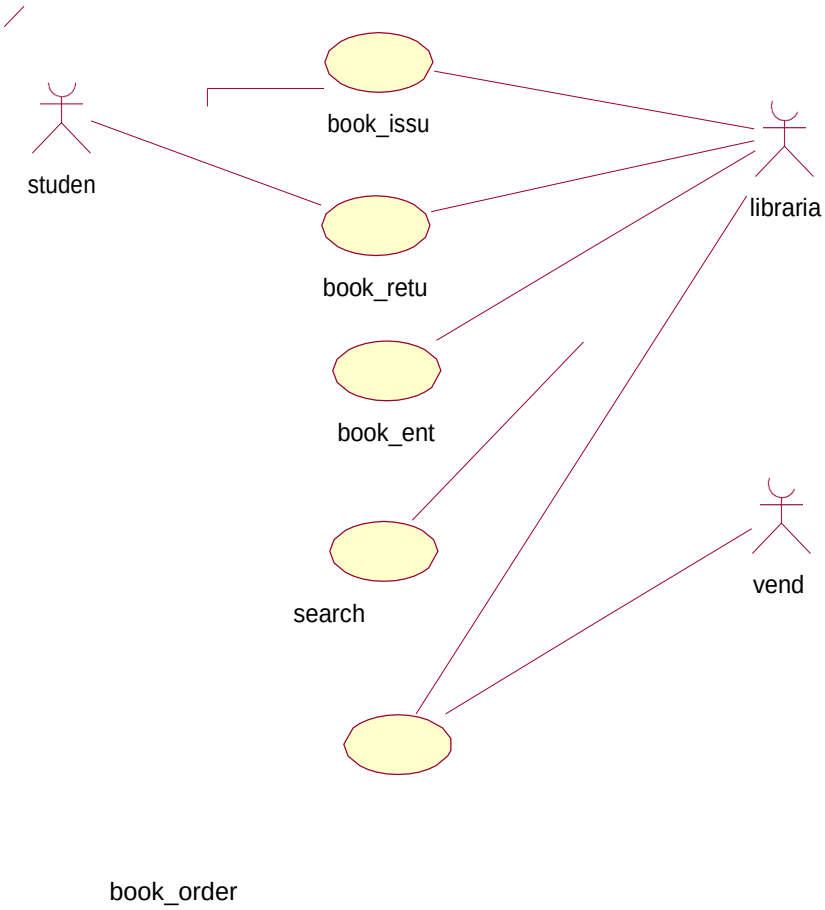


Fig.9. Use-CaseDiagramForBook BankSystem

ACTIVITYDIAGRAM:

Activity diagrams are graphical representations of workflows of stepwiseactivities and actions with support for choice, iteration and concurrency. Inthe Unified Modeling Language, activity diagrams can be used todescribethe businessandoperationalstep-by-stepworkflowsof componentsinasystem. An activity diagram shows the overall flow of control. An activity isshownas an rounded boxcontaining thename oftheoperation.

Thisactivitydiagramdescribes the behaviourofthesystem.

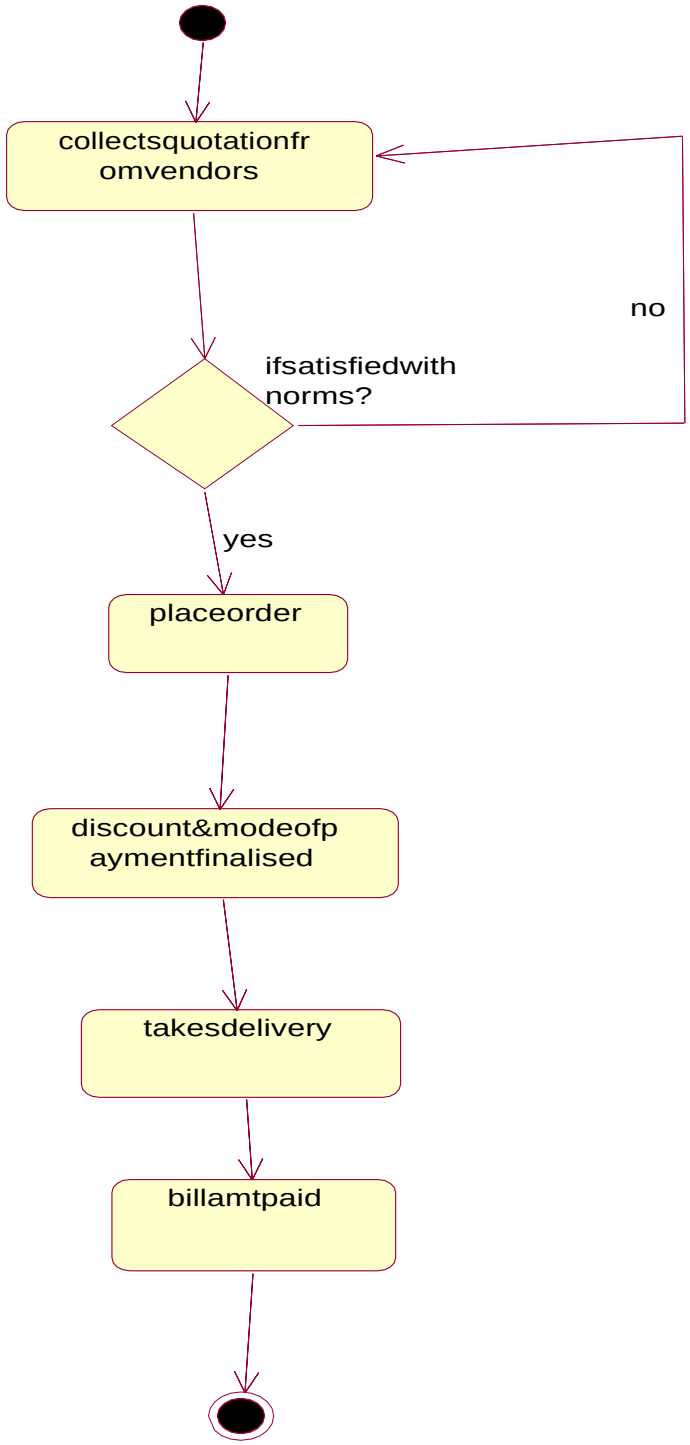


Fig.11. ActivityDiagram[OrderBook]

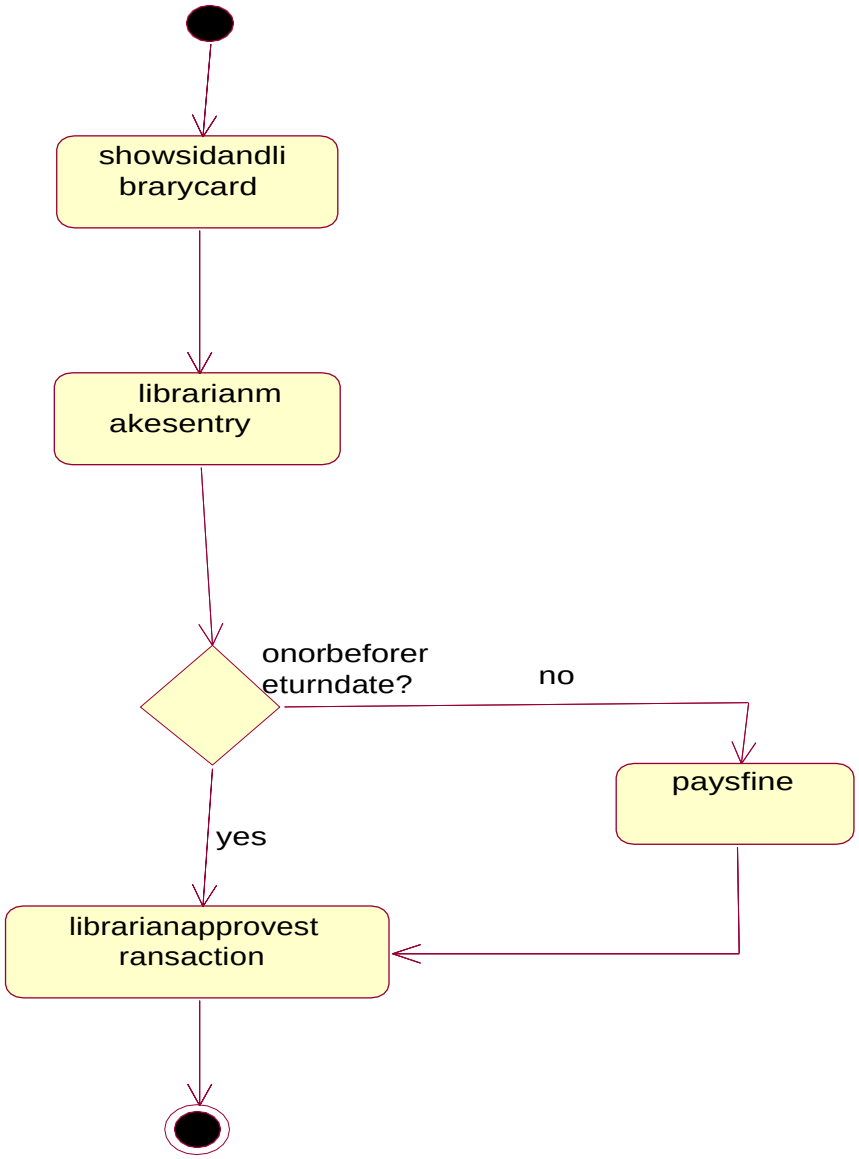


Fig.12.ActivityDiagram[ReturnBook]

CLASSDIAGRAM:

The class diagram, also referred to as object modeling is the mainstatic analysis diagram. The main task of object modeling is to graphicallyshow what each object will do in the problem domain. The problem domaindescribesthe structure and therelationships amongobjects.

TheATMsystemclass diagramconsistsoffourclasses:

6. Student
7. Book
8. Issue
9. Return
10. Vendor
11. Details

1) STUDENT:

It consists of twelve attributes and three operations. The attributes areenrollno,name,DOB,fathername,address,deptname,batchandbooklimits.Th eoperationsofthisclassareadd StInfo(),deleteStInfo(),modifyStInfo().

2) BOOK:

It consists of ten attributes and four operations. This class is used tokeepbook information suchas author, title,vendor, price,etc

3) ISSUE:

It consists of eight attributes and two operations to maintain issuedetailssuchas,issuedate,accnoof issuedbook,nameofthestudentwhoborrowedbook.

4) RETURN:

It consists of eight attributes and two operations to maintain issuedetails suchas,issue date,accnoof issuedbook,nameofthestudentwhoborrowedbook.

5) STUDENTS:

Theattributesofthisclassarename,dept,year,bcodenoTheoperationis display students().

6) DETAIL:

Theattributesofthisclassarebookname,author,bcodenoTheoperat ionsaredeletedetails().

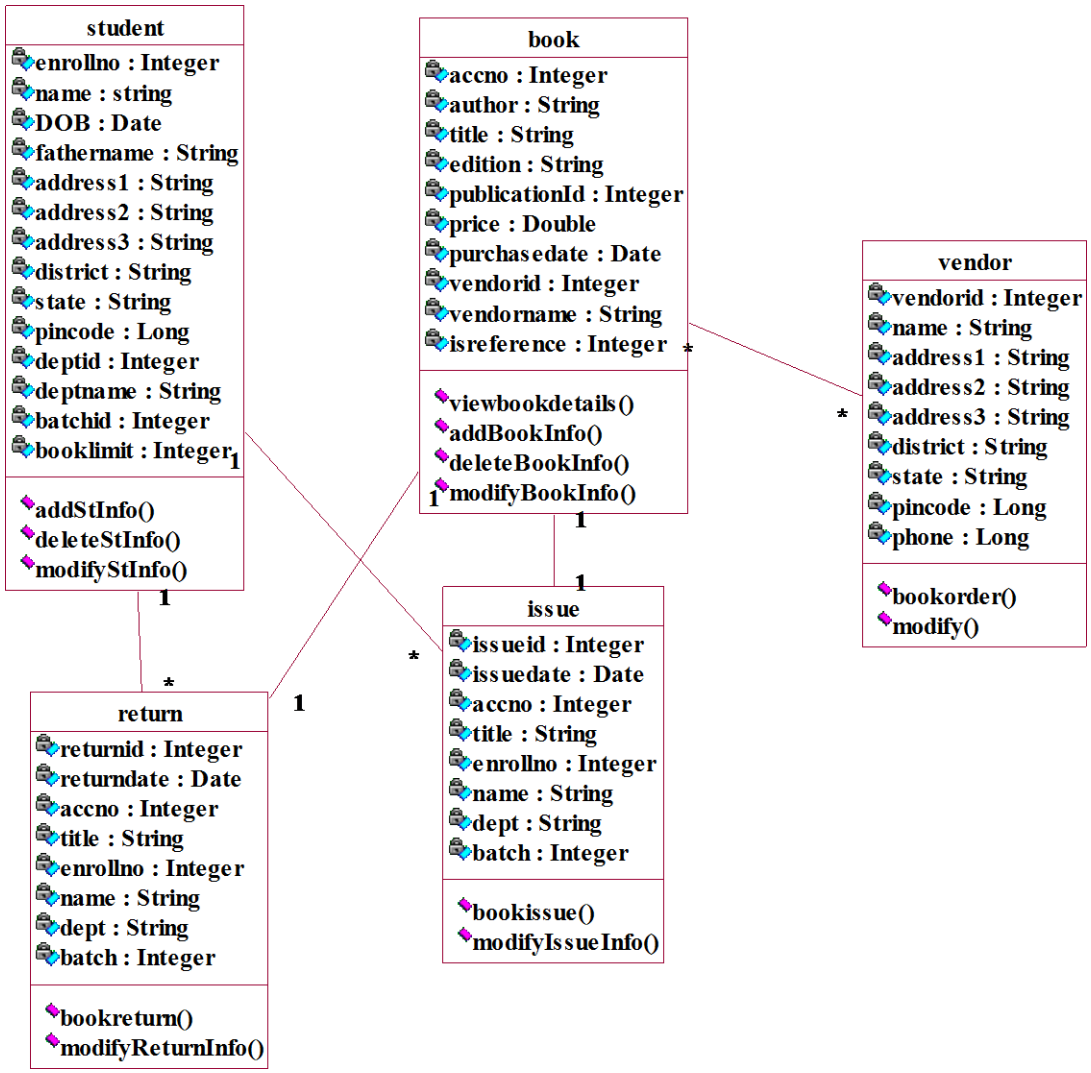


Fig.13.ClassDiagramForBook Bank System

SEQUENCEDIAGRAM:

A sequence diagram represents the sequence and interactions of agiven USE-CASE or scenario. Sequence diagrams can capture most of theinformationaboutthesystem.Mostobjecttoobjectinteractionsandoperationsa reconsideredeventsandeventsincludesignals,inputs,decisions, interrupts,transitionsand actions to or from users or externaldevices.

An event also is considered to be any action by an object that sendsinformation. The event line represents a message sent from one object toanother, in which the “form” object is requesting an operation be performedbythe“to”object.The“to”objectperformstheoperationusingamethodt hatthe class contains.

It is also represented by the order in which things occur and how theobjectsin the system send messageto one another.

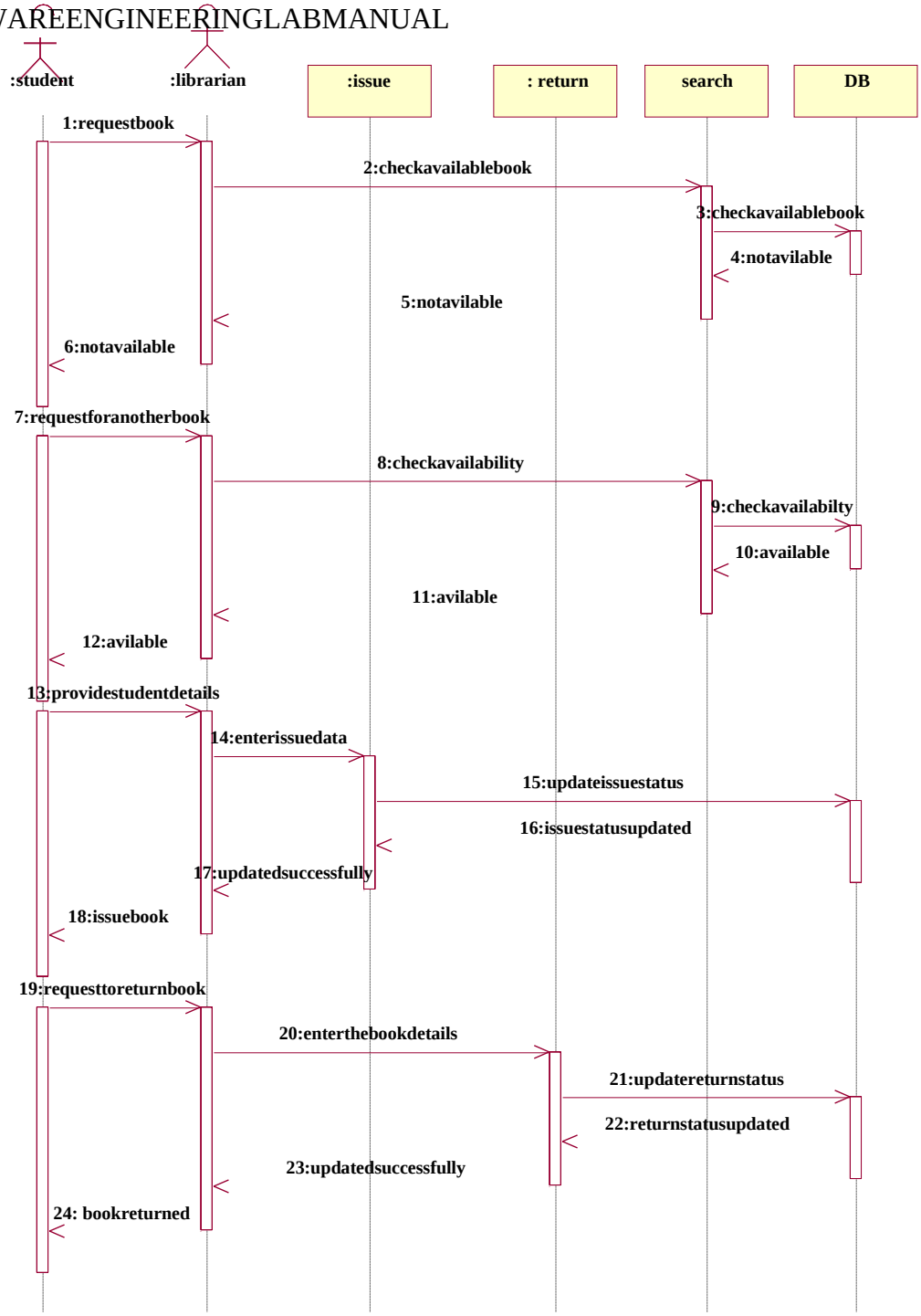


Fig.14.SequenceDiagram ForBook Issue&Return

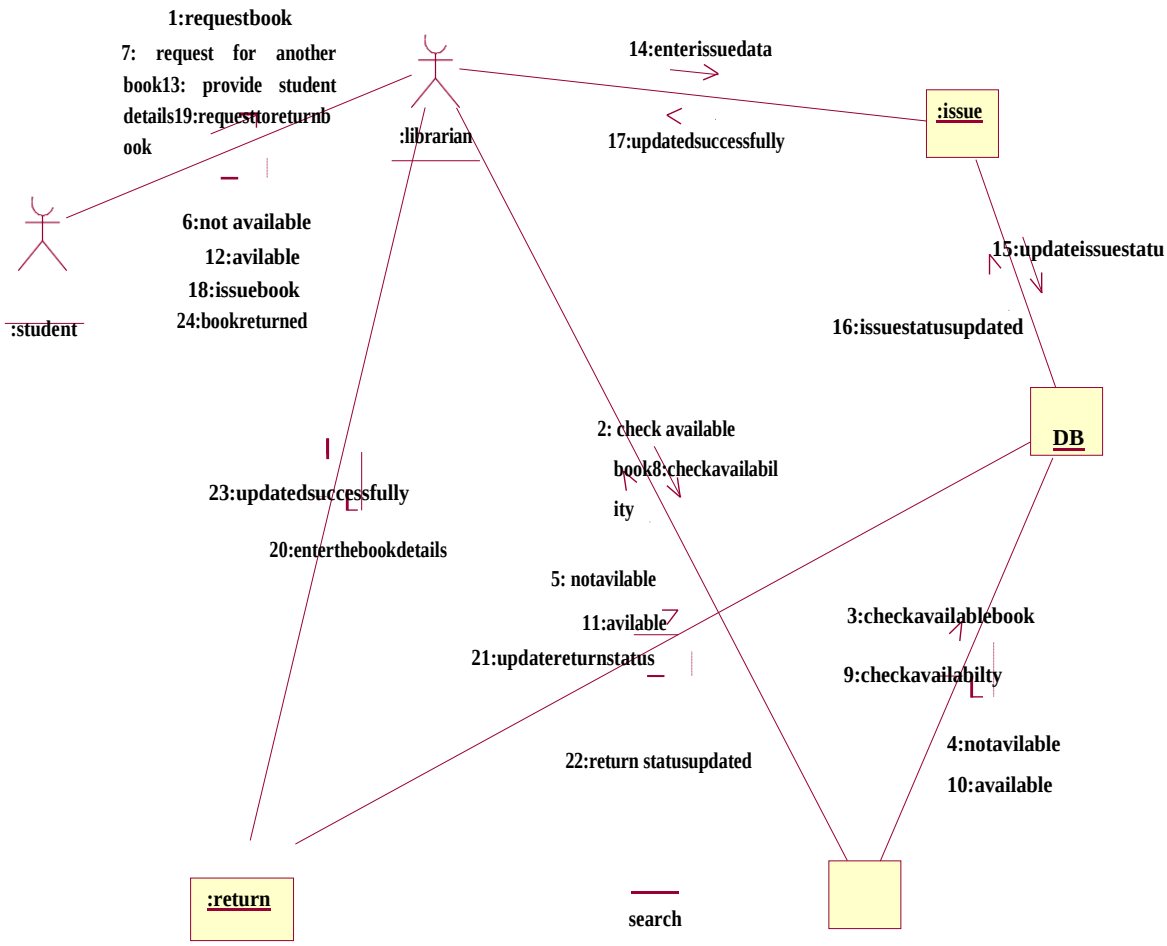


Fig.15.CollaborationDiagram ForBookIssue&Return

STATECHART DIAGRAM

It consists of state, events and activities. State diagrams are a familiartechnique to describe the behavior of a system. They describe all of thepossible states that a particular object can get into and how the object's statechangesasaresult of events that reach the object

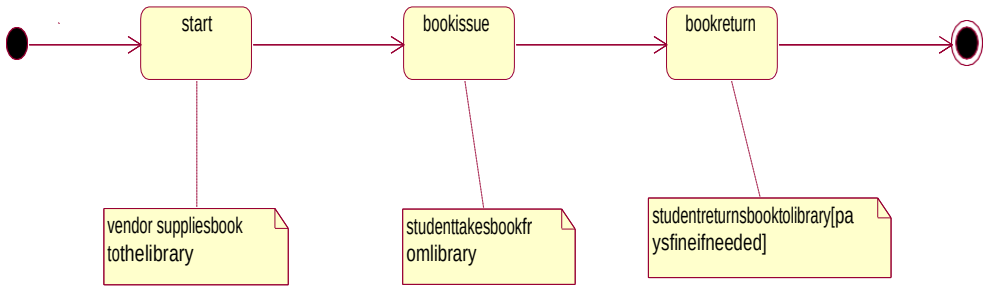


Fig.16.State ChartDiagram

DEPLOYMENTDIAGRAMAND COMPONENTDIAGRAM

Deployment diagrams are used to visualize the topology of thephysical components of a system where the software components aredeployed.

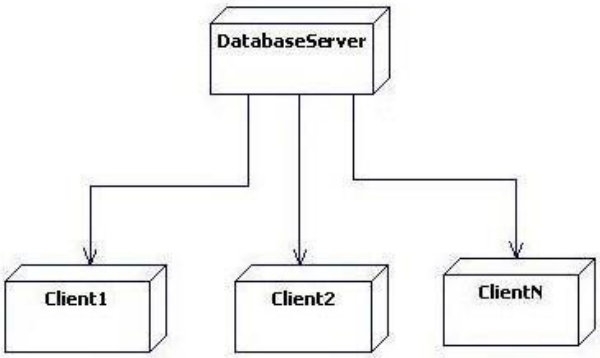


Fig.17.DeploymentDiagram

TASK3: Exam RegistrationSystem

AIM: TocreateasystemtoperformtheExamRegistrationsystem

PROCEDURE:(I)PROBLEMSTATEMENT

Exam Registration system is used in the effective dispatch of registrationform to all of the students. This system adopts a comprehensive approach tominimize the manual work and schedule resources, time in a cogent manner.Thecoreofthesystemistogettheonlineregistrationform(withdetailssuch as name, reg.no etc.,) filled by the student whose testament is verifiedfor its genuineness by the Exam Registration System with respect to thealreadyexistinginformationinthedatabase.Thisformsthefirstandforemost step in the processing of exam application. After the first round ofverification done by the system, the information is in turn forwarded to theExam Controller. The application is then processed manually based on thereport given by the system. The system also provides the student the list ofexam dates.The controller will be provided with fees details to display thecurrent status of application to the student, which they can view in theironline interface. After all the necessary criteria has been met, the originalinformationis addedto thedatabaseandthe hall ticketis sentto thestudent.

(II) SOFTWAREREQUIREMENTSPECIFICATION:

INTRODUCTION

ExamRegistrationSystemis an interface between the Student and theExamControllerresponsiblefortheIssueofHallTicket.Itaimsatimprovingthe efficiencyintheIssueofHallticketandreducesthecomplexitiesinvolved in it to themaximum possible extent.

PURPOSE

If the entire process of 'Issue of Hall ticket' is done in a manualmanner then it would takes several daysfor the hall ticket to reachthestudent. Considering the fact that the number of students for hall ticket isincreasing every year, an Automated System becomes essential to meet thedemand.Sothissystemusesseveralprogramminganddatabasetechniquestoel

ucidatetheworkinvolvedinthisprocess.AsthisisamatterofNational

Security,thesystemhasbeencarefullyverifiedandvalidatedinordertosatisfy it.

SCOPE

- The System provides an online interface to the user where they can fillin their personal details and submit the necessary documents (may bebyscanning).
- The controller concerned with the issue of hall ticket can use thissystem to reduce his workload and process the application in a speedymanner.
- Provide a communication platform between the student and thecontroller.

  Students will come to know their status of application and the date inwhichtheymustsubjectthemselvesformanualdocumentverification.

DEFINITIONS,ACRONYMSANDTHEA BBREVIATIONS

• **Exam Controller** - Refers to the super user who is theCentralAuthoritywhohasbeenvestedwiththeprivilegetom anagetheentiresystem.
• **Student**-Onewhowishes to obtainthe HallTicket.
• **ERS**-ReferstothisExaminationRegistrationSystem.
• **HTML** -MarkupLanguageusedforcreatingwebpages.
• **J2EE** – Java 2 Enterprise Edition is a programming platform javaplatformfordeveloping andrunningdistributed javaapplications.
• **HTTP**-HyperTextTransferProtocol.
• **TCP/IP**–TransmissionControlProtocol/InternetProtocolis the communication protocol used to connect hosts on theInternet.

TECHNOLOGIESTOBEUSED

• HTML
• JSP
• JavaScript
• Java
•

TOOLSTOBEUSED

• EclipseIDE(Integrated DevelopmentEnvironment)
• RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRS includes two sections overall description and specificrequirements - **Overall Description** will describe major role of thesystemcomponents and inter-connections. **SpecificRequirements** willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

PRODUCTPERSPECTIVE

The ERS acts as an interface between the 'student' and the 'examcontroller'. This system tries to make the interface as simple as possible andat the same time not risking the security of data stored in. This minimizes thetimeduration in which theuser receives the hall ticket.

SOFTWAREINTERFACE

- **Front End Client** - The exporter online interface is built using JSPandHTML.
- **WebServer**–ApacheTomcatServer (OracleCorporation)
- **BackEnd -**Oracle11gdatabase

HARDWAREINTERFACE

Theserverisdirectlyconnectedtotheclientsystems.Theclientsyste mshaveaccess to the databaseintheserver.

SYSTEMFUNCTIONS

• SecureRegistrationofinformation bytheStudents.
• SMSand Mailupdates tothestudents bythecontroller.
• Controller can generate reports from the information and is theonlyauthorizedpersonneltoaddtheeligibleapplicationinformationto thedatabase.

USERCHARACTERISTICS

• **Student**-
Theyarethepeoplewhodesiretoobtainthehallticketandsubmit the information to thedatabase.

• **Examcontroller**-Hehasthecertainprivilegestoaddtheregistration status and to approve the issue of hall ticket. He maycontain a group of persons under him to verify the documents andgivesuggestionwhetheror nottoapprovethedispatchofhallticket.

CONSTRAINTS

• Theapplicantsrequire a computer tosubmit theirinformation.
• Althoughthesecurityisgivenhighimportance,thereisalwaysachanc e of intrusion in the web world which requires constantmonitoring.
• Theuserhastobecarefulwhilesubmittingtheinformation. Muchcareisrequired.

ASSUMPTIONSANDDEPENDENCIES

• TheStudentsandExamControllermusthavebasicknowledgeofcomput ersand EnglishLanguage.
• Thestudent mayberequiredto scanthe documentsandsend.

(III) USECASEDIAGRAM:

TheExamRegistrationusecases inoursystem are:

1. Login
2. Viewexamdetails
3. Register
4. Acknowledgement
5. FeeProcessing

ACTORSINVOLVED:

1. Student
2. System DB

USE-CASENAME:LOGIN

The student enters his username and password to login and retrieve theinformation.

USE-CASENAME:VIEWEXAMDETAILS

The student view the details about the exam schedule which contains Date,time,etc...

USE-CASENAME:REGISTER

Thestudentshouldnotifythefeedetailsthatonlythestudentcanpaythecorrecta mount.

USE-CASENAME:ACKNOWLEDGEMENT

Theexamfees shouldbepaidby thestudent toget thehall ticketfrom theexamcontroller.

USE-CASENAME:FEEPROCESSING

Allthedetailsshouldbeviewedbybothestudentandthecontrollertoverifywh ether all theentered details are correct.

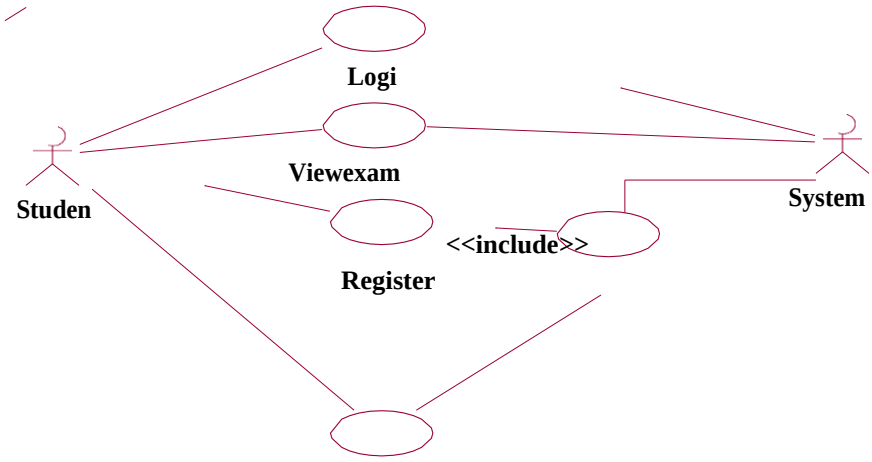


Fig.18.UsecaseDiagramForExam RegistrationSystem

ACTIVITYDIAGRAM:

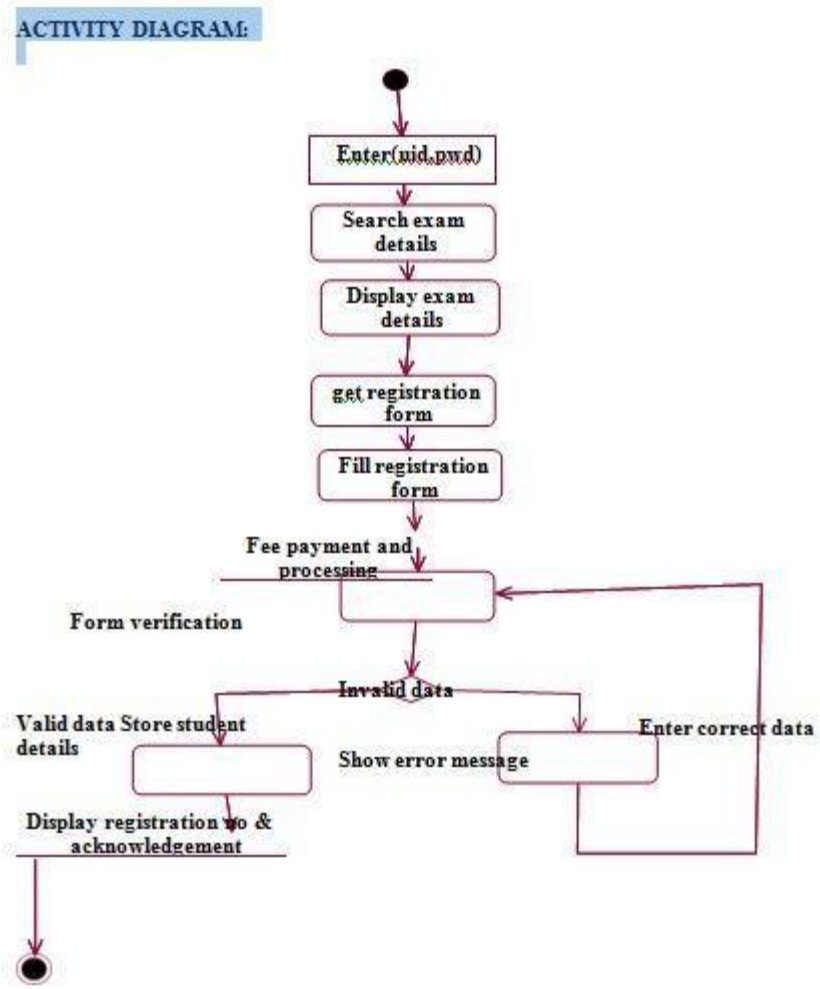


Fig.19.ActivityDiagramForExamRegistrationSystem

CLASSDIAGRAM:

The class diagram, also referred to as object modeling is the mainstatic analysis diagram. The main task of object modeling is to graphicallyshow what each object will do in the problem domain. The problem domaindescribesthe structure and therelationships among objects.

The Exam Registration System class diagram consists of four twoclassesof registration system.

6. Student_details
7. Exam_details
8. Register

1) STUDENT_DETAILS

Itconsistsofsixattributesandsixoperations.Theattributesid,password, name, age, sex, course. The operations of this class are login(),logout(),conformation(),register(), newfeesdetails().

2) EXAM_DETAILS

Itconsistsoffourattributesandsixmethods.Theattributesareuserid,password,examfees,feesdue.Themethodsarelogin(),logout(),feesdetails(),displayfees(), conformation(), examcontroller().

3) REGISTER

This class is used to maintain the registered student information suchas,subject registered, dateof registrationand etc,.

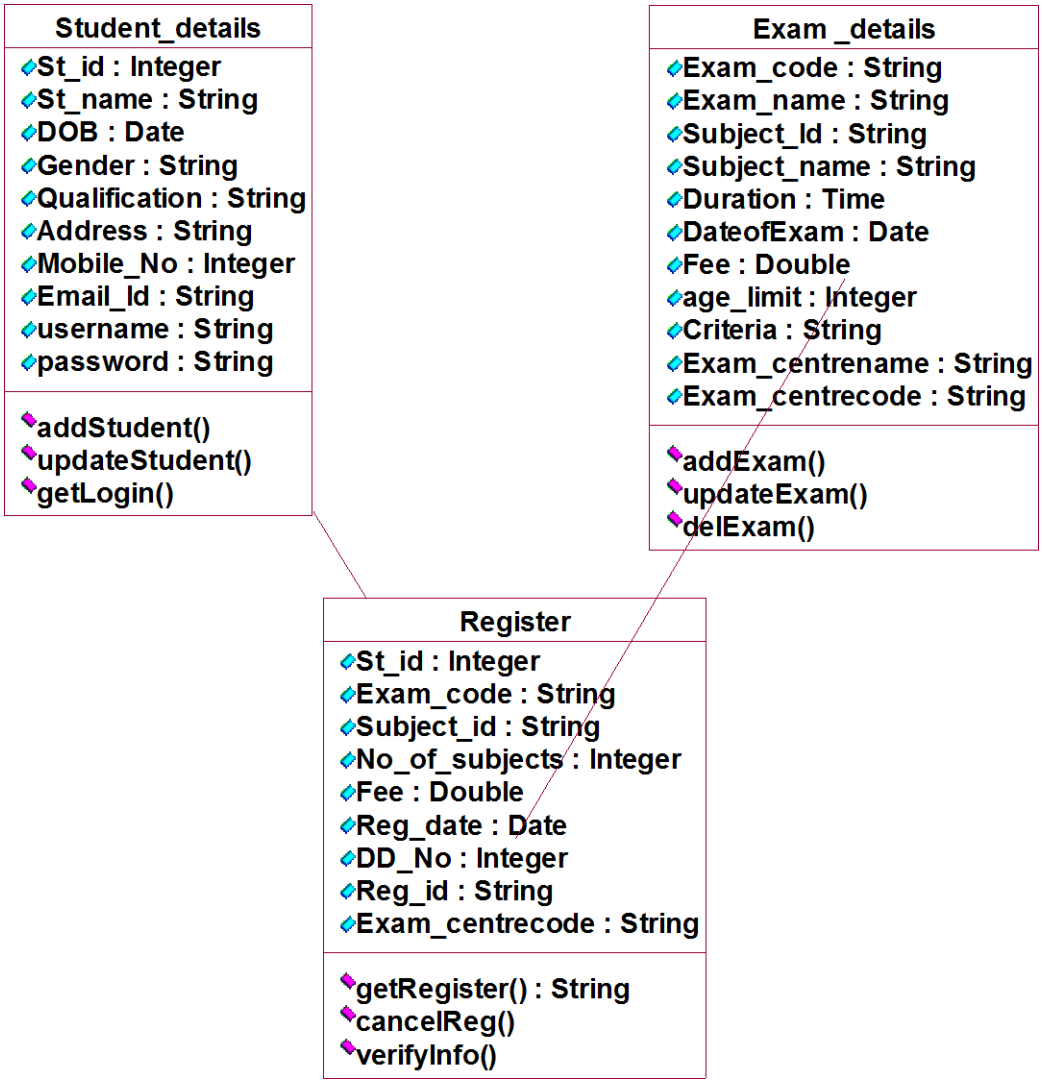


Fig.20.ClassDiagram ForExamRegistrationSystem

INTERACTIONDIAGRAM:

A sequence diagram represents the sequence and interactions of agiven USE-CASE or scenario. Sequence diagrams can capture most of theinformationaboutthesystem.Mostobjecttoobjectinteractionsandoperationsareconsideredeventsandeventsincludesignals,inputs,decisions,interrupts,transitionsandactions to or fromusers or externaldevices.

An event also is considered to be any action by an object that sendsinformation. The event line represents a message sent from one object toanother, in which the "form" object is requesting an operation be performedby the "to" object. The"to" object performs theoperation using a methodthatthe class contains.

It is also represented by the order in which things occur and how theobjectsin the system send messageto one another.

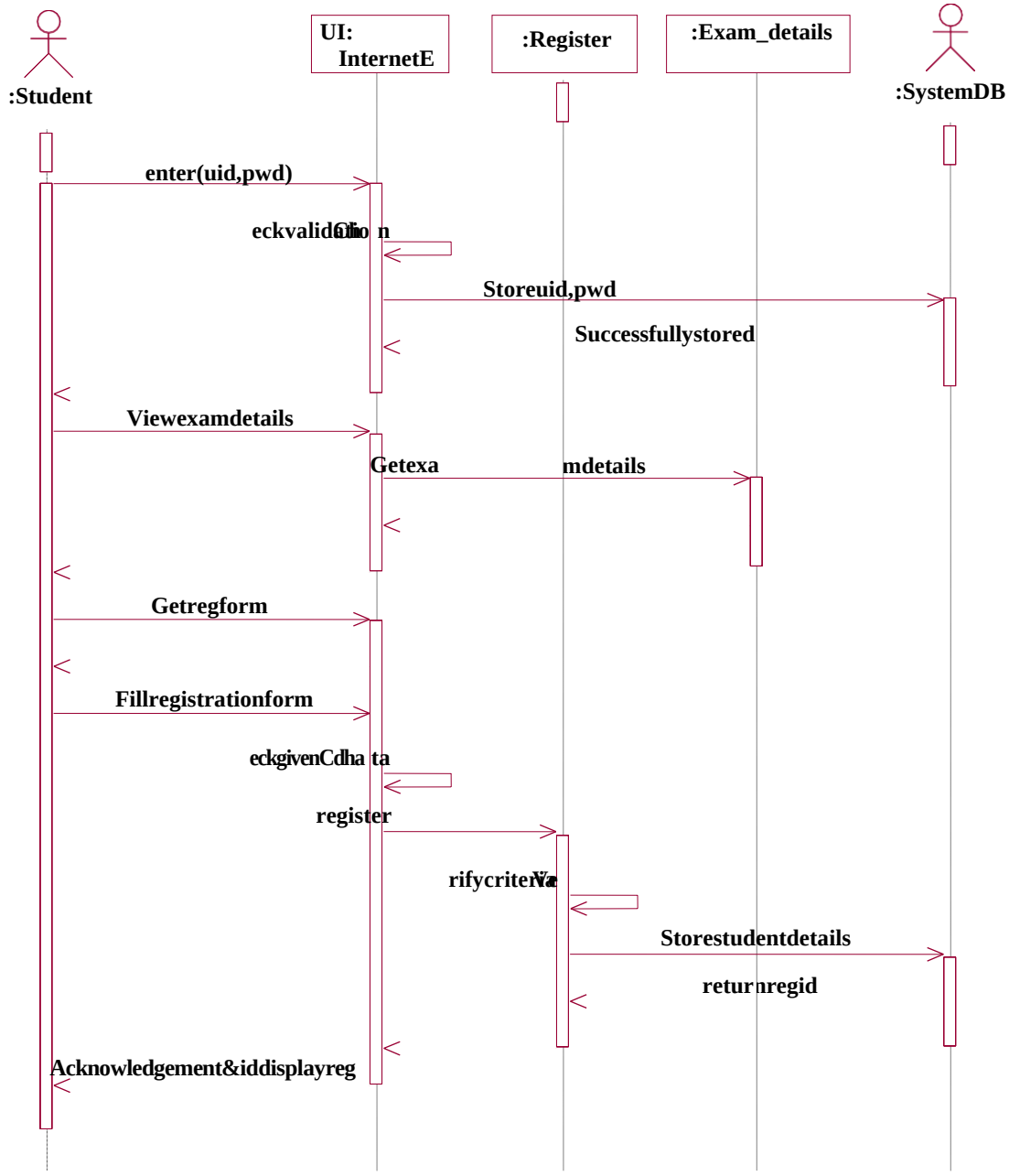


Fig.21.SequenceDiagramForRegistrationSystem

The sequence and collaboration diagram represents that the student enter theinformation to get the hall ticket and the exam controller issues the hall ticketafterverifying thenecessary itemsand thisdata arestoredin thedatabase.

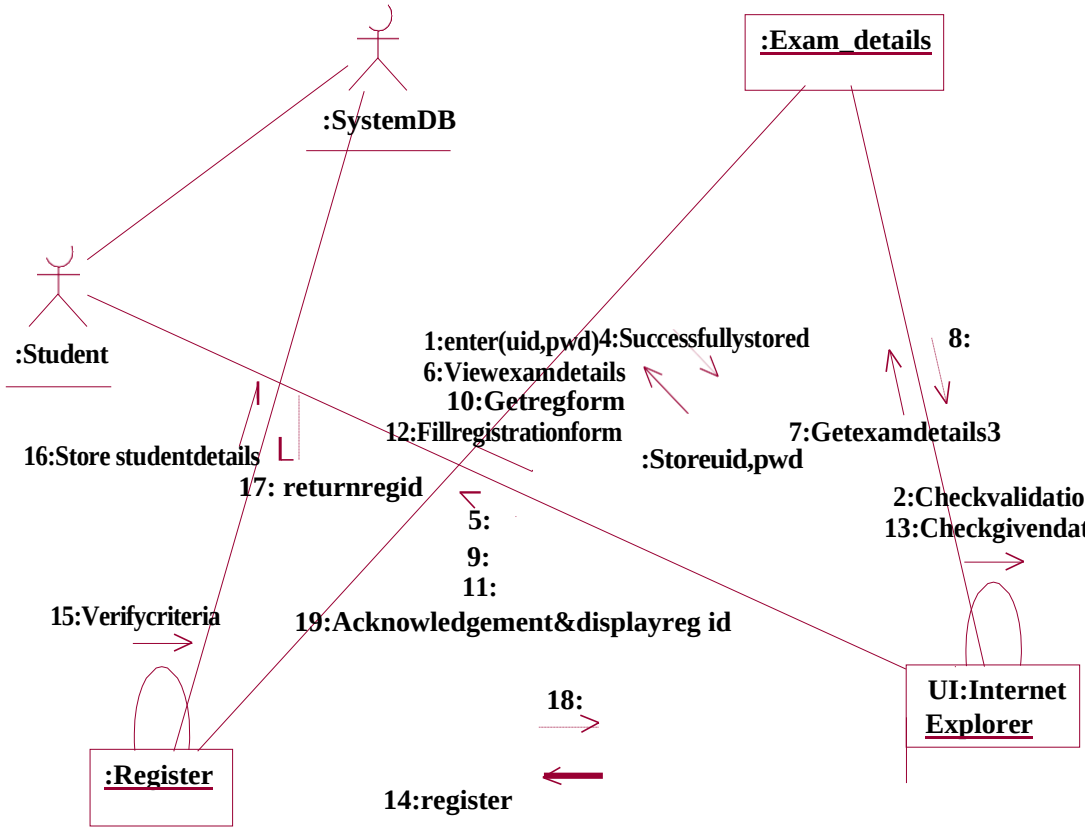


Fig.21.CollaborationDiagramForRegistrationSystem

DEPLOYMENTDIAGRAMAND COMPONENTDIAGRAM

Deployment diagrams are used to visualize the topology of thephysical components of a system where the software components aredeployed.

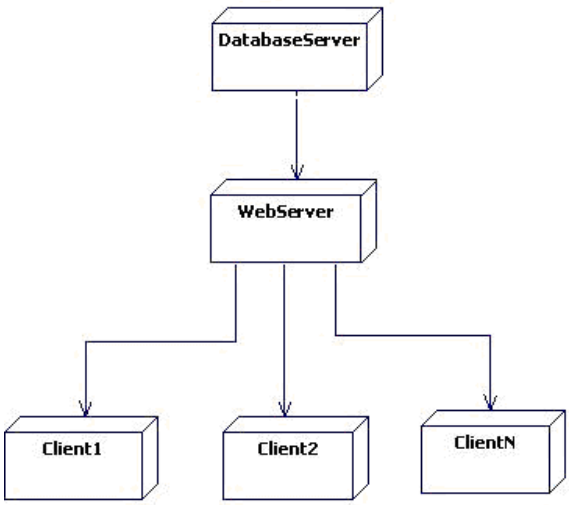


Fig.22.Deployment Diagram

COMPONENTDIAGRAM

Component diagrams are used to visualize the organization and relationshipsamong components in asystem.

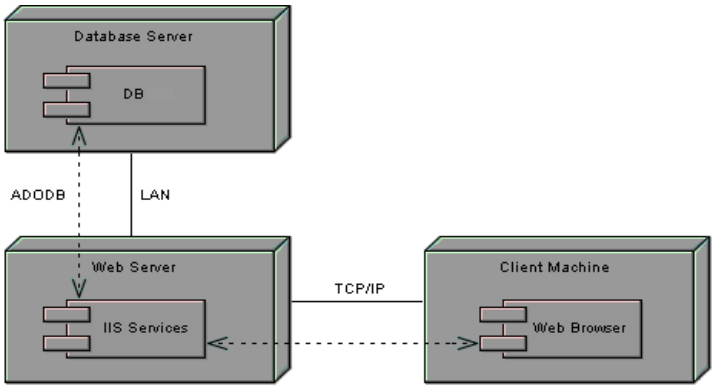


Fig.23.ComponentDiagram

TASK4: StockMaintenance

AIM: Tocreateasystem toperformtheStockmaintenance

PROCEDURE:(I)PROBLEMSTATEMENT

The stock maintenance system must take care of sales information of thecompany and must analyze the potential of the trade. It maintains the numberof items that are added or removed. The sales person initiates this Use case.Thesales personis allowedto updateinformationandviewthedatabase.

(II) SOFTWAREREQUIREMENTSPECIFICATION

INTRODUCTION

Stock maintenance is an interface between the customer and the salesperson. It aimsat improvingtheefficiency inmaintaining thestocks.

PURPOSE

The entire process of Stock maintenance is done in a manual mannerConsidering the fact that the number of customers for purchase is increasingevery year, a maintenance system is essential to meet the demand. So thissystem uses several programming and database techniques to elucidate theworkinvolved in this process.

SCOPE

- TheSystemprovidesaninterfaceto thecustomer wherethey canfillin orders for theitemneeded.
- Thesales personis concernedwith theissueofitems andcan usethissystem.
- Provideacommunicationplatformbetweenthecustomerand thesalesperson.

DEFINITIONS,ACRONYMSANDTHEA BBREVIATIONS

- **Market Data provider**: One who analyze the product and distributethenews.
- **Customer:**Onewho takesorder ofproduct
- **Salesperson:** Onewhomaintains thestockdetails

TECHNOLOGIESTOBEUSED

- Visual Studio
- VBScript

TOOLSTOBEUSED

• EclipseIDE(Integrated DevelopmentEnvironment)

• RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoveralldescriptionandspecificreq uirements

Overall Description will describe major role of the

systemcomponentsand inter-Connections

SpecificRequirements willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

The Stock maintenance acts as an interface between the 'customer' and the'sales person'. This system tries to make the interface as simple as possibleandat thesame timenotrisking thework of datastored in

SYSTEMFUNCTIONS

• Secureorder ofinformationby thecustomer

• Schedulethecustomeranappointmentformanualdeliveryoftheprod uct.

USERCHARACTERISTICS

1. **Customer:**Thepersonwhoordersfor theitem.
2. **Validatecustomer:**Theitemsorderedbythe customerarevalidated.
3. **Sales Detail:** Maintains the stock details after delivering the items tothecustomer.

CONSTRAINTS

1. Thecustomer shouldwait untilthe tradecontractor andothertoanalyzetheproduct.
2. After the distribution of the news about the product.

   Thecustomercantakeorderandrequestofsales persontofillit.
3. Finallythesales persondelivers theorder.

(III) USECASEDIAGRAM

Thefunctionalityofasystemcanbedescribedinanumberofdifferent use-cases, each of which represents a specific flow of events in asystem. It is a graph of actors, a set of use-cases enclosed in a boundary,communication,associationsbetweentheactorsandtheuse-cases,andgeneralizationamong theuse-cases.

Theusecasesusedin thissystem are

1. **Productdetails:** Usedforplacinganorder.
2. **Purchasedetails:** Usedfortrackingitemsthathavebeenordered.
3. **salesdetails:**Used forgivethesales particularsaboutaitem.
4. **stockdetails:**Used forgive thestockdetail in ashop.
5. **Purchasetheproduct:**Usedtoprovidebillsfor thecustomer.

6. **supplytheproduct:**Usedtogivetheorderproducttocustomer.

ACTORS

Theactors used inthis system are

1. **Customer:**Theperson who ordersfortheitem.
2. **Shopkeeper:**Theitemsorderedbythecustomer arevalidated.
3. **Company:** Maintains the stock details after delivering the items tothecustomer.

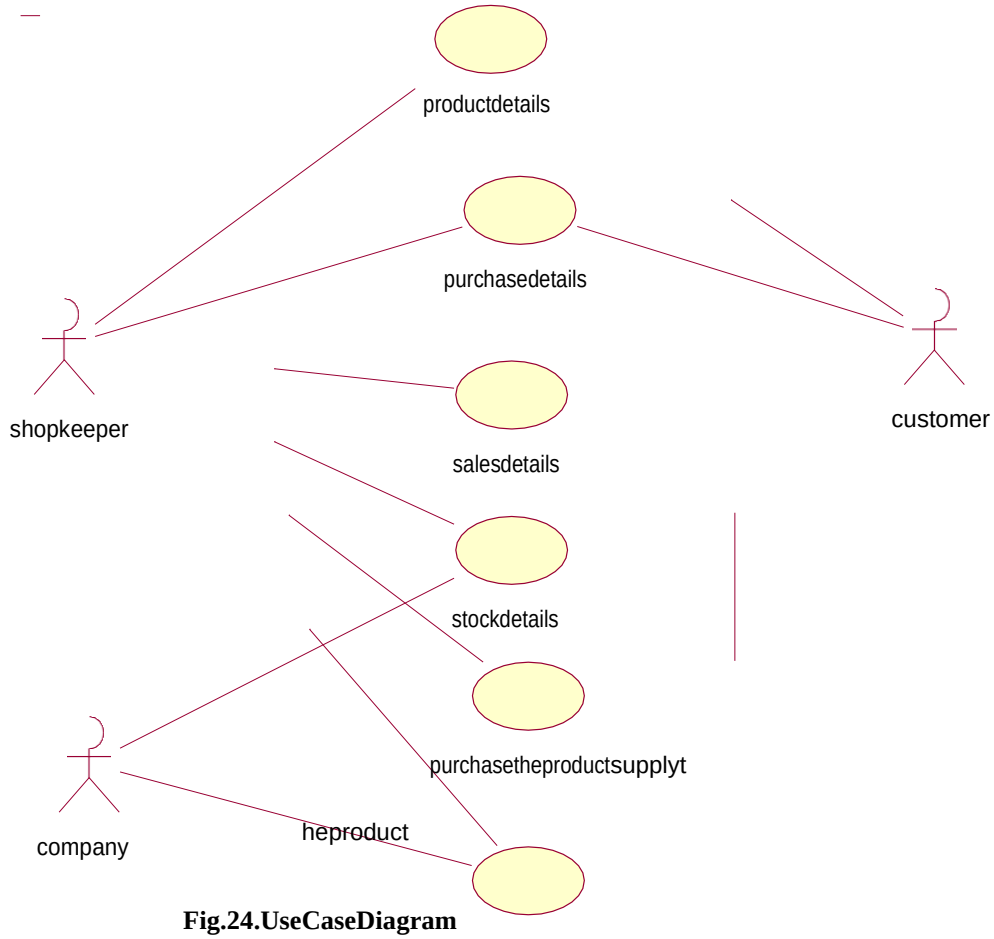


Fig.24.UseCaseDiagram

ACTIVITYDIAGRAM

Itshowsorganizationandtheirdependenceamongthesetofcomponents.Thesediagramsareparticularlyusefulinconnectionwithworkflow and in describing behavior that has a lot of parallel processing. Anactivity is a state of doing something: either a real-world process, or theexecutionofasoftwareroutine.

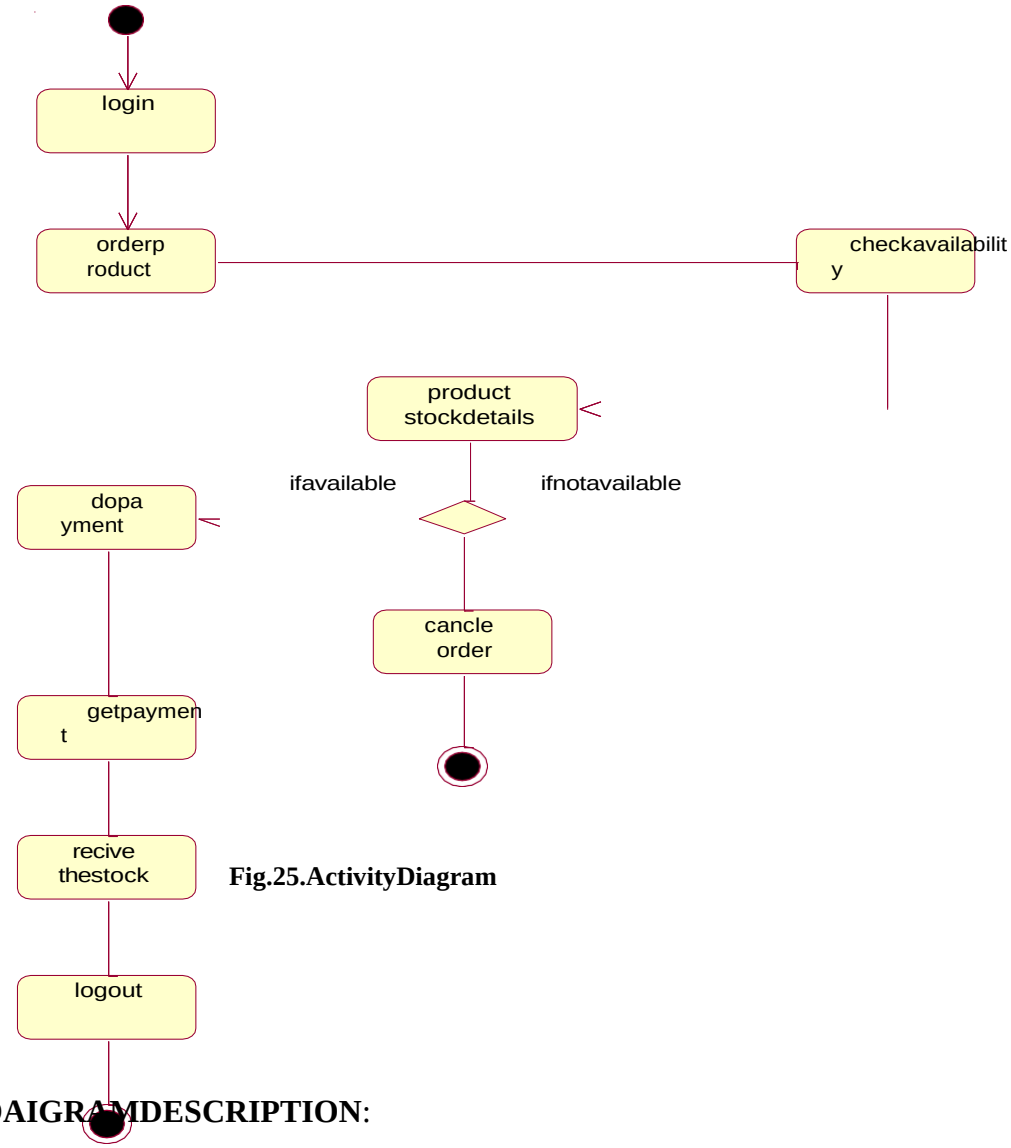


Fig.25.ActivityDiagram

CLASSDAIGRAMDESCRIPTION:

- A class diagram describes the type of objects in system andvariouskinds ofrelationships that existsamong them.
- Classdiagramsandcollaborationdiagramsarealternaterep resentationsof objectmodels.

TheStockmaintenancesystemclassdiagram consistsofsevenclasses:

7. **PurchaseDetails:** Onewhotakesordersfortheproduct?
8. **SalesDetails:**Thecustomermakeanorderfortherequiredproducts.
9. **ProductDetails:** Theitemsthatarestoredasstock.

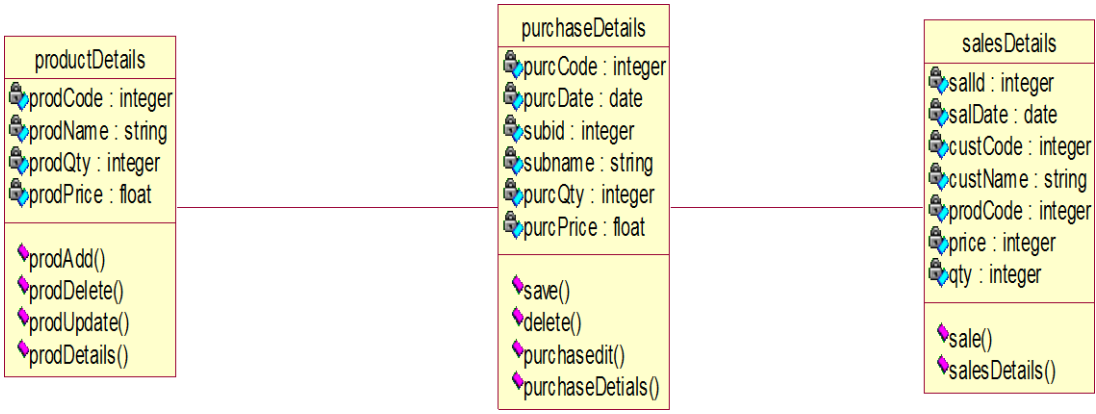


Fig.26.ClassDiagram

UMLINTERACTIONDIAGRAMS

It is the combination of sequence and collaborationdiagram. It isusedtodepicttheflowofeventsinthesystemoveratimeline.Theinteractiondiagramisadynamicmodelwhichshowshowthesystembehavesduring dynamicexecution.

SEQUENCEDIAGRAM

A sequence diagramrepresentsthe sequenceandinteractionsof a givenUSE-CASEorscenario.Sequencediagramscancapturemostoftheinformationaboutthesystem.Mostobjecttoobjectinteractionsandoperationsareconsideredeventsandeventsincludesignals,inputs,decisions, interrupts,transitionsandactionstoorfromusersorexternaldevices.

Aneventalsoisconsideredtobeanyactionbyanobjectthatsendsinformation. The event line represents a message from one object to another,in which the "from" object is requesting an operation be performed bythe"to" object. The "to" object performs the operation using a method that theclass contains.It isalsorepresented by the order in which things occur andhowtheobjects in the system send messageto oneanother.

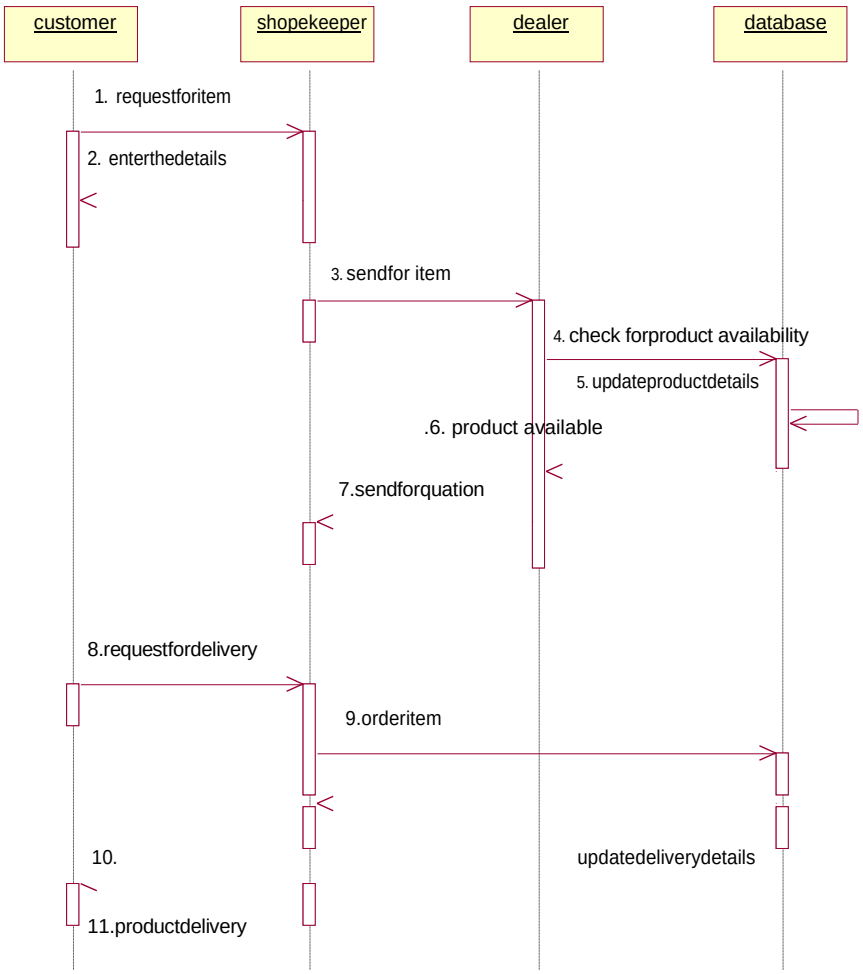


Fig.27.SequenceDiagram

COLLABORATIONDIAGRAM

Collaboration diagram and sequence diagrams are alternate representations ofan interaction. A collaboration diagram is an interaction diagram that showstheorderofmessagesthatimplementanoperationoratransaction.Collaborati ondiagramisaninteractiondiagramthatshowstheorderofmessages that implement an operation or a transaction. Collaboration diagramshows object s, their links and their messages. They can also contain simpleclassinstances andclassutilityinstances.

During,analysisindicatesthesemanticsoftheprimaryandsecondaryinteractions.De sign,showsthesemanticsofmechanismsinthelogicaldesignof system.

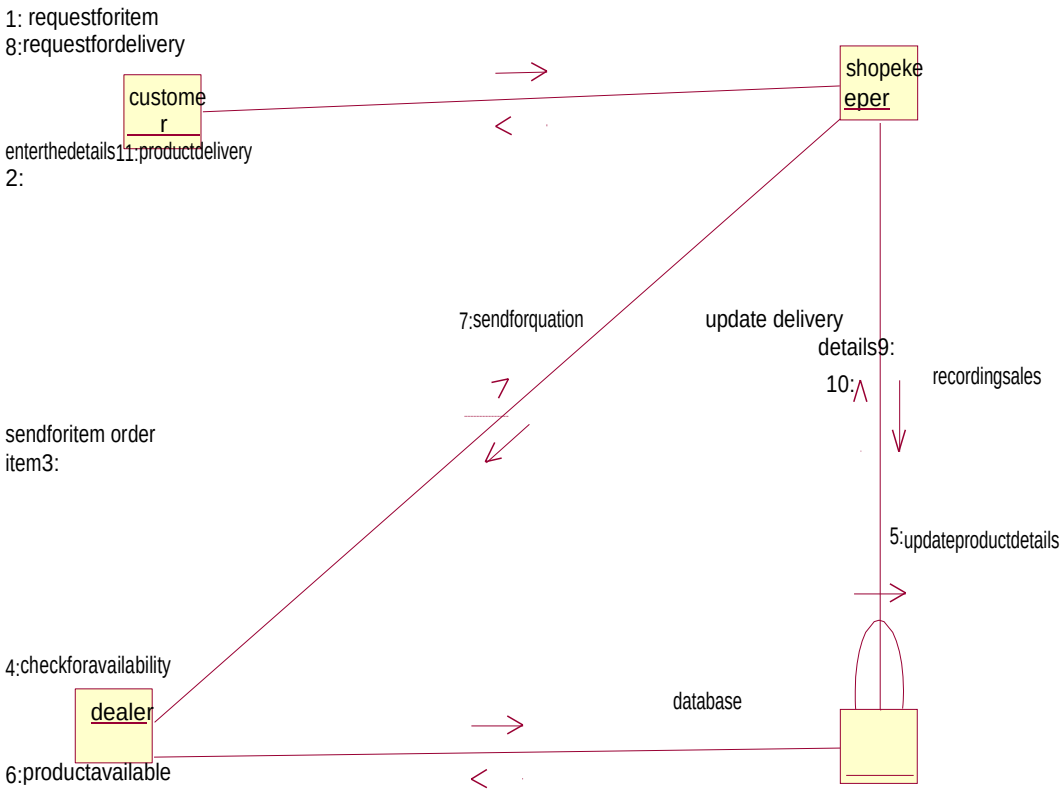


Fig.28.CollaborationDiagram

DEPLOYMENTDIAGRAMAND COMPONENTDIAGRAM

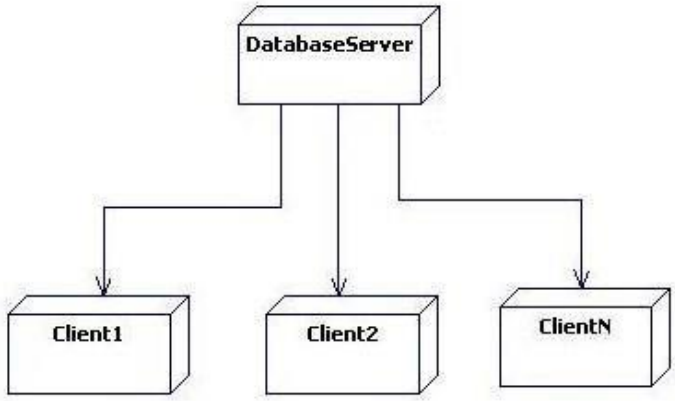


Fig.29.
DeploymentDiagram

Deploymentdiagramsareusedtovisualizethetopologyofthephysicalcomponentsof asystemwherethesoftwarecomponentsaredeployed.

TASK5: Online CourseReservationSystem

AIM: Tocreateasystemthroughwhichstudentscanregistertothecoursesdesired by them.

PROCEDURE:PROBLEMSTATEMENT

Thesystemisbuilttobeusedbystudentsandmanagedbyanadministrator. The student and employee have to login to the system beforeany processing can be done. The student can see the courses available tohim/herandregistertothecoursehe/shewants.Theadministratorcanmaintain the course details and view all the students who have registered toanycourse.

(II) SOFTWAREREQUIREMENTSPECIFICATION

INTRODUCTION

Course Reservation System is an interface between the Student and theRegistrarresponsiblefortheissueofCourse.Itaimsatimprovingtheefficiency in the issue of Course and reduces the complexities involved in itto themaximum possibleextent.

PURPOSE

If the entire process of 'Issue of Course' is done in a manual manner then itwouldtakesseveralmonthsforthecoursetoreachtheapplicant.Considering the fact that the number of applicants for course is increasingeveryyear,anAutomatedSystembecomesessentialtomeetthedemand. So

thissystemusesseveralprogramminganddatabasetechniquestoelucidatethework involved in this process.

SCOPE

- The System provides an online interface to the user where they canfillintheirpersonaldetailsandsubmitthenecessarydocuments (maybebyscanning).
- TheRegistrarconcernedwith theissueofcourse canusethissystemto reduce his workload and process the application in a speedymanner.
- Provide a communication platform between the Student and theRegistrar.

DEFINITIONS,ACRONYMSANDTHEABBREVIATIONS

- **Registrar**

  Referstothesuperuserwiththeprivilegeto managetheentiresystem.
- **Applicant**

  Onewho wishes toregister theCourse
- **OCRS**

  ReferstoonlineCourseReservationSystem.
- **HTML**

  MarkupLanguageusedforcreatingwebpages.
- **J2EE**

  Java2EnterpriseEditionisaprogrammingplatformjavaplatformfordeveloping and runningdistributed javaapplications.
- **HTTP**

HyperTextTransferProtocol.

- **TCP/IP**

  Transmission Control Protocol/Internet Protocol is thecommunicationprotocolusedtoconnecthostsontheInternet.

TECHNOLOGIESTOBEUSED

- HTML
- JSP
- Javascript
- Java

TOOLSTOBEUSED

- EclipseIDE(Integrated DevelopmentEnvironment)
- RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRS includes two sections overall description and specific requirements**Overall Description** will describe major role of the system components andinter-connections.

SpecificRequirements willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

PRODUCTPERSPECTIVE

TheOCRSactsasaninterfacebetweenthe'Student'andthe'Registrar'. Thissystemtries tomakethe interfaceassimpleaspossibleandatthesametimenotriskingthesecurity of data storedin.Thisminimizesthetime durationinwhichthe userreceivesthecourse.

SOFTWAREINTERFACE

- **Front End Client** - The Student and Registrar online interface isbuilt using JSP and HTML. The Administrators's local interface isbuiltusingJava.
- **Web Server** – Tomcat Apache application server (OracleCorporation).
- **BackEnd** –Oracle11gdatabase.

HARDWAREINTERFACE

Theserverisdirectlyconnectedtothe clientsystems.Theclientsystemshaveaccess to the databasein theserver.

SYSTEMFUNCTIONS

- SecureReservationofinformationbytheStudents.
- SMSandMail updatestothestudentsby theRegistrar
- Registrar can generate reports from the information and is the onlyauthorized personnel to add the eligible application information to thedatabase.

USERCHARACTERISTICS

- **Applicant** - They are the person who desires to obtain the courseandsubmit the information to thedatabase.
- **Administrator** - He has the certain privileges to add the coursestatus and to approve the issue of course. He may contain a group ofpersonsunderhimtoverifythedocumentsandgivesuggestionwhetheror not to approvethe dispatch ofcourse.

CONSTRAINTS

- Theapplicantsrequire a computerto submittheirinformation.
- Although the security is given high importance, there is always achance of intrusion in the web world which requires constantmonitoring.
- Theuserhastobecarefulwhilesubmittingtheinformation.

Muchcareisrequired.

ASSUMPTIONSANDDEPENDENCIES

- The Applicants and Administrator must have basic knowledge ofcomputersand EnglishLanguage.
- Theapplicantsmayberequiredtoscanthe documentsandsend

(III) USE-CASEDIAGRAM:

Thecourseregistration systemhasthe followinguse-cases

1. Login
2. Viewcoursedetails
3. Reserveforcourse
4. Payfee
5. Checkstatus

ACTORSINVOLVED:

1. Student
2. Registrar

USE-CASENAME:LOGIN

The user enters the username and password and chooses if the user is studentorRegistrar.Ifentereddetailsarevalid,theuser'saccountbecomesavailable. Ifit isinvalid, anappropriate messageis displayedto theuser.

USE-CASENAME:VIEWCOURSEDETAILS

In this use case, a student can search all the courses available to him andchoose the best course he wants. The student can view the course duration,facultyand department of thecourses hemay choose.

USE-CASENAME:RESERVEFORCOURSE

When a student has successfully chosen a course, he can register to thatcourse.Upon registration,thestudent'sdetailsare storedinthedatabase.

USE-CASENAME:PAYFEE

Afterregistrationtoanycourse,thestudentmayseethedetailsofhiscurrentcourse. Hemay wish to knowdetails about fees and otherinformation.

USE-CASENAME:CHECKSTATUS

Thestudenttriestocheckthestatusinwhichcategoryapplied.Thesystemdisplays the status information to the student.

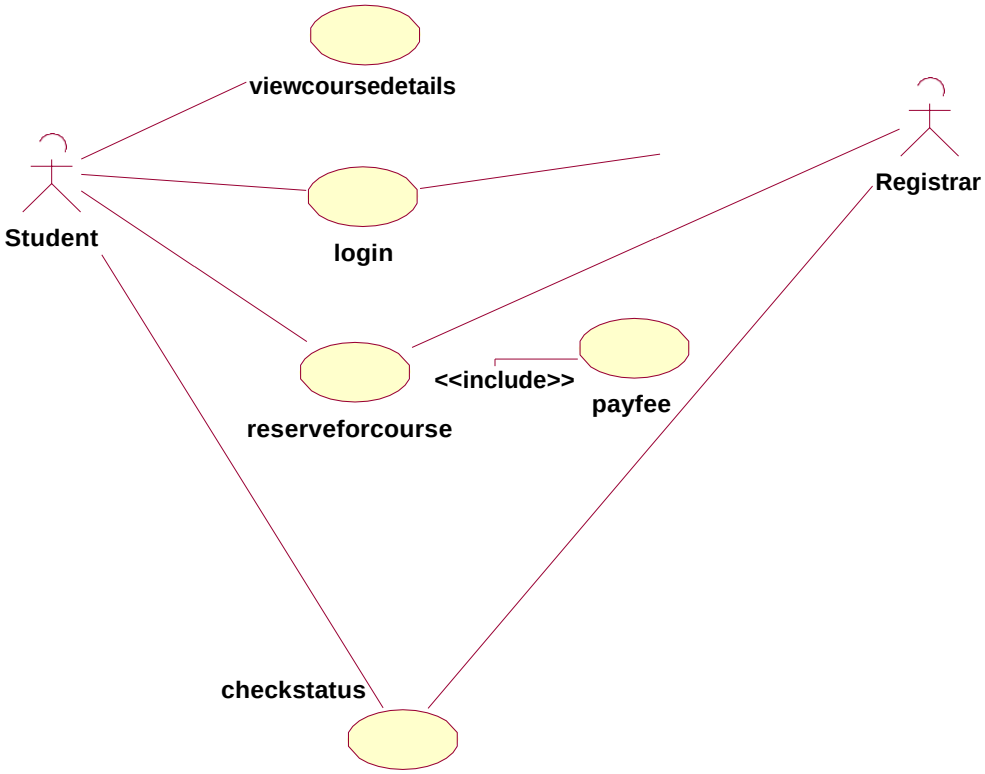
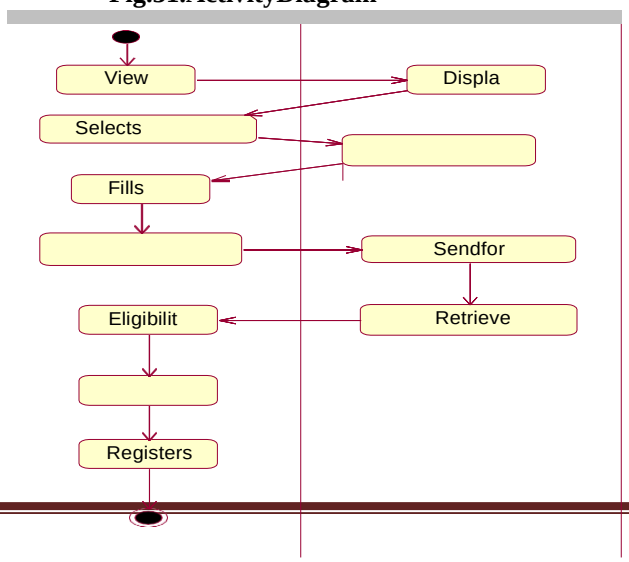


Fig.30.Use-CaseDiagram

ACTIVITYDIAGRAM:

Fig.31.ActivityDiagram



CLASSDIAGRAM:

Theclassdiagramisagraphicalrepresentationof all theclassesusedinthesystemand their operations, attributes andrelationships.

Thecourseregistrationsystem makesuseofthefollowingclasses:

6. Student
7. CourseCatalog
8. ReserveCourse

1) STUDENT:

Itconsistsofthedetailsofallthestudentspresentinthedatabase.Theattributespresentinthisclassarestudentid,studentname,studentqualification,studentaddress1,studentaddress2,studentaddress3, student mobile no, student emailed,, student dob, studentsex. The object of this class is created as soon as the student registersto a course. The operations available to this class are add details (),modifydetails (), del details (),reserve course().

2) COURSECATALOG:

The course catalog class consist of course id, course name, courseduration course fee, course eligibility, total no of seat, course availseat.Theoperationsareaddcourse(),update course(),delcourse().

3) RESERVECOURSE:

The reserve catalog class consists of student id, course id, date, amtpaid, reg id, DD no. the operation are get course details(), checkeligibility(),confirm registration().

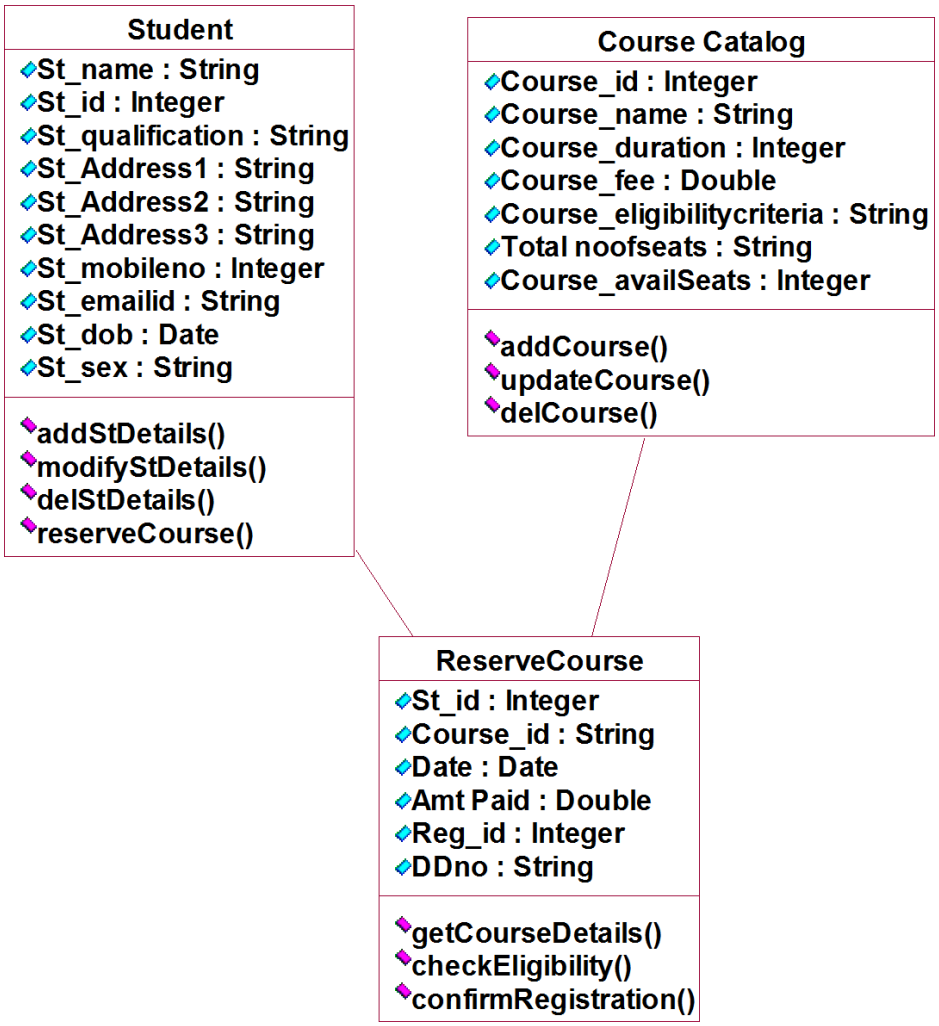


Fig.32.ClassDiagram

INTERACTIONDIAGRAM:

- A sequence diagram represents the sequence and interactions of agivenUSE-CASEorscenario.Sequencediagramscancapturemostoftheinformationaboutthesystem.Mostobjecttoobjectinteractions and operations are considered events and events includesignals,inputs,decisions,interrupts,transitionsandactionstoorfromusers or externaldevices.
- An event also is considered to be any action by an object that sendsinformation. The event line represents a message sent from one objectto another, in which the "form" object is requesting an operation beperformed by the "to" object. The "to" object performs the operationusingamethod that the classcontains.
- It is also represented by the order in which things occur and how theobjectsin the system send messageto one another.
- The sequence diagram for each USE-CASE that exists when a useradministrator,checkstatusandnewregistrationaboutcourseregistrationsystem are given.
- Users have to first login to the system before performing anyoperation.Theuserhastoprovidethenecessarydetailstothesystemfor login.

Fig.33.
SEQUENCEDIAGRAM

STATECHARTDIAGRAM:

Every object undergoes through some state and on receiving some event thestategets changed.This transitionof thestatecanberepresentedby thestatetransitiondiagram.

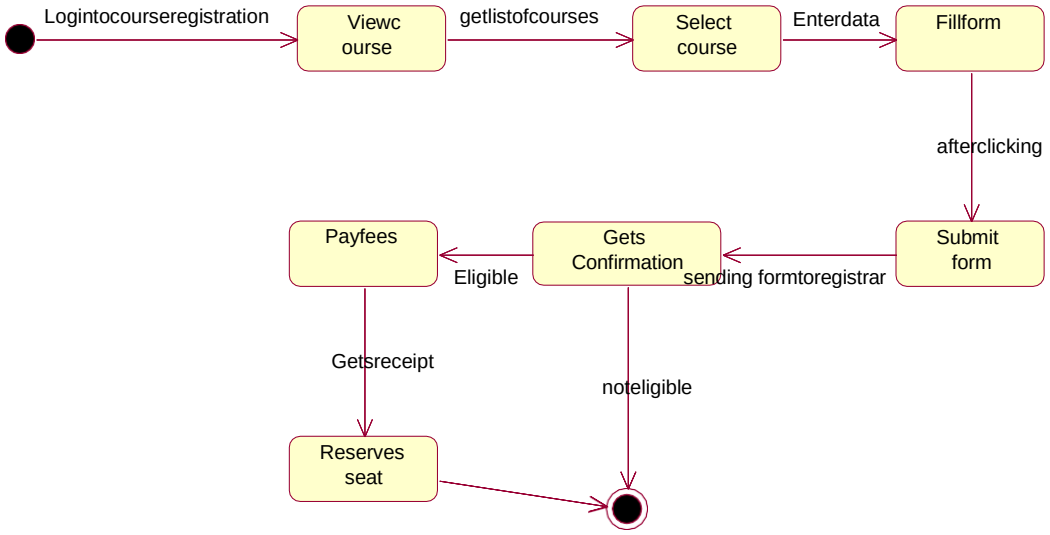


Fig.35. State ChartDiagram

DEPLOYMENTDIAGRAMANDCOMPONENTDIAGRAM

Deploymentdiagramsareusedtovisualizethetopologyofthephysicalcomponentsof asystemwherethesoftwarecomponentsaredeployed.

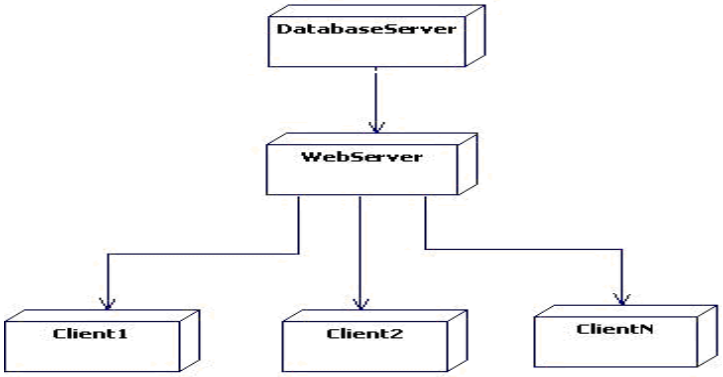


Fig.36.DeploymentDiagram

COMPONENTDIAGRAM:

Componentdiagramsareusedtovisualizetheorganizationandrelat
ionshipsamong components in asystem.

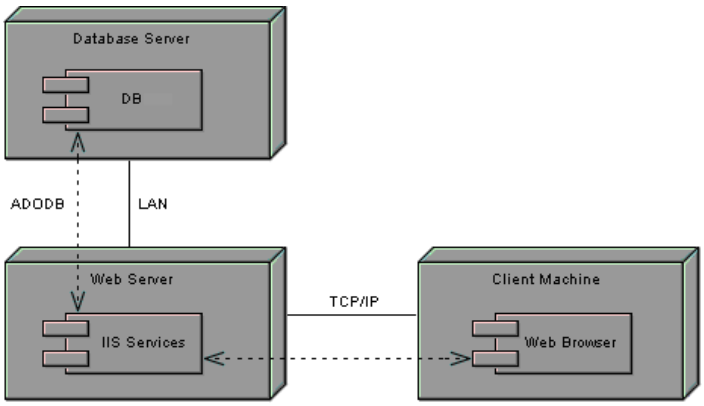


Fig.37.
ComponentDiagr
am

TASK6:E-Ticketing

AIM: Tocreate anautomatedsystemto perform E-ticketing.

PROCEDURE:(I)PROBLEMSTATEMENT

Our project is carried out to develop software for online RailwayReservation System. This system has various options like reservation,cancellation and to view details about available seats. Our projectmainly simulates the role of a Railway ticket booking officer, in acomputerizedway.

The reservation option enables a person to reserve for a ticket at theirhomeitself.Allhe/shehastodoistojustloginandentertherequireddetails.Afterthisthereservationdatabaseisupdatedwiththe person details, train name and also the source and destinationplace.

The cancellation option enables the passenger to cancel the ticketsthathas been already booked by him/her.

The availability option prompts the person toenter train number,train name and date of travel. After this the availability database isaccessedandavailable positions areproduced.

(II) SOFTWAREREQUIREMENTSPECIFICATIONI

NTRODUCTION

The manual system of ticket reservation takes more time and thenumber of reservations per day is limited. To increase the efficiencyoftheprocess,wegoforonlineticketreservationsystem.Thissystemsupports onlineticket booking.

PURPOSE

If the entire process of reservation is done in a manual manner then itwould takes several months for reservation to reach the applicant.Considering the fact that the number of passenger is increasing everyyear, an Automated System becomes essential tomeet the demand.So this system uses several programming and database techniques toelucidatetheworkinvolvedinthisprocess.Asthisisamatterof

NationalSecurity,thesystemhasbeencarefullyverifiedandvalidatedin order to satisfyit.

SCOPE

• TheSystemprovides anonlineinterfacetotheuserwherethey can fill in their personal details and submit the necessarydocuments(may bebyscanning).

• Theauthorityconcernedwiththeissueofrailwaycanusethis system to reduce his workload and process the application in aspeedymanner.

• Provide a communication platform between the passenger andtheadministrator.

• Passenger will come to know their status of application andthe date in which they must subject themselves for manual documentverification.

DEFINITIONS,ACRONYMSANDTHEA BBREVIATIONS

• **Passenger** – The person that who wishes to obtain the railwayticket.

• **PNR**–PassengerNameRecords

• **HTML** -MarkupLanguageusedforcreatingwebpages.

• **J2EE**–

Java2EnterpriseEditionisaprogrammingplatform java platform for developing andrunningdistributedjavaapplications.

• **HTTP**-HyperTextTransferProtocol.

•**TCP/IP** – Transmission Control Protocol/Internet Protocol isthe communication protocol used to connect hosts on theInternet.

TECHNOLOGIESTO BEUSED

- HTML
- JSP
- Javascript
- Java

TOOLSTOBEUSED

- EclipseIDE(Integrated DevelopmentEnvironment)
- RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoveralldescriptionandspecificrequirements–

OverallDescriptionwilldescribemajor roleofthesystemcomponentsand inter-connections.

SpecificRequirements
willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

PRODUCTPERSPECTIVE

Thissystemtriestomaketheinterfaceassimpleaspossibleandatthesametimenotriskingthesecurityofdatastoredin.Thisminimizesthe timeduration inwhich theuser receivestheticket.

SOFTWAREINTERFACE

- **Front End Client** - The passenger and System onlineinterfaceisbuiltusingJSPandHTML.TheAdministrators 'slocalinterfaceis built usingJava.
- **WebServer**–ApacheTomcatServer (OracleCorporation)

- **BackEnd** -Oracle11gdatabase

HARDWAREINTERFACE

Theserverisdirectlyconnectedtotheclientsystems.Theclientsystemshav eaccess to the databaseintheserver.

SYSTEMFUNCTIONS

- SecureRegistrationofinformationby thePassengers.
- System can generate reports from the information and is theonly authorized personnel to add the eligible applicationinformationto thedatabase.
- Displaytherequestedpages totheuser.
- Updatethedatabase aftereverysuccessfulprocess.

USERCHARACTERISTICS

- **Passenger** - They are the people who desire to obtain theticketand submitthe informationto thedatabase.

CONSTRAINTS

- Thepassengersrequirea computerto submittheirinformation.
- Although the security is given high importance, there isalwaysachanceofintrusioninthewebworldwhichrequirescons tantmonitoring.
- Theuserhastobecarefulwhilesubmittingthe information.Muchcareis required.

ASSUMPTIONSANDDEPENDENCIES

- The Passengers must have basic knowledge of computersandEnglish Language.

- The passengers may be required to scan the documents andsend.

(III) USE-CASEDIAGRAM

Theonlineticketreservation systemusesthefollowingusecases:

1. Requestforseat availability
2. MakeReservation
3. Cancellation
4. Checkstatus
5. Printticket

ACTORSINVOLVED:

1) System
2) Passenger

USE-CASE NAME: REQUEST FOR SEATAVAILABILITY

Thepassengercanviewthetrainavailableinthedatabasefordeciding which train ticket he wishes to reserve. The passenger cansearch the train information based on journey date, train type andreservationtype.Thepassengercanviewthedetailsofflightssuchas,train number,sourcestation,destinationstation,arrivaltime,departuretime, fareandnumberofseats available.

USE-CASENAME:MAKERESERVATION

The user is allowed to reserve a ticket on train as he/she requires onthe particular date and time. The user has to provide details such asname, train number, date of travel, source station, destination station,proofnameand money transaction details.

USE-CASENAME:PRINTTICKET

The user after booking a ticket can print a copy of the ticket reserved.Theuserhastoprovidethedetailsabouttticketnumberforsearching

inthedatabaseandpassengernameforconfirmingpassengeridentity.

USE-CASENAME:CANCEL TICKET

A passenger can decide to cancel a ticket after the ticket is booked.The passenger has to provide details about ticket for searching anddetailsabout him forconfirmation of identity.

USE-CASENAME:CHECKSTATUS

The passenger can view the status of the reserved tickets. So thepassenger can confirm his/hertravel.

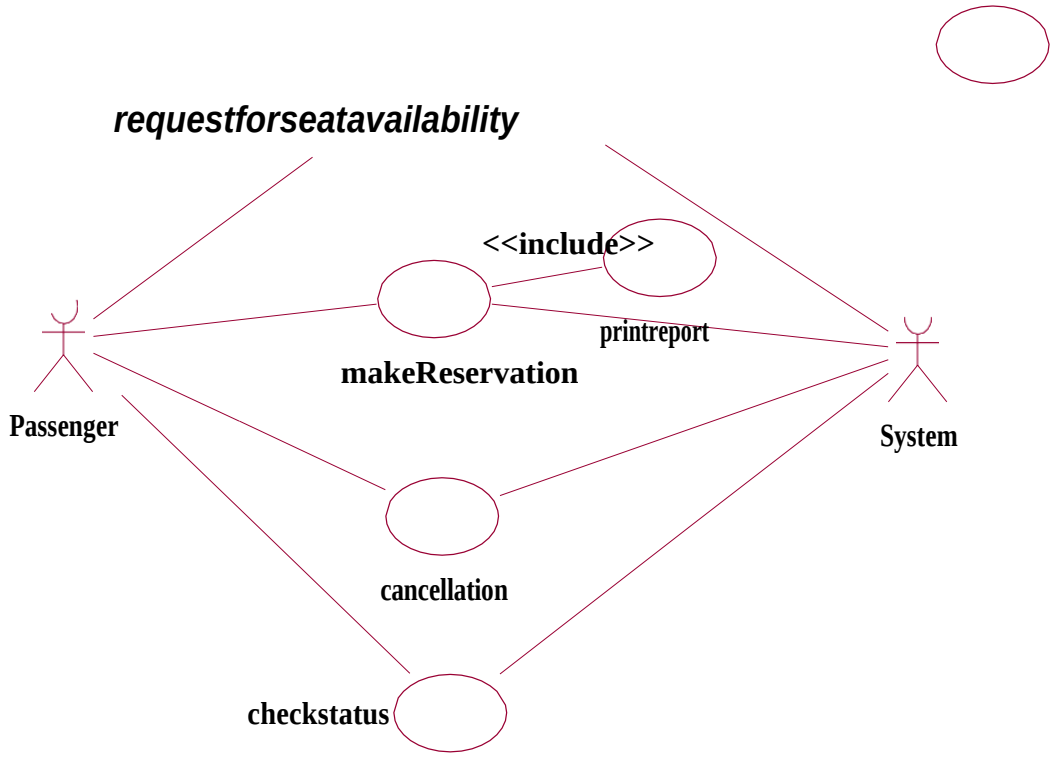


Fig.38.Use-CaseDiagram ForAirlineReservation

ACTIVITYDIAGRAM

Activitydiagramsaregraphicalrepresentationsofworkflowsofstepwise activities and actions with support for choice, iteration andconcurrency. In the Unified Modeling Language, activity diagramscan be used to describe the business and operational step-by-stepworkflows of components in a system. An activity diagram shows theoverallflowofcontrol.Anactivityisshownasanroundedboxcontaining thename oftheoperation.

Thisactivitydiagramdescribesthe behaviourofthesystem.

- First state is login where the passenger login to the E-Ticketingsystem.
- The next state is filling details the passenger are used to fill theform.
- Thenpassengerusedtoselectingtheflight.
- The passenger appears for book ticket and search details

fromE-TicketingDataBase.

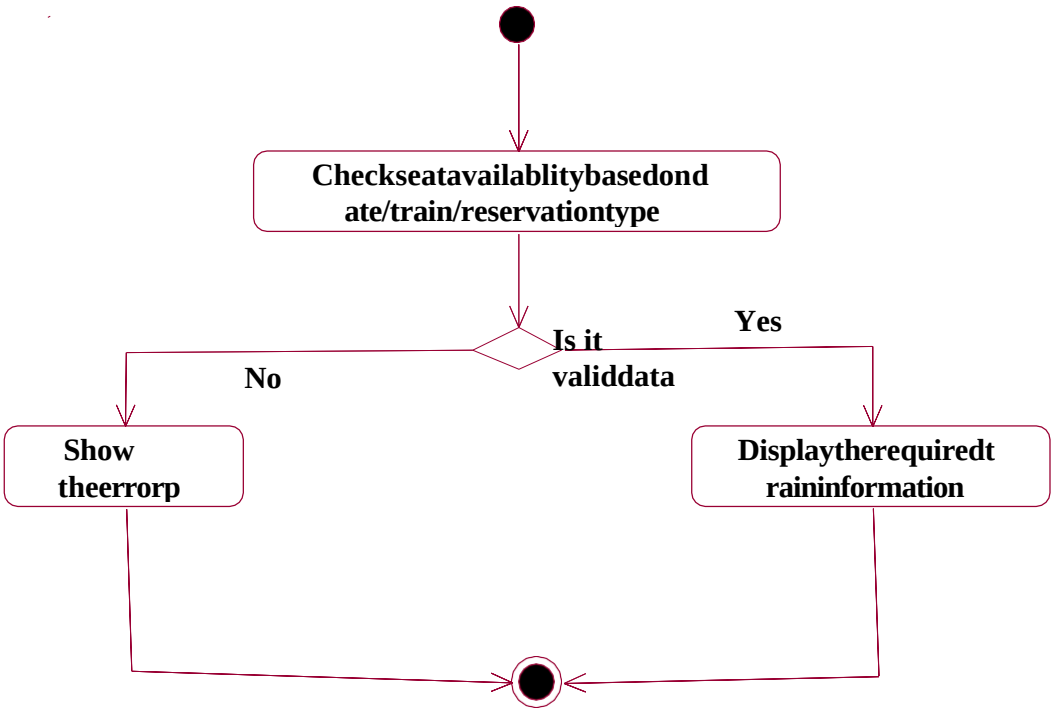


Fig.39.ActivityDiagram[CheckAvailability]

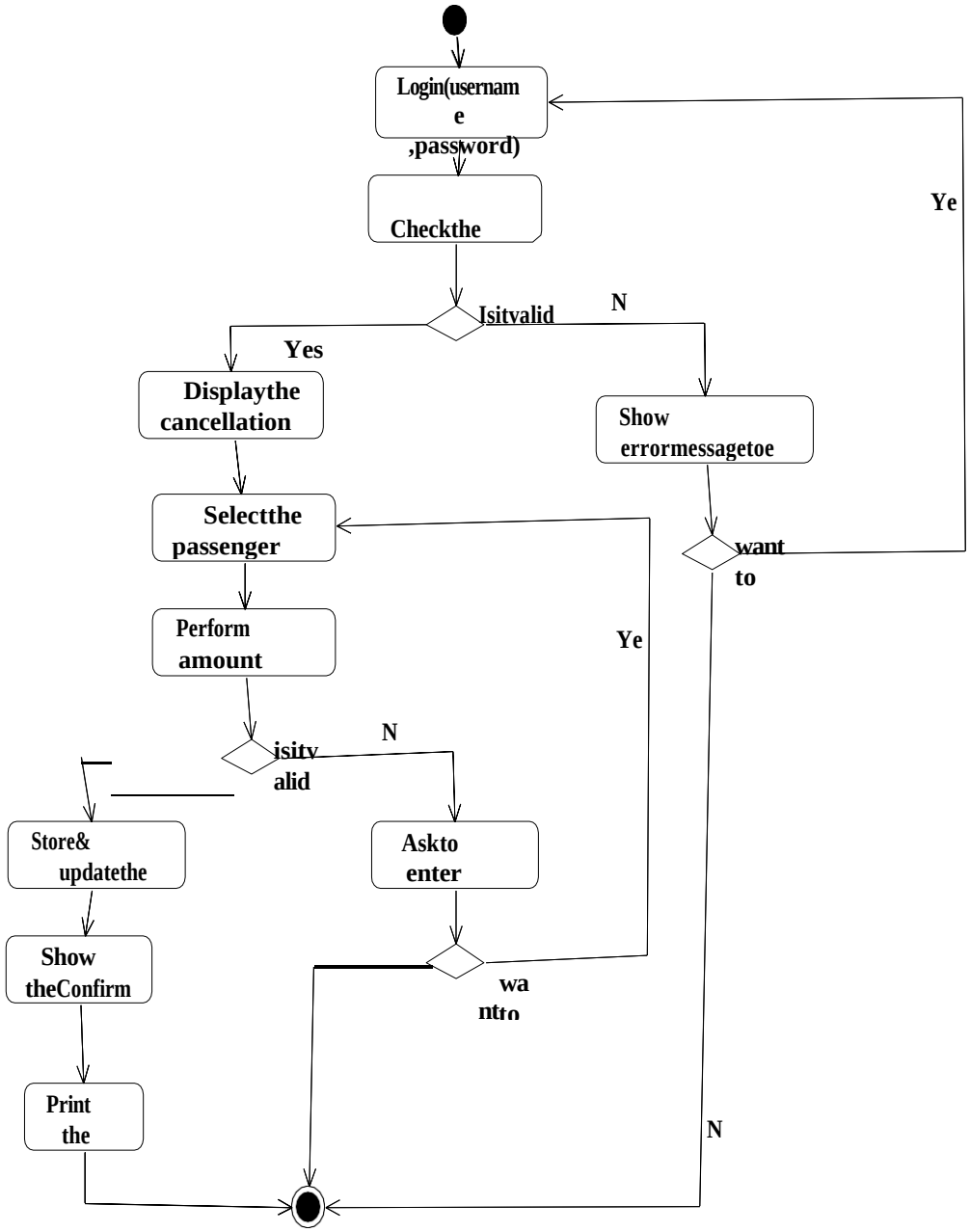


Fig.40.ActivityDiagram[TicketReservation]

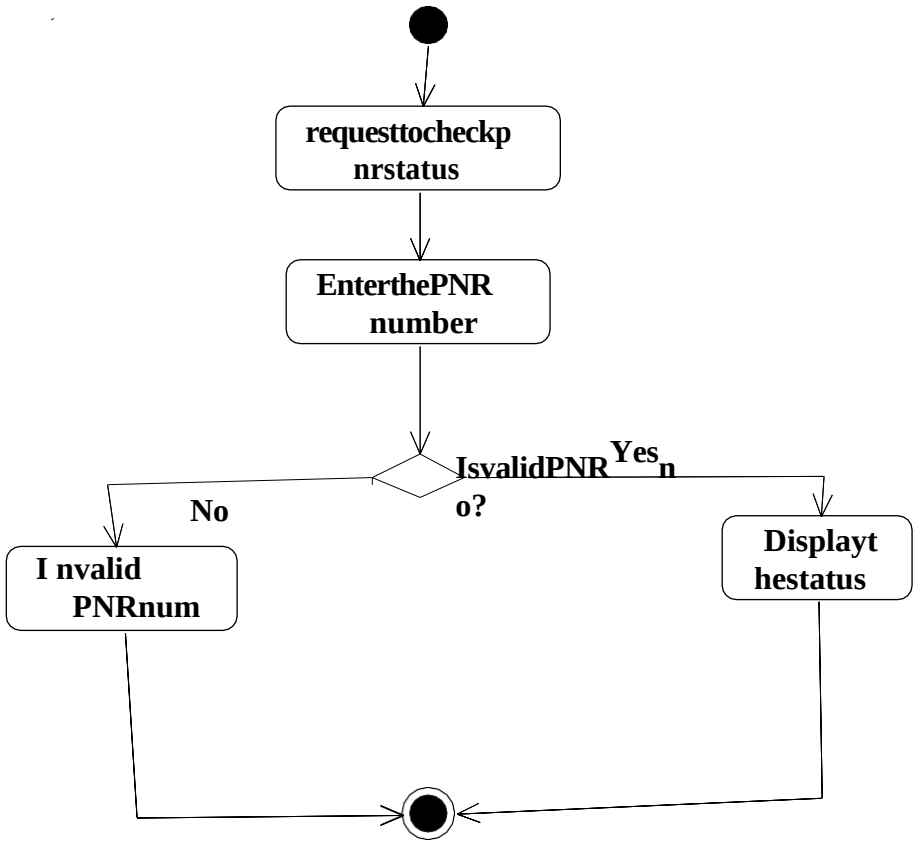


Fig.41.ActivityDiagram[Check Status]

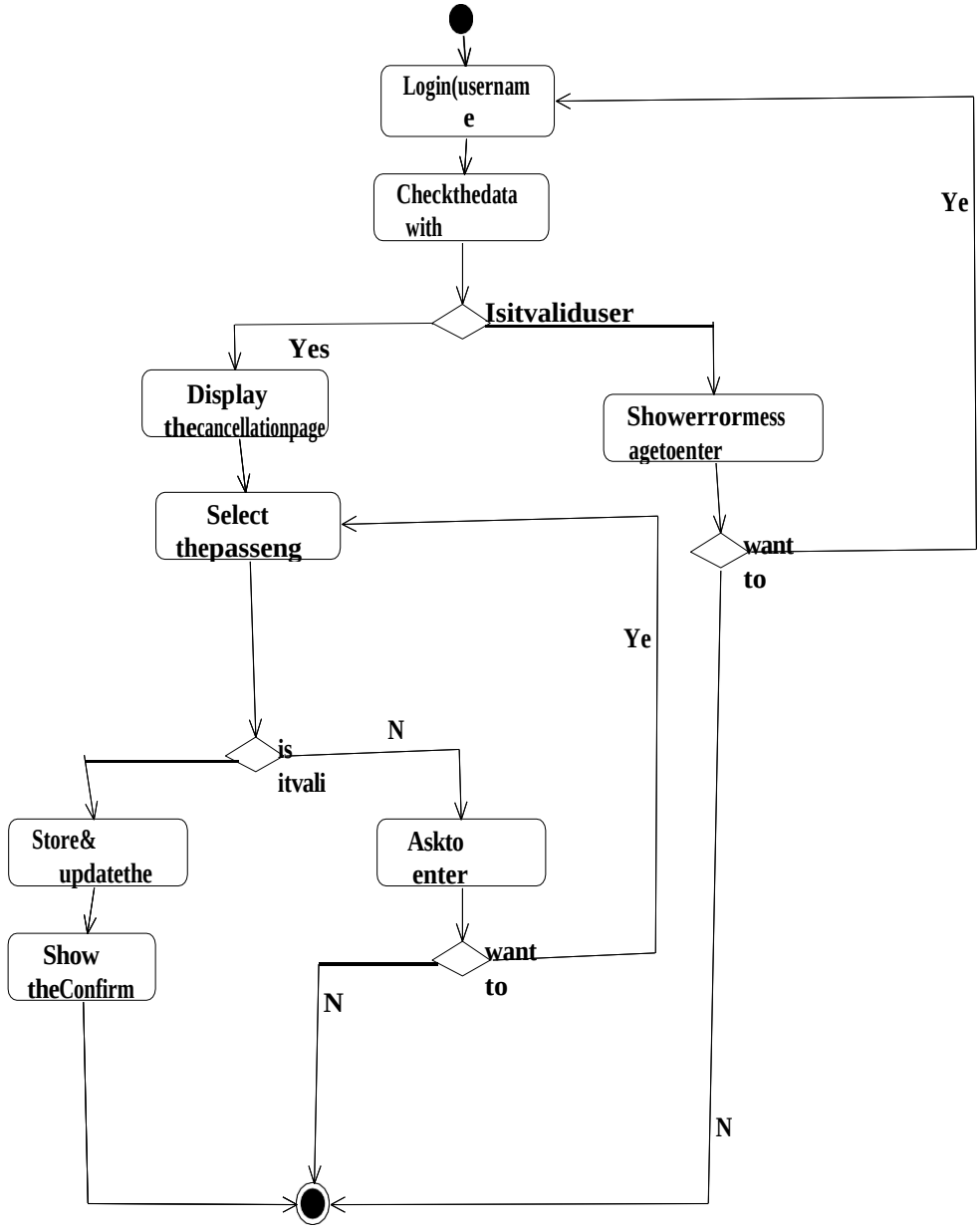


Fig.42.ActivityDiagram[TicketCancellation]

CLASSDIAGRAM:

The class diagram, also referred to as object modeling is themain static analysis diagram. The main task of object modeling is tographically show what each object will do in the problem domain.The problem domain describes the structureand the relationshipsamongobjects.

.

Theonlineticketreservationsystemmakes useofthefollowingclasses:

1. TICKETRESERVATION

It consists of twelve attributes and two operations. It records thedetails of every ticket booked such as ticket number, passenger ID,sourceand destination station and etc.

2. TRAININFO

Itstoresthedetailsofallthetrainssuchastrainnumber,trainname,speed,source and destination stations, etc.

3. PASSENGERINFO

It consists of seven attributes and three operations. This class is used tostorepassengerdetailssuchas, passengername,age,addressand etc.

4. SEATAVAILSTATUS

Thisclassisusedtoupdatethenumberofseatsavailablefor aparticulartrain by using updateStatus()operation.

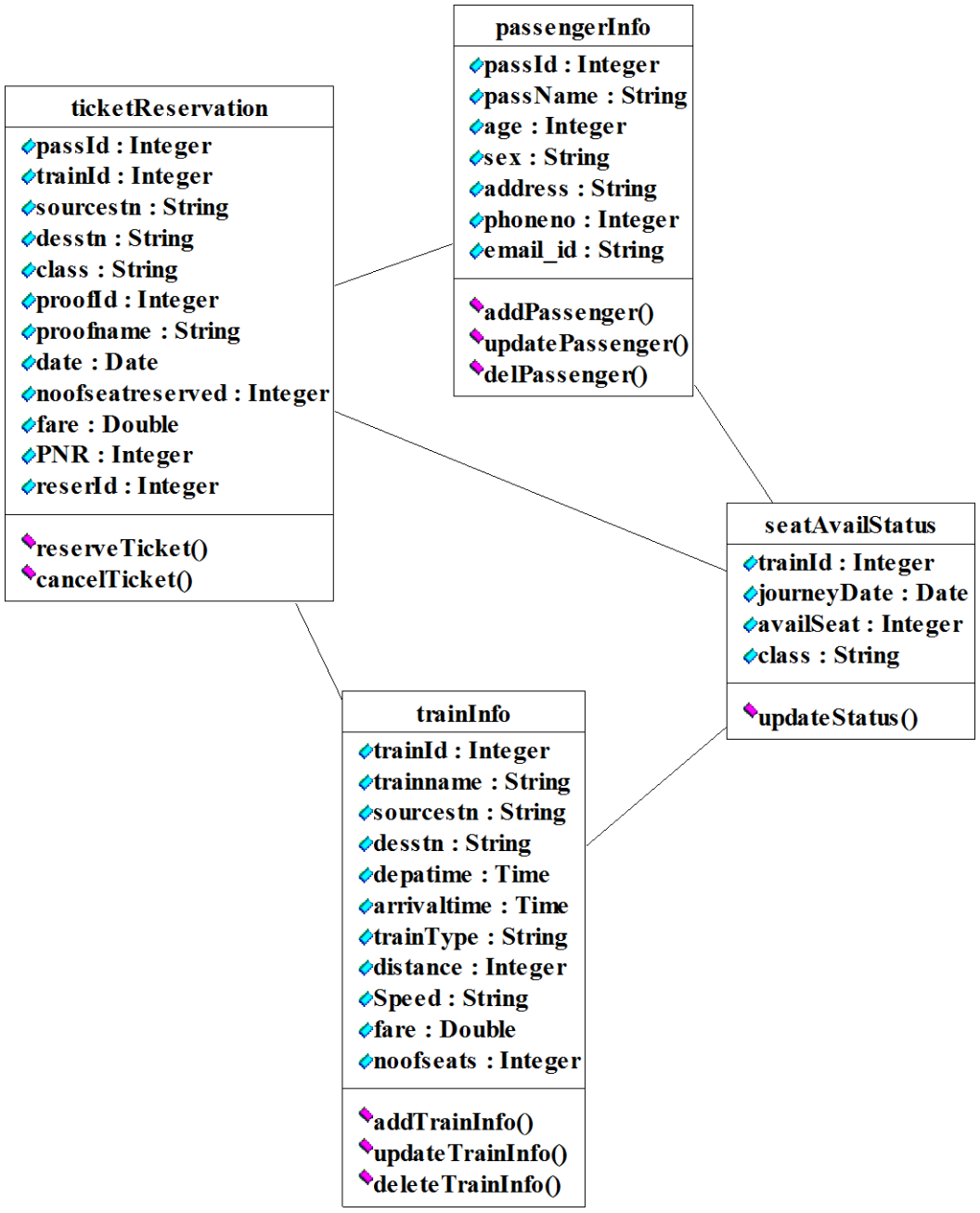


Fig.43.ClassDiagramForE-Ticketing

INTERACTIONDIAGRAM:

A sequence diagram represents the sequence and interactions of agiven USE- CASE or scenario. Sequence diagrams can capture mostoftheinformationaboutthesystem.Mostobjecttoobjectinteractions and operations are considered events and events includesignals,inputs,decisions,interrupts,transitionsandactionstoorfro musers or externaldevices.

An event also is considered to be any action by an object that sendsinformation.Theeventlinerepresentsamessagesentfromoneobject toanother,inwhichthe“form”objectisrequestinganoperation be performed by the “to” object. The “to” object performstheoperation using amethod that the class contains.

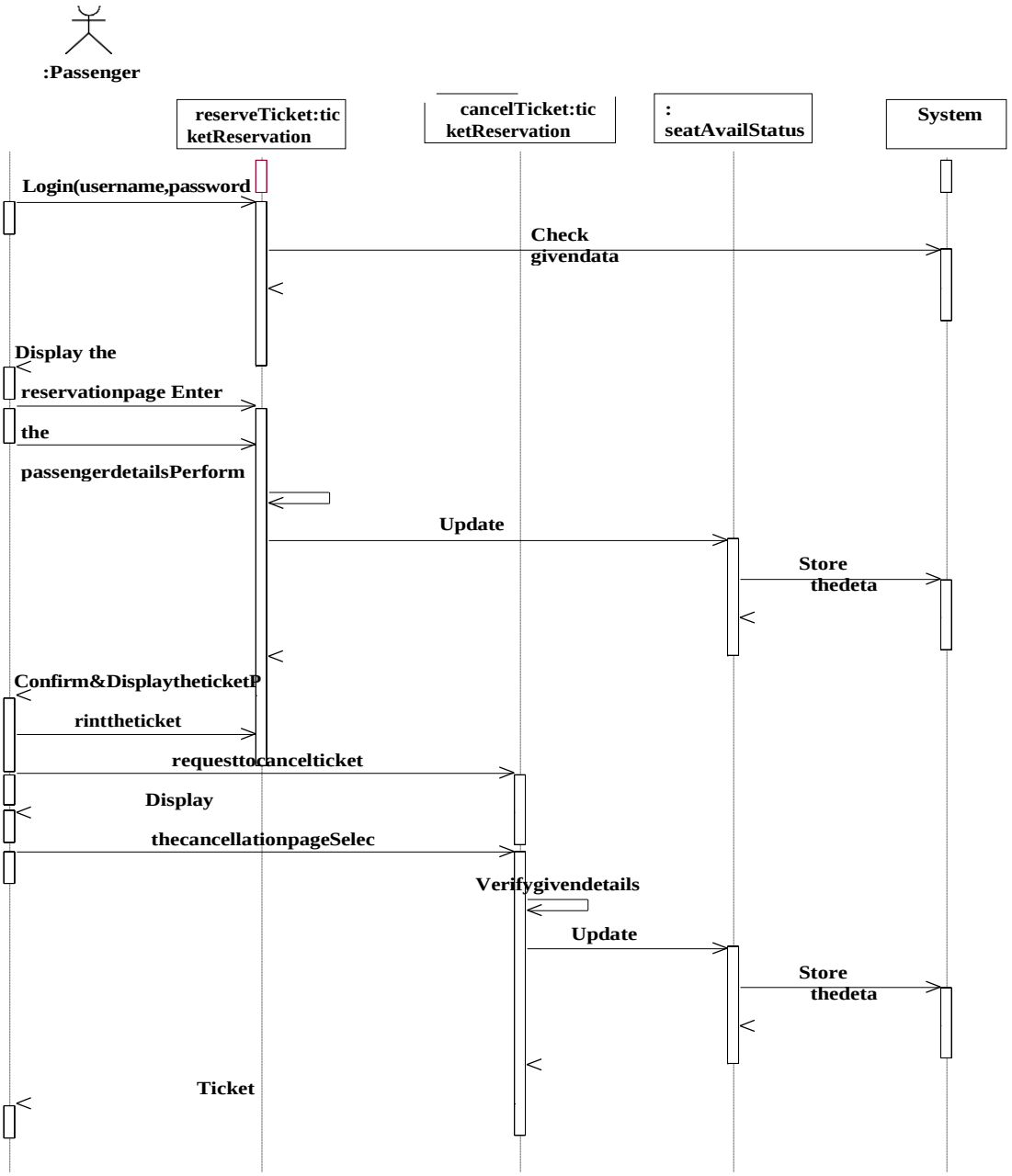


Fig.44.SequenceDiagram

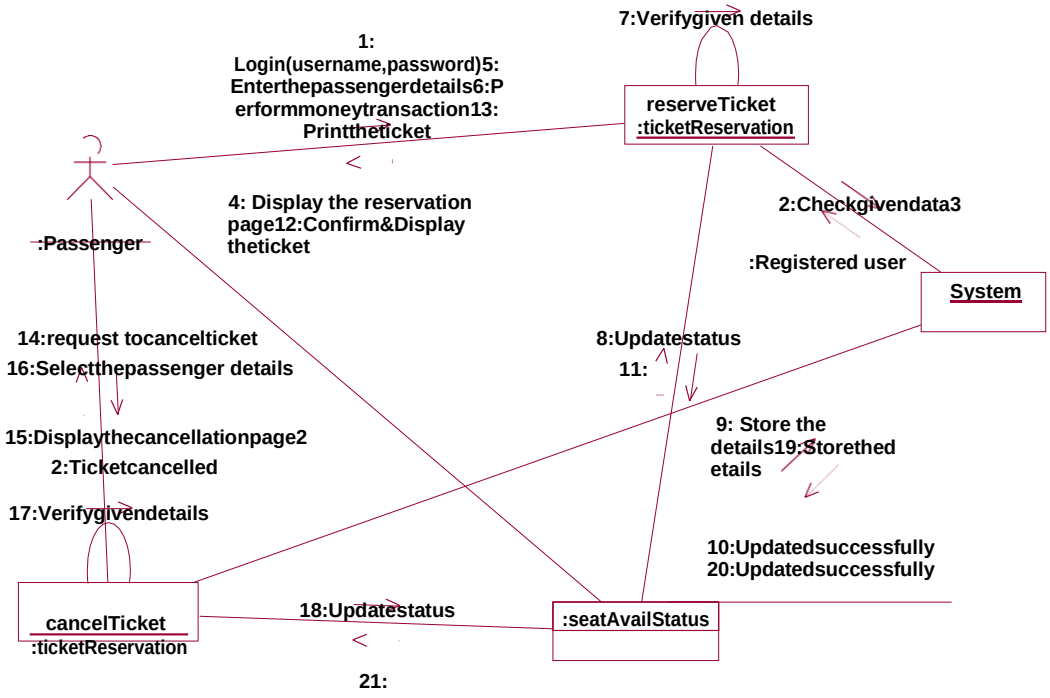


Fig.45.CollaborationDiagram

DEPLOYMENTDIAGRAMAND COMPONENTDIAGRAM

Deployment diagrams are used to visualize the topology of thephysical components of a system where the software components aredeployed.

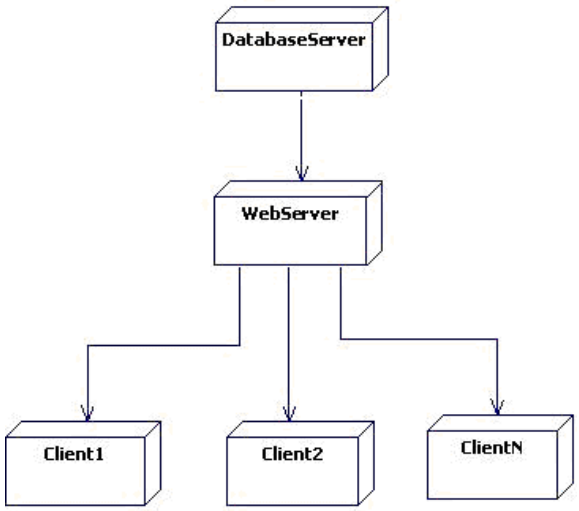


Fig.46.DeploymentDiagram

TASK7:SOFTWAREPERSONNELMANAGEMENTSYSTEM

AIM: Toimplement asoftware forsoftwarepersonnelmanagement system

PROCEDURE*:* **(I)PROBLEMSTATEMENT*:***

Software personnel management system allows employees to recordtimecardelectronicallyandautomaticallygeneratespayslipsbasedonnumber of hours worked and total amount of sales. The system will run onindividual employee desktops where the employee can access and edit onlytheir personal details. The system will maintain information on the employeein the company in order to calculate the payroll. The employees will also beable to know from the system, the number of hours worked per day and totalof all hours spent on a project and total pay received year-to-date etc. Payrolladministratorskeeptrackofalltheinformationincludingaddingnewemployees, deleting employees, and edit information and run reports. Thesystemwillgenerate recordsand performancereport oftheemployees.

(II)SOFTWARE REQUIREMENT

SPECIFICATION:INTRODUCTION

The Software Personnel Management system is an interface betweenEmployee and the Administrator responsible for generation of payment slip.It aims at improving the efficiency in the generation of Pay slip and reducesthecomplexities involved init to themaximum possible extent.

PURPOSE

If the entire process of Software personnel management is done in amanual manner then it would more time for pay slip generation process.Consideringthefactthatthenumberofemployeeisincreasingeveryyear,a

maintenance system is essential to meet the demand. So this system usesseveral programming and database techniques to elucidate the work involvedinthis process.

SCOPE

- Software system allows Administrator to manage its employee in abetterway.
- Whenneeded,itwilltakejustafewsecondtofindoutthebackgroundofanemployeeandhis/hercontributiontotheorganization,itwillalsofacilitatekeepingalltherecordsofemployee.
- So all the information about an employee will be available in a fewseconds, it will also make it very easy to generate statistical data orcustomdata, line finding acertain set ofemployee.

DEFINITIONS,ACRONYMSANDTHEABBREVIATIONS

- **ADMINISTRATOR**
  Referstothesuperuser whoismaintainingtheemployeedetails.
- **EMPLOYEE**
  Onewho worksforasoftware company.
- **SPMS**
  ReferstothisSoftwarepersonnelmanagementsystem.
- **HTML**
  MarkupLanguageusedforcreatingwebpages.

- **J2EE**

  Java2EnterpriseEditionisaprogrammingplatformjavaplatformfordevel opingand runningdistributed javaapplications.

- **HTTP**

  HyperTextTransferProtocol.

REFERENCES

IEEESoftwareRequirementSpecificationformat.

TECHNOLOGIESTO BEUSED

- HTML
- JSP
- Javascript
- Java
- XML
- AJAX

TOOLSTOBEUSED

- EclipseIDE(Integrated DevelopmentEnvironment)
- RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoverall descriptionandspecificrequirements

Overall Description will describe major role of the system components andinter-connections.

SpecificRequirements willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

PRODUCTPERSPECTIVE:

The SPMS acts as an interface between the 'ADMINISTRATOR' andthe 'employee'. This system tries to make the interface as simple as possibleandatthesametimenotriskingthesecurityofdatastoredin.Thisminimizes the timeduration in whichto managethesoftwarepersonnel.

SOFTWAREINTERFACE

- **FrontEndClient** -

  TheapplicantandAdministratoronlineinterface is built using

  JSP and HTML.

  TheADMINISTRATOR'slocalinterfaceisbuiltusingJava.

- **WebServer**–
  ApacheTomcatapplicationserver(OracleCorporation).
- **BackEnd** –Oracle11gdatabase.

HARDWAREINTERFACE

The server is directly connected to the client systems. The clientsystemshaveaccess to the databasein theserver.

SYSTEMFUNCTIONS

ThepaymentmodulegreatlyreducestheworkloadoftheADMINISTRATOR department by automating the payroll process,allowingADMINISTRATORtoensurethepayrollfunctionsarecompletedontimeandwithouterrors.Thepayrollclassautomaticallycalculatespaymentamountsandvariousdeductionssuch as income tax before generating pay checks and employee taxreports.

ViewSalary

The employee viewsthe salarydetailsefficientlyfromthe SPMS.Theemployeeswillalsobeabletoknowfromthesystem,thenumber of hours worked per day andtotal of all hours spent on aprojectand total payreceived year-to-dateetc.

USERCHARACTERISTICS

- **Employee**

  Thesearethe personwhodesiresto viewthe salarydetails.

- **Administrator**

  Administratorhasthecertainprivilegestogeneratepayslipfortheemplo yee.

- **Databasemanager**

  DBmanagerstores allthe datarelated toEmployeeandAdministrator.

CONSTRAINTS

- The administrator requires a system to monitor information of theemployee.

ASSUMPTIONSANDDEPENDENCIES

- TheemployeeandAdministratormusthavebasicknowledgeofcom putersand English Language.

(III) USECASEDIAGRAM:

TheSoftwarepersonnelmanagementsystemusecasesare:

1. Login
2. JobAssigned
3. ViewSalary
4. ViewEmployeedetails
5. Generatepaymentslip
6. CreateDB
7. UpdateDB
8. DeleteDB

ACTORSINVOLVED:

1. Employee
2. Administrator
3. DatabaseManager

USE-CASENAME:LOGIN

TheEmployeeloginto thesystem toviewthesalary details

USE-CASENAME:JOB ASSIGNED

Theemployeeviews the job assignedto him/ herby the Administrator.

USE-CASENAME:VIEWSALARY

TheemployeeviewsthesalarydetailsefficientlyfromtheSPMS.Theemployeeswillalsobeabletoknowthenumberofhoursworkedperdayand total of all hours spent on a project and total pay received year-to-dateetc.

.

USE-CASENAME:VIEWEMPLOYEEDETAILS

TheAdministrator viewsthe details oftheemployeeforthepayroll process

USE-CASENAME:GENERATEPAYMENTSLIP

The Administrator generates the pay slip based on the details of the no ofhours/no ofdays workedby the employee.

USE-CASENAME:CREATE DB

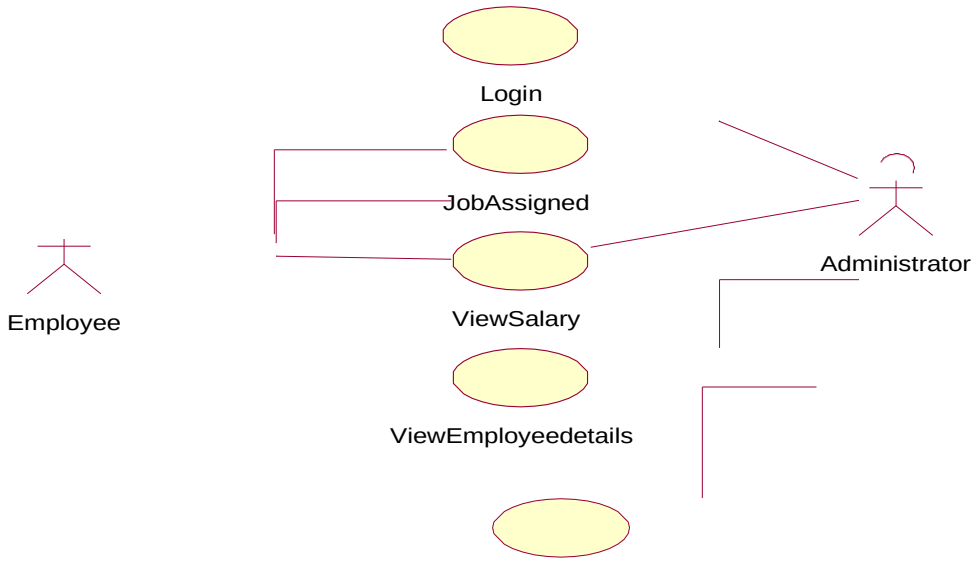
Thedatabasemanager createsindividual databasetablesforthe employees

USE-CASENAME:UPDATEDB

Whenanemployeeinformationchangesthedatabasemanagerupdatesindividualdatabasetables forthe employees.

USE-CASENAME:DELETEDB

Whenanemployeerelieves/terminatedthedatabasemanagerdeletesindividualdatabasetables forthe employees.



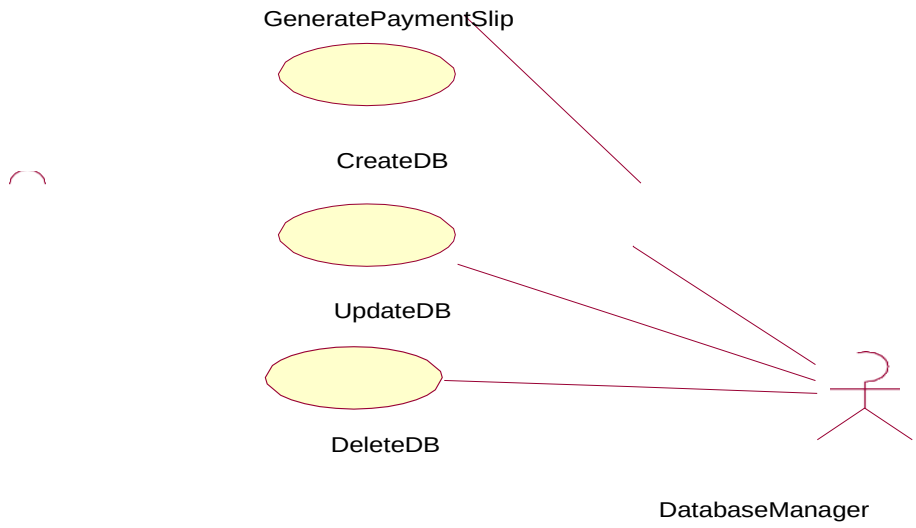


Fig.47.USECASEDIAGRAMFORSOFTWAREPERSONNELM ANAGEMENTSYSTEM

ACTIVITYDIAGRAM:

The activity diagram notation is an action, partition, fork join andobject node. Most of the notation is self explanatory, two subtle points. Oncean action finished, there is an automatic outgoing transaction. The diagramcanshow both control flow and dataflow.

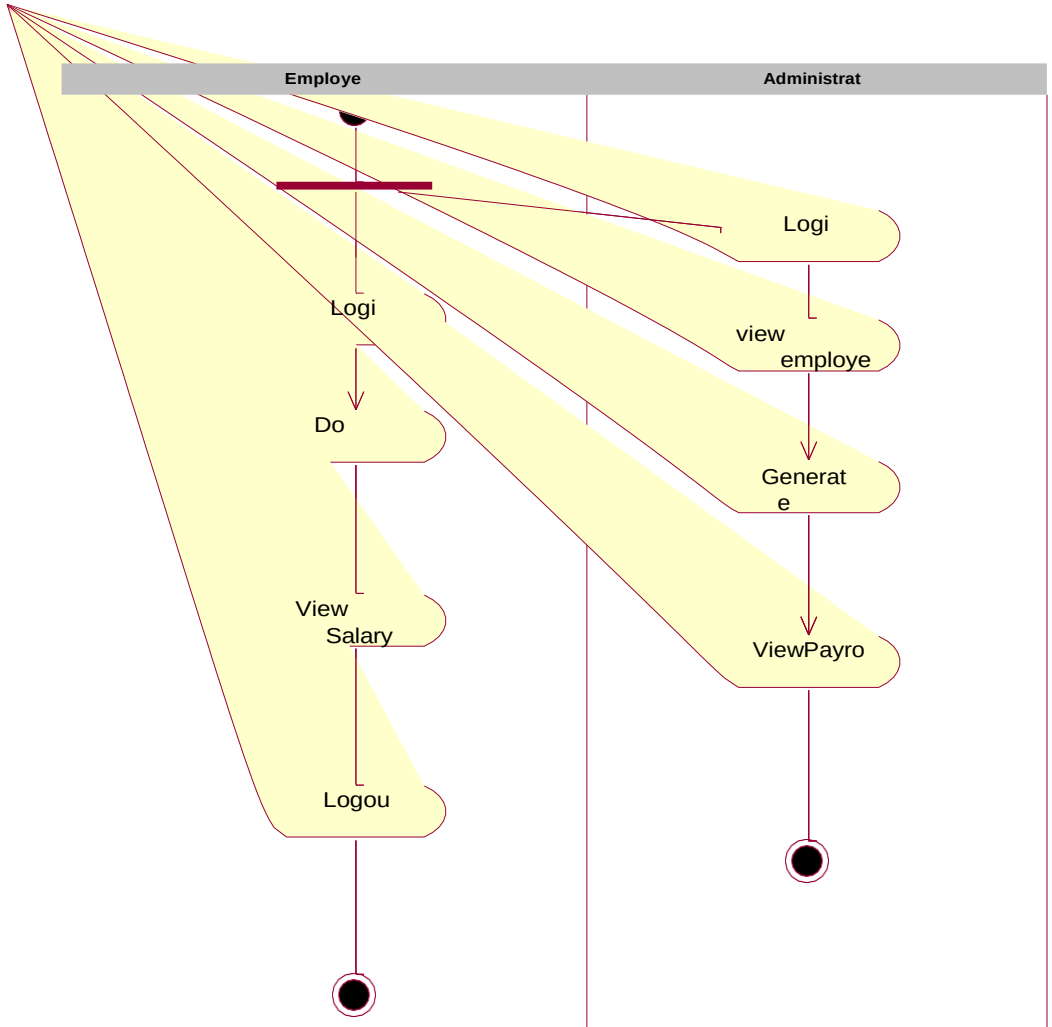


Fig.48.ACTIVITYDIAGRAMFORSOFTWAREPERSONNELM ANAGEMENTSYSTEM

CLASSDIAGRAM:

Theclassdiagramisreferredasobjectmodelinginthestaticanalysisdiagram. The main task of object modeling is to graphically show what eachobject will do in the problem domain. The problem domain describes thestructureand therelationships among objects.

The Software Personnel Management system class diagram consists of fourclasses

1. Employeeclass
2. Administratorclass
3. DatabaseManagerclass
4. Paymentclass

1. EMPLOYEECLASS

It consists of seven attributes and two operations. The attributes are empid,empname, emppassword, address, mobile number, date, Hours Worked. Theoperationsof this class areLogin()and viewsalary( ).

2. ADMINISTRATORCLASS

ItconsistsofattributesAdminid,AdminnameandAdminpassword.Theoperation sarelogin(),Generatepayroll(),viewpayroll()andviewemployeedetail( ).

3. DATABASEMANAGERCLASS

TheattributesofthisclassareDBmanagerid,DBmanagername()andDBmanager password. The operation are create( ), update( ),delete( ) anddisplaypayroll( ).

4. PAYMENTCLASS

The attributes of this class are paymentid, empid, date, Basic pay, HRA, DA,PF,NetpayandGrosspay.Theoperationarecalculatesalary()andGenerateSlip().

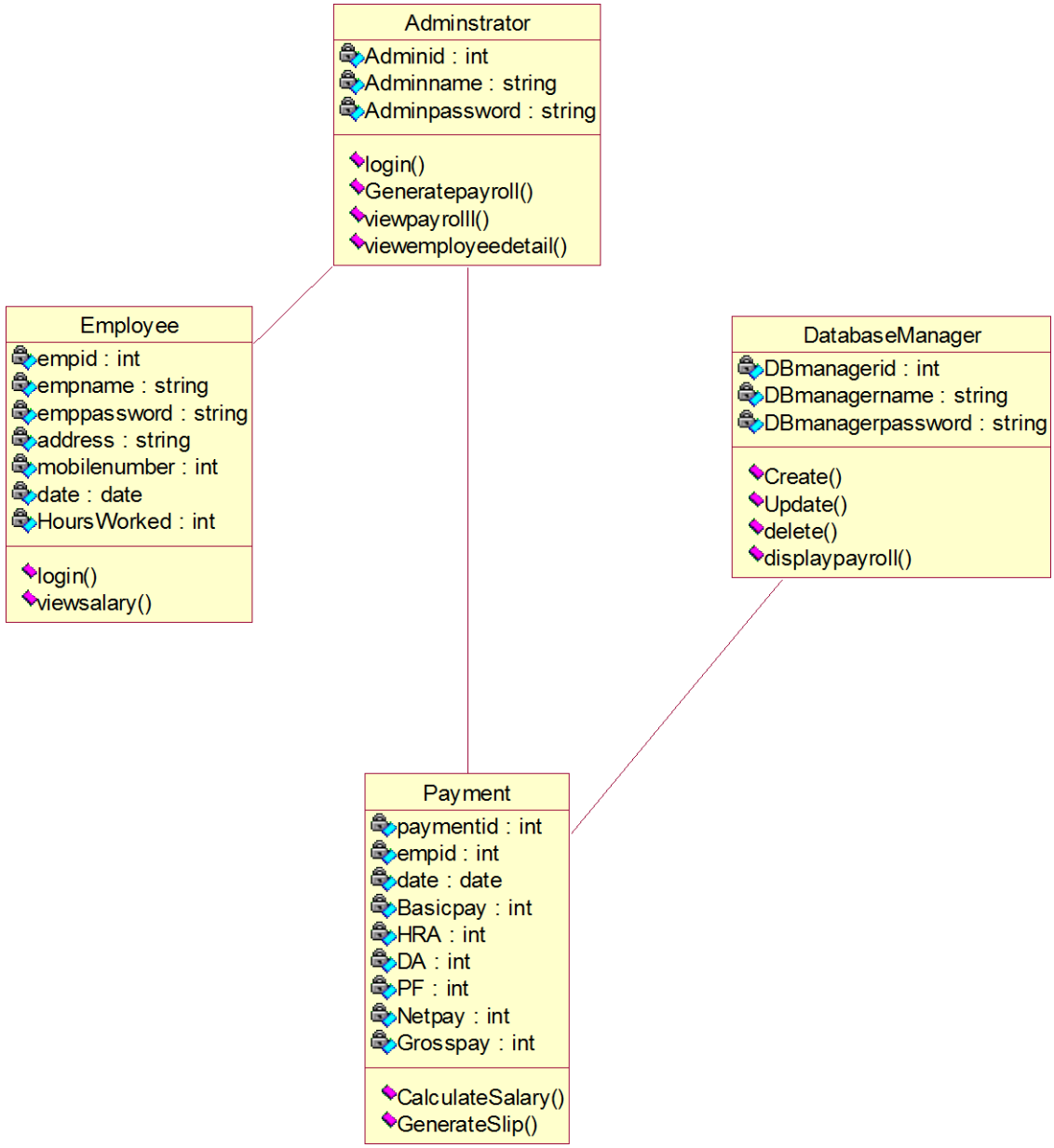


Fig.49.CLASSDIAGRAMFORSOFTWAREPERSONNELMANAGEMENTSY STEM

INTERACTIONDIAGRAM:

- A sequence diagram represents the sequence and interactions of agivenUSE-CASEorscenario.Sequencediagramscancapturemostoftheinformation aboutthesystem.
- Mostobjecttoobjectinteractionsandoperationsareconsideredeventsandeventsincludesignals,inputs,decisions,interrupts,transitionsand actionsto orfrom usersor externaldevices.
- An event also is considered to be any action by an object that sendsinformation.
- The event line represents a message sent from one object to another,in which the“form” object is requesting an operation be performedbythe “to”object.
- The “to” object performs the operation using a method that the classcontains.
- It is also represented by the order in which things occur and how theobjectsin the system send messageto one another.
- The sequence diagram for each USE-CASE that exists when a useradministrator,checkstatusandnewregistrationaboutpassportautomationsystem aregiven.

EMPLOYEE:

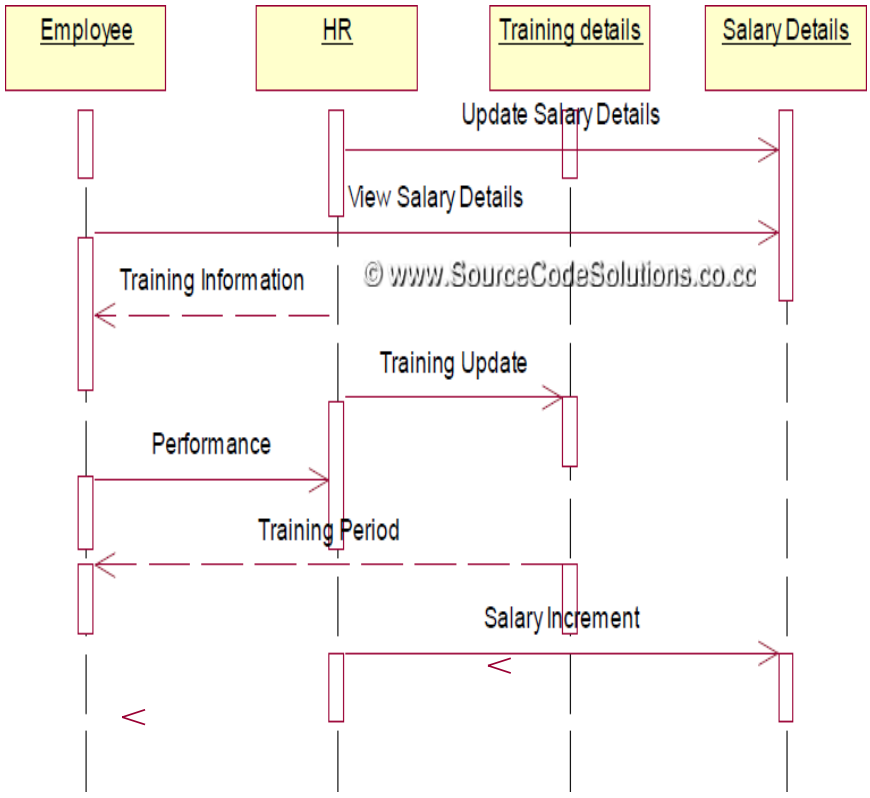


Fig.50.SEQUENCEDIAGRAMFOREMPLOYEE

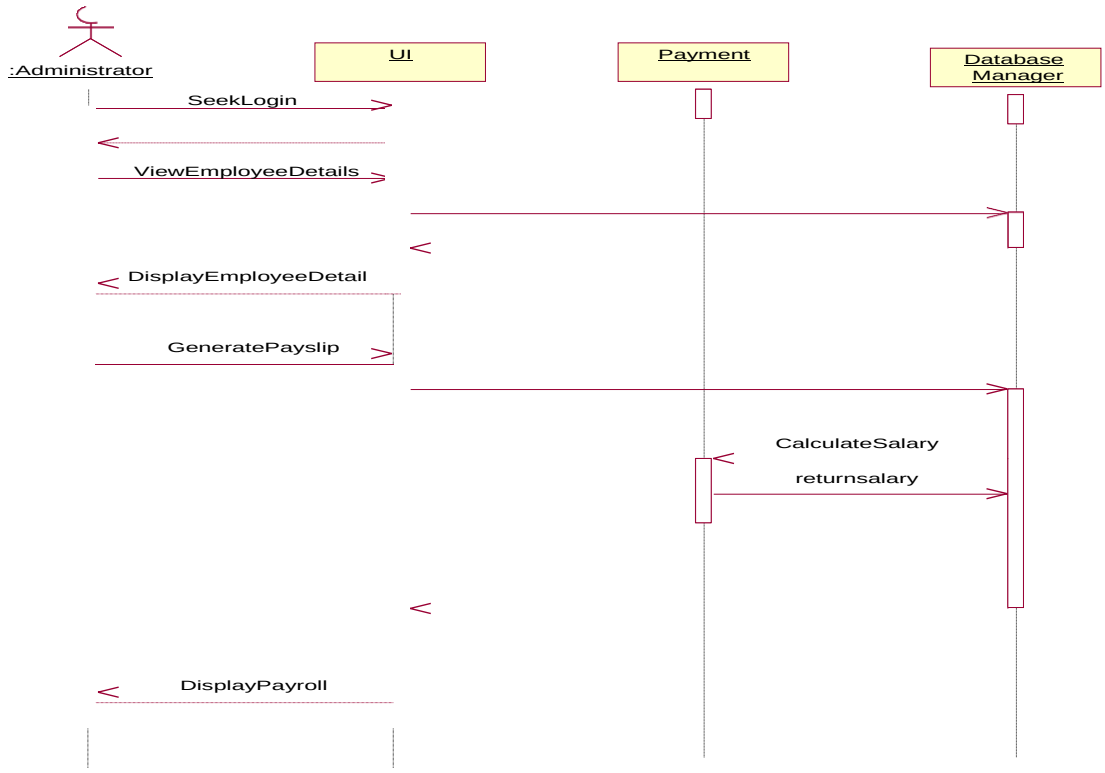


Fig.52.SEQUENCEDIAGRAMFORADMINISTRATOR

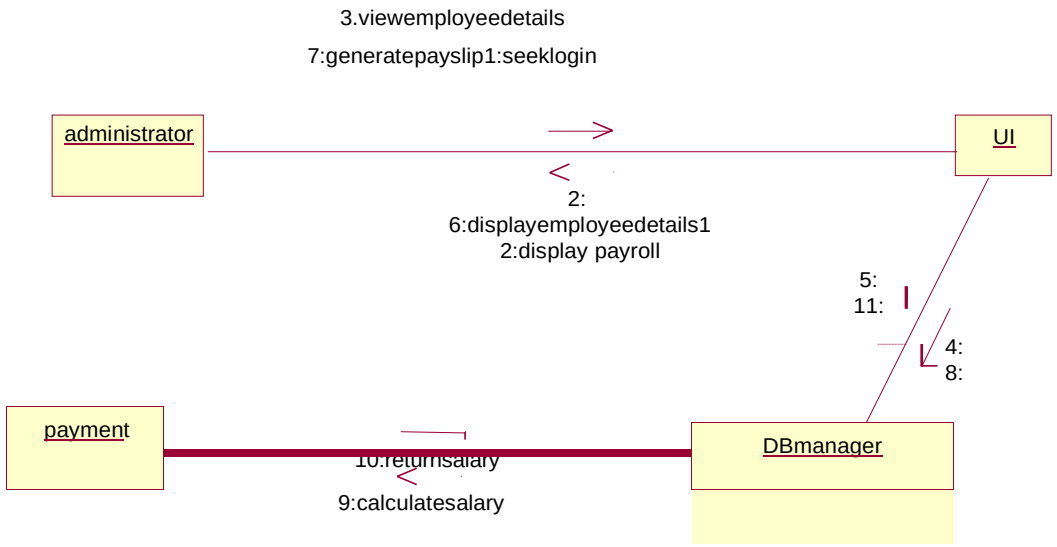


Fig.53.COLLABORATIONDIAGRAMFOREMPLOYEE

STATETRANSITIONDIAGRAM

- Statesofobjectarerepresentedasrectanglewithroundcorner,thetransaction between the different states.
- Atransitionisarelationshipbetweentwostatethatindicatesthatwhen an event occurthe object moves from the prior state to thesubsequent.

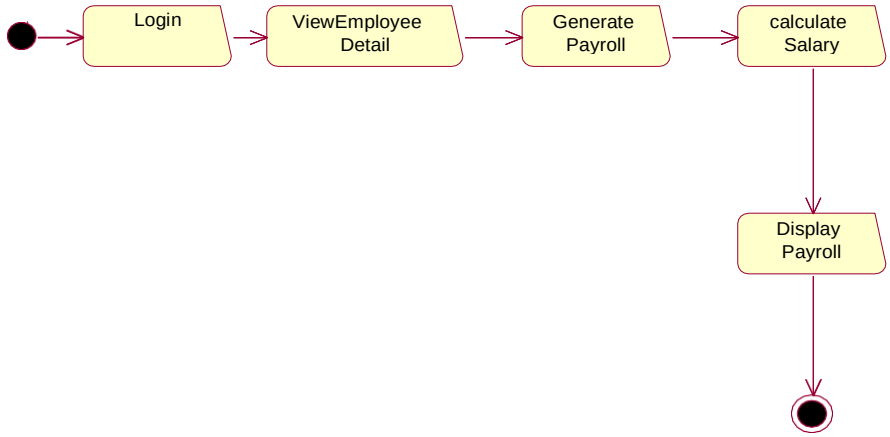


Fig.54.STATETRANSITIONDIAGRAMFORSOFTWAREPERSONNELMANAGEMENTSYSTEM

DEPLOYMENTDIAGRAMANDCOMPONENTDIAGRAM

Deploymentdiagramsareused tovisualizethe topologyofthephysicalcomponentsof asystemwherethesoftwarecomponents aredeployed

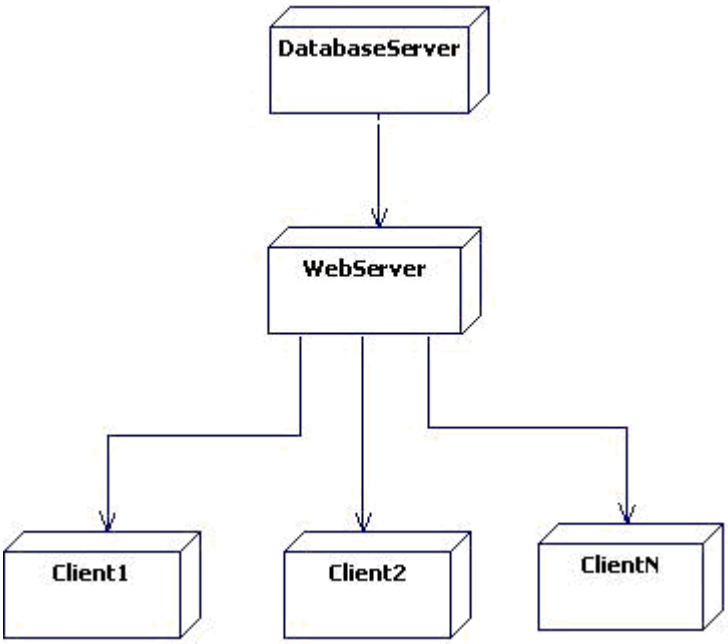


Fig.55.DEPLOYMENTDIAGRAMFORSOFTWAREPERSONNELM ANAGEMENTSYSTEM

COMPONENTDIAGRAM

Componentdiagramsare usedtovisualizetheorganizationandrelationshipsamong components in asystem.

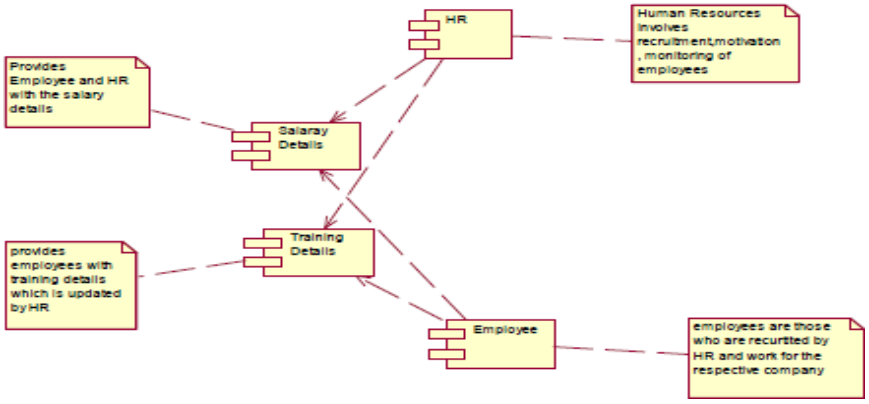


Fig.56.COMPONENTDIAGRAMFORSOFTWAREPERSONNELM ANAGEMENTSYSTEM

TASK8:CREDITCARD PROCESSING

AIM:Tocreateasystemtoperformthecreditcardprocessing

(I) PROCEDURE:PROBLEMSTATEMENT:

Creditcardprocessingthroughofflineinvolvesthemerchantcollecting order information (including credit card numbers), storing this in adatabase on your site, and entering it using their on-site merchant credit cardprocessing system. Takes time to manually enter credit card information foreachorder. This solution creates following cons:

· Insecure–there isa possibility that a skilled hackercouldbreakinto the database and steal an entire list of credit card numbers, therebydamagingthe merchant'sreputation withcurrentclient.

· Thereis ahigher riskofcustomer chargebacks withnosignature

· Higherriskoffraudforusingstolencreditcards

· Manydiscerningonlineshopperswillnotgivetheircreditcardtoan "untrusted" online merchant (you may want to consider being part of theBetterBusiness Bureauor similarorganization toaddcredibility).

Sothereisaneedof onlineandtrustedcreditcard processing.

(II) SOFTWARE REQUIREMENT SPECIFICATION:INTRODUCTION

A credit card is a small plastic card issued to users as a system ofpayment. It allows its holder to buy goods and services based on the holder'spromise to pay for these goods and services. The issuer of the card creates arevolvingaccountandgrantsalineofcredittotheconsumer(ortheuser)

fromwhichtheusercanborrowmoneyforpaymenttoamerchantorasacashadvance to theuser.

Whena purchase ismade the merchantswipesthe card. Theinformation goes to a gateway processor, which either accepts or rejectsthe transaction.If it is accepted, the transaction is held until the end ofthebusinessday.Themerchantthenreentersthetransactionviathegateway processor, the data is logged, and the debt is transferred to theaccount.TheuseofanATMfor cashadvanceisasimilarprocess.

If you are selling to consumers, merchant services will allow youto expand your customer base and provide a more convenient method ofpayment than cash or checks. And if you are interested in selling over theInternet, accepting credit card processing isa must. Accepting creditcards allows funds to be transferred to your bank account in less than aweek. This can be a welcome relief for businesses that experience a tightcashflow.

ThetwopurchaseoptionsforCreditCardProcessingfacilityare:

- Validationonly
- Creditcardprocessing(whichsecuresdeposits atthetimeofbooking)

With either option, credit card accounts entered during bookingare validated toassure thatthe accountisactiveand ingood standing.The credit card processing option also allows properties to process creditcarddeposits.

PURPOSE

Whencustomerscompletetheirshoppingcart,theircreditcardispreau thorized and the order is entered into Sales Order. Credit CardProcessing dials out and obtains a credit card payment. Within fiveminutesthecustomer receives an e-mail receipt.

SCOPE

- Automaticallyconnectstoyourfinancialnetworkforcreditcardauthorizationsand settlements
- Integrates with Sales Order, Accounts Receivable, and e-BusinessManager
- Supportfordial-up(modem)connectionsorsecure Internetconnectionsthrough TCP/IP and SSL
- CompliantwithVisaandMasterCardElectronicCommerce Indicator(ECI)regulations.
- Multipleaddressverificationoptionsavailable.

DEFINITIONS,ACRONYMSANDTHEABBREVIATIONS

• **Authorization service** - The issuer of the card creates a revolvingaccount and grants a line of credit to the consumer (or the user) from whichtheusercanborrowmoneyforpaymenttoamerchantorasacashadvanceto theuser.

•**User**-Onewhowishes tousesthe creditcard.

• **CCP**-Refers tothis CreditCard Processing.

• **HTML** -MarkupLanguageusedforcreatingwebpages.
•**J2EE** – Java 2 Enterprise Edition is a programming platform javaplatformfordeveloping andrunningdistributedjavaapplications.
• **HTTP**-HyperTextTransferProtocol.
•**TCP/IP** – Transmission Control Protocol/Internet Protocol is thecommunicationprotocolusedtoconnecthostsontheInternet.

TECHNOLOGIESTO BE USED

• HTML
• JSP
• Javascript
• Java

TOOLSTOBEUSED

• EclipseIDE(Integrated DevelopmentEnvironment)

• RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoveralldescriptionandspecificreq uirements–

Overall Description will describe major role of the systemcomponentsand inter-connections.

SpecificRequirements willdescriberoles&functionsoftheactors.

OVERALLDESCRIPTION

PRODUCTPERSPECTIVE

This solution involves signing up for a free Business Account. Oncethis is done and the e-commerce site is properly configured, you can acceptpaymentsfromVisa, MasterCard,Amex, and Discovercards payments.

SOFTWAREINTERFACE

- **FrontEndClient** -
  TheapplicantandAdministratoronlineinterface is built using JSP and HTML. The Administratorslocalinterfaceis built usingJava.
- **WebServer**-Glassfish applicationserver(SQLCorporation).
- **BackEnd** -SQLdatabase.

HARDWAREINTERFACE

Theserverisdirectlyconnectedtotheclientsystems.Theclientsystemshaveaccess to the databasein theserver.

SYSTEMFUNCTIONS

1. Accept creditcardnumbersontheweb,storetheminadatabase,thenprocess them off-line
2. CreditcardprocessingwithCCP
3. Creditcardprocessingwithathird-partycreditcardprocessingcompany.

USERCHARACTERISTICS

1) **User/Customer**-Theyarethepeople whodesires topurchasethegoodsusing creditcard.

2) AuthorizationService

- Validatethecreditcardpaymentstoensurethatthecardnumberisvalida nd the card hasnot expired
- Depositprocessingtoapplythedepositpaymenttothecard
- PrepareCreditcardtransactionreportsthatshowauthorizationcod es,amounts,and error/successmessages

CONSTRAINTS

- Trustedif using awell known third-partyprocessor
- Mustsuiteforhigher-volumesites
- Cheapertransactionrates
- Gettingmoneytransferredmaybeveryfast
- Mustprovidefraudpreventionmeasuresandfraud protectionprograms

ASSUMPTIONSANDDEPENDENCIES

- TheApplicantsandAdministratormusthavebasicknowledgeofcom putersand English Language.

- Theapplicantsmay berequiredto scanthedocuments andsend.

(III)USECASEDIAGRAM:

ThePassportAutomationsystemusecases are:

CreatingAccount: Usedtocreate aaccount.

Creditcardrequest: Usedtosendtherequesttocreditcard.

BankEnquiry: Usedtogetthebankenquirylikepincodetoverifyyouruseraccount.

Issuingcard: Usedtoissuing thecardtomachine.

Purchase the item: Used to list out the purchase details in shop.**Prepare the bill:** Used to issuing the bill for the purchased item.**payingbill:** Usedto transaction ofmoney to payingthebill.

ACTORSINVOLVED

Customer/user: Theperson who order for theitem.

Banker:Thepersontochecktheaccount details.

Retailer:Theperson topreparing thebills.

USE-CASENAME:PURCHASEPRODUCT

Customer purchases items from ecommerce site thenproceedsto the site'ssecurecheckout area.

.

USE-CASENAME:AUTHORIZATIONREQUEST

Creditcardprocessorcollectsbillinginformationfromthecustomerviaasecureconnection.

USE-CASENAME:AUTHORIZATIONRESPONSE

Billinginformationisverifiedandthetransactioniscompletedbythecredit card issuer.

USE-CASENAME:PAYMENTAPPROVAL

The transaction details are recorded by the credit card processor andresultsaresecurelyrelayedtothemerchant.Merchant’ssitereceivestransacti onresultanddoesappropriate actions(e.g.savestheorder&showsmessage).

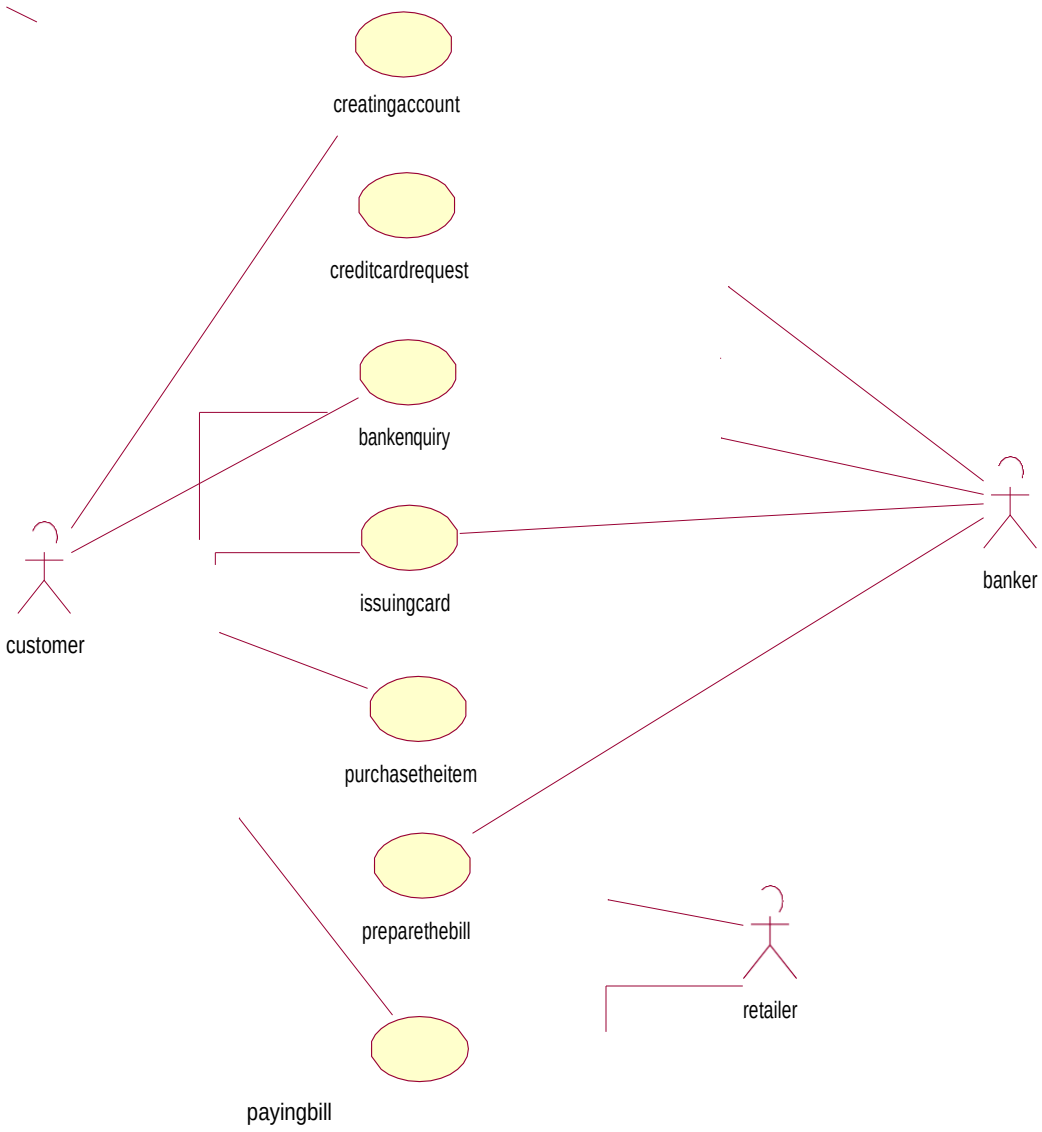


Fig.57 USECASE DIAGRAM FOR PASSPORT AUTOMATIONSYSTEM

CLASSDIAGRAM:

The class diagram, also referred to as object modeling is the mainstatic analysis diagram. The main task of object modeling is to graphicallyshow what each object will do in the problem domain. The problem domaindescribesthe structure and therelationshipsamong objects.

TheCreditCardProcessingsystemclassdiagramconsists

of threeclasses.They are

1. Banker
2. Customer
3. Retailer

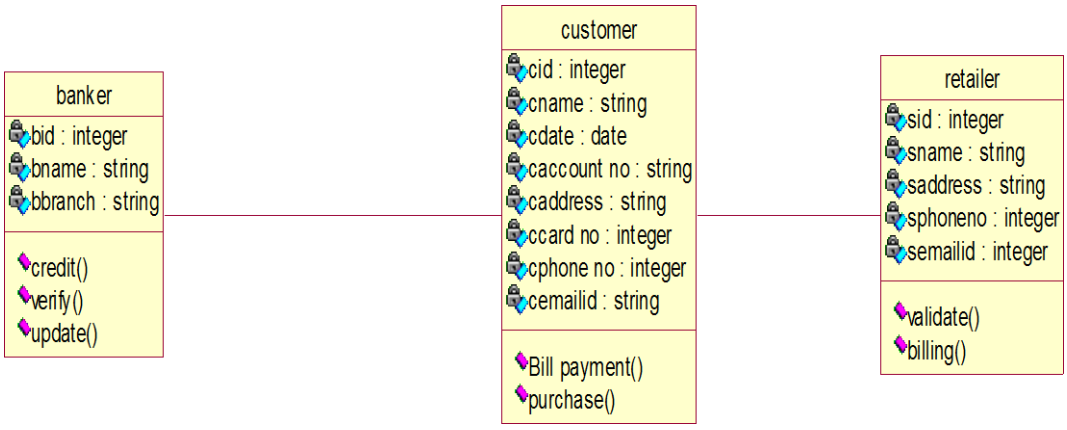


Fig.58.CLASSDIAGRAM

INTERACTIONDIAGRAM:

- A sequence diagram represents the sequence and interactions of agiven USE-CASE or scenario. Sequence diagrams can capture mostoftheinformation aboutthesystem.
- Mostobjecttoobjectinteractionsandoperationsareconsideredeventsande ventsincludesignals,inputs,decisions,interrupts,transitionsand actionstoorfrom usersor external devices.
- An event also is considered to be any action by an object that sendsinformation.
- The event line represents a message sent from one object to another,inwhichthe“form”objectisrequestinganoperationbeperformed bythe “to”object.
- The “to” object performs the operation using a method that the classcontains.
- It is also represented by the order in which things occur and how theobjectsin the system send messageto one another.
- The sequence diagram for each USE-CASE that exists when a useradministrator,checkstatusandnewregistrationaboutpassportautom ationsystem aregiven.

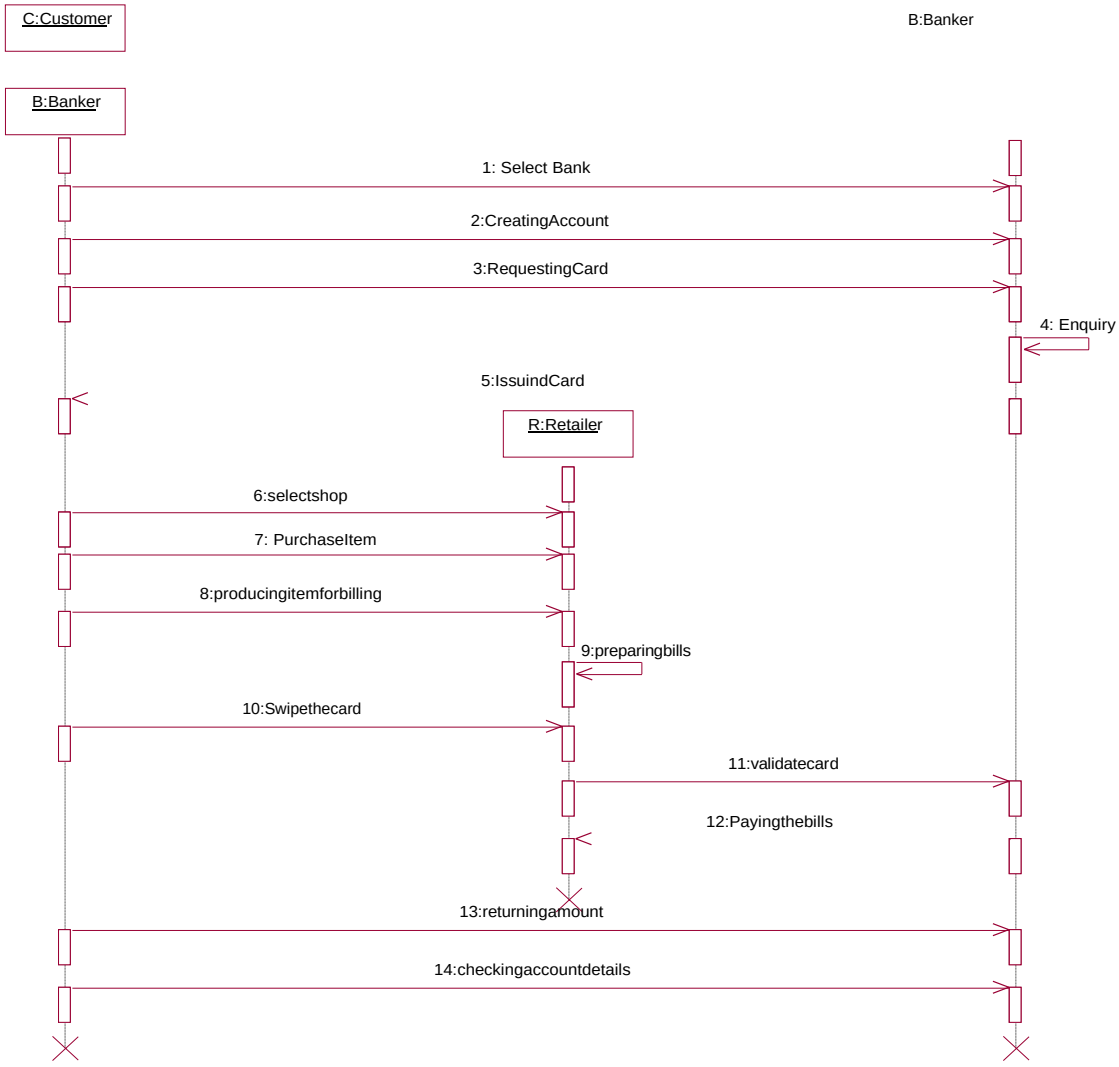


Fig.58.SEQUENCEDIAGRAM

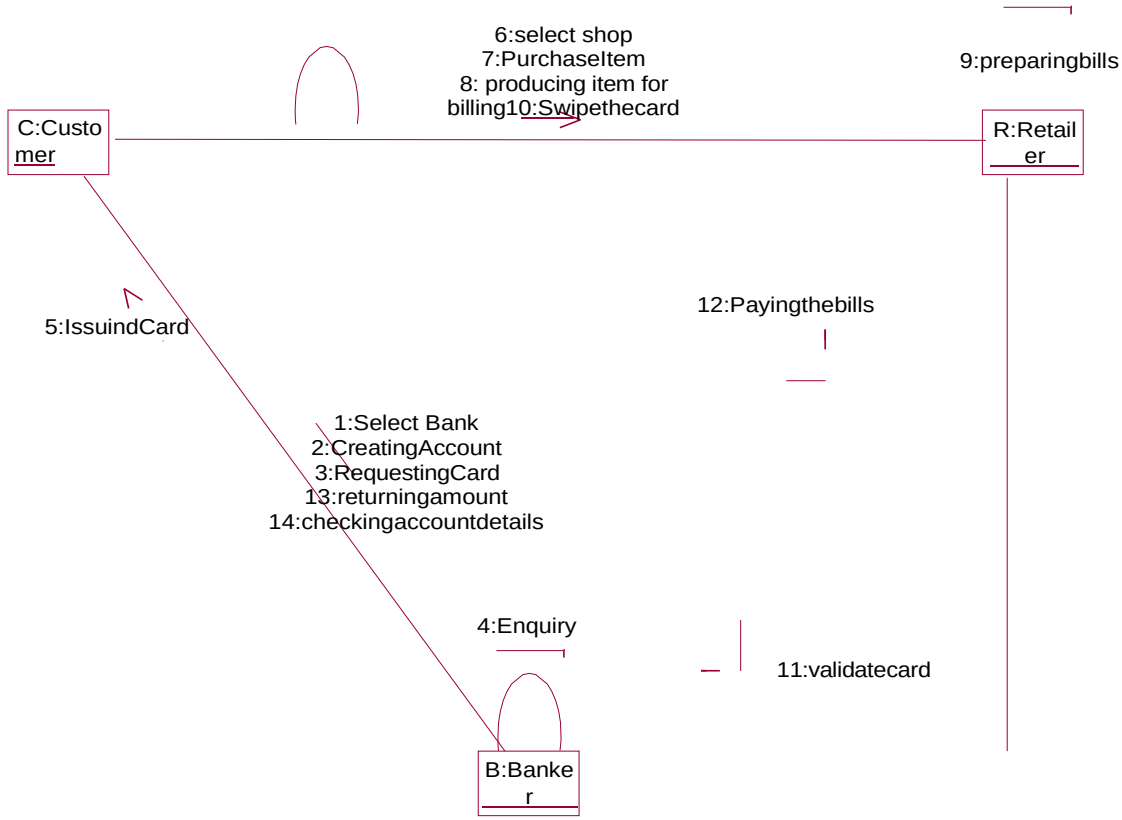


Fig.59.COLLABORATI ONDIAGRAM

StatechartDiagram:

- States of object are represented as rectangle with round corner, thetransactionbetween the differentstates.
- Atransitionisarelationshipbetweentwostatethatindicatesthatwhen an event occur the object moves from the prior state to thesubsequent.

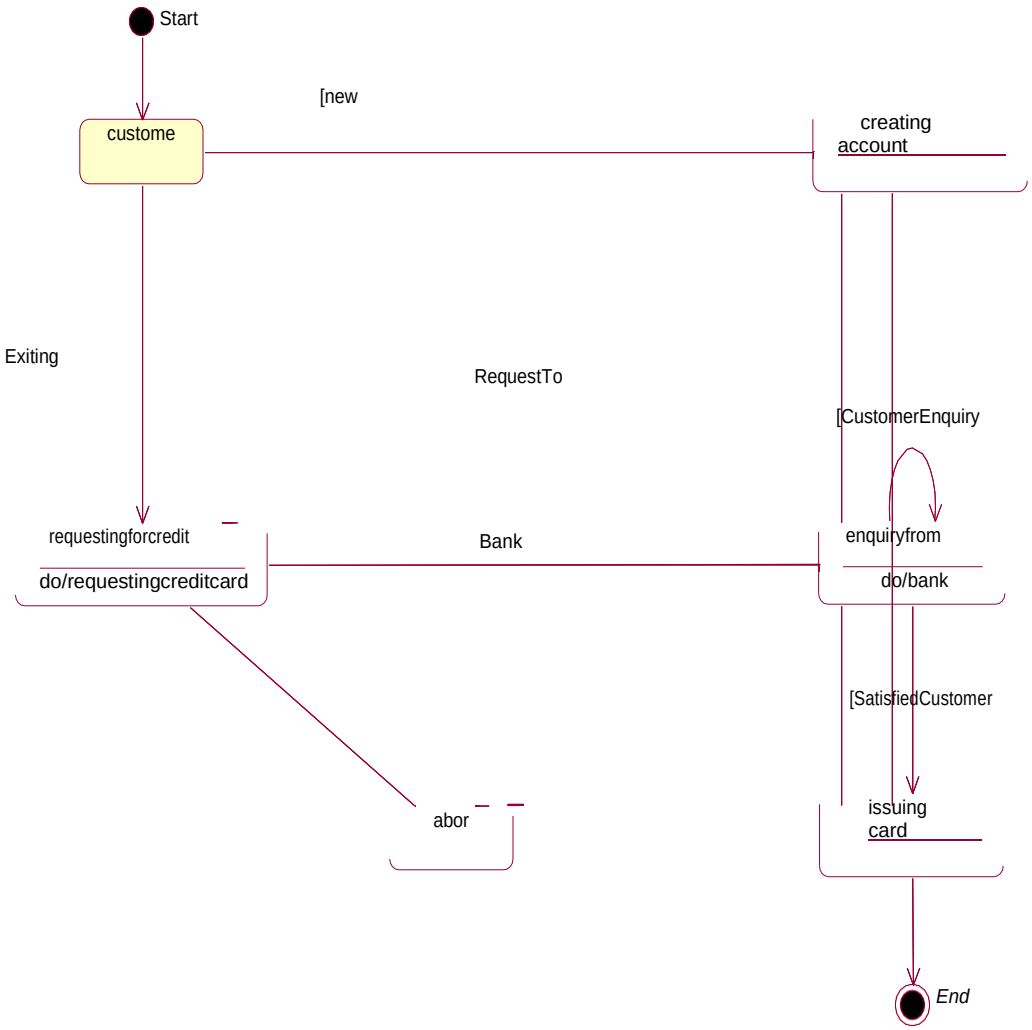


Fig.60. STATE CHARTDIAGRAM

DEPLOYMENTDIAGRAMAND COMPONENTDIAGRAM

Deployment diagrams are used to visualize the topology of thephysical components of a system where the software components aredeployed.

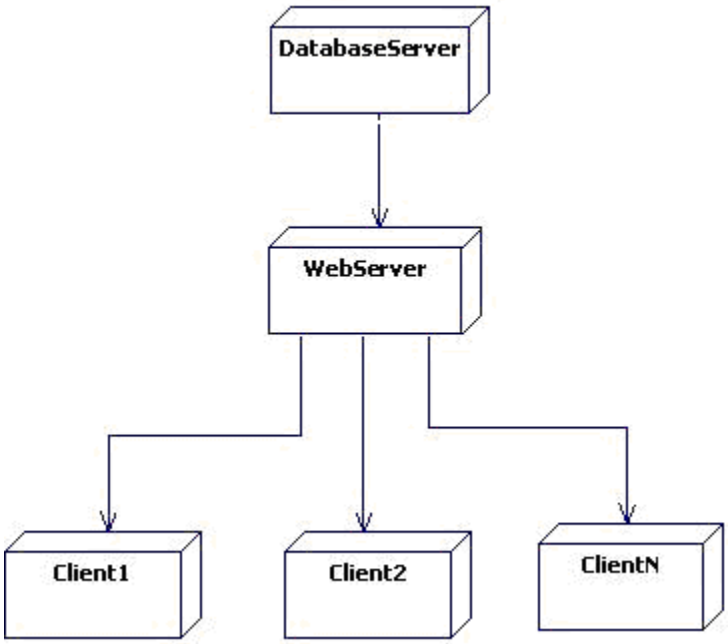


Fig.61.DEPLOYMENTDAIGRAM

COMPONENTDIAGRAM

Componentdiagramsare usedtovisualizetheorganizationandrelationshipsamong components in asystem.

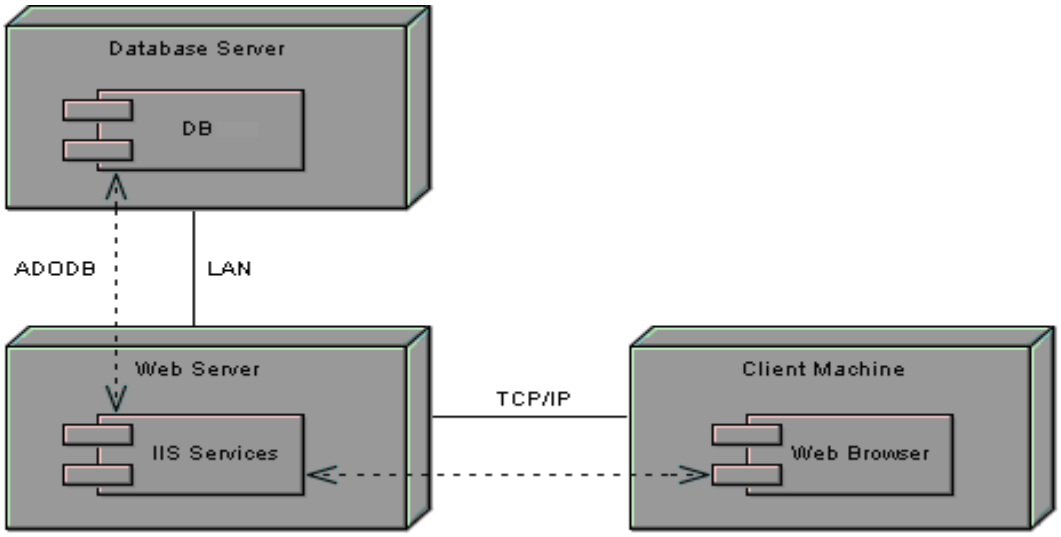


Fig.62.COMPONENTDIAGRAM

TASK9:E-BOOKMANAGEMENT SYSTEM

AIM:To createasystemtoperform E-book ManagementSystem.

(I) PROCEDURE:PROBLEMSTATEMENT:

EBook process is well organized online buying and selling of books.This system is well developed in various resources, for example Amazon sitedeals more about e-booking concept. This process has various issues in thebasics of maintenance of database and updating in sites, and virus problem inpdf books, so we have many issues in this process. The process of e-books isfully based on online, and the process for this mainly interaction betweenbuyer and seller, buyerwho enter the site forpurchase of book willusesearch engine for book to purchase, the search engine will mainly focused onthe database process, it used to search book for the buyer who mentioned thebook name, author name, edition, publication details in the site, so that thesearch engine will show many books. There will bea payment option andoption for pdf file or hardcopy delivery to home, the user should decidewhether he want which one. Whether he choice hardcopy means, full detailaddress, driving license no, and then he should login with his username andpassword,andthen paymentthrough atmdebitorcreditcard applicable.

(II) SOFTWARE RESOURCE

SPECIFICATION*:*INTRODUCTION

E-Book is the interface between the students and Librarian. It aims atimproving the efficiency in the Issue of books or magazines and reduces thecomplexitiesinvolved in it to themaximum possible extent.

PURPOSE

If the entire process of 'Issue of Books or Magazines' is done in amanual manner then it would take several months for the books or magazinesto reach the applicant. Considering the fact that the number of students forBookBankisincreasingeveryyear,anAutomatedSystembecomesessential to meet the demand. So this system uses several programming anddatabasetechniquestoelucidatetheworkinvolvedinthisprocess.Thesystemh as beencarefully verified andvalidated in orderto satisfyit.

SCOPE

TheSystemprovidesanonlineinterfacetotheuserwheretheycanfill in their personal details and submit the necessary documents (may be byscanning). The authority concerned with the issue of books can use thissystemto reducehis workload.

DEFINITIONS,ACRONYMSANDTHEABBREVIATIONS

- **E-bookmanager**

  ReferstothesuperuserwhoistheCentralAuthoritywhohasbeenvested with theprivilegeto managetheentiresystem.

- **User**

  Onewho wishes to obtainthe Books or Magazines.

- **Visitor**

  Onewho visitsto obtainBooks orMagazines.

- **Administrator**

  Onewhomanages andmaintainBooks orMagazines.

REFERENCES

IEEESoftwareRequirementSpecificationformat

TECHNOLOGIESTO BEUSED

HTML-MarkupLanguageusedforcreatingweb pages.

J2EE-Java2Enterprise Edition isaprogramming platformandit isthe part of the java platform for developing and running distributedjavaapplications.

HTTP-HyperTextTransferProtocol

TCP/IP-TransmissionControlProtocol/Internet Protocolisthe communication protocol used to connect hosts on theInternet.

TOOLSTOBEUSED

Eclipse IDE

(IntegratedDevelopment

EnvironmentRationalRosetool(for

developingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoveralldescriptionandspecificreq uirements.

Overall description will describe major role of the systemcomponentsand inter-connections.

Specificrequirements willdescriberoles &functionsoftheactors.

OVERALLDESCRIPTION

It will describe major role of the system components and inter-connections.

PRODUCTPERSPECTIVE

TheORSactsasaninterfacebetweentheuserandthe'e-bookmanager'. This system tries to make the interface as simple as possible and atthe same time not risking the security of data stored in. This minimizes thetimeduration in whichtheuser receivesthe booksormagazines.

SOFTWARE

INTERFACE

Front

EndClient

The Student and Librarian online interface is built using JSP and HTML. TheLibrarianslocal interfaceis built using Java.

Web Server

ApacheTomcatapplicationserver(OracleCorporation).

BackEnd

Oracle11gdatabase

HARDWAREINTERFACE

Theserverisdirectlyconnectedtothe clientsystems.Theclientsystemshaveaccessto the databasein theserver.

SYSTEMFUNCTIONS

SecureRegistrationofinformation bytheStudents.

Librarian can generate reports from the information and is the onlyauthorized personnel to add the eligible application information to thedatabase.

USERCHARA

CTERISTICS

User

They are the people who desire to obtain the books and submit theinformationto the database.

Visitor

Theyarethepersonwho visits theE-book system

Administrator

Hehasthecertainprivilegestoaddthebooksand toapprovalofthereservation ofbooks.

CONSTRAINTS

TheStudentsrequireacomputertosubmittheirinformation.

Althoughthesecurityisgivenhighimportance,thereisalwaysachance of intrusion in the web world which requires constantmonitoring.

Theuserhastobecarefulwhilesubmittingtheinformation. Muchcareisrequired.

ASSUMPTIONSANDDEPENDENCIES

The user and e-book manager must have basic knowledge ofcomputersandEnglishLanguage.Theusermayberequiredtoscant hedocumentsand send.

(III) USE-CASEDIAGRAM:

TheE-bookuse casesinoursystemare:

1. Login
2. Register
3. Searchbook
4. Download
5. Payment
6. Publisher
7. Update

Actorsinvolved:

1. RegisterUser
2. Visitor
3. Administrator

1. **Add:**astudent record. Each student shouldhavefollowingattributes.

->Student id

->Name

->Address

->Phoneno

2. Update:

The record would be selectedusingthestudentid.Theup datescanbemadeon full itemsonly.

->name

->address

->phoneno

3. Addto book item:

Eachbookshould have followingattribute

->callno

->title

->ISBN

->Authorname

4. Querythebookdatabase:

Theproductshallletlibrarianquerytoolsbooksdetailinfor mationby their ISBNnumber (or)author (or)title.

Thesearchresultwouldproducealistofbooks,whichmatchthesearchpa rameters.

5. Checkoutabook:

Librariansandmemberofthelibrarycancheckoutcanbeinitializedfroma previous searchoperation whereuser hasselectedaset ofbooks.

6. Checkin a book:

Librariansandmemberofthelibrary cancheck inabook usingits callno.

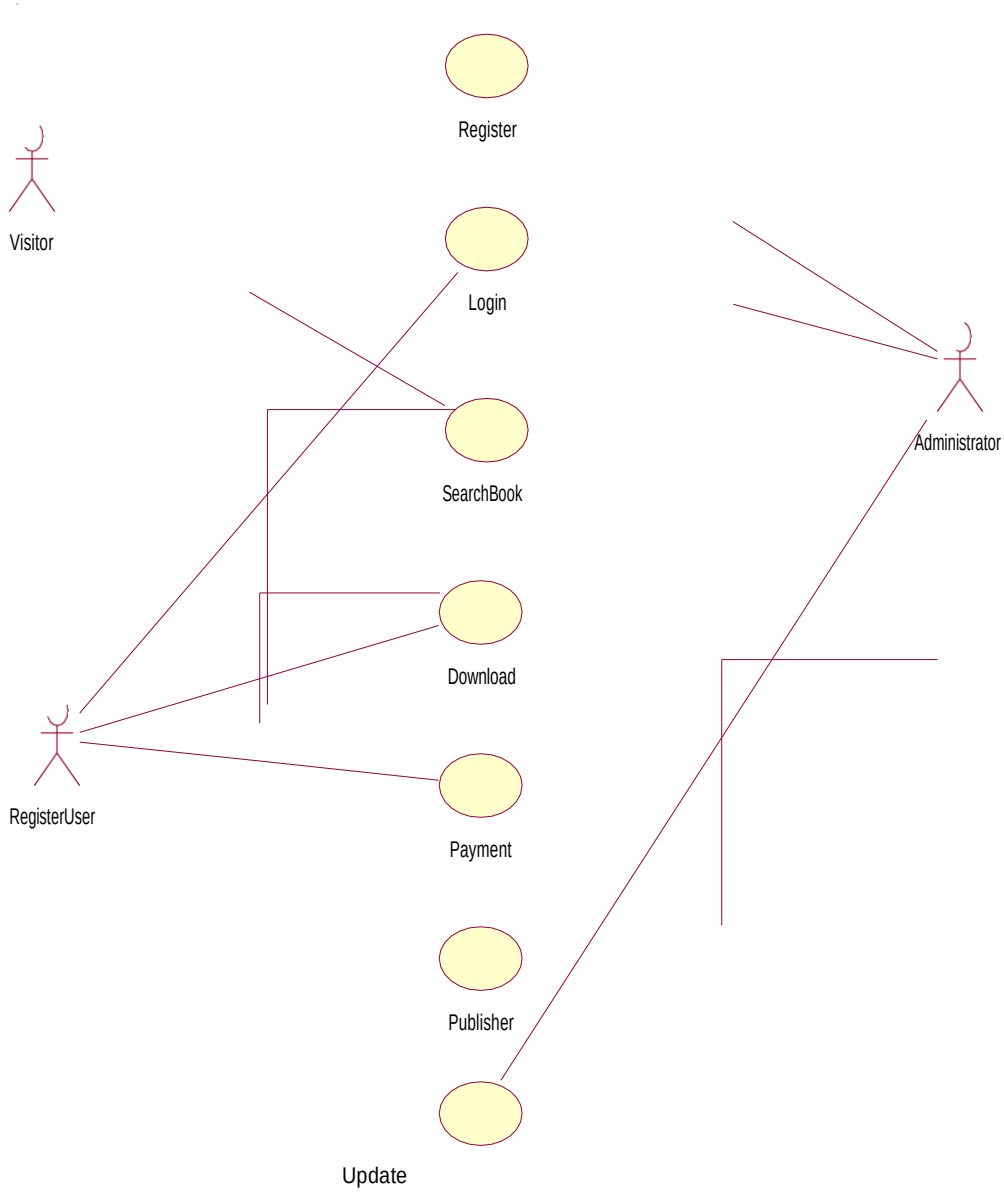


Fig.63.USE-CASEDIAGRAM

ACTIVITYDIAGRAM:

The activity diagram shows the activity of the process here first loginis done when the user is valid then the welcome page appears .Here fork isusedwheretwotransactionlinemaybegotsearchbookandonlinereading .search book can be used to search book and online reading can allow user tolearn online and when any of these two process is selected a join is usedwhere download occurs, in this download of book is done then finally cost ofbookis paid online.

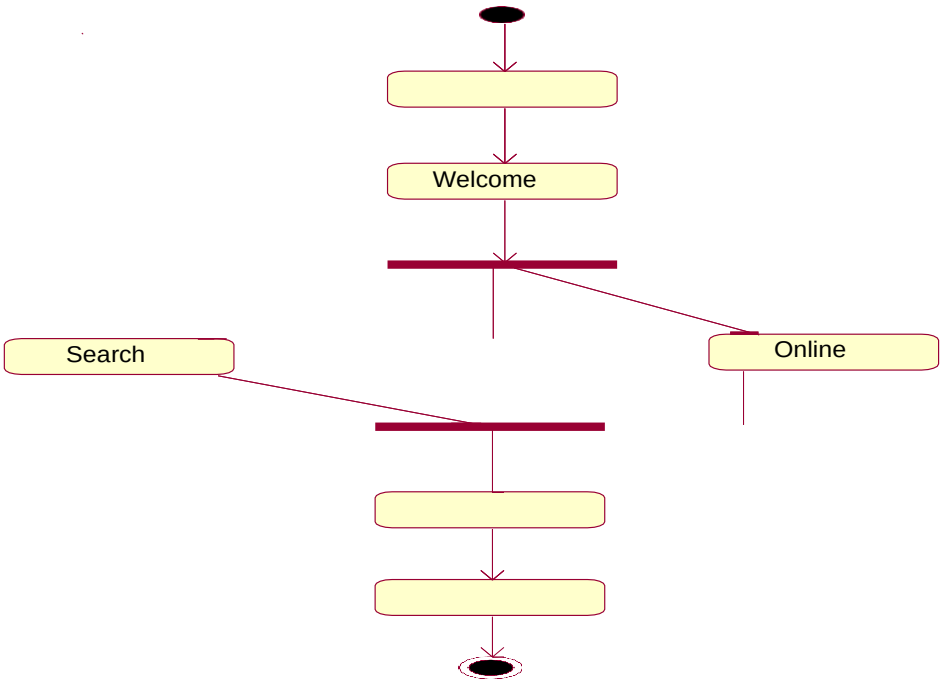


Fig.64.ACTIVITYDIAGRAM

CLASS DIAGRAM

The class diagram, also referred to as object modeling is the mainstatic analysis diagram. The main task of object modeling is to graphicallyshow what each object will do in the problem domain. The problem domaindescribesthe structure and therelationships amongobjects.

TheE-bookManagementsystemclassdiagramconsistsoffiveclasses:

8. Login
9. RegisteredUser
10. Administrator
11. Book
12. Visitor
13. download
14. Logout

1) **Login:**Login to the system

2) **Registered User:** It consists of six attributes and four operations. Theattributes are user id, name, password, email id, phone no, securityquestion.Theoperationsofthisclassaredownload(),login(),search(),register().

3) **Administrator:** It consists of four attributes and two operations. Theattributes are name, password, email id, admin id. The operations ofthisclass areupdate(), record().

4) **Book:** It consists of four attributes and two operations. The attributesarebookid,bookname,author,andprice.Theoperationsofthisclassareupdate(),add().

5) **Visitor:**Itconsistsoftwoattributesandtwooperations.Theattributes are user name, email id. The operations of this class aresearchbook(), readbook().

6) **Download:**Itconsistsoftwoattributesandtwooperations.Theattributes are user id, book id, date, and amount. The operations ofthisclass aresearch download().

7) **Logout:**

Logoutfromthesystem.

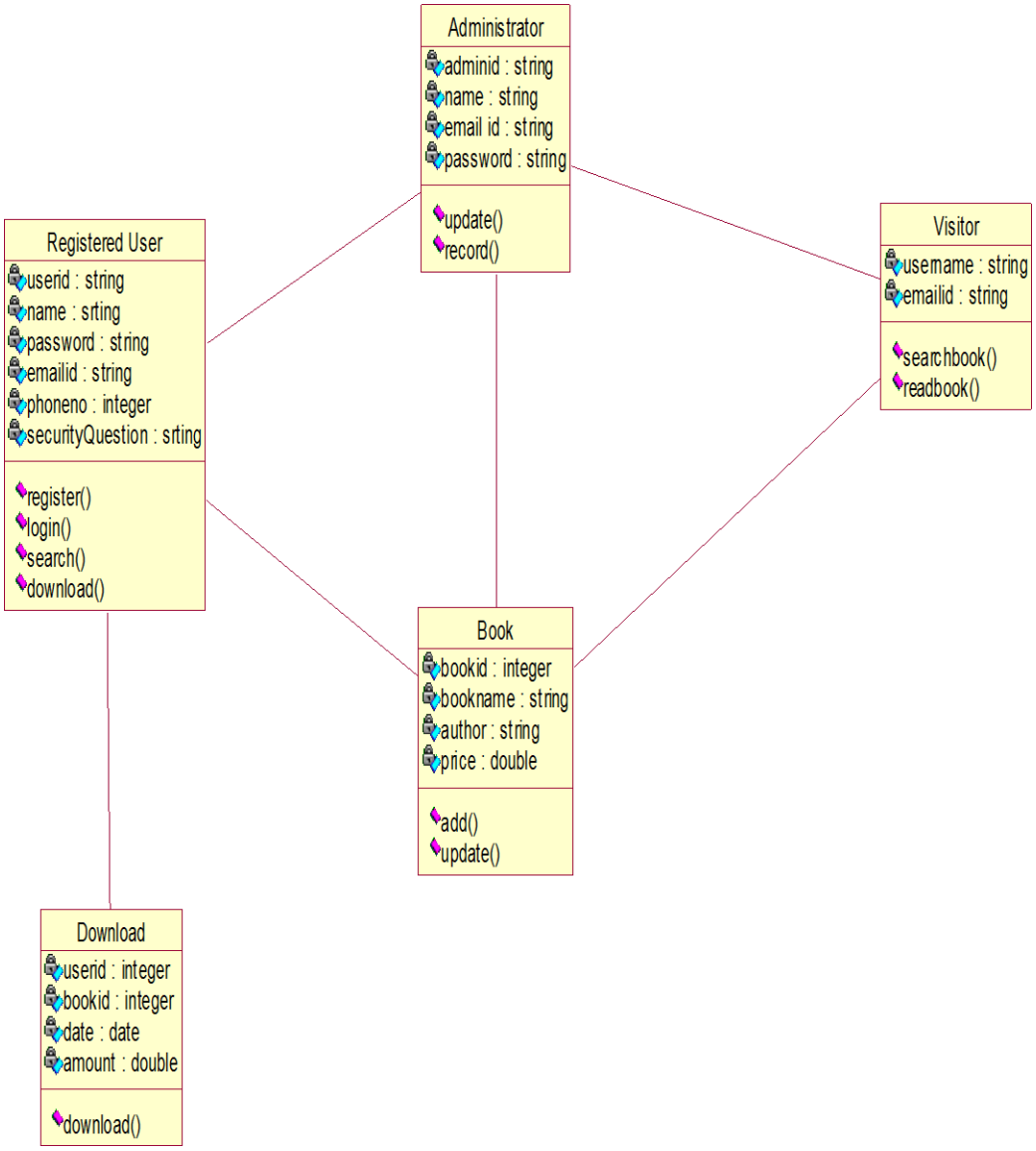


Fig.65.CLASSDIAGRAM

INTERACTIONDIAGRAM:

- A sequence diagram represents the sequence and interactions of agivenUSE-CASEorscenario.Sequencediagramscancapturemostoftheinformationaboutthesystem.Mostobjecttoobjectinteractions and operations are considered events and events includesignals,inputs,decisions,interrupts,transitionsandactionstoorfromusers or externaldevices.
- An event also is considered to be any action by an object that sendsinformation.Theeventlinerepresentsamessagesentfromoneobject toanother,inwhichthe“form”objectisrequestinganoperation be performed by the “to” object. The “to” object performstheoperation using amethod that the classcontains.
- It is also represented by the order in which things occur and how theobjectsin the system send messageto oneanother.
- The two sequence diagram and two collaboration diagram one forRegistereduserand another for visitoraregiven below

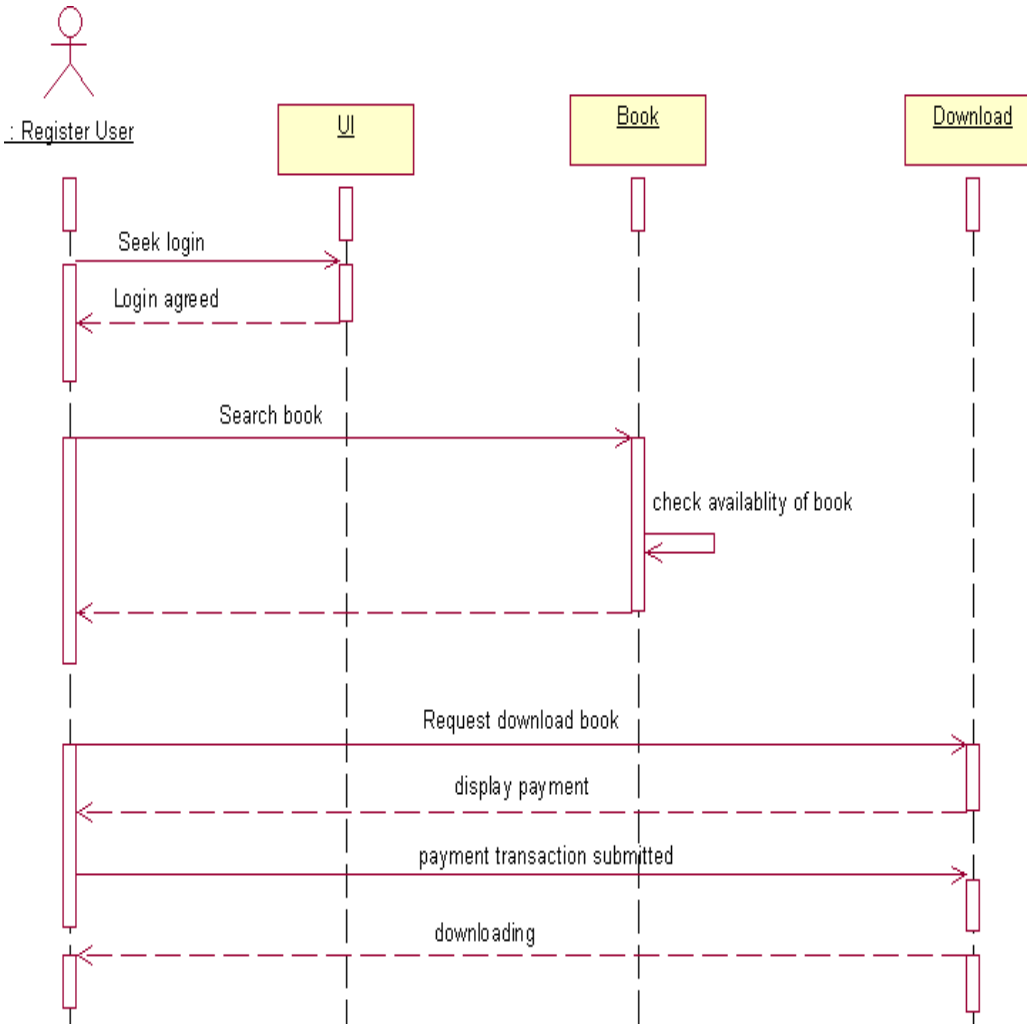


Fig.66.SEQUENCEDIAGRAMFOR REGISTEREDUSER

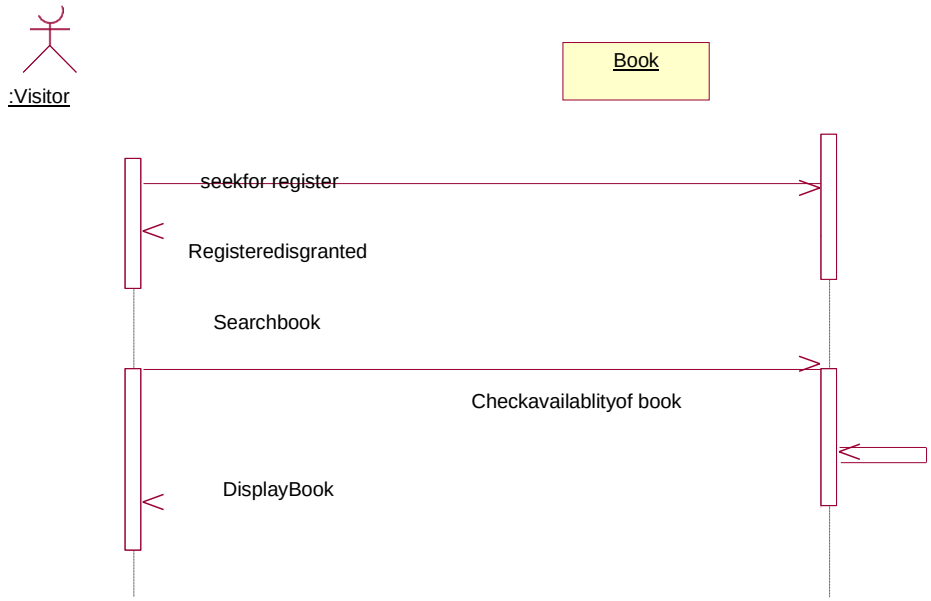


Fig.67.SEQUENCEDIAGRAMFORVISITOR

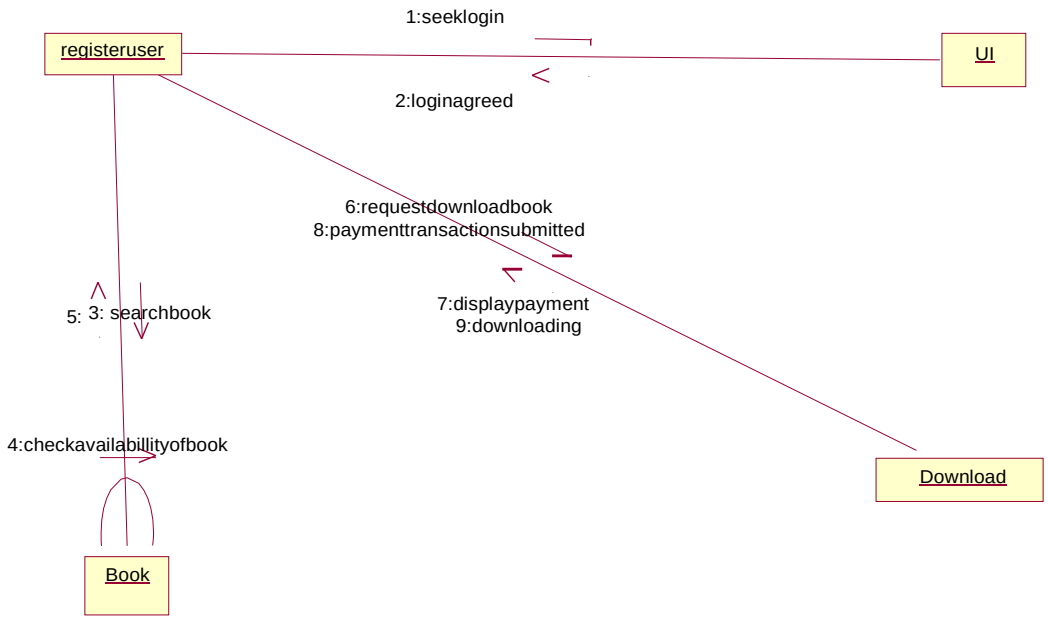


Fig.68.COLLABORATIONDIAGRAMFORREGISTEREDUSER

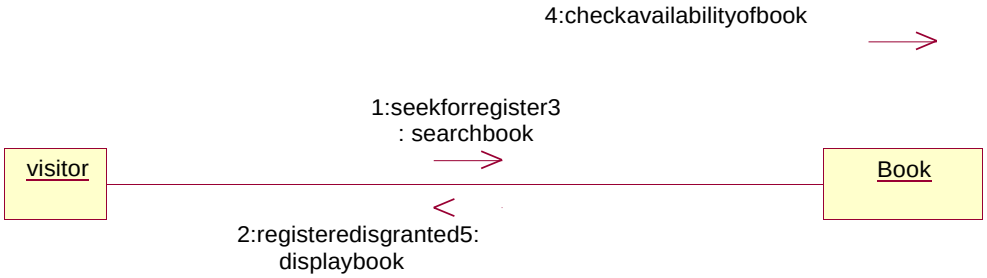


Fig.69.COLLABORATIONDIAGRAMFORV ISITOR

The diagrams show first login to the system and the pin no is enteredandcheckthepin.Getnoandvalidatepasswordcheckthecondition basedon conditionbookissueandreturnaredone.Paytheonlineandrenewed .Finallylogoutfromthesystem.

STATECHARTDIAGRAM:

The diagrams show first login to the system and view the books andsearch for required book is done and then required book is downloaded andamountpaid in online .Finallylogoutfromthesystem.

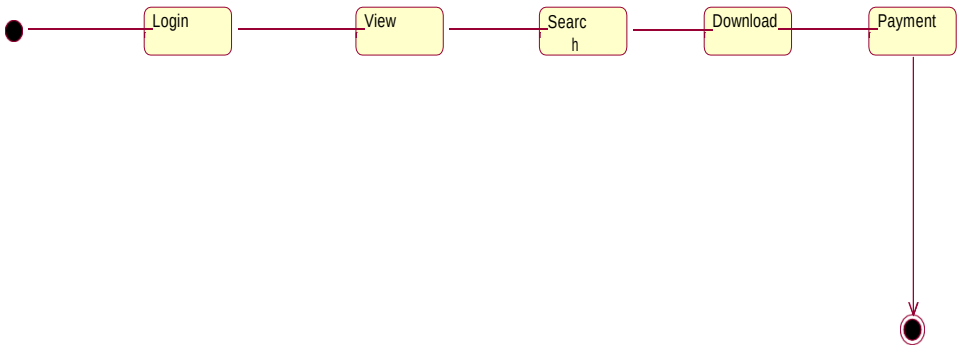


Fig.70.STATECHARTDIAGRAM

DEPLOYMENTDIAGRAMANDCOMPONENTDIAGRAM

Deployment diagrams are used to visualize the topology of thephysical components of a system where the software components aredeployed.

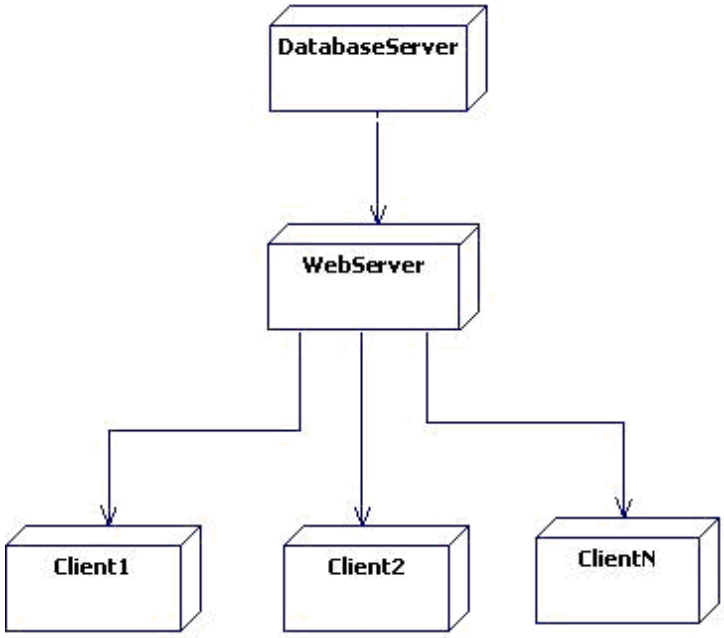


Fig.71DEPLOYMENTDIAGRAM

COMPONENTDIAGRAM

Componentdiagramsareusedtovisualizetheorganizationandrelationshipsamong components in asystem.

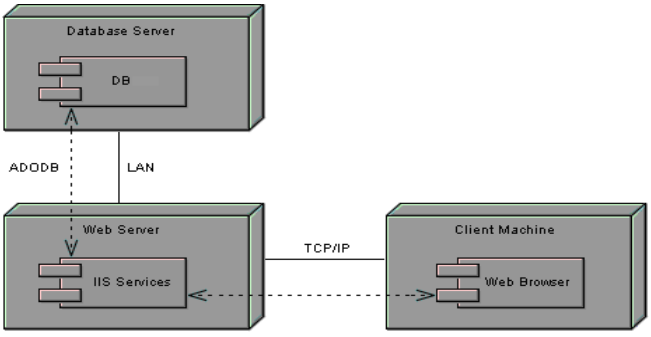


Fig.72.COMPONENTDIAGRAM

TASK10:RECRUITMENTSYSTEM

AIM: To create an automated system to perform the Recruitment SystemProcess.

(I) PROCEDURE:PROBLEMSTATEMENT:

TherecruitmentsystemallowsthejobseekerstoviewthejobopportunitythroughAdvertisementandhelpstoapplyforthejob.Theorganizationshortlisttheapplicantsfortheinterview.Theshortlistedapplicantsundergothroughaprocessof TestandInterview.TheHRdepartment selects the Applicant based on the performance in the Test andInterview. Finally the recruited applicants are informed. This system makesthe task of the job seeker easier rather than waiting in queue for enrollment.This also reduces the time consumption for both for the job seeker andorganization.

(II)SOFTWAREREQUIREMENTSPECIFICATION:

INTRODUCTION

Recruitment System is an interface between the Applicant and theOrganizationresponsiblefortheRecruitment.Itaimsatimprovingtheefficiency in the Recruitment process and reduces the complexities involvedinit to the maximum possibleextent.

PURPOSE

If the entire process of ‘Recruitment' is done in a manual manner thenit would takes several days for the recruitment. Considering the fact that thenumber of applicants for recruitment is increasing every year, an AutomatedSystembecomesessentialtomeetthedemand.Sothissystemusesseveral

programminganddatabasetechniquestoelucidatetheworkinvolvedinthisprocess
.

SCOPE

- TheSystemprovides anonlineinterfacetotheuser wherethey canfillin theirpersonal details and apply forthejob.
- TheOrganization(HR-Department) concernedwiththerecruitmentprocess can make use of this system to reduce their workload andprocesstheapplication in a speedymanner.
- ProvideacommunicationplatformbetweentheApplicantandtheOrganization.

DEFINITIONS,ACRONYMSANDTHEABBREVIATIONS

- **Organization**
  Refers to the super user who is the Central Authority with theprivilegetomanagethe entiresystem. Itcanbe anyhigherofficial intheHR department.
- **Applicant**
  Onewho wishes to applyforthe job.
- **RS**
  Referstothis RecruitmentSystem.
- **HTML**
  MarkupLanguageusedforcreatingwebpages.
- **J2EE**
  Java2EnterpriseEditionisaprogrammingplatformjavaplatformforde veloping andrunning distributedjavaapplications.

- **HTTP**

  HyperTextTransferProtocol.

- **TCP/IP**

  Transmission Control Protocol/Internet Protocol is thecommunicationprotocolusedtoconnecthostsontheInternet.

TECHNOLOGIESTO BEUSED

- HTML
- JSP
- JavaScript
- Java

TOOLSTOBEUSED

- EclipseIDE(Integrated DevelopmentEnvironment)
- RationalRosetool(fordevelopingUMLPatterns)

OVERVIEW

SRSincludestwosectionsoveralldescriptionandspecificrequirements

Overall Description will describe major role of the system components andinter-connections.

SpecificRequirements willdescriberoles&functionsoftheactors.

OVERALL

DESCRIPTIONPRODUCT

PERSPECTIVE

TheRSactsasaninterfacebetweenthe"Applicantandthe'Organization'. This system tries to make the interface as simple as possibleandatthesametimenotriskingthesecurityofdatastoredin.Thisminimizes the time duration for recruitmentprocess.

SOFTWAREINTERFACE

- **FrontEndClient**–TheApplicantsand Organizationonline interfaceisbuiltusingJSPandHTML.TheAdministrators'localinterface is built usingJava.
- **WebServer**-Glassfishapplicationserver(SQLCorporation).
- **BackEnd** -SQLdatabase.

HARDWAREINTERFACE

Theserverisdirectlyconnectedtotheclientsystems.Theclientsystemshaveaccess to the databasein theserver.

SYSTEMFUNCTIONS

- Theapplicant viewsthejobsthroughAdvertisement.
- Applicants applyfor thejob.
- TestandInterviewareconducted.
- RecruitedApplicantsareinformed.
- HRManagercangeneratereportsfromtheinformationandhe/sheisthe only authorized personnel to add the eligible applicationinformationto thedatabase.

USERCHARACTERISTICS

- **Applicant**

  Thesearethe persons who desireto apply for thejob.
- **Organization**

  Thesearethepersonwithcertainprivilegestoannouncerecruitmentdepending upontheorganizationneed.He/Shemaycontainagroup

ofpersonsunderhim/hertopublishadvertisementandgivesuggestionwhetheror not to approvetherecruitment.

- **HR**

  He/ She is the person who upon receiving intimation from the RS,perform a personal verification of the applicants and see if he/she haseligibilityfortheadvertisedjobthroughaprocessofTestandInterview.

CONSTRAINTS

- TheApplicantsrequirea computer tosubmit theirinformation.

ASSUMPTIONSANDDEPENDENCIES

- TheApplicantsandHR musthavebasicknowledgeofcomputersandEnglishLanguage.

(III)USECASEDIAGRAM:

TheRecruitmentsystemusecasesare:

1. Advertisement
2. Applyforjob
3. Test
4. Interview
5. RecruitApplicants

ACTORSINVOLVED:

Actorsareasfollows:

1. Applicant
2. Organization
3. HR

ACTORSDOCUMENTATION:

- **Applicant**
  Applicant is an actor who applies for the job vacancy. If he/she getsselectedthenHR departmentsends the Interviewcallletter.
- **HR**
  HR is an actor who informs about the vacancy to their Organization.HR recruits the applicants based on the required skill for the vacantpositionandshortlistthem.HRisalsoresponsibleforInterviewScheduling.
- **Organization**
  OrganizationisanactorwhoannouncestheAdvertisementforvacancy.

USE-CASENAME:ADVERTISEMENT

Description: ThisUseCaseisinitiated byOrganization.Notifiesabouttherequiredjob vacancies

FlowofEvents:

1. HRinformsaboutvacancytoOrganization.
2. OrganizationannouncestheAdvertisement.

Pre-Condition:Vacancymustexist.

Post-Condition: Detailsaboutthevacancy areinformed.

USECASE: APPLY FORJOB

Description: This Use Case is initiated by Applicants. Online forms arefilledby theApplicants and submittedto the organization.

FlowofEvents:1. HRprocesses the filled forms.

2.HR selectsthelist ofeligibleApplicants.

Pre-Condition: Onlineformmustexist.

Post-Condition: Forms filled are stored in an Information System forprocessing.The filledforms aresent tothe HR.TheHR producesthelistofeligibleApplicants.

USECASE:SELECTAPPLICANTSFOR INTERVIEW

Description This Use Case is initiated by HR. The lists of selectedApplicantsare Informed .TheTestandInterviews areconductedbytheHRoftheregion that has thevacancy.

FlowofEvents:1. HRschedules theinterview process.

2. HRconductstestandinterviewfortheapplicantviaonlinesystem.
3. Whoclear theinterviewprocessareselected.

Pre-Condition: Applicantsmustmeeteligibilitycriteria.

Post-Condition: ApplicantsclearsinterviewprocessORdoesn'tclearinterviewprocess.

USECASE:TEST

Description: ThisUseCaseisinitiated bytheHR. Atestwill beconductedby theHR

FlowofEvents

- Theapplicantsundergo theTestprocess.
- He/Sheclear ornotcleartheTest.
- **Pre-Condition:**Applicantisselected fortheTest.
- **Post-Condition:**ApplicantclearornotcleartheTest.

USECASE:INTERVIEW

Description: This Use Case is initiated by the HR. An Interview will beconductedby theHR

FlowofEvents1.TheapplicantsundergotheInterviewprocess.

2.He/Sheclearornot cleartheInterview.

Pre-Condition: Applicant is

selectedforthe Interview. **Post-**

Condition:

Applicantclearornotcleartheint

erview.**USE CASE:**

RECRUITEDAPPLICANTS

Description: ThisUseCaseisinitiatedby theHR.TheselectedapplicantsarerecruitedbyHR.

FlowofEvents1.Theapplicants cleartheTest.

2.Theapplicantsclearthe Interview.

Pre-Condition: ApplicantisselectedfortheTest andInterview.

Post-Condition: ApplicantclearsTest and Interview.

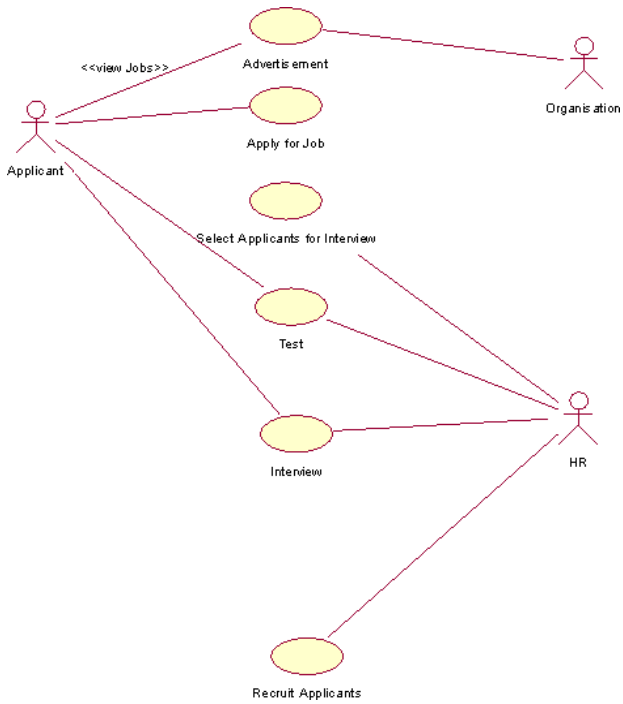


Fig73.USECASEDIAGRAMFORR ECRUITMENTSYSTEM

ACTIVITYDIAGRAM:

The activity diagram represents the series of activities that are ocurringbetween the objects.Following is activity diagram which represents therecruitmentprocess .

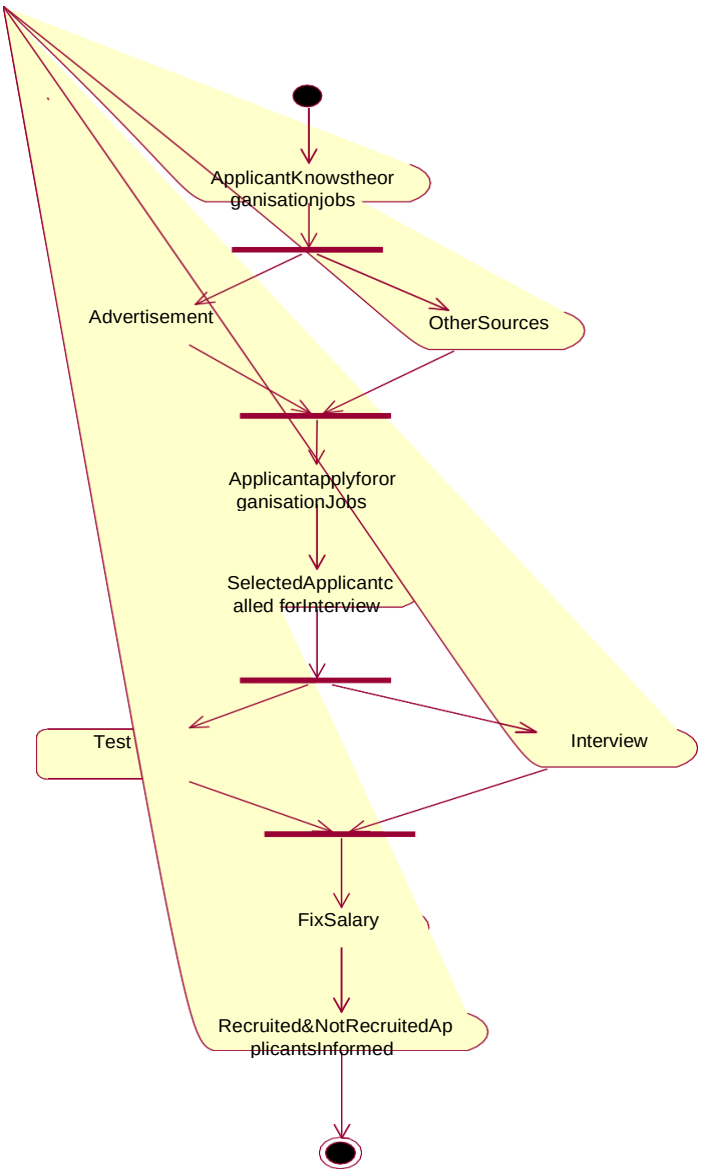


Fig.74ACTIVITYDIAGRAMFORR ECRUITMENTSYSTEM

CLASSDIAGRAM:

The UML class diagram illustrates class interfaces and their actions.Theyareused forstaticobjectmodeling.Theproblemdomaindescribesthestructureand therelationships among objects.

TheRecruitmentsystem classdiagramconsistsof fiveclasses

1. Applicantclass
2. Organizationclass
3. HRDepartmentclass
4. Advertisementclass
5. Recruitmentclass

APPLICANTCLASS:

It consists of eight attributes and two operations. The attributes areAppl-id,Appl-name,Appl-DOB,Appl-Gender,Appl-Qualification,Appl-phone, Appl-emailid, Appl-addr.The operation of this class are view jobs ( )andApply ().

ORGANIZATIONCLASS:

The attributes of this class are Org-name, Org-Ph-No, and Org-Addr. TheoperationofthisclassareHR-Dept(), Mkt-Dept() andAccount-Dept( ).

HRDEPARTMENTCLASS

The attributes of this class are Emp-id, Emp-name, Emp-DOB, Emp-Gender,Emp-Phone,Emp-emailid, Emp-addr.TheoperationarePlanning( ),Policies(),Strategies()

ADVERTISEMENTCLASS

The attributes of this class are Adv-No, Adv-Name and Adv-description.Theoperation is display( ).

RECRUITMENTCLASS

TheattributesareRec-DesignationandRec-Totalcandiate.Theoperation isrecruit( ).

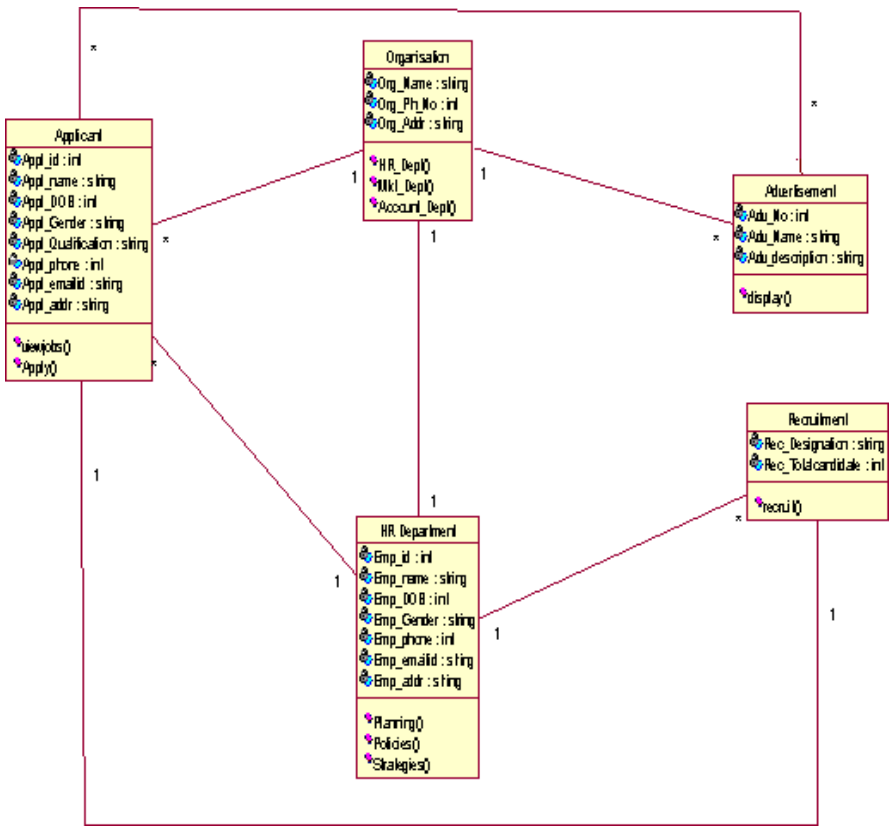


Fig.75.CLASSDIAGRAMFORRECRUITMENTSYSTEM

INTERACTIONDIAGRAM:

- Asequencediagramillustratesakindofformatinwhicheachobjectinteracts viamessage.It isgeneralizebetween twoor morespecializeddiagram.

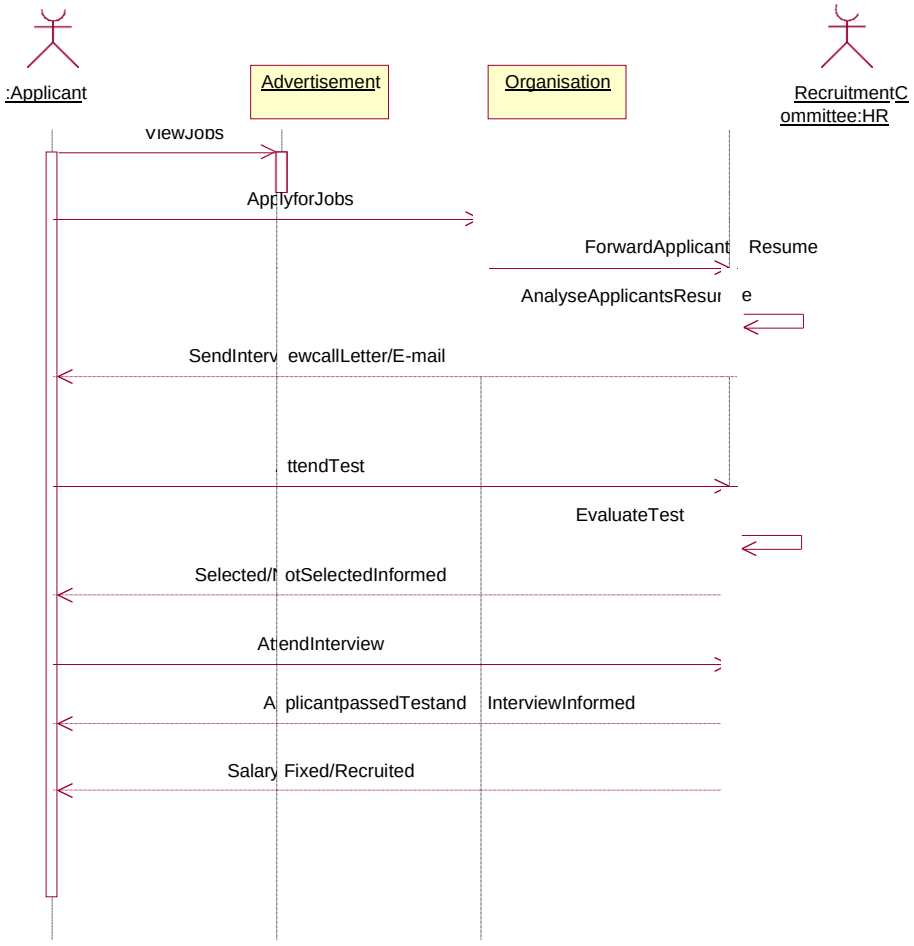


Fig76SEQUENCEDIAGRAMFORRECRUITMENTSYSTEM

- Communication diagram illustrate that object interact on a graph ornetwork format. In collaboration diagram the object can be placed inanywhere on the diagram. The collaboration comes from sequencediagram.

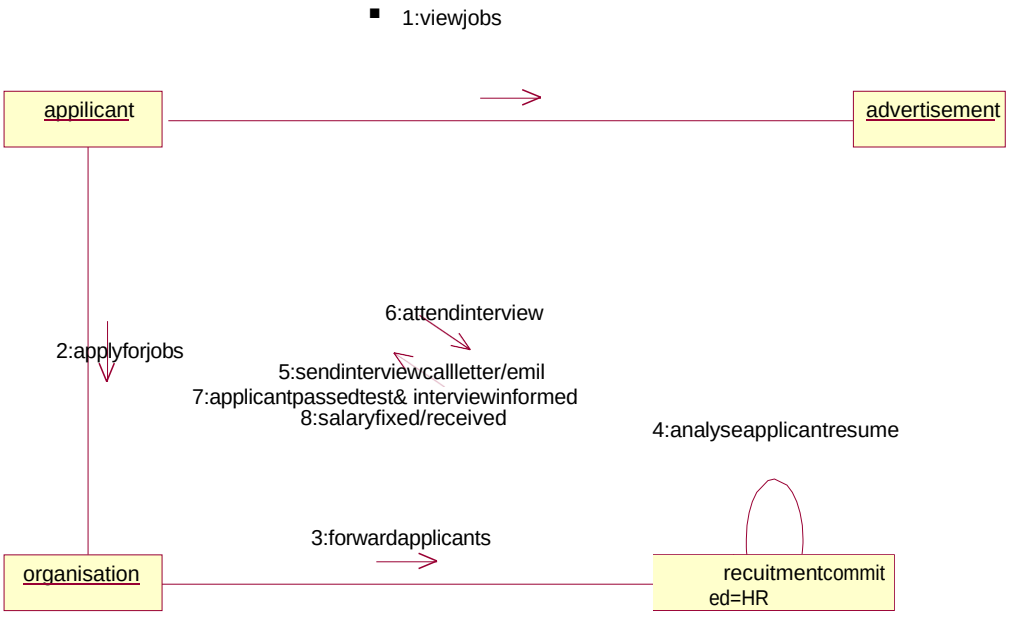


Fig77COLLOBORATIONDIAGRAMFORR ECRUITMENTSYSTEM

STATECHARTDIAGRAM:

- Everyobjectundergoesthroughsomestateandon receivingsomeevent the state gets changed. This transition of the state can berepresentedby thestatetransitiondiagram.

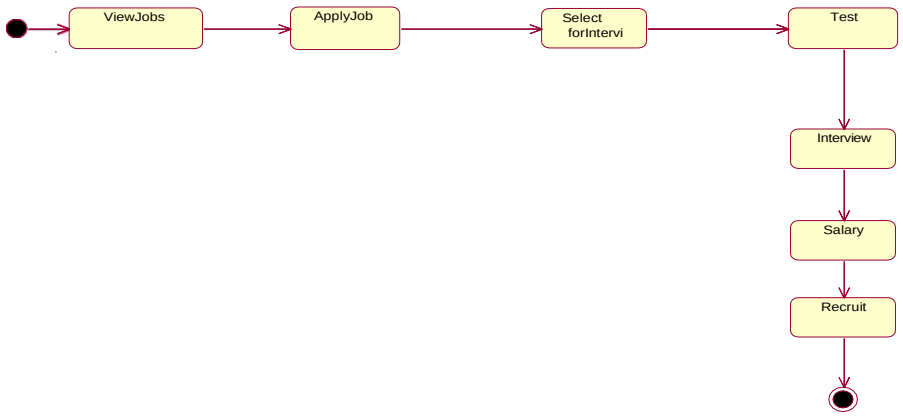


Fig.78.STATECHARTDIAGRAMFORR ECRUITMENTSYSTEM

DEPLOYMENTDIAGRAM

Deployment diagrams are used to visualize the topology ofthe physical components of a system where the softwarecomponents aredeployed.

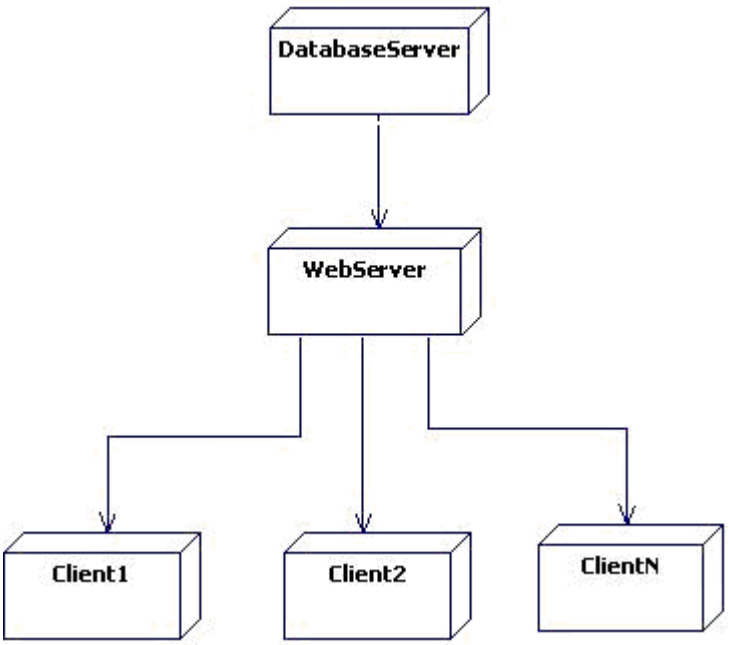


Fig.79.DEPLOYMENTDIAGRAM

COMPONENTDIAGRAM

Component diagrams are used to visualize the organization andrelationshipsamong components in asystem.

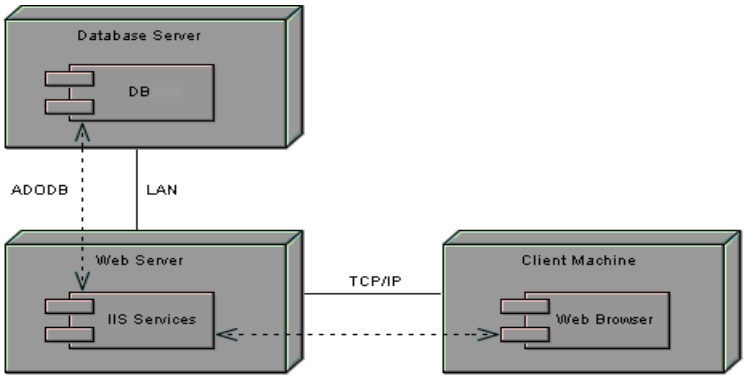


Fig.80..COMPONENTDIAGRAM