

ChineseUniversityofHongKong
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Topic:EntertainmentInformationSystemusingCORBA

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EntertainmentInformation SystemusingCORBA

Abstractoftheproject

PersonalEntertainmentInformationSystem(PEIS)isprovidingtheentertainment informationsuchmovienews,preview,listing,TVlisting,musicalbumnews.In marketnow,therearemanyentertainmentinformationavailable ontheInternetfrom manybigbroadcastingmediacompanies.InHongKong,somewebsitesalsoprovide suchservices.Themainfeaturesofthissystemarethepersonalization,andthe multimediadeliveryengine.Thesettingofthispaperwillbeasfollows .First,about 10pageswillspendontheintroduction,suchasthedetaildescriptionofthissystem, theliteraturestudyandtheimpactofthissystemtothesociety.Second,about10 pageswillbeusedtodescribethesystemdesign.Then20pageswill beonthe descriptionofthesystems specification.Last,10pageswillbeusedonthe preliminary implementnotes

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Introduction

BriefDescriptionofthe entertainmentsystem

Theentertainmentsystemhas the abilities to deliver the up-to-date entertainment information to the users. The entertainment information is mainly on three areas now. The first one is the movie information. The information includes, the movie listing, box office rank, the ticket selling information, the movie review clip and related news. The second one is the Music information. In the market, there are different styles of music. The music information will include the music record information, purchasing information and their music preview clip. The third one is the TV information. In US, the channels available for the domestic are enormous, the need of the TV listing is urgent for them. Besides, they need some commentary on what is good on the TV. In Hong Kong, the demand of the TV listing and information is not as urgent as the US. However, since there are about 25 channels in Hong Kong, it is welcome by most people to have a TV listing telling them what is good tonight.

Besides the domestic users, this system will be targeted for the media content provider. This system will be designed to be reusable, scalable and customizable. That means that when a media content provider wants to adopt this system. The only things required to do is to design the Layout object and Data connectivity objects. For personalization and content delivery modules, they will be designed to be reusable. This system may save time for a Media company to build a personalized content website on their own.

The last target user group of the system are the filmmakers and film buyers. The system will be modified to let the filmmaker stop putting their film on the system. The film buyers can search, browse those new films through the system and they can make deals on the system to buy the copyright of the films.

There are three technologies being used and adopted in this project. They are the

CORBA,PersonalizationandMultimediaContentDelivery.

CORBA

The system will be implemented on CORBA platform. CORBA is Common Object Request Broker Architecture. It is a new and famous distributing system model nowadays. It allows the system components built on different platform and language. Besides it has many built-in services, such as naming services, multi-threading, and load-balancing.

Personalization

Personalization is a critical tool for most of the websites which provide enormous information. The project will try to demonstrate the power of the personalization for individual client. In the project, the demonstrated system will use several personalization techniques to do the customization for the users. The users can receive data tailored made content and design when they log into the page.

Content Delivery

Content Delivery means a special channel or facility to let the client have the content whatever the type of the content is text, audio, or even video. For the text content delivery, the method is simple. The project will adopt HTML or XML. For the audio and video, in order to provide better quality, the real-time protocol will be used to let the user get the streaming content.

Similarprojectsaroundtheworld

www.Mov3.com&www.filmplay.com

Thesewebsitesarethetwomajormovieinformationdatabasesin HongKong.These twowebsitewouldhavesimilarcontent.Theyhavethecurrentmoviepreviewand commentary.Besides,theyhavetheupcomingmoviescheduleandmoviepreviewer. TheyalsohavetheboxofficeofthefilmavailableinHongKong.Last,they providesomegame,membercorner,moviestars'pictureandnews.

BritishSkyBroadcasting

ThecompanyuseCORBAto buildanentertainmentssystem.This systemcontains the Sky'schannelsschedule,programinformationnews,andsomeinteractivegames. Thereare text,videoandaudioinformationfromthem.Besides,theyhavesomeadditional functionstofacilitatetheuserssuchassearching,andpersonalization.Thewebsiteis builtbyIONA'sOrbixforCORBAplatform,Oracleforthedatabase,Javaforthe programmingandJSPforthewebinterface.

Entertainment.com

ThiswebsiteislaunchedbyTimeWarner.Itmainlyprovidestheentertainment information,suchasentertainmentnews,musiccharts,movielisting,boxoffice number,TVlistings,ratingandsomeothergames. Italsobuiltthevirtualcommunity intheweb.Thefeatureofthiswebsiteisthatitprovideseveralonlineprogram.

Technology Impact

Problem solving

The impact of this system is only solution of the existing problems. In the Internet, it exists two major problems. First, it is the growth of information is too fast such that the available information on the Internet is booming. Thus, some of the information becomes noise to the Internet audience. This problem is called information overflow.

The next problem is the E-commerce platform. E-commerce is one of the famous topics in the Information Technology Industry. The technology of the E-commerce is quite mature now. However, there are not much good E-commerce model on the market which can be better than the traditional commerce. In the later section, the benefit of system to the E-commerce will be discussed.

Information overflow

In the Internet world now, there are lots of information. People are hardly to get their irrelevant information from the Internet. Even they use the search engine or portal, they can't get their favor information. Moreover, the information from the search engine and portal is so much that they can simply show one or two pages to list out the information. They common will show the information hierarchically or page by page. For the hierarchical method, the user can get into their favor information by this requires many overheads on showing the hierarchy pages. Besides, these hierarchies are done manually. For the page by page method, the user may have the chance to get its information on the first pages, but probably some important information will be put in the later pages and thus user will lose some of their information.

To solve this existing problem, the personalization is adopted to these web portals and also this project. How the personalization help in the problem of information overflow. First, the system will summarize a most fit page for the

users. The pages will be much more less than the pages in the portals since each user won't digest too much information. They just want to read their most favorite information. If all the important information is put into one page. This can save in many ways. First, the download time of the page is saved since the personalized pages are much slimmer than all information available pages. Second, this can save the number of user request. Sometimes, the users require to click several pages, http requests, in order to get their irrelevant information. If these requests are fewer, the congestion of the web server can be solved. This also saves the time of users to get their information since the time of retrieve one page will be much shorter than retrieve three or four pages.

Facilitate the E-commerce

The personalization entertainment information system can be as a frontend for those who want to do e-commerce related to the entertainment. For example, an online movie selling system. This system can provide the online transaction to buy the movie ticket. Through this system, user can choose when to see the movie, and which Theatre that they will go to. Besides, they can choose their own seat. With this system, the theatre can save the number of labor in their counter to sell the ticket and this can stimulate the utilization of the seat. This is because when there is no available for a particular time slot, the users can choose another time slot other than don't choose any.

However, it has one big problem. This system cannot attract people to go in and buy the tickets. With this system, the online transaction website can make use of the system to provide the movie information and news to attract the users. Since this is an information system not a buying system. This can attract the client to go in more frequently. Besides, the personalization can help the companies to know which group of users are they royal customers. They can also identify the customer in order to do some direct market.

Commerce Impact

For the commerce, the system can be applied in three ways. First, the system can be migrated to a content provider database for helping them set up a similar system. Second, it can be applied to Business to Business (B2B) E-commerce model, such that the system becomes a marketplace for gathering the buyers and seller of the entertainment resources. Third, trivially, the system can be applied to Business to Customer (B2C) E-commerce model. That is the system will be the front end for the entertainment seller to sell their product to their target customers. It also provides a good place for the people who want to entertain to shop around.

Technology Provider

In this high-speed Internet era, most of the commerce institute cannot keep the pace with the technology. Most of them have the idea but not the technology. This system can help the old-fashioned media companies to put their contents from the paper, Television or radio to the Internet in order to keep their competitive with others.

How to apply the technology to these companies. Since the system is built by the CORBA, and Java. One of the main features of CORBA is that it is a distributed platform and can support different machines. That can help the companies available to set up without buying some new machine. Besides, the language used in the system is Java. The characteristic of Java is that it can write once, run anywhere. That means Java are machine-independent. If the system developed under Windows NT environment using Java, it can be ported to Solaris without any changes to the system program. Besides, this system can provide a web-based client interface for the user to retrieve the content. However, this system is not a total solution, the user of this system needs to customize the data connectivity and the user interface part.

B2BE -commercemodel

In above, it is said that this system can be applied on Business to Business E-commerce model, how can this be done? What is the philosophy inside Business to Business E-commerce model means that the transactions between companies are done on the Internet. In the current market, the movie, VCD, CD are purchasing through the traditional buying process, such as the making the purchasing order, receive the sale order, etc. This kind of process wastes a lot of time, labor work and administration cost. With the rise of the E-commerce, this kind of workflow are gradually replaced by the E-commerce model, which is the ordering and transaction of the products can be done online. This means those cost can be saved and thus the profit margin is increased.

This system can be the bridge between the content resource providers such as the filmmakers, the music producers, the VCD manufacturers and TV producers and the business content consumers such as the cinemas, the music record shops, the VCD shops and TV producers. When the consumer comes to this system, they can know the latest information available on the world. For example, a music record shop boss logs into this system and finds that the latest album of Jack Cheung will be released next month, and he wants to order 50 packs for his shop. With E-commerce modules added to the system, he can make a pre-order to the supplier immediately. In this case, both the shop and the supplier will benefit. For the shop, he can start pre-order the popular CDs. For the supplier, they can estimate more precisely on how much pieces to be produced.

Another Case, a local cinema, the film buyer of the cinema looking for the films around the world to show in his cinema. If he looks into the system, he can find out the up-to-date movie on the system and view the preview clip of the movie. If he finds that the movie is suitable for his cinema, he can make the order directly on the system.

Last Case, TV broadcasting company in US wants to open a channel for the local Chinese. They want some of the programs in this channel are from some soap dramas produced in Hong Kong. This system can provide the TV listing information in Hong Kong. Like the movie, there are some preview clips for the people to view, once he thinks that the program may be good for his company. He can start making deals by retrieving information from the TV producers.

B2CE -commercemodel

Inthe introductorypartofthissection,thissystemcanbesaidtosupportthe BusinessstoCustomerE -commercemodel.Thebusinessstocustomer e-commerceistalkingaboutputting tradition-retailingshopontheInternet.That meanspeoplecanseetheproductcatalogandbuythingontheInternet.Oneof thefamousB2Ce -commerceistheAmazon.com.Amazon.comistheonline booksellerwhichthelargestoneintheworld.Itfirstprovidesbooksfors elling. Recently,itasmuchmoreproductssuchasMUSIC,Video,electronics,etcto besold.

HowoursystemworkontheB2CE -commerce?Firstthesystemwillprovide theusera customizedpagetoviewtheirmostfavoriteinformationafterthey login.Th einformationcontains therelatedproductinformation.ForExample,a userlogintothsystem,thereisasummaryofthelatestromanticmoviesfor him.Then theusermayclicktoseethedetailofoneofthelatestrelease.Then systemwillguidehimto theticketsellingcornertobuythetickets.Besides,as thereismanyclients'informationinthsystem.Thecinemacanprovidesome promotionplanforthefrequentlycustomersinordertokeeptheirloyalty.

FortheMusicinformation,aftertheuser logintothsystem,hecangothis personalizedinformation.Theusercanviewthemusicchartfromthe broadcastingmediainHongKong.Alsohecanseethelatestreleaseofthemusic onthemarketing.Hecanalsolistentothepreviewofthemusic.Whe nheis interesttobuythemusic,hecanviewthepriceandthedetail.Hecanalsobuyit onlineandgettheCDathome.

SystemDesign

Designgoals

Inthesystem,severalgoalswillneedtobeachieved.

Thegoalareasfollows:

First,thesystemcanabletostoreanyentertainmentinformation.

Second,thesystemcanadopttoanyexistdatabase.

Third,thesystemcandopersonalization.

Fourth,thesystemshouldhaveabletodeliverythereal-timecontent.

Fifth,E-commercemodulecanbeaddedtothesystem

Sixth,Data miningmodulecanbeaddedtothesystem.

Seven,thesystemcanbescalableandreusable.

CanstoreanyEntertainmentInformation

Inordertomakethesystemanentertainmentinformationsystem,itshouldbeabletoimportanyentertainmentinformation.Otherwise,thesystemcannotsaytobeentertainmentinformationsystem.Ifthesystemcanonlycontainthemovieinformation,itisonlyamoviedatabase.

Theentertainmentinformationincludethefollowingitem:

1. Movieinformationsuchasmovietitle,scheduleandboxoffice....
2. MusicinformationsuchasCDtitle,songlistingandprice.
3. TVinformationsuchastheTVschedule,TVprogramdetail,etc.
4. VideoinformationsuchastheVideotitle,thevideocontentdescription,etc.
5. Gameinformationsuchasthegametitle,thesystemrequirementofthegame.

Able to connect any entertainment information database

Since there are much information around the market, it is impossible to maintain the information from one database. Probably, the information may be from the different databases. For example, there is one database for the movie data. Another database is storing for the music data and one database for the TV information.

Besides, to enrich the information available on the system, it is a trend to connect the system from the movie provider and content provider. Thus, the system may be designed to be connected to different relational database management systems, such as Oracle, Sybase, or SQL server. This is because different information providers may use different databases. Besides, there will be different schemas among different information providers. In this case, the system should have a common schema which suits all the related schemas.

Able to do personalization

Personalization is a need to improve the relationship between the clients and the system. Most information systems on the Internet are the same among different users. However, most of the users want their own layouts such as the position of the information component, the theme color, and the background of the pages. Besides, most of these websites require the user to click many times in order to view their information. When they enter the websites next time, they are required to repeat the action again. It is quite un-user friendly for most people. Therefore, personalization should be done in the system in order to increase the hit rate of the system.

Able to deliver real-time content

For much entertainment information, it contains the multimedia contents such as the text data, audio data and video data. For the text data, the system can deliver in the normal way, such as using the TCP/IP or HTTP to deliver the data to the client. However, for the audio and video data, these two kinds of data are time-critical data. If the system delivers the whole data files, the clients require to wait until the whole data file is downloaded to their system. This method is quite old-fashioned and not friendly

enough. The time to download such as video file is quite long. For example, a movie clip has about 10MB, if the user has a 2.8Kbps connection, he should wait for 50 minutes in order to view the movie. So, it is infeasible for many users. So, a real-time streaming of the multimedia delivery should be done.

Able to add E-commerce modules

The ultimate goal of this information system is to improve the E-commerce popularity. Without the online transaction, the information system will be not profitable. Since, the opportunity of making profit on the Internet is doing the E-commerce, the main goal of providing those information is to stimulate the profile of the existing entertainment business. If the E-commerce module is added, users can directly purchase the product once they find the product is good to them from the information.

Able to do data mining

In order to make E-commerce doing better, some data mining can be done over the system. With the data mining, the entertainment supplier can know the association between the products such that they can create some sales plan for their customers. Besides, they can identify the target groups for each of their product. This can help on deciding their market strategy. Last, the customer behavior can be mined from the system logged data. With the customer behavior, the company can do many actions such as sending some promotion plan to the users, some discounts or special gifts to their target users.

For example, the system analysed customer A like to see action, scientist fiction movie on the cinema, but like to see romantic, dramatic movie by buying the VCDs. Then, the company can make a promotion that give couple to buy the romantic video for customer A if he has bought the action movie for three times, or vice versa.

Scalable and Reusable

The system is also aimed to be scalable and reusable. For the scalability, since there will be more and more information gather into the system if the system become popular. So the system should design to be scalable in order to meet the future requirement. The areas of the scalability is as follows:

- i. The system is scalable on the type of entertainment information. Currently, the system is available to accept movie, music or TV information. However, in the

future, there may be much more entertainment information, which may attract the customer. For example, the video game is one of the popular entertainment events among the youth, it will be much popular in the future. Besides, there may be some video on-demand services in the future after the broadband infrastructure is ready.

- ii. The system is scalable on the location. Since the Internet is a world-wide connected network, every information on the Internet can be anywhere in the world. As the system is built on the Web platform, the entertainment information can serve at different places around. Therefore, the system should be able to expand among the country boundary. For example, the data imported from Hong Kong, mainland China or Japan can be seen around the world. The people around the world can access the product available to these countries through this system.
- iii. The system is scalable on the language. As the final goal of providing the information services is to help the B2C e-commerce. Therefore, the language should be localized on the customer's native language. For example, in mainland China, the people using the Internet may know very little English. If the product wants to sell to them, the description and information of the products should be represented in simplified Chinese in order to persuade them to buy. This case will also happen to Japan, France, and those countries whose native language is not English.

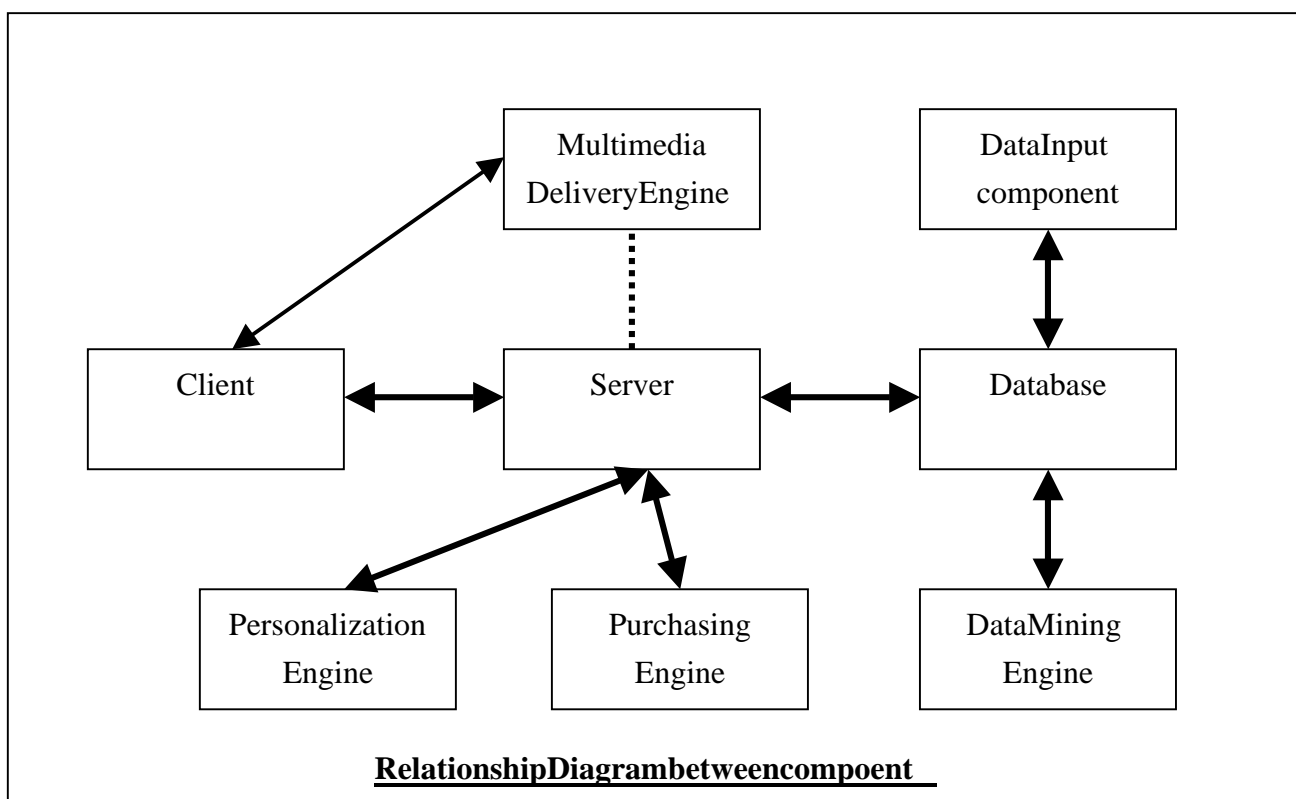
SystemArchitecture

The system architecture contains several major components. Every component is doing the different jobs. Each component can be viewed as a black box, there will be data into it and it will output other data after it does the processing. The data between the components will pass on the network.

Here is the list of the major components:

1. Database
2. Data Input Component
3. User Client
4. Server
5. Personalization Engine
6. Data Mining Engine
7. Multimedia Delivery Engine
8. Purchasing Engine

The following diagram will show the relationship between these components:



Explanationofdifferentcomponents

DataInputComponent

Thiscomponentisresponsiblefortheimportingdatafromtheexternalsourcetothethe systemdatabase.Forexample,itisusedtoreplicatethedatabasefromacontent providersuchastheTVbroadcastingcorporate.Thiscomponentrequiretoreturn differentdatafromdifferentsourceintothegenericdatatabledefinedinthedatabase.

Database

Theatabasehasthemainroletostorethedatawillbeusedintheshystem.The data containsofthefollowing:

- i. Userdata,thedataincludestheuserlogininformation,userpersonal information.anduserpreferenceinformation
- ii. Contentdata,The dataisthedatastoredtheinformationprovidefortheusersof thesystem.The dataincludesthemovieinformation,musicinformation,TV informationandotheravailableinformation.
- iii. Useraccessdata,Thesedataareusedfordoingthepersonalizationand data mining.Withthesedata,thepersonalizationenginecanderivethecurrentuserfavor withoutasktheusersagain.Forthedataminingengine,itcantrackouttheuser behaviorandalsotheclusterthegroupofuserhavingssimilarhabit.

DataMining Engine

The dataminingengineisdoingthejobtoanalyzeandexplorenewknowledge basedontheloggeduseractions.Itisresponsibletoextractthevaluableknowledge fromtheuserwhichcanhelpinthesaleoftheproductsavailablebytheservices. Therearesomekeyinformationsshouldbeabletominerfromthedataminer.They are:

- i. Therelationbetweentheagegroupandentertainmentevent
- ii. Therelationamongtheentertainmentitemsfortheclient
- iii. Whichisthepotentialagegroupfortheservice?

PersonalizationEngine

Thepersonalizationengineisusedtodothecustomizationforeveryusers. Every usershavetheirownpreferenceonthecontenttheyread,andthelayouttheyread.

Thepersonalizationcanfirstentertaintherequirementsoftheusers toincrease their loyaltytotheservice.Itcanalsosavethedeliverytimefortheuser.

PurchasingEngine

Thepurchasingengineisusedfordoingthetransactionoftheentertainmentproduct orservices.Itautomatictransmitstheuserpurchaseorder tothesupplierthroughthe networkaftertheuserrequesttobuy.Thepurchasingenginewillthancollectthe feedbacktotheclientwhetheritstransactionissuccessornot.

MultimediaDeliveryEngine

Themultimediadeliveryengineisusedtodeliver ythetime -sensitivecontenttothe user.Time -sensitivecontentarevideoandaudiocontent.Theaveragesizeofthese dataareintermofMegabytes,soitisnotfeasiblefortheuserstodownloadthe wholefileandthenlisten.Therefore,thisenginei sbuilttostreamthesedata tothe userssuchthattheylistenorseethecontentwithoutwaitingdownloadedthewhole contentdata.

Server

Theserverisusedtotalktotheclient.For multimediacontent,theclientwill communicateMultimediadelivery engine.Forthecommondata,thecontroldataor userdata,theclientiscommunicatingwiththeserver.Besides,itwillhandletheback endoperationsuchastheloggingofuseraction.Tosummarize,theserveris responsibletodothefollowings:

- i. Accepttheclientrequestsanddothecorrespondingjob.
- ii. Logginguseractions.
- iii. Triggerthepersonalizationenginewhentheuserlogouttomaketheuser interfacebeingcustomizednexttime.

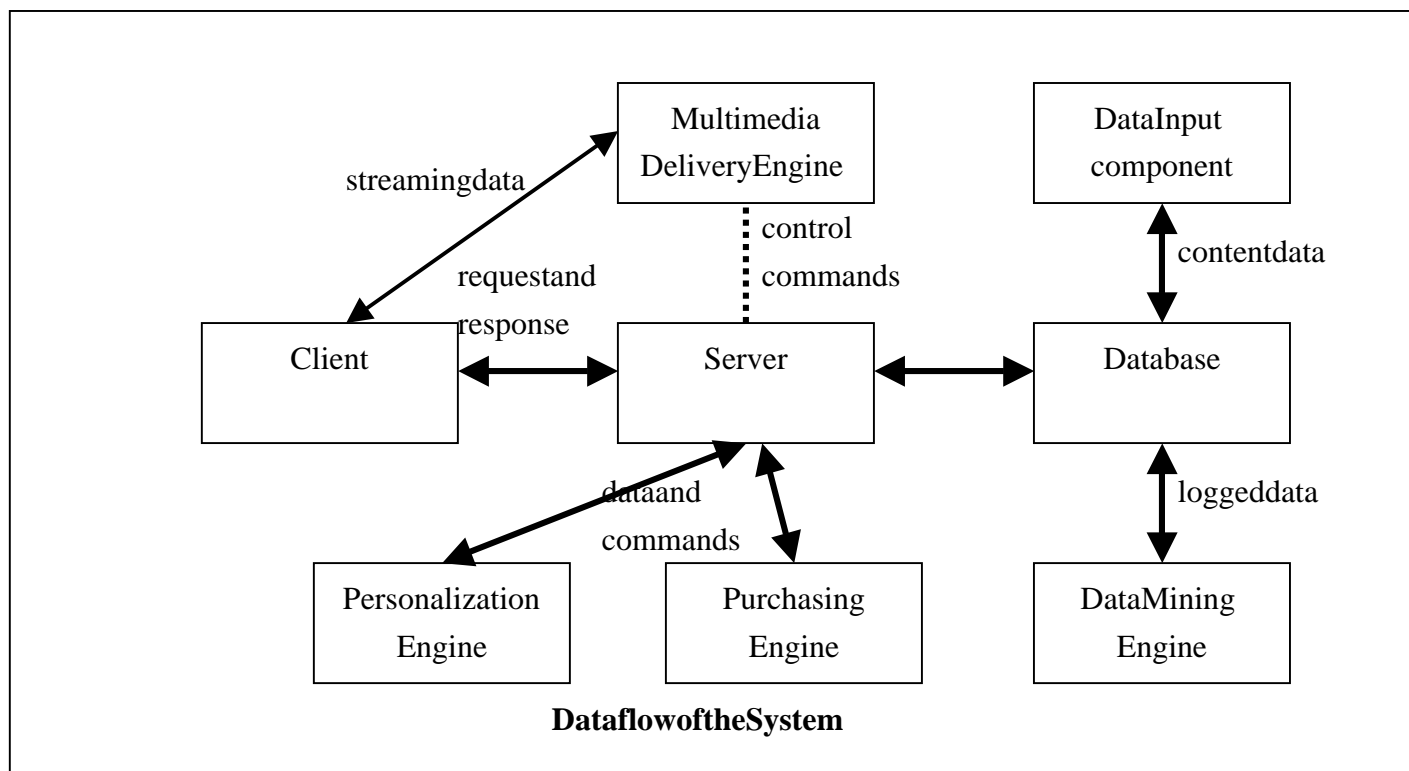
- iv. Triggerthepurchasingenginewhentheclientwanttobuysomethings.

Client

Theclientisusedtocommunicatewiththeuser.Thefollowingfunctionwillbe availablebyclient:

- i. Itisablelettheusertoviewthecontentavailableonthesystem.
- ii. Itcanlettheusertologin
- iii. Itcanlettheusertocustomizetheirprofileandlayout
- iv. Itcanlettheusertobuysometheproductavailableonthesystem
- v. Theusercantriggerthepersonalizationoftheirpageatanytime.

SystemFlow



The data flow of the system is as the above diagram. There are several connections between different components. The connections are:

1. Client to Server
2. Client to Multimedia Delivery Engine
3. Server to Personalization Engine
4. Server to Purchasing Engine
5. Database to Server
6. Data Input Terminal to Database
7. Data Mining Engine to Database

Client to Server

The connection between client and server are mainly for the request and response between the client and server. When the client requests some service, the server will receive the corresponding request and return a response after it does the processing. When the user comes to the service, it will communicate with the client. For example, the user logs into the system, the client will receive the user

id and the password, then the user id and password will send to the server for the authentication and give a response to the client when the user being verified or not.

Client to Multimedia Delivery Engine

When the user request to see a movie or music preview, the user will listen or view these content while they are downloading. In other word, the multimedia content of the system is streamed to the user when it makes such a request.

Original data communication method is not suitable for streaming of the content. First, the multimedia content are nearly to be real-time, when the data transfer too slow, there will be some delay on the screen. Therefore, there is another protocol to support this kind of data communication in order to make quality of the streamed acceptable for the user.

Server to Personalization Engine

After the server receive the log out signal or the personalization command from the user, the server will trigger the personalization engine. The personalization engine will ask for the server for the data they required in order to do the personalization. The data they required will be user profiles, user preference data, the user action is the last session and the user schedule. After the personalization process is done, the engine will send the result back to the server. The user can refresh to get it newly personalized pages.

Server to Purchasing Engine

When the user want to buy something on the system, for example, he want to buy a pair of movie ticket on the system. the user will send request to the server for making such a transaction. When the client do the transaction, he will first send his purchasing information, such as the product they are buying, the visa card to the server. The server will verify the data and redirect to the purchasing engine if the data is valid. As the purchase engine will connect to the corresponding shop offer the product, the purchase engine will translate the purchasing information into the standard format and transfer to that system. Then, it will wait for the transaction complete. When the transaction complete, it will reply to the server whether the transaction is success or not.

Database to Server

For the diagram, it is found that the components are not connecting to the database. Here is the reason of that is because of the generality. If too many components are connecting to the database, when the database is redesigned, every component needs to rewrite to suit the newly designed database. However, if the other components are talking to the server, but not the database, there is no need to rewrite of the components can be eliminated.

Then, what kind of data will be between the database and the server. The server will take care of any data. First the server will retrieve and send the user data to the database. The user data include the user login data, user profile or user preference. Second the server will send the user action history to the database. Third, the server will send the personalization result to the database. Last, the server will retrieve the content from the database.

Data Input Terminal to Database

Data input terminal is responsible for inputting data into the database. Therefore, the data from the data input terminal are the content data. The content data are the following:

1. movie information
2. music information
3. TV information
4. other entertainment information

Data Mining Engine to Database

Data Mining Engine will retrieve the data for doing the data mining. The data include the user information, user history actions, user selected category and the purchasing information of user. After the engine processed the data, it will send the result back to the database to store, or it may report to an external application for the system administrator of the system.

System Specification

Overall System Detail

The overall system will base on the system architecture described in last section. There will be the data input terminal, the database, the server, the personalization engine, purchasing engine, client, multimedia delivery engine and the data mining engine.

In the current phrase, the following components will be implemented:

1. Data Input Terminal
2. Database (using Oracle)
3. Personalization Engine
4. Multimedia Delivery Engine
5. Server
6. Client

For the data mining and purchasing engine, these two components require more time to integrate. Besides, without these two components, the overall system would not be affected.

The information provided in this phrase will be movie and the music information. The movie and music information are the popular information in Hong Kong. There are many websites contain those information. For the TV information, it is quite complex since the TV schedule is changing every and the data provide are very large. Therefore, this kind of implement will be designed later.

Therefore the specified application of the system will be as follows. When the user log into the system, he or she can see the latest information of the film and also the music. He or she can do any personalization by filling the user preference form. In the backend, the system will trace the pattern of the use of the client and make the personalization automatically. When the user want to hear the preview of the movie or music, he or she can listen or view that immediately by the multimedia delivery engine.

Platform

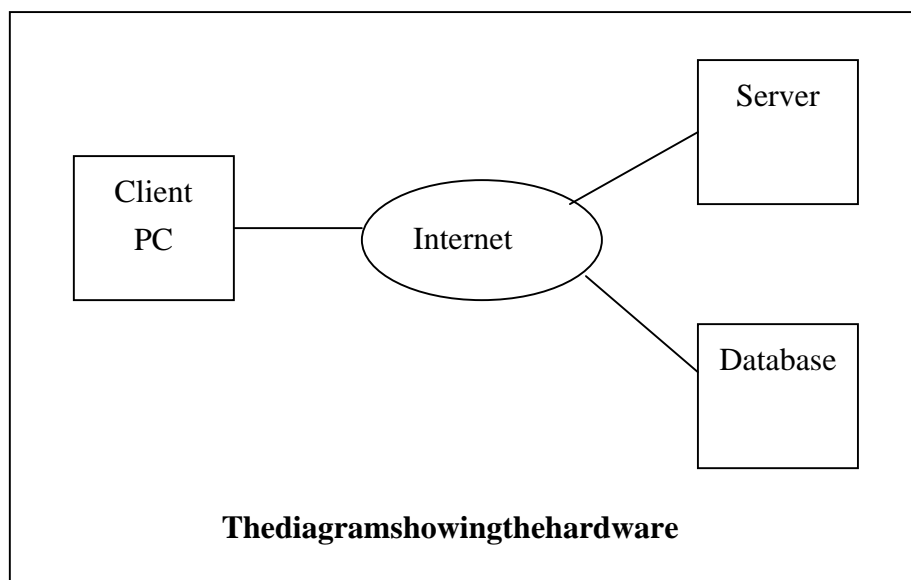
Hardware

Forthesystem,therewillbethreecomputerinvovled.Oneistheclientmachine.
Oneistheserverandoneisthedatabase.

TheclientisaPCcomputerwithconnecttotheInternet.

TheserverisaSUNcomputerwithconnecttotheInternet.

ThedatabaseisaSUNcomputerwithconnecttotheInternet.



Network

ThenetworkusedinthesystemistheInternet,andSQLnet.

Internetistoconnecttheclientandtheserver.TherasonofusingInternetisthe systemisthatinternetthecommon,easytoconnectplatform.Theclientcan easilyconnecttotheInternet.

SQLnetisthe networkdesignbyOracle.SQLnetisresponsibleforthedatabase retrievalandupdating.

Software

CORBA

CORBA is the Common Object Request Broker Architecture. CORBA is used to because it allow different kind of object to use on the system and the cooperation of the system can be easily done by the CORBA.

UNIX

UNIX is used for the development platform and the running platform of the server. The reason of choosing is UNIX is that UNIX is the most stable operating system in the market. UNIX support multitasking. It also have high efficiency since the UNIX have very little graphics interface, thus, more resource can be used for the services. Finally, UNIX are not easily down compare with Windows NT.

Web Browser

Web browsers will be the platform for adopting the client interface. The reason of using web browsers be the client program is that web browsers is the common software for most of the users. That meansevery user has a PC may have a web browsers in it. Besides, the web pages are easy to build the interface than building the application. Also, the users don't need to install if the client is a web application. Finally, the web application can be run on any different Operating system, which have the web browser.

Client

Clientrequirement

The requireme nt of the client will be as minimum as possible. The Internet and worldwide is well developed. Therefore the client will be built on top of this web platform.

The requirement of user to use the system is as follow:

- Any computer which have connected to the Internet
- Any Internet Browsers such as Internet Explorer or Netscape Navigator
- The browser has the ability to operate the Java applet.

Available features

The client are providing the information to the users. Therefore, the client applications should be able to show lots of the information to the user and with many features in it.

These are the available features in the client application:

- i. Customized layout

The customized layout is done in order to suit the user look and feel. The customization of layout can be done by the user or the system. If the user want to customize its pages, it need to click at the customization button in order to -organize
its page layout.

- ii. Event Calendar or Event Listing

The event calendar or listing are the way to resent the upcoming entertainment event. Some users would like to have a calendar component on their personalized pages such that they can quickly located when will some special event happen. Alternatively, the user can read the event as a listing.

- iii. purchasing capability

The clients should be able to let the user to purchase the product when they find the product they like and they want to purchase. The purchasing capability also include the shop cart, showing the price of the product, and most importantly they can buy and get their desired product.

Client Functions

Besides the above special features, there are some functions need to be done in order to make the system works.

These are the functions provided by the client:

i. Registration

The client will contain a corner for the new user to register.

This can let the new comer register and use the system. The registration of the system should be designed as simple and user friendly as possible.

The ideal situation is that the registration procedures require only two to three pages to finish.

ii. Login

Once the user registered, the user only need to login again when they come in the system next time. Therefore, the client should have an interface for the user to login to the system. Besides, some users may lose their password. In this case, the system should be capable to send the password to the user if they lost it.

iii. Searching and browsing

Although the personalization can save the page size and let the users view their desired information. However, the user may want to get the information not related to his interests sometimes. Therefore, the system should do some searching and browsing to let the user get the information which is not in the front page. Besides, tracking the action on the search and browse service, the system can estimate the up-to-date interest of the users.

ClientAvailableInformation

ClientScreenDesign

MainPage

Welcome to CORBA Entertainment

Login name:

Password:

RegisterCorner

CORBA Entertainment Information System

Register Corner

LoginName:

Password:

RealName:

Email:

Phone:

Location:

PersonalizedPage

CORBAEntertainmentInformationSystem

Welcome

Logout

Personalize

Search

Browse

Profile

Layout

XXX's
Personalization Entertainment Information

Main Information Component
A

Mini Info
Component
1

Main Information Component
B

Mini Info
Component
2

Mini Info
Component
3

SearchPage

CORBAEntertainmentInformationSystem

Welcome

Logout

Personalize

Search

Browse

Profile

Layout

XXX's
Personalization Entertainment Information

Movie Search

MovieTitle:

Actor:

Cinema

MovieType:

ReleaseDate

SearchNow

Music Search

CDTitle:

Singer

Record

MusicType:

SongName

ReleaseDate

SearchNow

BrowsePage

CORBAEntertainmentInformationSystem

Welcome

Logout

Personalize

Search

Browse

Profile

Layout

XXX's Personalization Entertainment Information

Movie Information

MovieTitle: MovieType:

Actor: Cinema

Music Browse

CDTitle: MusicType:

Singer SongName

ProfileSettingPage

CORBAEntertainmentInformationSystem

Welcome

Logout

Personalize

Search

Browse

Profile

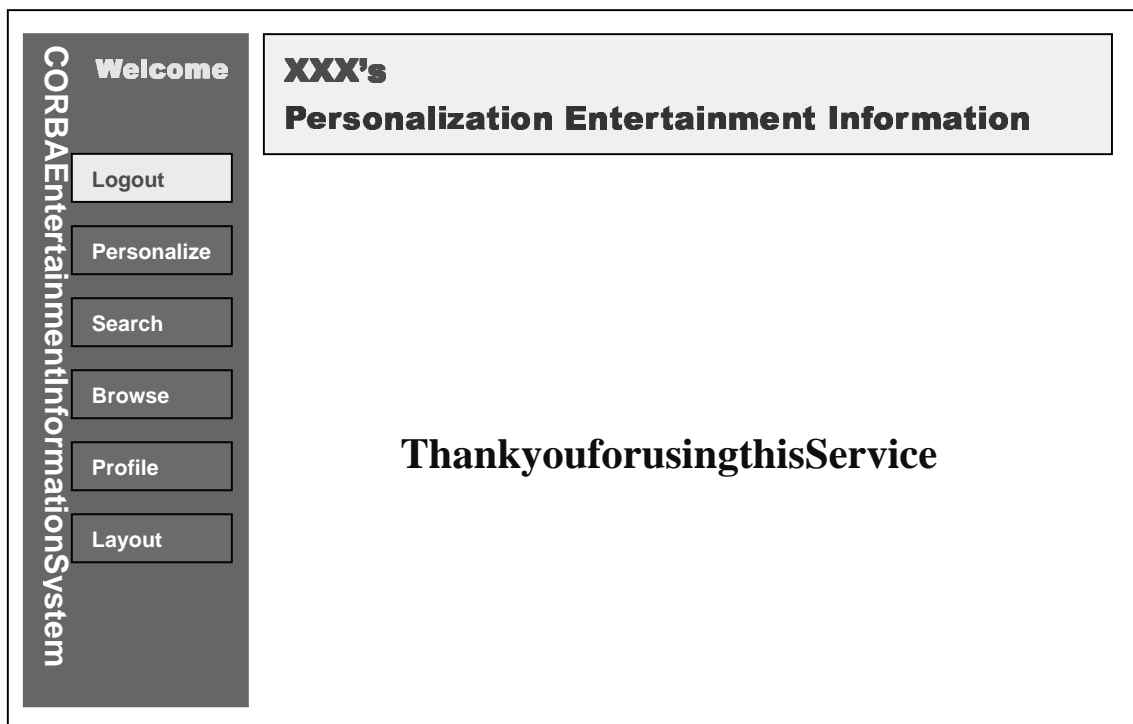
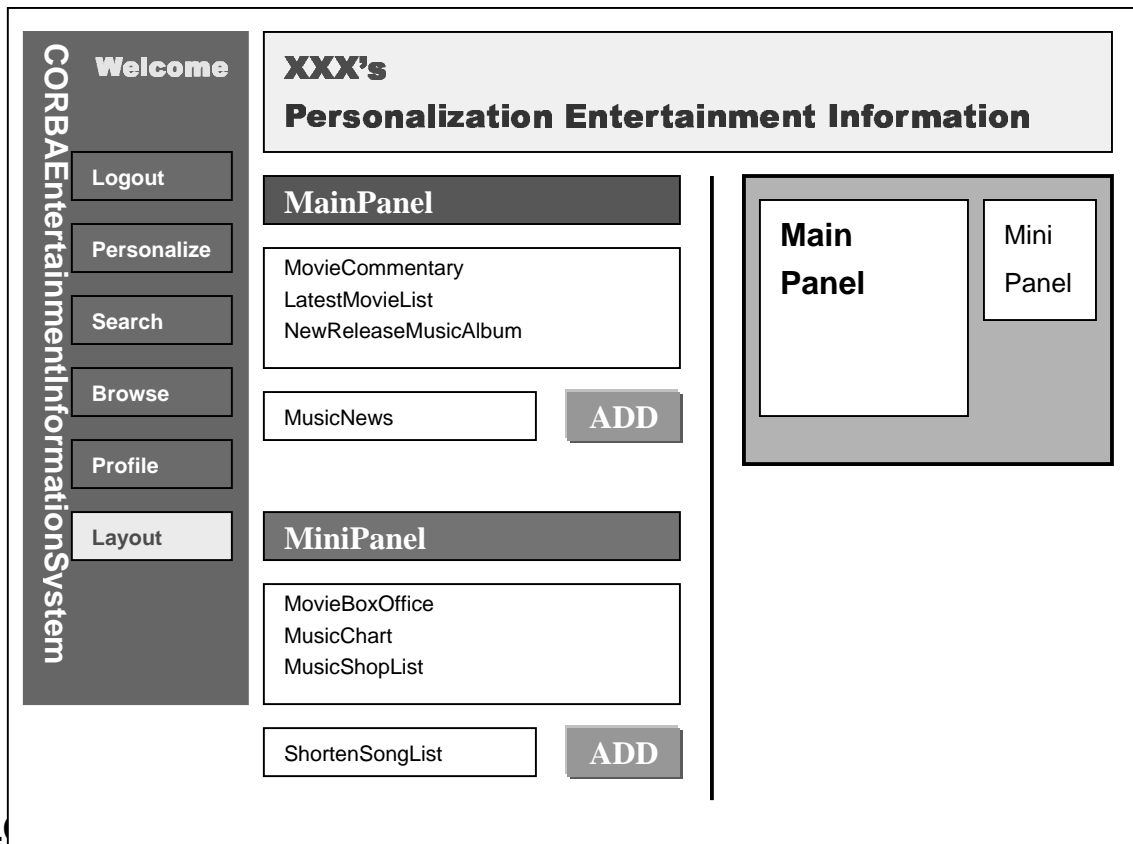
Layout

XXX's Personalization Entertainment Information

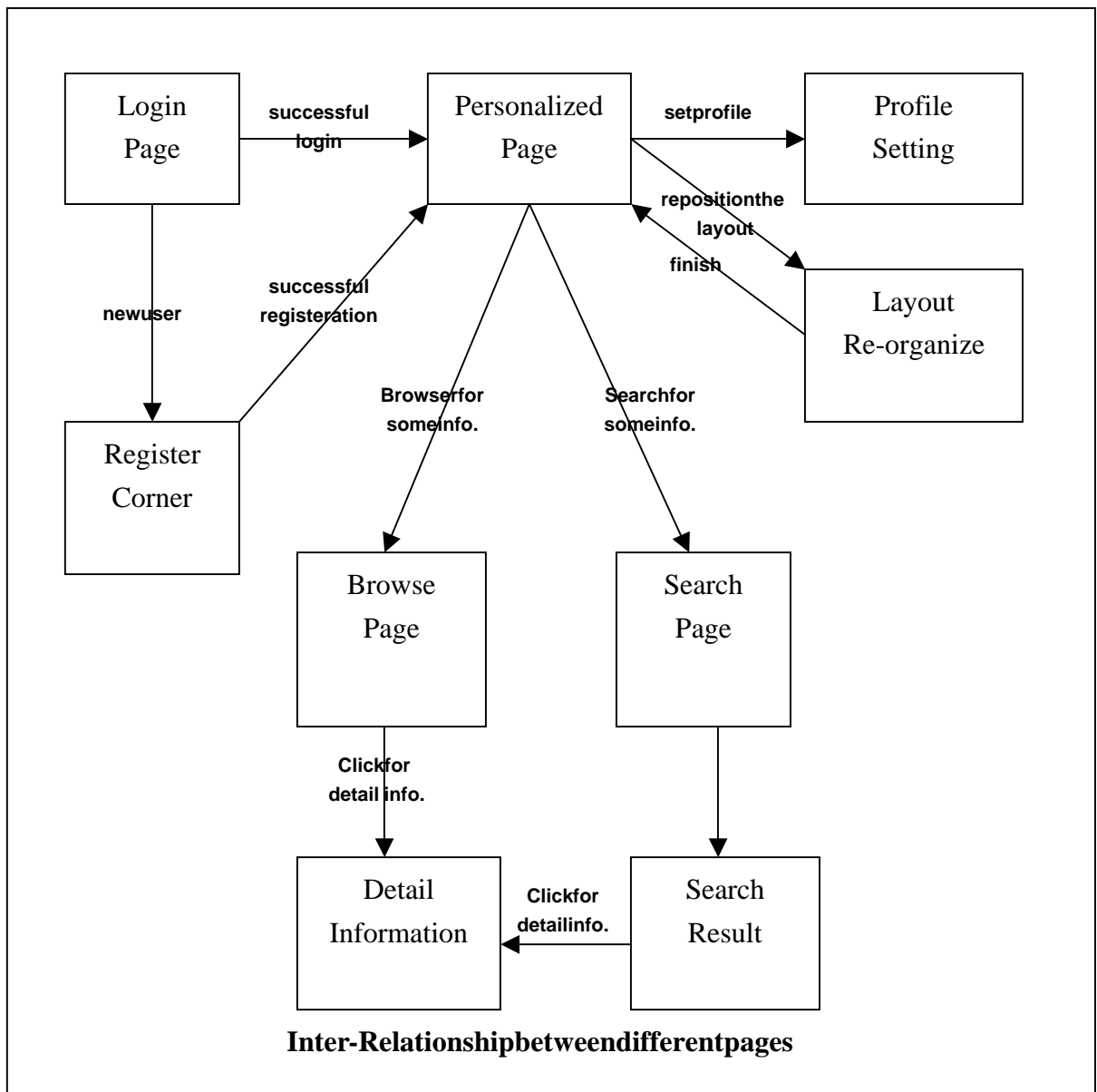
User Interest

Movie	5		Music	10
Romantic	-3		Pop	0
Action	10		Country	-4
Comedy	4		Classic	4
Sci-fi	3		Rock	3

LayoutRe -organizingPage

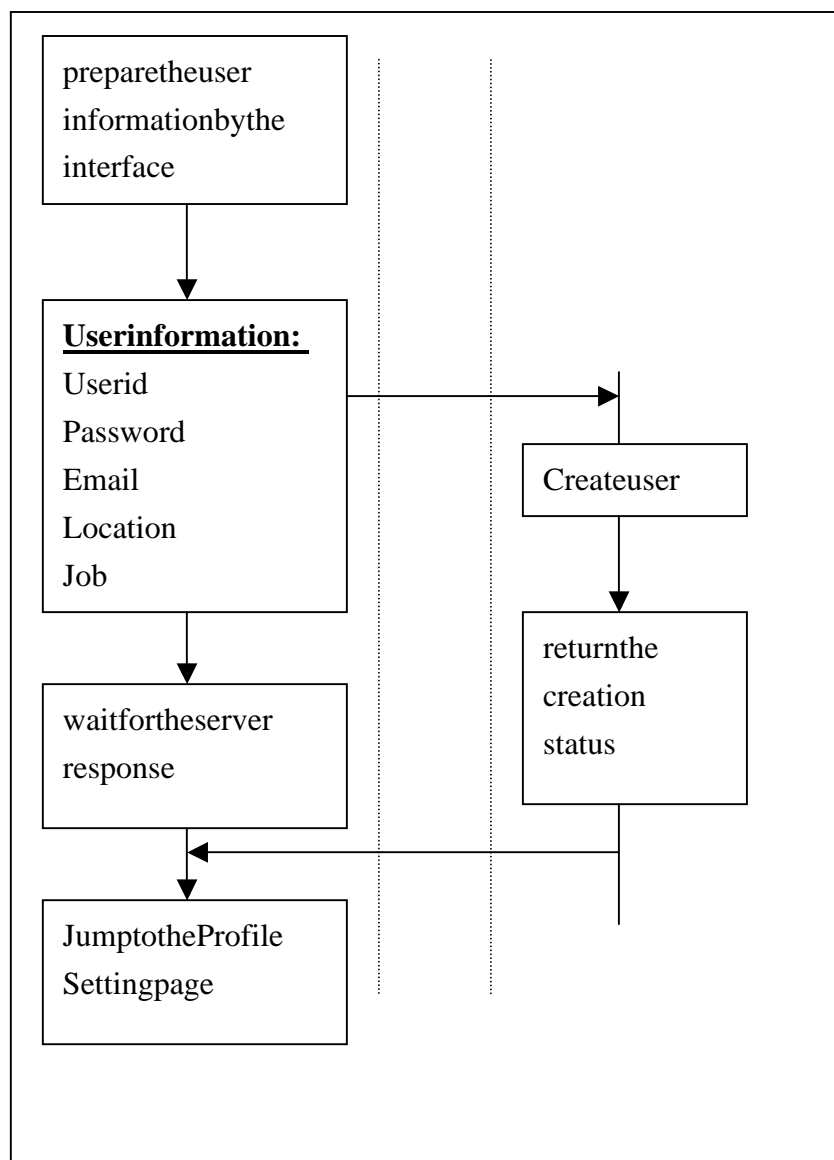


PagesFlow



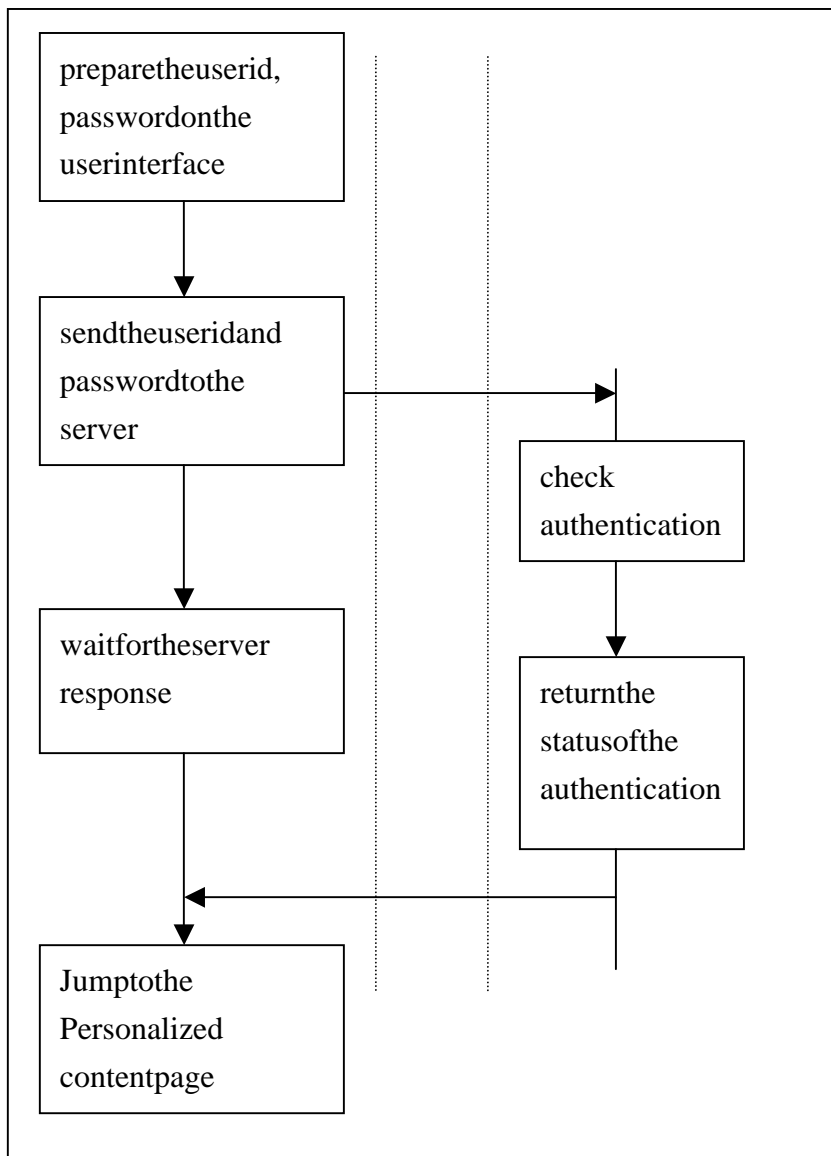
ClientServerInteractions

Registration



TheRegistrationof clientisdescribed bythebesides diagram.Firstthe userregistration datawillbe preparedonthe UserInterface. Thentheuser informationwill sendtotheserver tocreatethatnew userthen,the serverwillreturn statusofthat process.

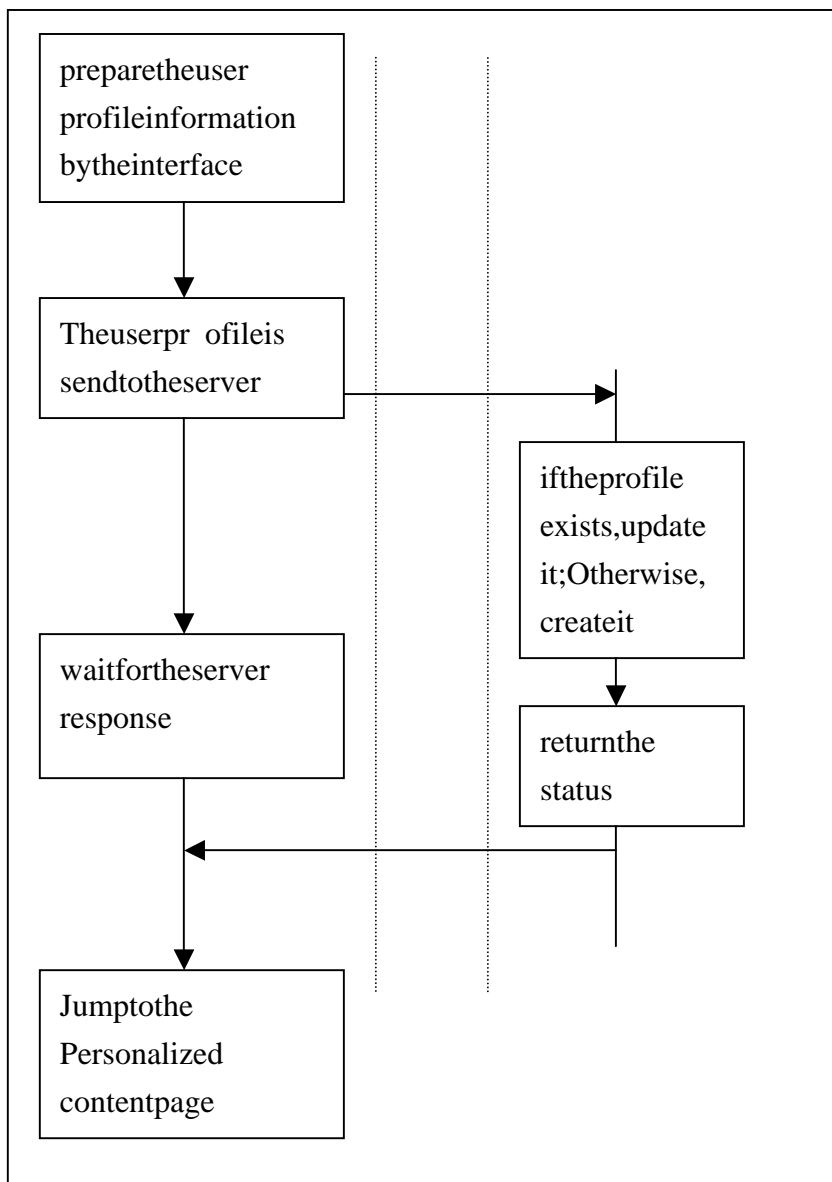
Login



The flow of the login procedure of user is described in the beside diagram.

First the user id and the password is prepared by the client and then the login information is send to the server to check the authentication and the status is returned by the server.

Change the Profile



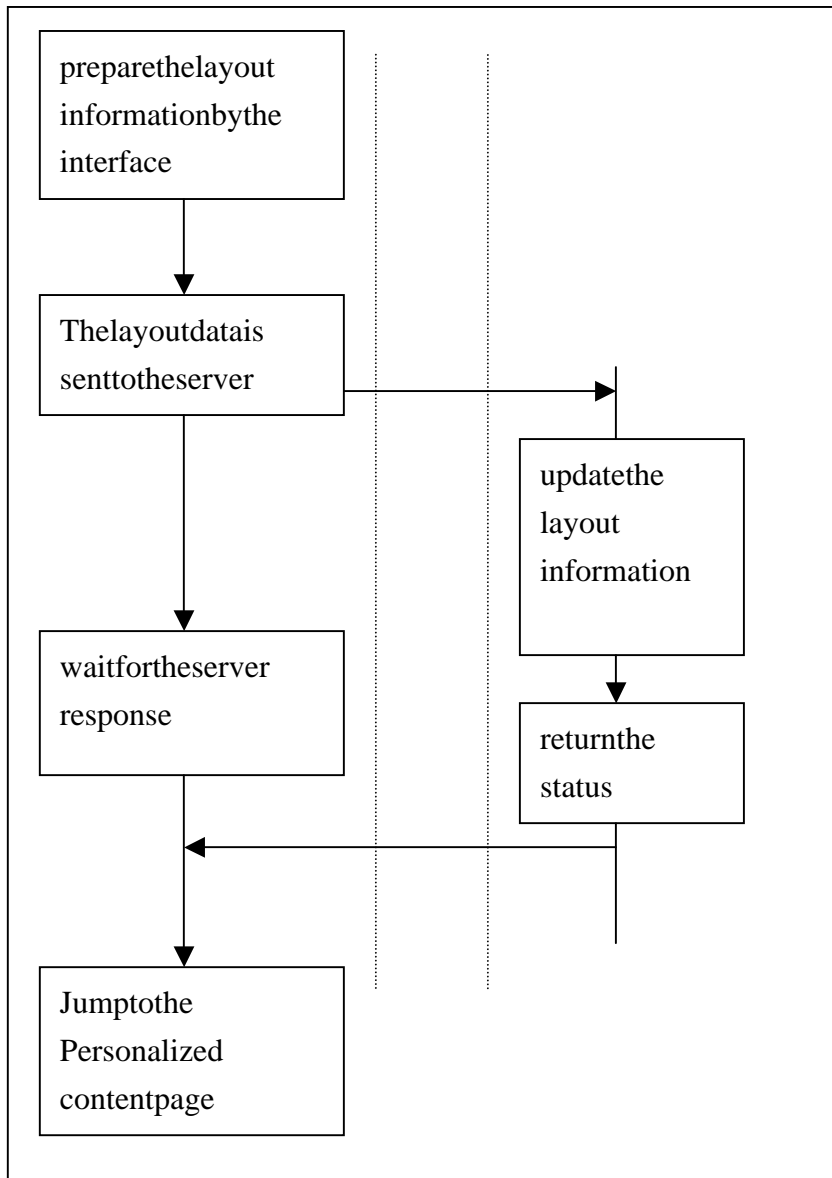
The procedure of the changing the profile is shown on the beside diagram.

First, the user will gather the profile information on the user interface. The information will send to the server.

Then, The server design whether the profile is exist or not. If it exist, the profile will be updated, otherwise, a new one will be created.

Then, the status will be send back.

Change the Layout

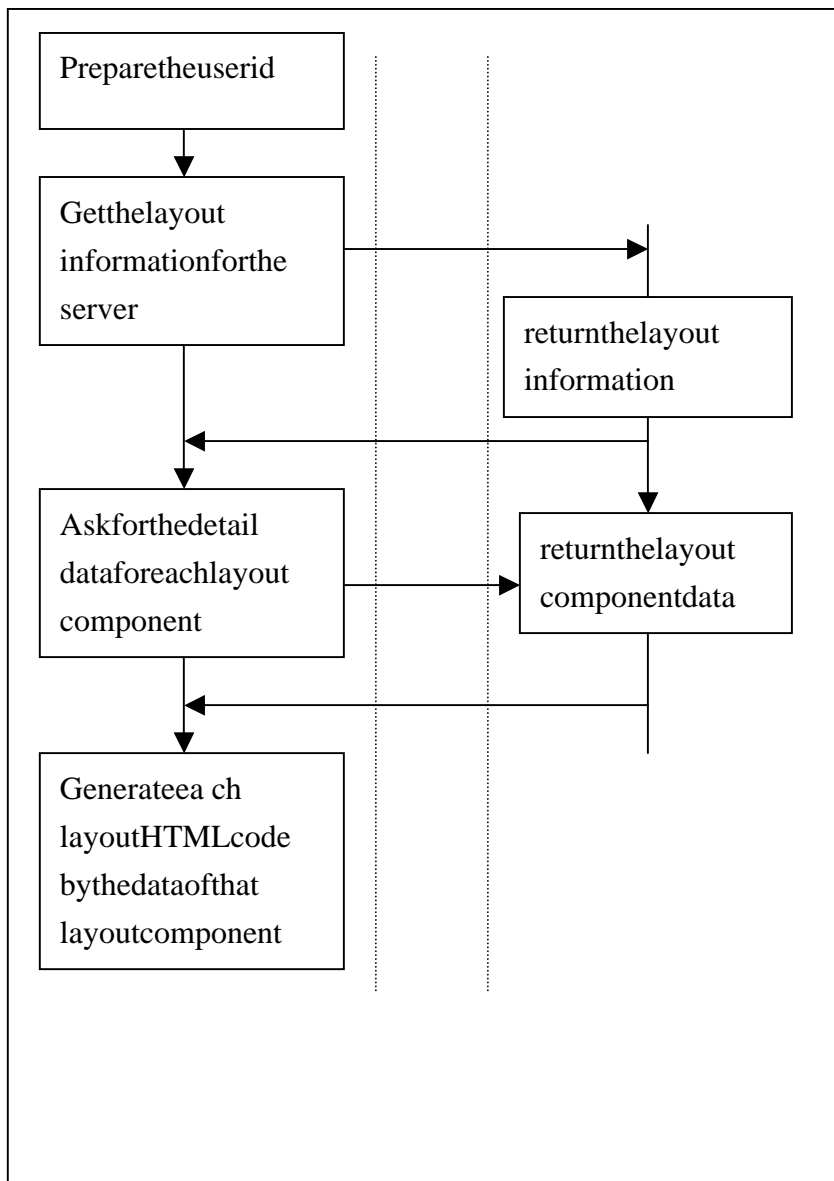


The flow of the changing of the layout is shown on the besides diagram.

The layout information is the definition of position different components.

The layout information is first prepared by the user interface. Then, the data is sent through the network to the server and the server update the layout information of that user and return the status.

GenerationofthePersonalizedLayout



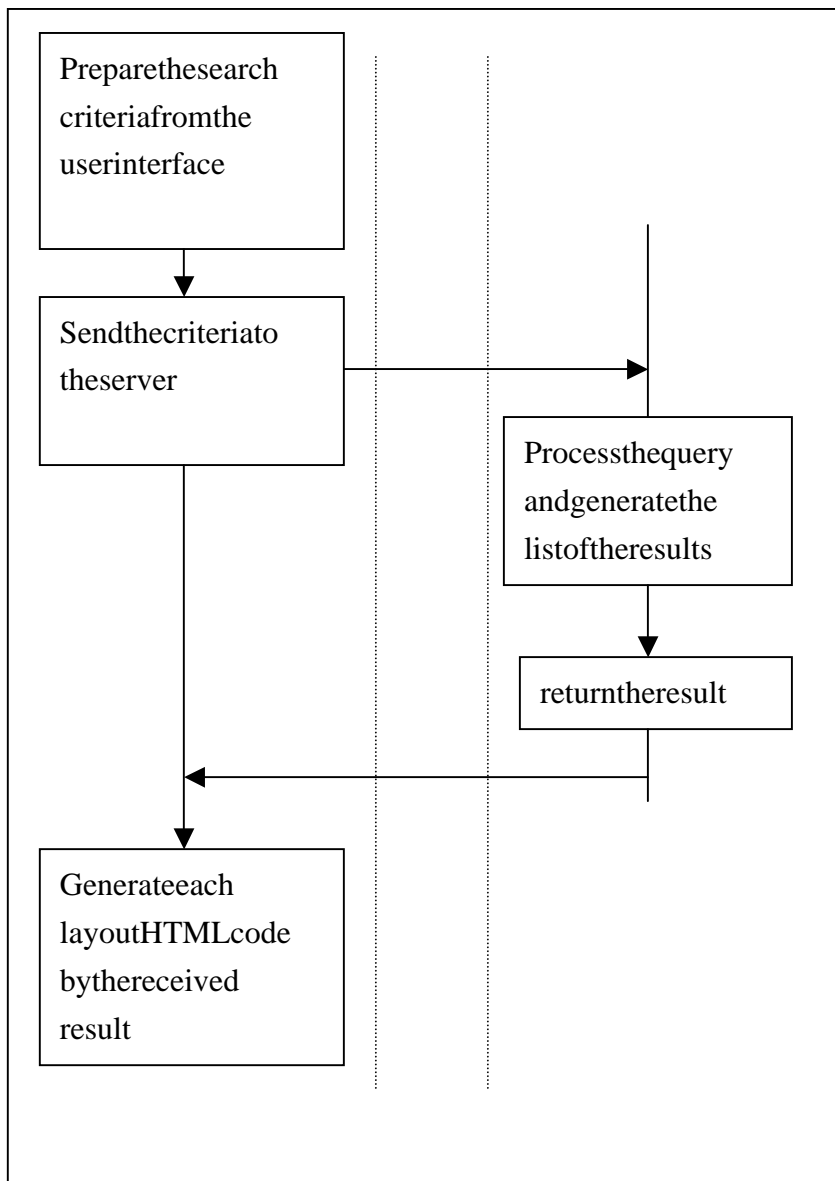
Theflowofthegeneration ofthepersonalizedpageis describedonthebesides diagram.

First,theuseridissentto theserverinordertogetthe layoutinformation,suchas thesetofthecomponentsto begotanditsco rresponding position.

Then,thedataofeach layoutcomponentisbeing got.

Afterthedataiscollected, HTMLcodeisgenerated foreachcomponent.

SearchInformation



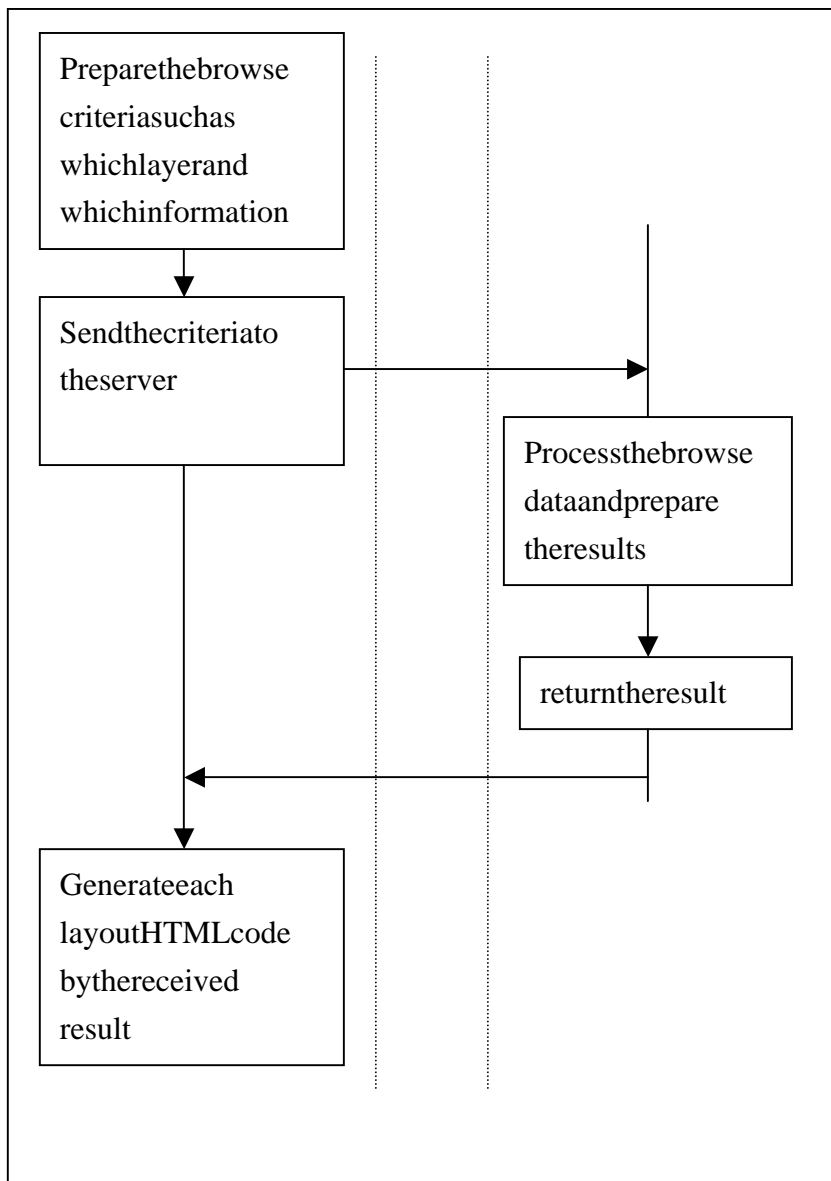
The flow to search the information is shown as the besides diagram.

First the search criteria, query is collected on the user interface.

Then the query will be sent to the server. When the server received the query. It will process it and generate the results.

Then, the results will be sent to the client. When the client received them, it will generate the HTML code for the data.

BrowseInformation



Theflowofthebrowsingis shownonthebesides diagram.

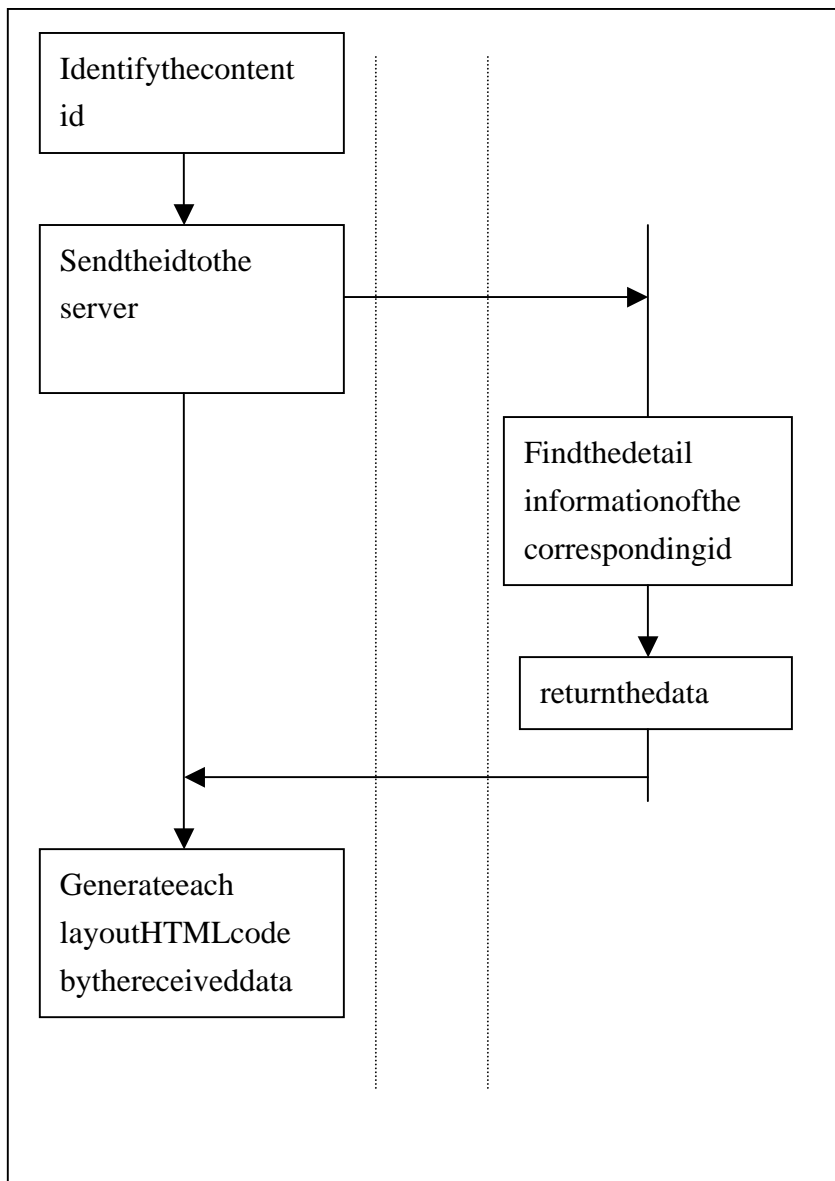
First,theclientwillcollect thebrowseinformation,the informationincludes:

1. Browselevel
2. Whatinformationto beshown

Then,theserverwillreceives theinformationandprocess it.Theresultwillthenbe generateandsendtothe client.

Aftertheresultisreceivedby theclient,theclientwill generatetheresultusing HTML.

DisplayDetailInformation



The flow to display the detail information is shown on the besides diagram.

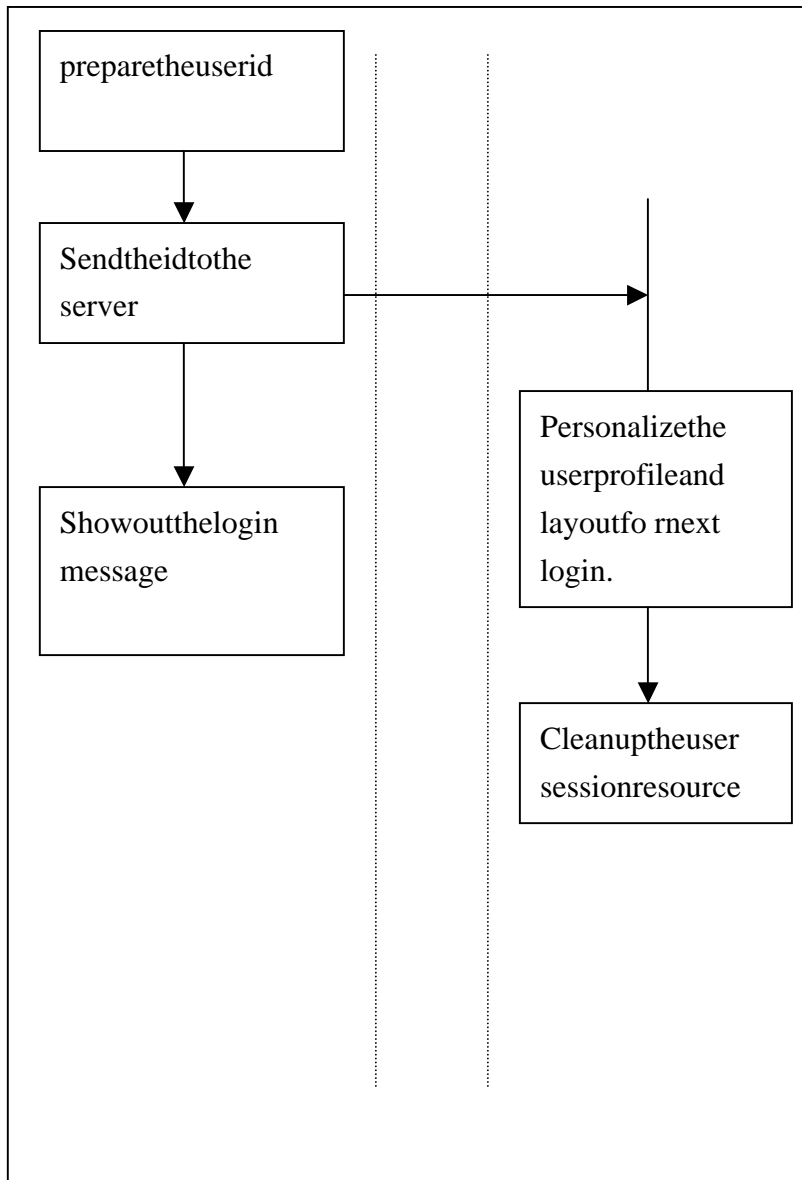
First, the clients should identify which information to be shown by its id and send the ID to the server.

Then the server will find out the corresponding data of that piece of information.

Then the result data will be returned to the client.

When the client receives the data, it generates the layout using HTML.

Logout



Theflowofthel logout procedureisshownonthe besidesdiagram.First, the clientwillfirstsendthel logout requesttotheserver.

Theserverwillreceivetheuser idanddothepersonalization whenitre -entertheservicenext time.

Besides,theserverwillclean uptheresourcesusedbythe user.

Server

Servermodules istohandlealltheclientrequestandreturnthecorreponding responsetotheusers.

ThefollowingarethemainfunctionoftheServer:

Collecttheclientmessage

Writetheuserpersonalinformationtothedatabase

Writetheuserpreferencedatatoth edatabase

Writethelatestuseractiontothedabase

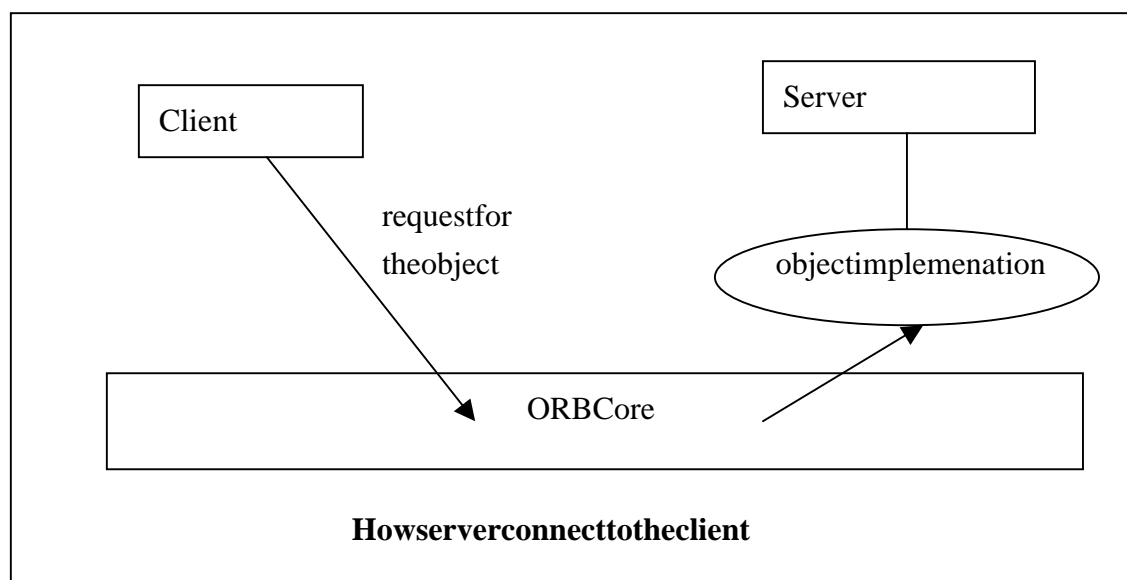
Sendtheuserpreferenceinformationtothepersonalizationsystem

Receiviedpersonalization’sreusultsandsendbacktotheclient.

Connectivity

AstheplatformofthesystemisCORBA,theserverneed totalktotheclient throughtheCORBAplatform.Inthisway,theserverarenotrequiredtodesign theprotocolbetweentheclientandtheserver.

Thefollowingdiagramwillshowthesituations:



Fromthediagram,theservercontaintheobj ectimplementationandthenitwill registertotheORB(ObjectRequestBroker).Whenaclientwanttodoaspecial functionontheserver,theclientisjustneedtotalktotheORBandaskforthe

objects from the server. Compare with the client-server model using TCP. This model does not need to care about the protocol between the client and server. The ORB has implemented several facilities for the client and server to communicate.

Available objects

The following objects should be provided by the Server.

1. UserSessionObject

This object is used on the login of the user. The client requests this object and verifies whether the user can belong to the system or not.

Methods:

`boolean canEnter` –return whether the user can log into the system

`void setSessionVar(String name, String value)` –set the session variable for that user

`void getSessionVar(String name)` –return the value than has set before.

2. UserRegistrationObject

This object is used to register for the new user. The client needs to pass the user name, login name, password, and other information. Besides, the user can modify its profile through this object.

Methods:

`boolean isRegistered` –return whether the registration is done or not

`void modify(field, value)` –modify the value of a particular field

3. UserLayoutObject

This object is used to control the layout of the user interface. The client uses this object to generate the layout of the users. Besides, the object is used to modify or re-organize the layout of the page.

Methods:

`String getLayout` –return HTML code for the corresponding layout

`void setLayout()` –set the layout of the user

IDLoftheObjects

UserObject:

```
IDLCode:
interface UserManager{
    void create(in String id, in String pass, in
        String name, in String email, in String job,
        in String country);
    void remove();
    User get_user(String userid);
}
```

```
IDLCode:
interface User{
    attribute String id;
    attribute String password;
    attribute String name;
    attribute String email;
    attribute String job;
    attribute String country

    void login(String password);
    void logout();
    ComponentList get_layout_component();
    UserProfile get_user_profile();
}
```

```
IDLCode:
interface UserSession{
    attribute userid;
    attribute String variable;
    attribute history;

    void load();
    void clear_history();
    void clear_variable();
    void save();
}
```

```
IDLCode:
interface UserProfile{
    attribute String componet_interest_matrix;
    attribute String content_interest_matrix;

    void save();
    void personalize(Session session);
}
```

```
void to_HTML();  
}
```

IDLCode:

```
interface InfoComponent{  
    attribute String name;  
    attribute String type;  
    attribute String pos;  
    attribute String size;  
}
```

IDLCode:

```
interface Movie{  
    String title;  
    String actors;  
    String release_date;  
    String category;  
    String type;  
  
    void showInfo();  
    void asHTML();  
    void play ();  
}
```

IDLCode:

```
interface MovieManager{  
    MovieList search(String query);  
    MovieList listBy(String type);  
    Movie getMovie(int movieid);  
}
```

IDLCode:

```
interface Song{  
    String title;  
    String singer;  
    String lyric;  
  
    void play();  
}
```

IDLCode:

```
interface Music{  
    String title;  
    String singer;  
    String release_date;  
    String category;  
    String type;
```

```
SongList songlist;  
  
void showInfo();  
void asHTML();  
}
```

IDLCode:

```
interface MusicManager{  
    MusicList search(String query);  
    MusicList listBy(String type);  
    Music getMusic(int musicid);  
}
```


Database

There are four databases require to be implement in the system.

They are:

1. User database
2. Content Database
3. Personalization Database
4. Statistic Database

User database

user database is the store the information of the register users, such as their login information, their personal information, their schedule information and their preference information.

login-scheme=(userid,password)

user-scheme=(userid,username,email,address,phone,occupation)

schedule-scheme=(userid,date,event)

content-preference-scheme=(userid,favoritecategory1,favoritecategory2,
favoritecategory3,unfavoritecategory1,unfavoritecategory2,
unfavoritecategory3)

layout-preference-scheme=(userid,componetid, componetposition)

color-preference-scheme=(userid,backgroundcolor,foregroundcolor,
componentsbackgroundcolor,datacolor,highlightcolor)

Content database

The content database are storing the events and detail information from the contentsource. There will be two kind of source. The first one is the movie information, the second one is the music information

movie-scheme=(movieid,name,director,studio,actor,releasedate,cinema,
category,moviefile)

ticket-scheme=(movidid,cinema,price)

cinema-scheme=(cinemaid,cinemaname,location)

schedule-scheme=(movieid,cinema,scheduledtime)

music-scheme=(musicid,name,singers,releasedate)
shop-scheme=(shopid,shopname,location)
record-scheme=(musicid,shopid,price)
song-scheme=(musicid,songname,songfile)
event-scheme=(eventid,eventname,eventdescription,eventtype)

PersonalizationDatabase

Thepersonalizationdatabaseisstoringtheresultafterdoingthepersonalizationand thatareusedforoutputtingthelayout.

personalized-content-scheme=(userid,contenttype)
personalized-layout-scheme=(userid,component,componetposition)

StatisticDatabase

Thestatisticdatabaseisusedtorecordalltheuserbehaviorforthefurtherprocessing inthepersonalizationanddatamining.

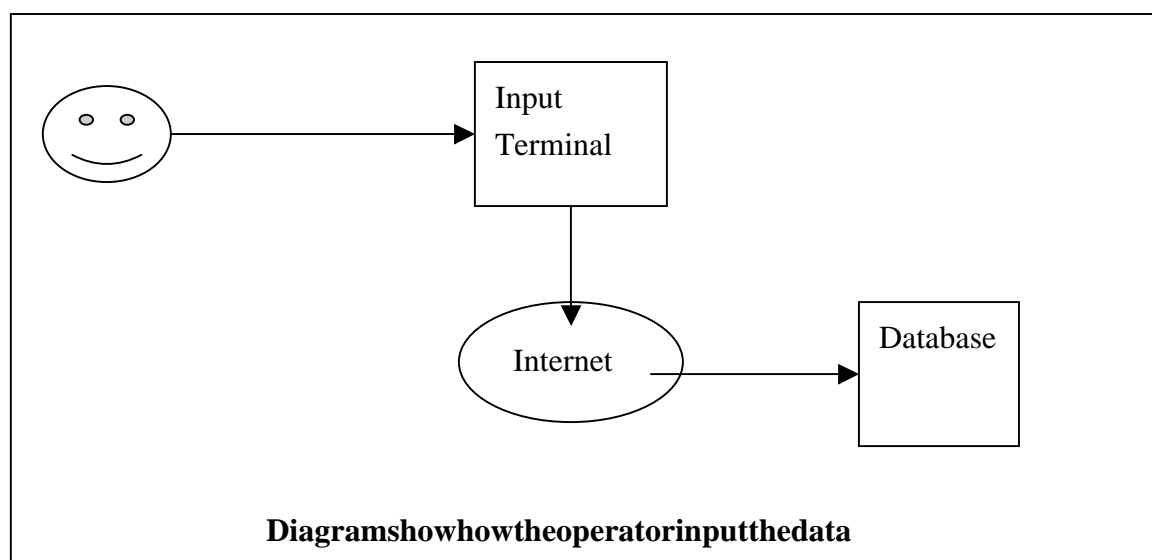
user-action-scheme=(userid,useraction,frequency)
user-view-scheme=(userid,eventid,frequency)
user-purchasing-scheme=(userid,purchaseditem)
user-spending-scheme=(userid,spentmoney)
user-login-scheme=(userid,loginfrequency)
user-staying-scheme=(userid,timespend)

DataInput

Inordertobuildtheentertainmentinformationsystem,thereneedthewaystoinput dataintothesystem.Thereareseveralwaystoimportthedata.Theinformationcan beimport byreplicatingthedatafromotherdatabase.Besides,theinformationcanbe importedbythemanualdatainputbytheoperator.Thelastwayistoautomatic retrievetheinformationfromthewebsitesandinputtothedatabase.

ManualDataInput

Toinput the data into the database, there will be an interface for the operator to input to the database. The following diagram is showing the picture of how the data into to the database.

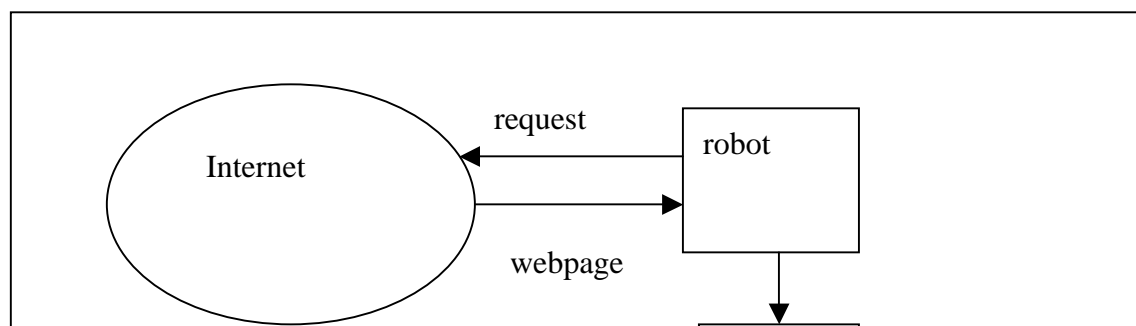


The operator will interact with the input terminal. He can select which information event to be entered. In the system, there are movie and music information. Therefore, the input terminal should allow the operator to select the type of information to input. The operator can switch to the movie information and also the music information.

After he select the type to be input, he need to be guided to input the data. The inputted data will send to the database through the Internet.

AutomaticDataInput

Besides, the manual data input, the information can be imported from other websites. In the Internet, as the introduction, there is some movie database in the Internet. These website contain many valuable movie data or music data. So robot is used in this model to retrieve these data.



From the diagram, the robot will first send the HTTP request to those movie information websites. Then it will retrieve the web pages from those sites. However, these pages are in the format for the common user to read, but not for the database.

Therefore, a parser is needed to turn those HTML format into the database. To input the data into database, SQL statements should be generated.

PersonalizationModule

PersonalizationModuleisusedtodothepersonalizationfortheusers. Therewill bethreeareas. Theyare:

1. Userprofiling
2. LayoutCustomization
3. ContentCustomization

Userprofiling

Thesignificationoftheuserprofilingistobuildupaprofilefortheuserinback end. Theuserdoesn'tneedtobuildthatprofileitself. Theprocesswillhiddenin thebackendandt heeffectwillbeshowninthe front.

Theeffectoftheuserprofilingcanhelptheusersavetheirtimeonusingthe system. Forexample, whentheuserfrequentlyviewthetheboxofficeofthe movie. ThesystemwillsavethisinformationandWhentheusercometothe systemnexttime. Theboxofficelistingwillshowonthetopcorneroftheuser.

Thefollowinginformationwillbesavedintheuserprofile:

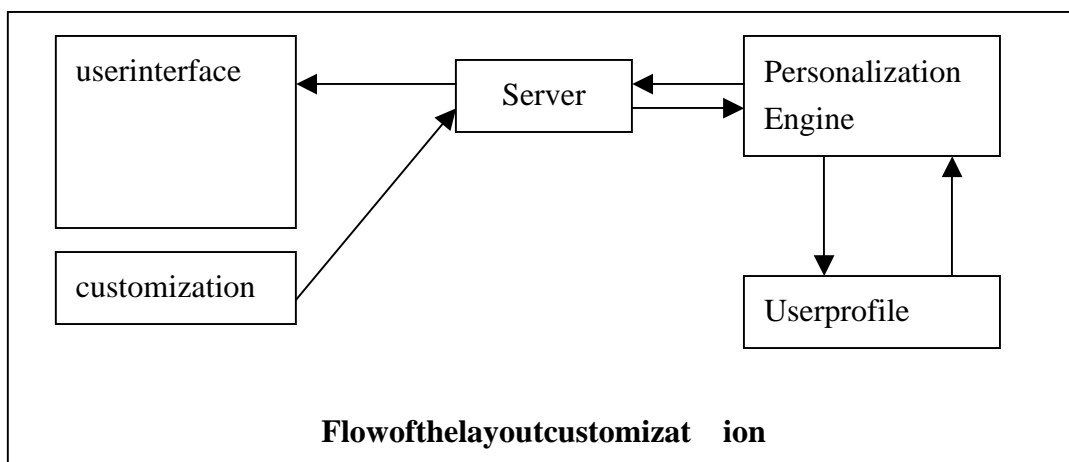
- i. Theuserfrequentlyaccessingcomponents.
- ii. Thetypeofentertainmentthattheywillusuallyaccess.
- iii. Thequeriesthattheuserasked
- iv. Thecategoryoftheuserfavoritemovie
- v. Thecategoryoftheuserfavoritemusic

LayoutCustomization

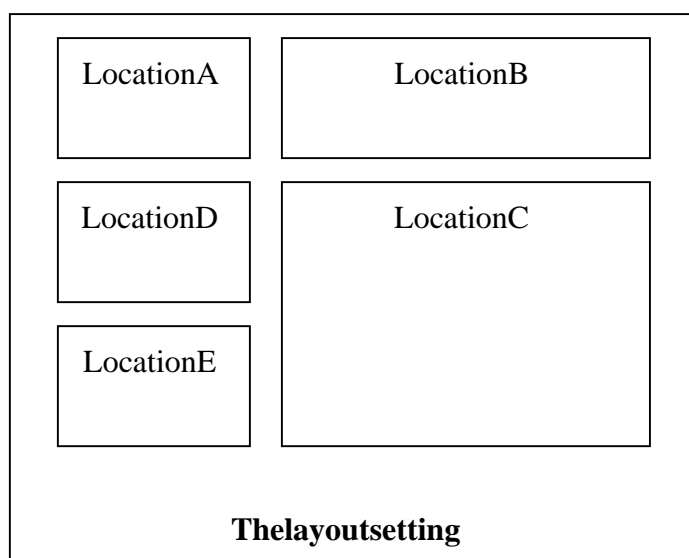
The layoutcustomizationisusedtomodifythelayoutofthepageinorderto increasethattractionoftheusers. Thustheloyaltyoftheusertotheservice will beincreased.

Therearetwowaystodothelayoutcustomization. First, thesystemallowthe usertodothecustomizationitself. Second, thesystemshoulddothe customizationbasedontheuserprofile.

Herearetheflowwentthelayoutcustomization:



Forthefirstcase,thusercustomizethelayoutthemselves.Theinformation pagewillbedesignasfollows:



Theusercansselectwhichcomponentputatwhichlocation.

Ifthecustom izationisdoneatthebackend,thesystemwillputtheusermost frequentlydatatothehigherposition.Forexample,auserliketowatchthe movieboxofficeevery,thesystemwillputthatcomponentonLocationA.

ContentCustomization

Content customization is used to customize the information from large information database. For example, there are lots of movie information and music information available in the system. If all those information put into one big page, the page will be too large to transmit or even read. Therefore, contents should be refined and re-organized to make the contents slimmer and easy to read.

Ways of content customization:

The customization can be done in two ways. First, the system can trim the unwanted data from all the content. Second, the system can re-position the information. In this way the more favorite content will put into the higher position and the unwanted content will put into the lower position.

How to do the customization?

The customization can be done by ranking the content with respect to the particular user and filtering the unwanted data. First the system will retrieve the unwanted data from the database. Then the set of events will be reduced by removing those user unwanted categories. Second, the system will rank the content by setting the formula.

The formula is as follows:

The rank = level of favorite of the category * multiple factor + frequency of the user access the category.

Then sort the listing of the content event based on the rank and send to the layout generator.

ContentDeliveryModule

ContentdeliveryModuleisresponsibletodeliverthemultimediacontenttothe userbystreamingtechnique.Inthissystem,eachofthemediatypewillsupport onlyoneformatinordertosimplifythe system.

Contentformatsforeachmedia

Thefollowingaretheformatofeachmedia:

Text –HTMLortxt.

Audio –Mpeg3

Video –QuickTime

WhychoosingMpeg3asaudioformat.Thisisbecausethebandwidth requirementofMpeg3islowbutthequalityishigh.

WhychoosingtheQuickTimeasvideoformat.Thisisbecausethequicktimeis thecommonvideoformatavailableonthemarket.Besides,theQuickTimevideo haveagoodquality.

Deliverymethodforeachformat

ThedeliverymethodofthemultimediacontentisrequiredtodousingtheJMF. ThereasonofitisthatJMFisaJavapackagefordeliverythemultimedia content.

WhyJMF?

JMFiscalledJavaMediaFramework,whichsupporttheintergrationofawide rangeofaudioandvideoformatintothejavaapplicationandapplets.Besides, theJMFcanbeoperatingonanyJavaplatformsuchasJavaonWindows,Java onUNIXorJavaonMactintosh. ThemostimportantisthattheJMFcan support formanycommonprotocols,suchasFILE,FTP,HTTPandRTP.Forthe RTP,it iscalledRealTimeProtocol.ThatmeantheJMFallowtomakethesystemto streamthedata.

DataMiningModules

DataMiningModuleisusedtoanalyzetheuserswhoareusingthesystem.The marketingandthesaledepartmentoftheentertainment suppliermaywanttoknow moreabouttheircustomer.The traditionwaytoknowthebehaviorofthecustomersis thataskingthesalesorcustomerservicesofficertogetthecustomerfeedbackor makingsurveyonthemarket.

However,thismaybetimeconsumingforthecompanyandthecustomer. Bytheexistingdataminingtools,thesaledepartmentcanknowmoreaboutthe customerfromtheloggeduserdata.

Informationtobemined

SowhataretheinformationcanbeminedfromtheDataminingmodules.Here are thelistofinformationcanbemined.

- Theclassificationoftheuseraccordingtoregion,age,productgroupsor spendingpatterns.
- recognizethepatternoftheuser
- Therelationshipbetweenusergroupsandtheproduct
- Therelationshipbetweenusergroupsandthespendinghabit
- Therelationshipbetweenpurchasingoftheproducts.

Implementation

ImplementationPlanning

The implementation of the whole system may need a long time. There are 7 major components to be built. So, it is impossible to build all the components in this phase. Therefore, only several high priority components will be built in this phase.

Here is the priority of the schedule of the building blocks:

1. The Database
2. The Data input module
3. Server
4. Client
5. Multimedia delivery module
6. Personalization module
7. Purchasing module
8. Data Mining module

First two building blocks, database and data input have the highest priority. Since without the data, the following blocks can't be built. After the data is ready, the client and server will be started to build. After the data can be loaded from client to the server. The multimedia delivery engine will start to work out in order to let the user get their video or audio information. Then, the personalization can be added on to customize each user's front page. After all of this building blocks is ready, the purchasing module is going to build in order to make the system able to sell things online. The last one, data mining module, it is not suggested to build because there are many similar applications on the market available and that need time to build this module.

Systemplatform:

COBRAPatform

FortheCORBAPlatform,thesystemisgoingtoadopttheVisibroker.Visibroker followstheCORBA2.0specification.TheVisibrokerallowtoletthedeveloper useJavatoimplementthestub.Besides,Visibrokercansupportmany platform,forexample,itcansupportUNIXandWindows.

HereissomespecialfeaturesofferedbytheVisibroker:

- SmartAgent,itprovideaneasywayfortheclienttoobtaintheserverobject. Itcansupporttheload balancingandfault tolerance
- SmartBinding,thistechnologymaketheremoteobjectbindaseasyas possible,forexample,iftheclientandtheobjectimplementationatthesame machine.Itwillmakecommunicating usingjavamethodinsteadofpassing throughtheORBandIIOP.
- URLNamingService,theobjectreferencecanbeobtainviaURLaddress.
- GateKeeper,thisisalightweightHTTPdaemonwritteninJavawhichcan helpintesttheappletsusingCORBA.

Database

Database

Forthisproject,Oraclewillbeusedasthedatabasemanagementsystem.

Thefollowingtoolwillbeusedtomaintainthedatabaserecord

- SQLPlus
SQLPlusisaclientprogramtoconnecttothedatabaseserver.Thetoolcan helpcreatethetable,viewthedatarecordandmakestoredprocedurefor theproject.
- JDBC
JDBCisthedriverforJavaprogramtoconnecttothedatabaseserver.Since mostoftheprograminthisprojectiswritteninJava.Itisimportanttoinstall JDBCtoconnecttothedatabase.
- PerlDBI,DBD::Oracle
PerlDBIistheprogramminginterfaceforperlprogramtoconnecttothe databaseserver.DBD::Oracleisthedriverfortheperltoconnecttothe Oracle.Sincethedatainputterminalanddatainputrobotwillbeimplemented byperl,itiseasytouseanditdoesn'trequiretouseontheCORBA.So, PerlDBIisinstalled.

DataInputTerminal

RobotInput

Inthespecification,thesystemisrequiredtobuildautomaticdatainput programfortheimporttheentertainment informationfromtheWeb.Thebest choiceistousePerltoimplement.

Whyperl?Inperl5.0,itcontainsmanymodules.Oneofthemodulesiscalled libwww-perlwhichcanallowtheprogramconnecttothewebsitesandretrieve thepages.Besides,perlsupportregularexpressionwhichcanmakeiteasyto implementtheparserprogram.

ManuallInputterminal

Forthemannualinputterminal,webwillbeusedtoastheinterface.The implementwilluseJSPtoastheclientandconnecttotheserverfortheupdate andinsertofthedata.ThereasonofthisistotakingthisopportunitytolearnJSP, CORBAandJDBC.

Server:

This server will be implemented by Java with the Visibroker. The following objects will be implemented in this Server Modules.

ObjectName	User
Data	Id
	Password
	Username
Method	Add
	Delete
	Login
	Logout
	ChangePassword
	SendPassword
Exception	NoSuchUser

ObjectName	UserInfo
Data	Id
	Username
	Address
	Phone
	Email
	Age
	Country
Method	Modify
Exception	NoSuchUser

ObjectName	Content
Data	Id
	Type
	Title
	Category
Method	GetContent
Exception	NoSuchContent

ObjectName	MovieextendContent
Data	Cinemas
	Rating
	Commentary
	Preview
Method	GetCinemaCollection
	GetPricelist

ObjectName	Musicextend Content
Data	Songs
	Price
	Commentary
Method	GetSonglist

Client:

BuildingTools

The client is the application that communicates with the users. The client will be built by the following tools.

JSP

JSP is the Java Server Pages. It is something similar to the ASP (Active Server Page) which is the embedded coded HTML. The role of JSP on the client program is to display all the information to the users. It is also responsible for every front-end interface of the users.

Javascript

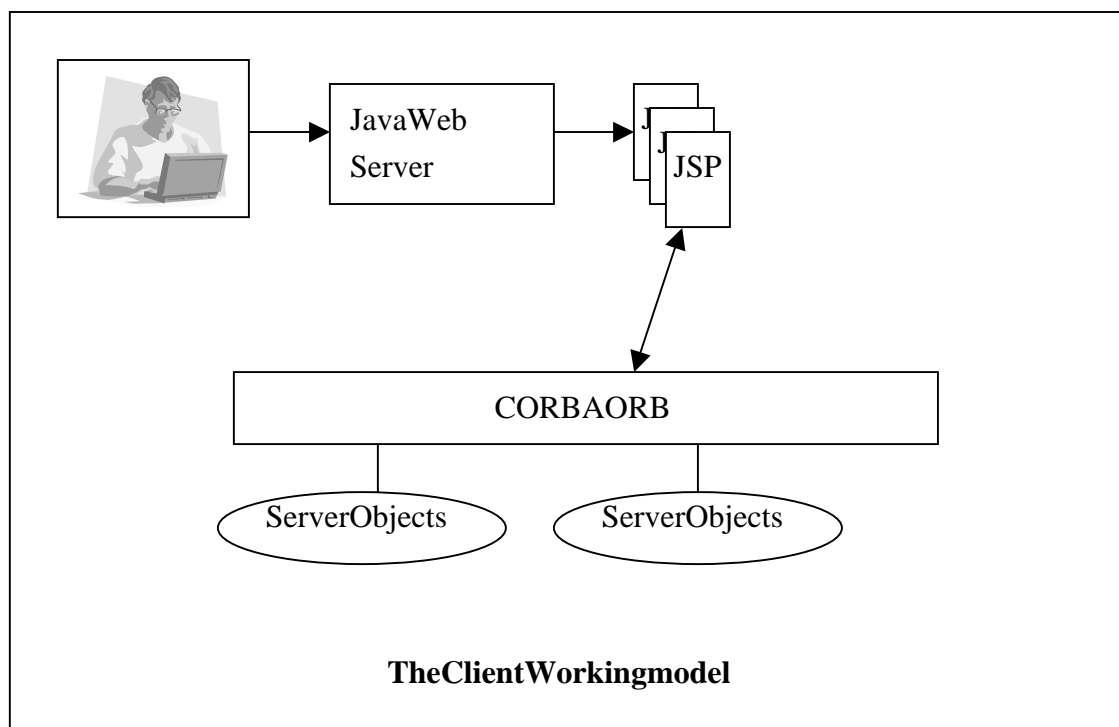
Javascript is the script which will run on the client side. The role of javascript in the client interface is that it will use the generated some client-side dependent information such as the time of the client, and doing the client-side checking. For example, the javascript can check whether the user input valid information in the registration form.

PaintShopPro

PaintShopPro is one of the graphic tools available in the market. As a paintshop pro is a free ware and easy to use. It will choose to use for the graphics design for the client interface.

Howtheclientworks?

Thefollowdiagramwillshowhowtheclientworks.



Fromtheabovediagram,theclientwillusetheWebbrowsertoviewourpages.The pagesaretheJavaServerPage(JSP),whi chloadingintotheJavaWebServer.The javawebserverwillprocesstheJSPanddelivertotheClient. Whenthejavaweb serverisprocessingtheJavaServerPage,itwillrunthecodeembeddedinsidethe JavaServerPageandatthetime,theremoteobj ectintheCORBAObjectRequest Brokerwillbegottobuildupthepages.

Appendix:Development

Environment

OperationSystem

FortheServersides,theoperatingSystemisUNIX

FortheClientsides,theoperatingSystemisWindows

ToolsSet

Java

Javais thecorelanguageinthedevelopmentinthisproject.

JDK1.2willbeused.

JMF

JMFisanadditionpackageofJAVA.

JMFisusedforthe partfordoingthemultimediastreaming.

JSP

JSPisanadditiontoolofAVAtobuildthewebsites.

JSPisforcreatintgthewebinterfacefortheclientsides.

JDBC

JDBCisanadditionpackageofJAVAforconnectingtheprogramtothedatabase.

CORBA

CORBAiscalledCommonObjectRequestBrokerArchitecture.Itisusedasthe platformforthe communicationbetween different objects.

Perl

Perl is a scripting language. In this project, it is used to build the data input program.

Libwww-perl module

Libwww-perl module is the add-on module for perl. With this module, perl can retrieve the Web pages using HTTP.

PerlDBI Module

PerlDBI Module is the add-on module for perl. With this module, perl can connect to the database.

Editor

Vi will be used in development of programs in UNIX environment.

UltraEdit will be used in the development of programs in Windows environment.

Graphics Design

PaintShop Pro will be used for design the graphics that need in the client interface.

Documentation

Microsoft Word is used to do the documentation.