

Presented on 2022-01-01



# DIVVY UP

**Online bill-sharing system**

Git-Address : <https://github.com/DongkyuPark2735/divvyUp.git>

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# 1.1 Subject & purpose

This project is an integrated web management system that can be used and managed by a single program by integrating the automatic settlement function (splitting bills amongst a group of people) with a member management system.

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## Member

- ✓ Users are managed through member information and group information, and can modify personal information, follow and unfollow other users, create groups, insert new expenses, settle balances, search for past expenses, and access and utilize various forums.

## Admin

- ✓ Administrators use functions such as member management, group management, Q&A bulletin board and notice management



# 1.1 Subject & purpose - References



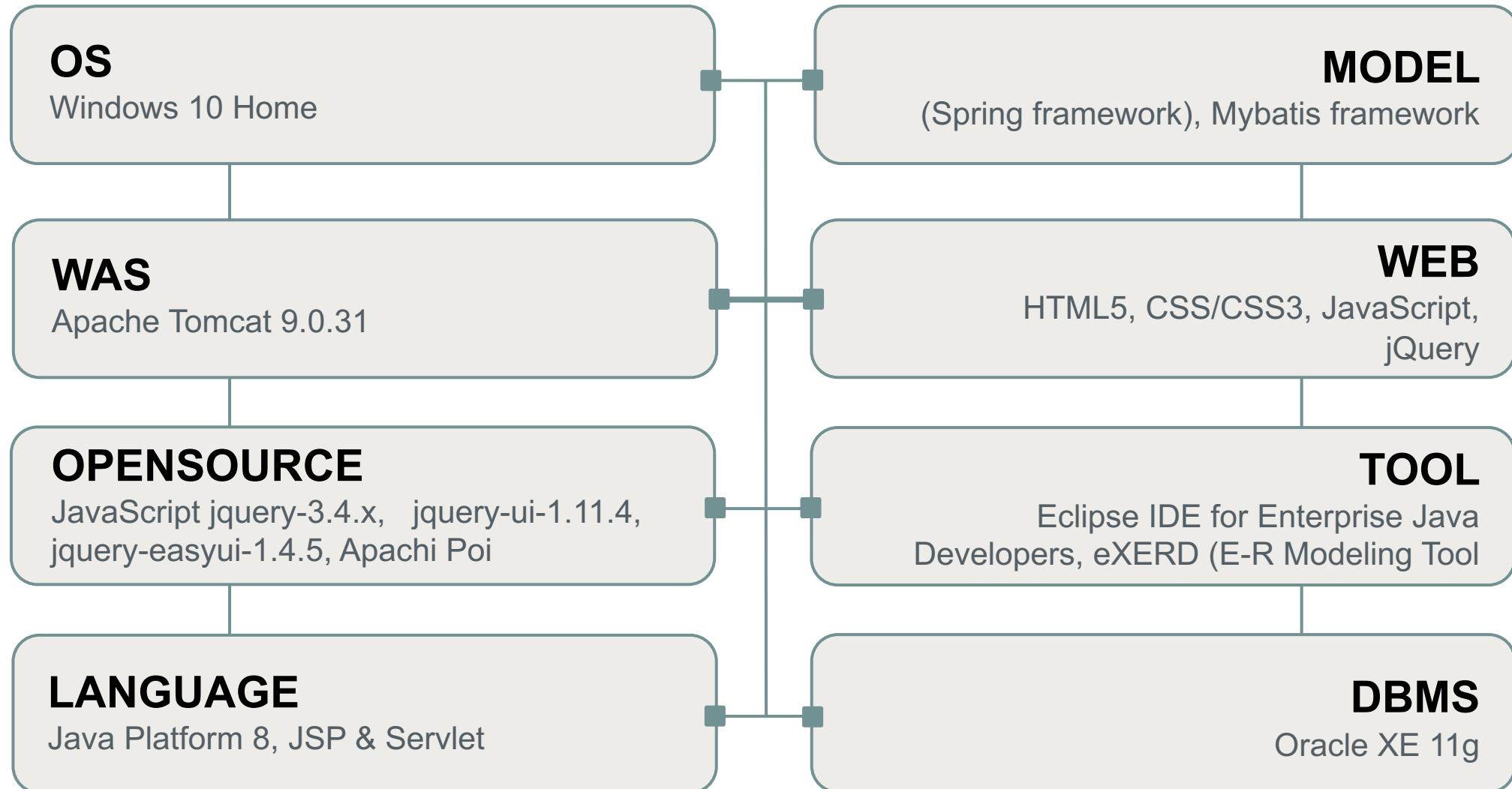
The image displays three separate web application interfaces for managing group expenses:

- Splitwise:** Shows a dashboard with a timeline of transactions from 2019 to 2021. Transactions include "we smile with our teeth" (June 2021), "Settle all balances" (March 2021), "Daniel H. paid Jasper D. €0.97" (December 2020), "Settle all balances" (October 2020), "Vereffen alle saldo's" (August 2020), "Ylver paid Philip €2.40" (April 2020), "Settle all balances" (March 2020), "Newyears" (January 2020), "Dinner" (October 2019), "Wine+Tobacco" (October 2019), and "Chicken" (October 2019). A sidebar shows friends like Jasper De Kock and Philip.
- billZer:** Shows a "Who paid what?" feature where users can input names and amounts for a group. It includes instructions: "Enter the names and how much everyone spent for the group. Add more expenses with the +. Remove them with the - Expenses not shared by everyone can be edited with the edit button." A sidebar lists group balances for Anton Braan, Daniel Hassenplug, Jasper De Kock, and Mylota.
- Splitser:** Shows a "Settlement 05-06-21" page with a table of transactions. The table includes columns for Name, Transaction, Date, and Amount. Examples of transactions include "Uber (when we had a taxi in Portugal)" (Novana, 04-06-21, €11.05), "All Uber's not added yet for non-UK 20 people" (Unie, 04-06-21, €20.23), "Gift shop Avor" (Maria, 04-06-21, €4.50), "Gift shop Avor" (Maria, 04-06-21, €4.80), "Ice creams Adriana (after SUP)" (Unie, 04-06-21, €35.00), "Laptop cash + lunch" (Novana, 02-06-21, €21.50), "Shots (ed, my sister 2 & Max G.D.)" (RJ Ruberg, 02-06-21, €21.50), and "Food and drinks (ed, sangria)" (RJ Ruberg, 02-06-21, €75.00).

Referenced web pages that have similar functions

REF: <https://splitser.com>, <https://secure.splitwise.com> , <https://billzer.com>

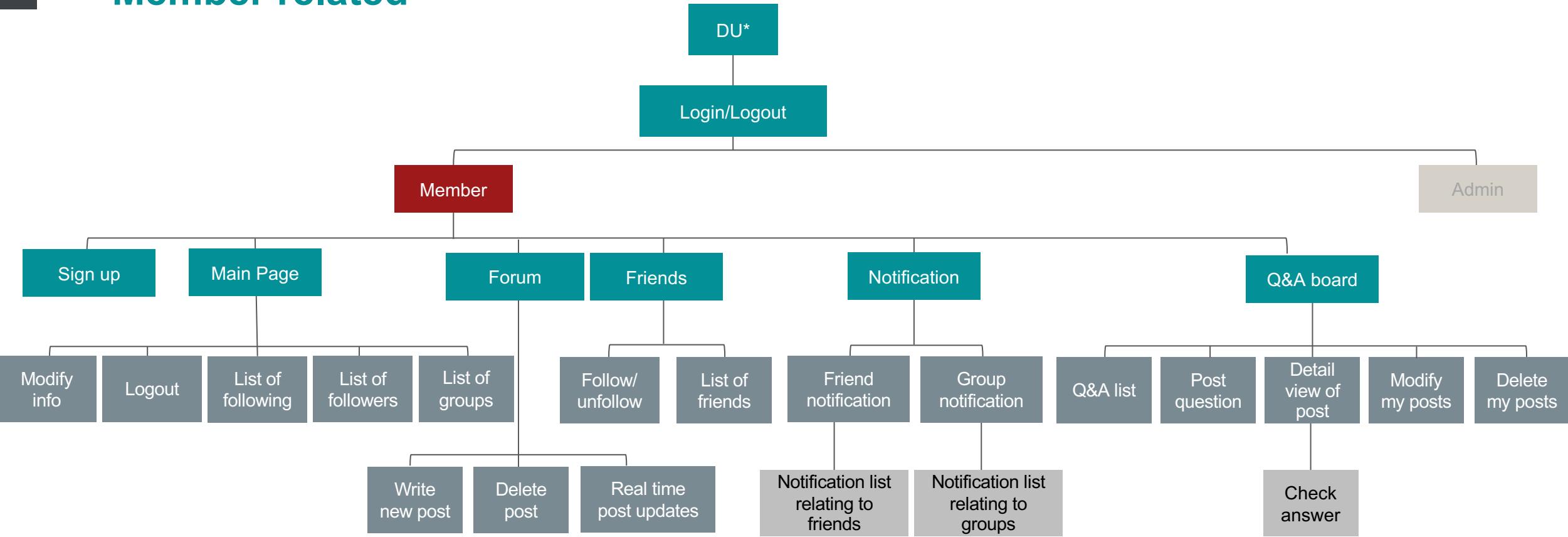
# 1.2 Resources



# 1.3 Work breakdown structure (WBS)



## Member related

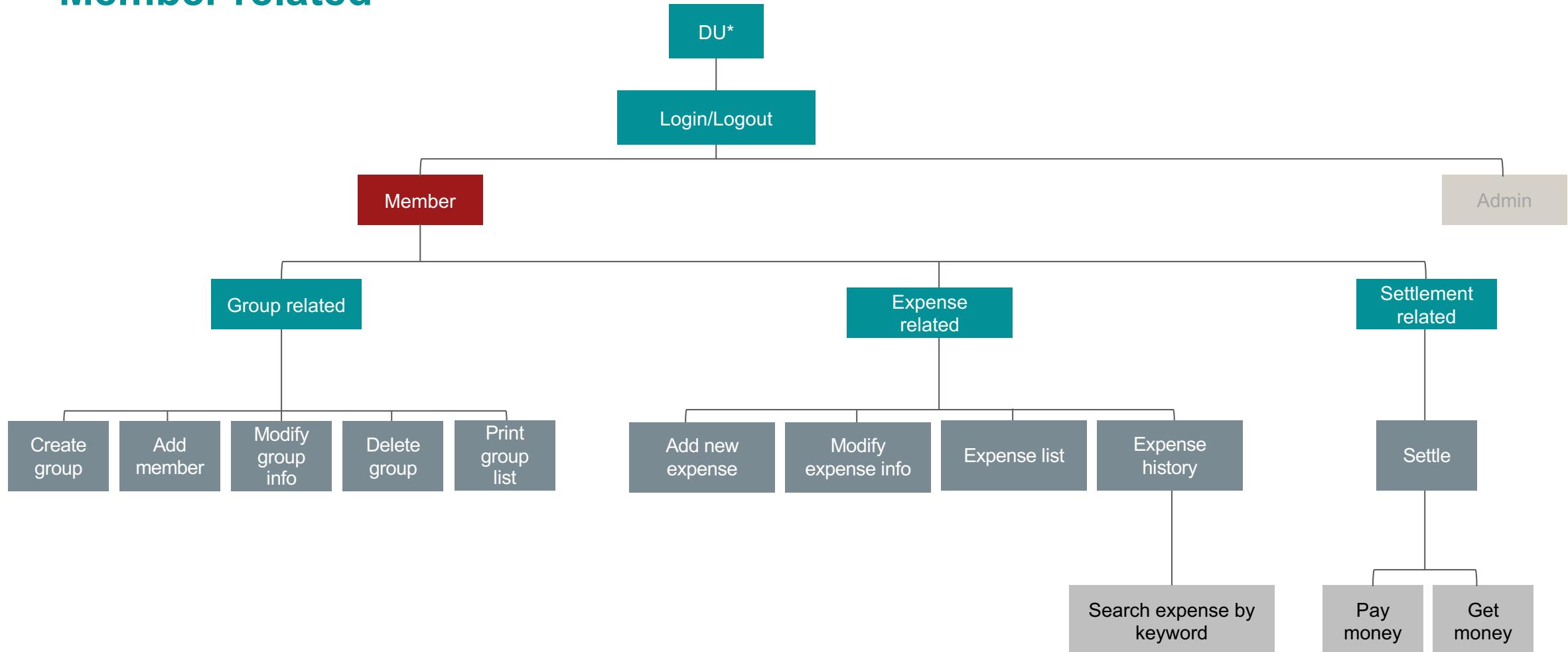


\*DU = Divvy Up

# 1.3 Work breakdown structure (WBS)



## Member related

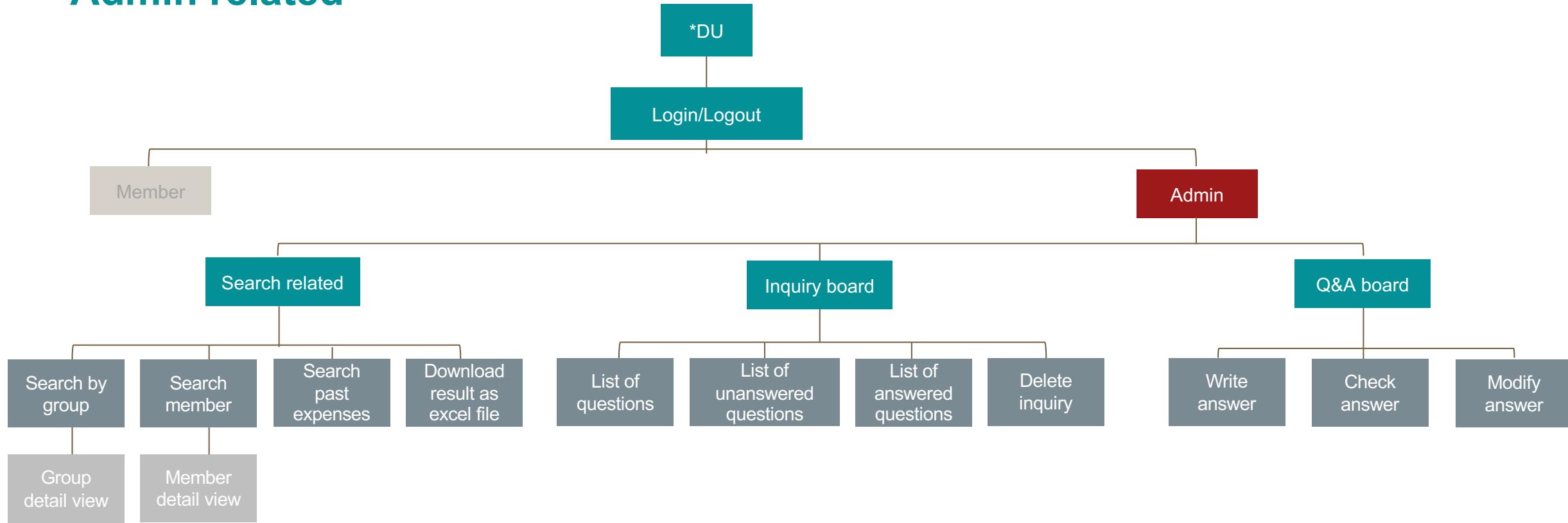


\*DU = Divvy Up

# 1.3 Work breakdown structure (WBS)



## Admin related



\*DU = Divvy Up

# 1.4 Division of Work



**Yoonseo Koo**

- Software design and presentation
- Features relating to group functions
  - Creating, deleting and printing list of groups.
  - Modifying group information
  - Adding, removing and printing the list of members in a groups (group creator only)
- Features relating to expenses
  - Inserting & deleting new expenses
  - Updating member balance according to an algorithmic rule (self created formula using Oracle SQL)
  - Modifying expense information (automatically updating member's balance)
  - Printing expense history
- Features relating to settlement process
  - Calculations on the final balance of each member



**Bin Kim**

- Member login and sign up
- Social features
  - Ability to follow and unfollow specific members
- Notification function
  - Sending automatic notifications when new interactions are made (new follower, added to new group...etc)
  - Implementation of real-time notification alerts using ajax
- Q&A board
  - Bulletin boards that only administrators can answer and delete

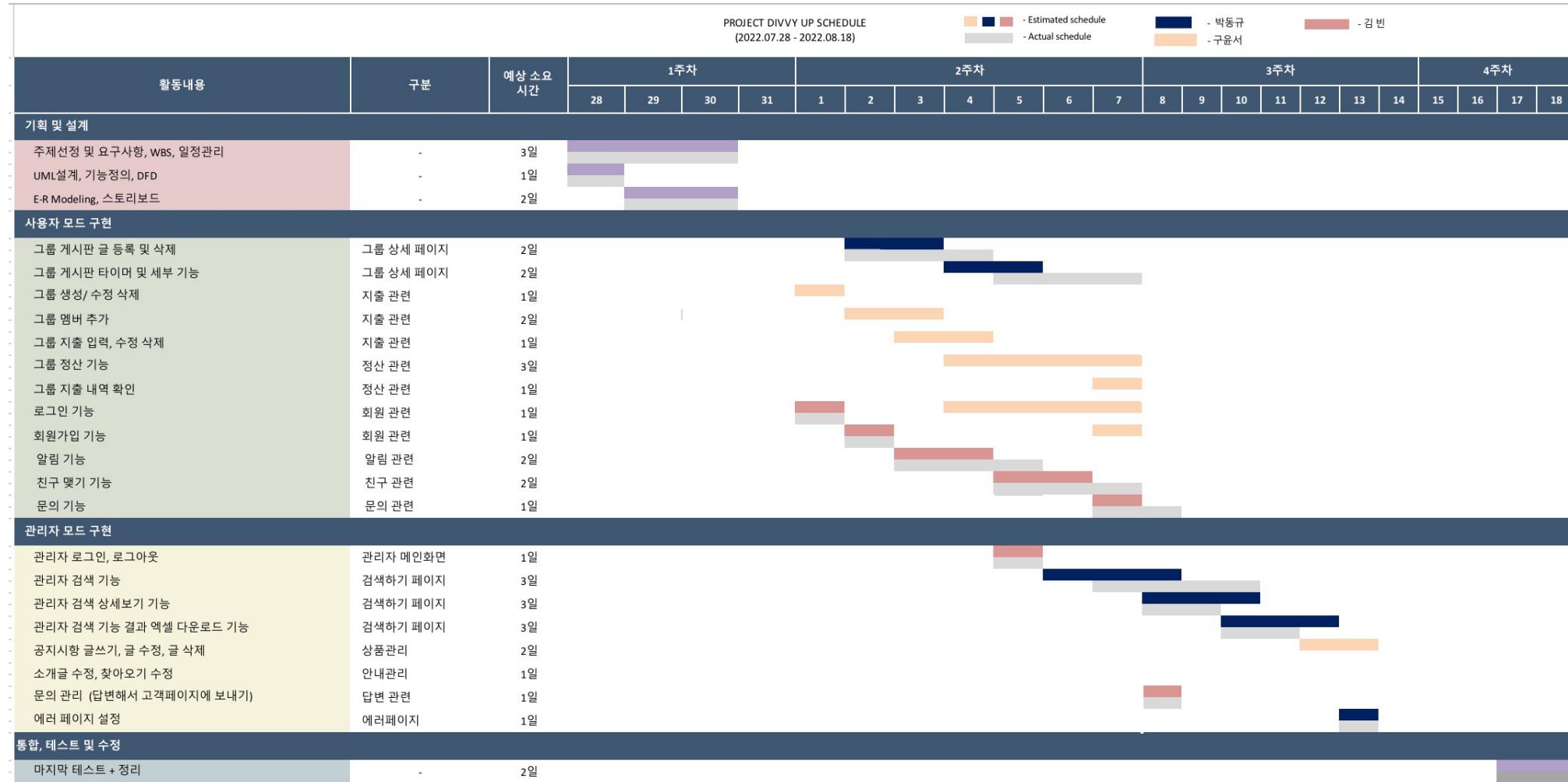


**Don-gyu Park**

- Team Git Administrator
- Real-time chatting function to use within the group
  - Printing the latest conversation (periodically) using ajax and the timer method
  - Real-time text input function that can attach files
  - Implementation of the infinite scrolling feature
- Administrator-related features
  - Searching and sorting feature for registered members, groups and expenses
  - Ability to download information on an Excel file.
- Error page and error handling features

# 1.5 Schedule

## Gantt Chart



# 1.6 Requirements Analysis



## Member

- Members can modify their own information.
- Members can create groups. (The member who created the group becomes the group leader)
- Members can add and delete friends in the group. (Only for the member who created the group)
- Members can search for their groups.
- A member can search for a friend's ID.
- Members can follow & unfollow other members.
- Members can write, check, edit, and delete posts on the inquiry board.
- Members can check notifications and handle them as "read".
- Members can write, delete, and attach files on the group bulletin board with instantaneous response times
- Members in the group can add/modify/delete their expenses
- Group leader (group creator) can use the settlement function to settle balances.
- During the settlement process, members with a negative balance pay the amount to be paid using the "pay" button.
- When all the members with negative balances pay their due, members with positive balances can receive their due through the "get" button.
- After each payment/collection the relating member's balance updates to null
- When the settlement is finished, group can be deleted

# 1.6 Requirements Analysis



## Admin

- Administrators can search for (1)registered members, (2)groups, and (3) expense records by keyword
- Administrators can sort search results by name and creation date.
- Administrators can download all search results as excel files.
- Administrators can view requirements posts made by members through the Q&A bulletin board
- Administrators can write, edit, and delete answers through the Q&A bulletin board.

# 1.6 Requirements Analysis



## User rights



### ▷ Terminology index

- User : Everyone that visit the Divvy Up website
- Admin : Individuals that inherited the rights of an admin
- Non-member user : All users that use the website without making an account
- Member : All users that use the website that has an account



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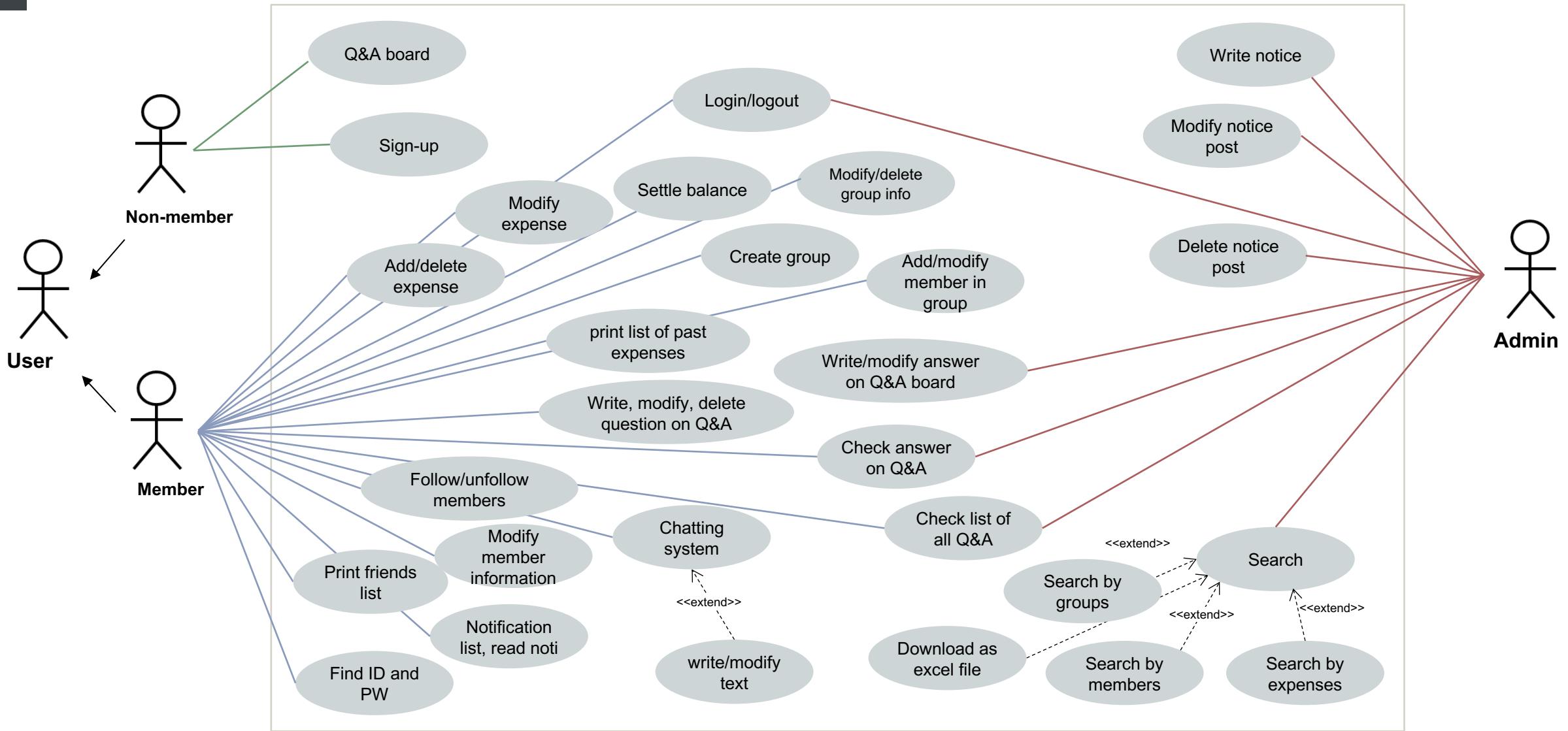
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## Implementation & Testing

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# 2.2 Use Case Diagram



# 2.3 Information Architecture

## Members



대분류	중분류	소분류	설명	Controller 호출	해당 Controller	Service	mapper ID/ DAO method명	전달 parameter	뷰단			
MEMBER  Regarding Expenses	지출 정보 추가 (1/n)	지출 방법	지출방식 선택	selectEventType.do	EventController	x	x	gid	event/selectEventType.jsp			
				insertEventForm.do		eventDetailService	printMidList	gid	event/insertEventForm.jsp			
				insertEvent.do		eventService	insertEvent	eid	groups/groupsInfo.jsp			
						eventDetailService	insertEventDetail	mids				
		지출 정보 추가 (직접입력)	새로운 지출 추가하기 (직접입력)	insertEventForm2.do		eventDetailService	insertEventDetailPayer	mids				
				insertEvent2.do		groupDetailService	updateGroupDetail	gid				
		지출 내역 수정	지출 내역, 또는 참여 멤버 수정하기			eventHistoryService	insertEventHistory		groups/groupsInfo.jsp			
						eventDetailService	deleteEventDetail					
						eventDetailService	printMidList	gid				
						eventService	insertEvent2	eid				
						eventDetailService	insertEventDetail2	mids, share				
						eventDetailService	insertEventDetailPayer2	gid				
						groupDetailService	updateGroupDetail					
						eventHistoryService	insertEventHistory					
						eventDetailService	deleteEventDetail					
						eventService	eventList	gid	event/eventList.jsp			
MEMBER  Regarding Expenses	지출 내역 삭제	지출 내역 삭제	멤버 잔액 수정	eventList.do	EventController	centralSystemService	checkAddition	gid	event/eventList.jsp			
				modifyEventForm.do		eventService	getEvent	eid	event/modifyEventForm.jsp			
						eventHistoryService	getEventHistory	eid	event/modifyEventForm.jsp			
				modifyEvent.do		eventService	modifyEvent		event/eventList.jsp			
				deleteEvent.do		groupDetailService	rollbackEventInfo	eid, gid	main/main.jsp			
						eventHistoryService	deleteEventHistory	eid				
						eventService	deleteEvent	eid				

# 2.3 Information Architecture

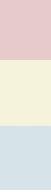
## Members



대분류	중분류	소분류	설명	Controller 호출	해당 Controller	Service	mapper ID/ DAO method명	전달 parameter	뷰단	
MEMBER	Regarding Groups	그룹 리스트 출력	그룹 내 멤버 출력	groupList.do	GroupsController	groupsService	groupList	pageNum, mid	groups/groupList.jsp	
			페이지를 위한 그룹 수 불러오는 메소드				countGroups	mid		
		그룹 상세보기	그룹 정보 출력	groupInfo.do		groupsService	groupInfo	gid		
			속한 멤버 출력			groupDetailService	groupDetailList	gid		
			정산 관련 서비스			centralSystemService	checkAddition	gid		
		그룹 생성	그룹 정보 입력	groupInsertForm.do		centralSystemService	checkAllPaid	gid		
			그룹 생성 가능			centralSystemService	checkFinishSplit	gid		
			그룹 멤버 정보 저장			groupsService	nextGid		groups/groupInsertForm.jsp	
			그룹 생성자 정보 저장			groupsService	followList	mid		
		그룹 정보 수정	그룹 정보 불러오기	modifyForm.do		groupsService		groups	main/mainto.do	
			그룹 멤버 리스트 불러오기			groupDetailService		fids		
			그룹 정보 수정			groupDetailService		mid		
			그룹 멤버 수정			groupsService	groupInfo	gid	groups/groupInfo.do	
		그룹 삭제	그룹 삭제 전, 그룹 관련 채팅 지우기	deleteGroup.do		groupsDetailService	groupDetailList	gid		
			그룹 삭제 전 멤버 지우기			groupsService	modify	groups		
			그룹 삭제 전, 그룹 지출 지우기			groupDetailService	insertGroupDetailNew	fids, gid		
			그룹 삭제 전, 그룹 지출내역 지우기			groupBoardService	step1BeforeDeleteGroup	gid		
			그룹 내 일어난 모든 지출 지우기			groupDetailService	step2BeforeDeleteGroup	gid		
			그룹 내 일어난 모든 정산 지우기			eventHistoryService	step3BeforeDeleteGroup	gid		
			그룹 지우기			eventDetailService	step4BeforeDeleteGroup	gid		
		그룹 정보 불러오기	그룹에 멤버 추가	insertGroupDetail.do	GroupDetailController	eventService	step5BeforeDeleteGroup	gid	groupDetail/insertGroupForm.jsp	
			그룹 멤버 정보 불러오기	groupDetailList.do		centralSystemService	step6BeforeDeleteGroup	gid		
		그룹 멤버 수정	그룹 내 멤버 빼기	deleteMember.do		groupsService	finalStepDeleteGroup	gid	groups/groupInfo.do	
						groupDetailService	groupDetailList	gid		
						groupDetailService	deleteMember	mid, gid		

# 2.3 Information Architecture

## Members


  
 Yoonseo Koo  
 Dong-gyu park  
 Bin Kim



대분류	중분류	소분류	설명	Controller 호출	해당 Controller	Service	mapper ID/ DAO method명	전달 parameter	뷰단		
MEMBER	Regarding Settlements	정산 시작하기	중앙제어시스템이 정산 시작하기	insertSplit.do	centralSystemController	centralSystemService	insertSplit	gid	groups/groupInfo.do		
			받아야 할 돈 계산				totalSum	gid			
		정산 하기	돈 내기	payForm.do		centralSystemService	getMember	mid	centralSystem/confirmPay.jsp		
							pay	mid, gid			
			돈 받기	pay.do		groupDetailService	updateBalance	mid			
							allPayChk				
			정산 끝났는지 채크	getForm.do		centralSystemService	getMember	mid	groups/groupInfo.do		
							get	mid, gid, session			
				get.do			finishedSplit	gid			
MEMBER	Regarding notification	알림보내기	친구 팔로우 시 해당 친구에게 알람 발송	followMember.do	FollowController	notificationHistoryService	insertFollowNotification	notSender, notReceiver			
			친구 언팔 시 해당 친구에게 알람 발송	unfollowMember.do			insertUnfollowNotification				
			그룹 생성시 초대된 친구에게 알람 발송	groupInsert.do			insertGroupNotification				
		알림 리스트	모든 알람 리스트 출력	notificationConfirmForm.do	notificationHistoryController		getAllNotificationList	mid	notification/notificationConfirmForm		
			모든 알람 갯수 구하기				getAllNotificationCnt	mid			
		알림읽기	알림 읽음 처리	updateUncheckNotification.do			updateUncheckNotification	notid	main/mainto.do		
		Regarding followers	팔로우 하기	친구 추가	followMember.do	FollowService	followMember	from_mid, to_mid			
			언팔로우 하기	친구 삭제	unfollowMember.do		unfollowMember	from_mid, to_mid			
			팔로잉 리스트	내가 팔로우한 친구 리스트 출력	mainto.do		myFollowingList	mid	main/mainto.do		
			팔로우 리스트	나를 팔로우하는 친구 리스트 출력			myFollowerList	mid	main/mainto.do		

# 2.3 Information Architecture

## Members



대분류	중분류	소분류	설명	Controller 호출	해당 Controller	Service	mapper ID/ DAO method명	전달 parameter	뷰단
MEMBER	Regarding Q&A	내 문의글 리스트	내가 작성한 문의글 리스트 출력	listQboardForMe.do	QboardController	QboardService	listQboardForMe	mid	QnAboard/listQboardForMe
		내 문의글 개수	내가 작성한 문의글 갯수 구하기				getQboardTotCntForMe	mid	
		문의글 상세보기	해당 문의글 상세보기	viewQboard.do			viewQboard	qbid	QnAboard/viewQboard
		문의글 작성하기	문의글 작성폼으로 가기	writeQboardForm.do			writeQboard	qbid	QnAboard/writeQboardForm
			문의글 작성하기	writeQboard.do			writeQboard	Qboard	
		문의글 수정하기	문의글 수정폼으로 가기	modifyQboardForm.do			modifyQboard	qbid	QnAboard/modifyQboardForm
			자신이 작성한 문의글 수정하기	modifyQboard.do			modifyQboard	Qboard	
	Regarding mem info	회원정보 수정하기	회원정보 수정폼으로 가기	modifyMemberForm.do	MemberController	MemberService			member/modifyMemberForm
			회원정보 수정	modifyMember.do			modifyMember	Member	
	Regarding Friends	친구 찾기	검색한 친구 리스트 출력	searchMemberList.do			searchMember	schMid	forward../main/mainto.do
	Regarding chatting	그룹 게시판 글 목록 보기	최근 글 리스트 20개 출력	groupboard/groupChatBoard.do	GroupBoardController	GroupBoardService	listLatest20Groupboard	gid	groupBoard/groupChatBoardMain.jsp
		그룹 게시판 글 쓰기	그룹 게시판 글 쓰기 및 파일 첨부 가능	groupboard/insertGroupBoard.do			insertGroupboard	groupBoard	groupBoard/groupChatBoardMain.jsp
		그룹 게시판 글 삭제	그룹 게시판 글 삭제하기	groupboard/deleteGroupBoard.do			deleteGroupboard	gbid	groupBoard/groupChatBoardMain.jsp
		그룹게시판 실시간 글 가져오기	타이머로 주기적인 최신글 가져오기	groupboard/singleLatestGroupboard.do			singleLatestGroupboard	gid	groupBoard/groupChatBoardMain.jsp
		게시판 예전 글 불러오기	이전글 리스트 가져오기	groupboard/pastGroupBoardList.do			listPast20Groupboard	groupBoard	groupBoard/groupChatBoardMain.jsp

# 2.3 Information Architecture

## Admin



대분류	중분류	소분류	설명	Controller 호출	해당 Controller	Service	mapper ID/ DAO method명	전달 parameter	뷰단		
ADMIN	Regarding Admin Account	문의글 처리 대기 리스트	문의글 처리 대기 리스트	listUncheckedQboardForAdmin	QboardController	QboardService	listUncheckedQboardForAdmin	pageNum	QnAboard/listUncheckedQboardForAdmin		
			처리 대기 문의글 갯수 구하기				getUncheckedQboardTotCntForAdmin				
		문의글 처리 완료 리스트	문의글 처리 완료 리스트	listCheckedQboardForAdmin			listCheckedQboardForAdmin	pageNum	listCheckedQboardForAdmin		
			처리 완료 문의글 개수 구하기				getCheckedQboardTotCntForAdmin				
		답변글 작성하기	답변글 작성폼으로 가기	writeAboardForm.do	AboardController	AboardService			QnAboard/writeAboardForm		
			답변글 작성하기	writeAboard.do			writeAboard	Aboard			
		답변글 수정하기	답변글 수정폼으로 가기	modifyAboardForm.do					QnAboard/modifyAboardForm		
			답변글 수정하기	modifyAboard.do			modifyAboard	Aboard			
		답변글 보기	해당 문의글에 대한 답변글 보기	viewQboard	QboardController	QboardService	viewAboard		QnAboard/viewQboard		
		관리자 로그인	관리자 로그인 폼으로 가기	adminLoginForm.do	AdminController	AdminService			admin/adminLoginForm		
			관리자로 로그인하기	adminLogin.do			aloginCheck				
Regarding Admin Search	Regarding Admin Search	회원 검색하기	회원 이름, 아이디, 이메일별 검색 및 검색 기준별 정렬하기	adminSearch/searchMember.do	AdminSearchController	AdminSearchService	searchMember	adminSearchKeyWord	adminSearch/adminSearchMain.jsp		
		회원 검색결과 불러오기	스크롤 이용한 회원 검색결과 더 불러오기	adminSearch/scrollSearchMember.do			scrollSearchMember	adminSearchKeyWord	adminSearch/adminSearchMain.jsp		
		그룹 검색하기	그룹 이름, 아이디, 그룹생성 회원 아이디별 검색 및 검색 기준별 정렬하기	adminSearch/searchGroup.do			searchGroup	adminSearchKeyWord	adminSearch/adminSearchMain.jsp		
		그룹 검색결과 불러오기	스크롤 이용한 그룹 검색결과 더 불러오기	adminSearch/scrollSearchGroup.do			scrollSearchGroup	adminSearchKeyWord	adminSearch/adminSearchMain.jsp		
		지출 내역 검색하기	지출기록명, 아이디, 생성 회원, 그룹아이디 별 검색	adminSearch/searchEvent.do			searchEvent	adminSearchKeyWord	adminSearch/adminSearchMain.jsp		
		지출내역 검색결과 불러오기	스크롤 이용한 지출기록 검색결과 더 불러오기	adminSearch/scrollSearchEvent.do			scrollSearchEvent	adminSearchKeyWord	adminSearch/adminSearchMain.jsp		
		회원 상세보기	회원 검색결과 상세보기	AdminSearchResultDetail/SearchResultDetailMember.do	InSearchResultDetailCont	memberService, followService, groupService	SearchResultDetailMember	mid	adminSearchResultDetail/SearchResultDetailMember.jsp		
		그룹 상세보기	그룹 검색결과 상세보기	AdminSearchResultDetail/SearchResultDetailGroup.do			SearchResultDetailGroup	gid	adminSearchResultDetail/SearchResultDetailGroup.jsp		
		검색결과 엑셀 다운로드	회원 검색결과 엑셀다운로드	excel/excelDownloadMember.do	SearchExcelDownloadCont	AdminSearchExcelDownloadService	excelDownloadMember	adminSearchKeyWord			
			그룹 검색결과 엑셀다운로드	excel/excelDownloadGroup.do			excelDownloadGroup	adminSearchKeyWord			
			지출 내역 검색결과 엑셀 다운로드	excel/excelDownloadEvents.do			excelDownloadEvents	adminSearchKeyWord			

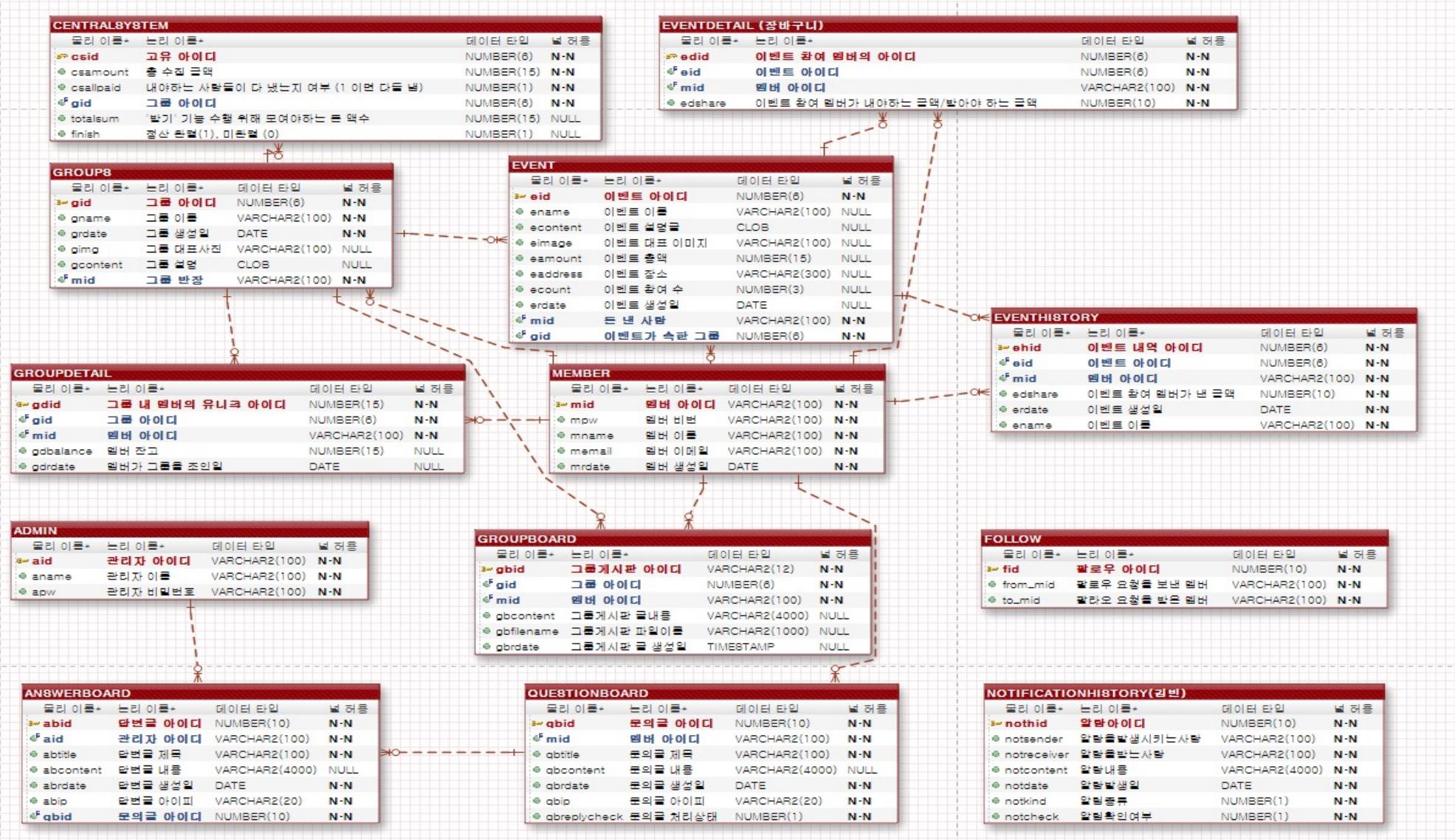
# 2.3 Information Architecture

## User



대분류	중분류	소분류	설명	Controller 호출	해당 Controller	Service	mapper ID/ DAO method명	전달 parameter	뷰단
USFR	Regarding User functions	회원 가입하기	회원 가입폼으로 가기	joinForm.do	MemberController	MemberService	confirmMid	mid	member/confirmMid
			아이디 중복 체크	confirmMid			confirmMemail	memail	member/confirmMemail
			이메일 중복 체크	confirmMemail			joinMember	Member	
			회원 가입	join					member/loginForm
		회원 로그인하기	로그인폼으로 가기	loginForm.do			loginMember	mid, mpw	
			로그인폼으로 가기	login.do					member/searchIdPwForm
		아이디 & 패스워드 찾기	아이디 & 패스워드 찾기폼으로 가기	searchIdPwForm.do			searchMid	mname, memail	
			아이디 찾기	searchMid.do			searchMpw	mid, mname, memail	
			비밀번호 찾기	searchMpw.do					

# 2.4 Data Base Design Exerd



# 2.5 Project Explorer



The screenshot displays the Project Explorer view of a Java web application. The structure is organized into several packages and resources:

- com.lec.divvyup [divvyUp DK]**
  - Spring Elements
  - JAX-WS Web Services
  - Java Resources
    - src/main/java
      - com.lec.divvyup.controller
        - AboardController.java
        - AdminController.java
        - AdminSearchController.java
        - AdminSearchExcelDownloadController.java
        - AdminSearchResultDetailController.java
        - CentralSystemController.java
        - ErrorController.java
        - EventController.java
        - FollowController.java
        - GroupBoardController.java
        - GroupDetailController.java
        - GroupsController.java
        - MainController.java
        - MemberController.java
        - NotificationHistoryController.java
        - QboardController.java
      - com.lec.divvyup.dao
        - AboardDao.java
        - AdminDao.java
        - AdminSearchDao.java
        - CentralSystemDao.java
        - EventDao.java
        - EventDetailDao.java
        - EventHistoryDao.java
        - FollowDao.java
        - GroupBoardDao.java
        - GroupDetailDao.java
        - GroupsDao.java
        - MemberDao.java
        - NotificationHistoryDao.java
        - QboardDao.java
      - com.lec.divvyup.service
        - AboardService.java
        - AboardServiceImpl.java
        - AdminSearchExcelDownloadService.java
        - AdminSearchService.java
        - AdminSearchServiceImpl.java
        - AdminService.java
        - AdminServiceImpl.java
        - CentralSystemService.java
        - CentralSystemServiceImpl.java
        - EventDetailService.java
        - EventDetailServiceImpl.java
        - EventHistoryService.java
        - EventHistoryServiceImpl.java
        - EventService.java
        - EventServiceImpl.java
        - FollowService.java
        - FollowServiceImpl.java
        - GroupBoardService.java
        - GroupBoardServiceImpl.java
        - GroupDetailService.java
        - GroupDetailServiceImpl.java
        - GroupsService.java
        - MemberService.java
        - MemberServiceImpl.java
        - NotificationHistoryService.java
        - NotificationHistoryServiceImpl.java
        - QboardService.java
        - QboardServiceImpl.java
      - com.lec.divvyup.util
        - Paging.java
        - test.java
    - Deployed Resources
      - WEB-INF
        - classes
        - spring
          - appServlet
            - adminSearchMain.css
            - adminSearchResult.css
          - root-context.xml
        - views
          - admin
            - adminLoginForm.jsp
          - board
            - boardList.css
            - boardWrite.css
          - centralSystem
            - pay.css
          - event
            - eventInsert.css
            - eventList.css
            - eventModify.css
            - select.css
          - groups
            - groupBoard.css
            - groupInfo.css
            - groupInsert.css
            - groupModify.css
          - main
            - footer.css
            - header.css
            - main.css
            - main2.css
          - member
            - join.css
            - join2.css
            - join3.css
            - login.css
            - tempChattCss.css
          - event
            - groupBoard
            - eventList.jsp
            - insertEventForm.jsp
            - insertEventForm2.jsp
            - modifyEventForm.jsp
            - selectEventType.jsp
          - notification
            - groupBoard
            - listCheckedQboardForAdmin.jsp
            - listQboardForMe.jsp
            - listQboardForMember.jsp
            - listUncheckedQboardForAdmin.jsp
            - modifyAboardForm.jsp
            - modifyQboardForm.jsp
            - viewQboard.jsp
            - writeAboardForm.jsp
            - writeQboardForm.jsp
          - QnAboard
            - listCheckedQboardForAdmin.jsp
            - listQboardForMe.jsp
            - listQboardForMember.jsp
            - listUncheckedQboardForAdmin.jsp
        - css
          - admin
          - board
          - centralSystem
          - event
          - groups
          - main
          - member
          - notification
          - QnAboard
        - spring
          - appServlet
          - root-context.xml
        - admin
        - board
        - centralSystem
        - event
        - groups
        - main
        - member
        - notification
        - QnAboard



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- 1.2 Resources
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- 1.4 Division of work
- 1.5 Schedule
- 1.6 Requirements Analysis

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## Program Design

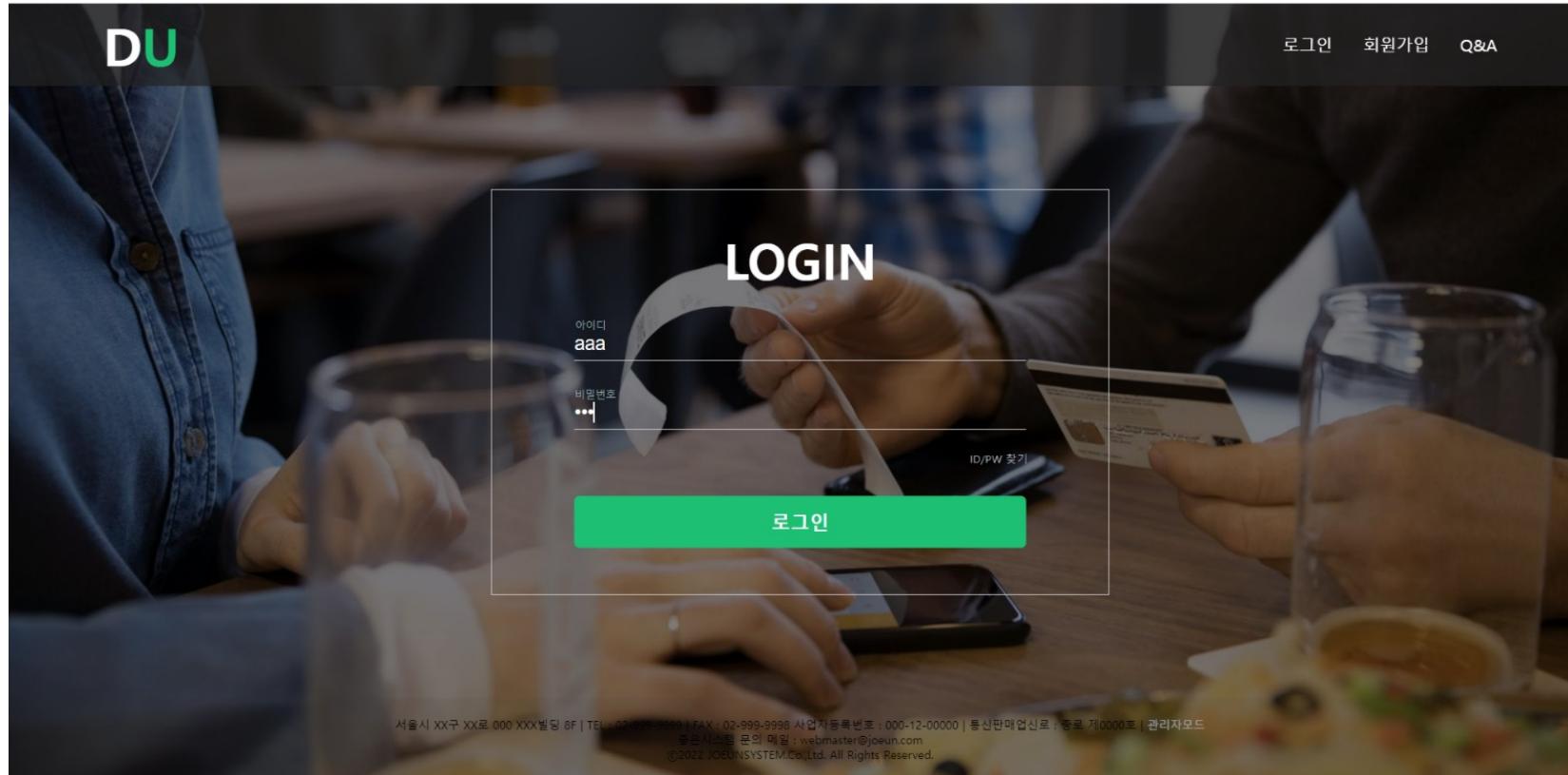
- 2.1 Usecase Diagram
- 2.2 Data Flow Diagram (DFD)
- 2.3 Information Architecture
- 2.4 Data Base Design
- 2.5 Story Board, User Interface

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## Implementation & Testing

- 3.1 Demonstration
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- 3.3 Evaluation

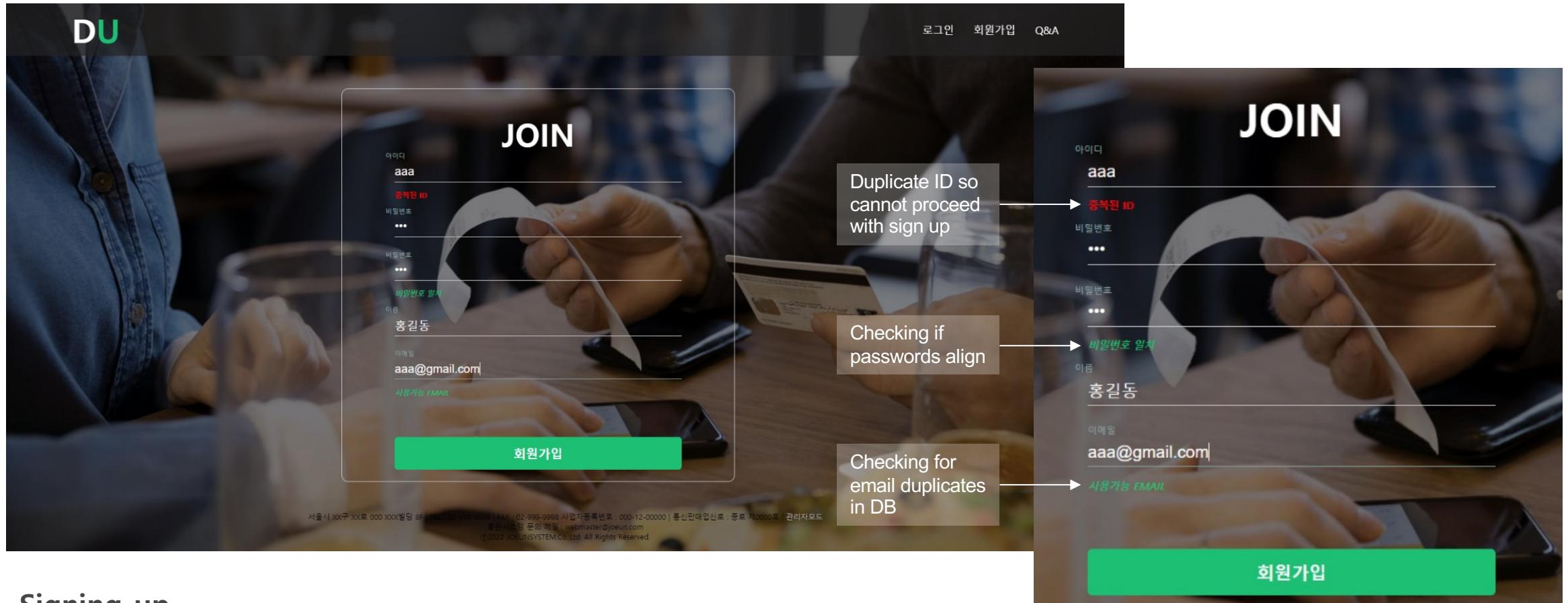
# 3.1 Demonstration



## Login

Send parameters mid and mpw and if there is existing data in the DB, set user information in session

# 3.1 Demonstration



## Signing-up

- Send Member vo parameter values and save in DB using the insert query
- Through validation, avoid duplicates for ID and email (ajax)

# 3.1 Demonstration



The screenshot shows a login page with fields for '아이디' (ID), '이름' (Name), and '이메일' (Email). A green 'PW 찾기' (Find PW) button is prominent. Below the fields is a large 'LOGIN' button. A red box highlights the 'ID/PW 찾기' (Find ID/PW) link on the right side of the page.

**Example of email sent with user's ID information**

The email subject is '김빈님의 아이디'. The body of the email includes the message: '당신의 ID는 wen6113입니다.' and attachments labeled '활인 글씨 부분' and '파란 글씨 부분'.

**Dum**

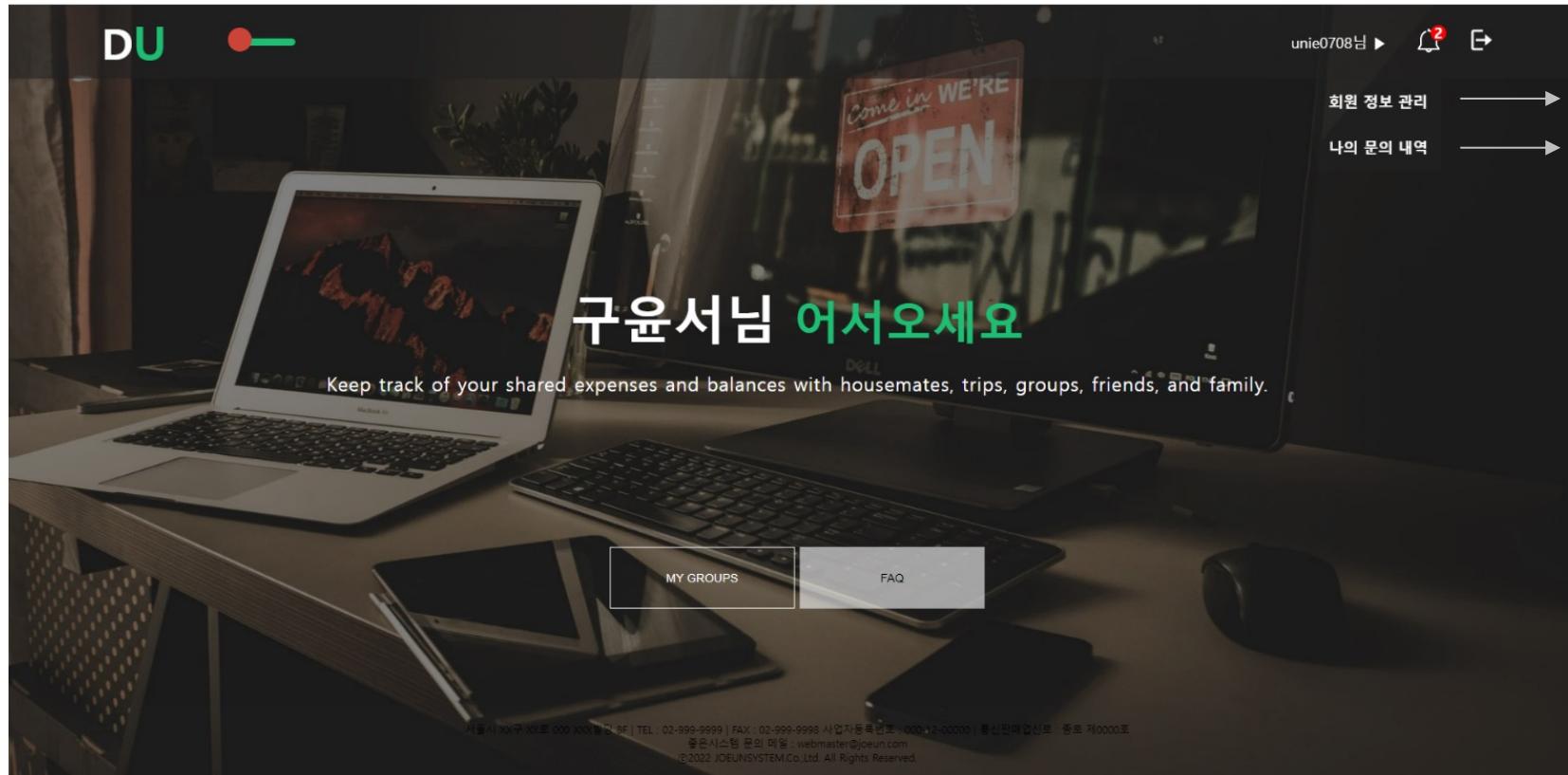
서울시 어떤구 XXX로 00-00000 | 08-13 18:16  
08-13 12:20

## Finding ID/PW

If the red box is clicked, a pop up appears where the user can input the necessary information the ID and PW is sent through the user's email



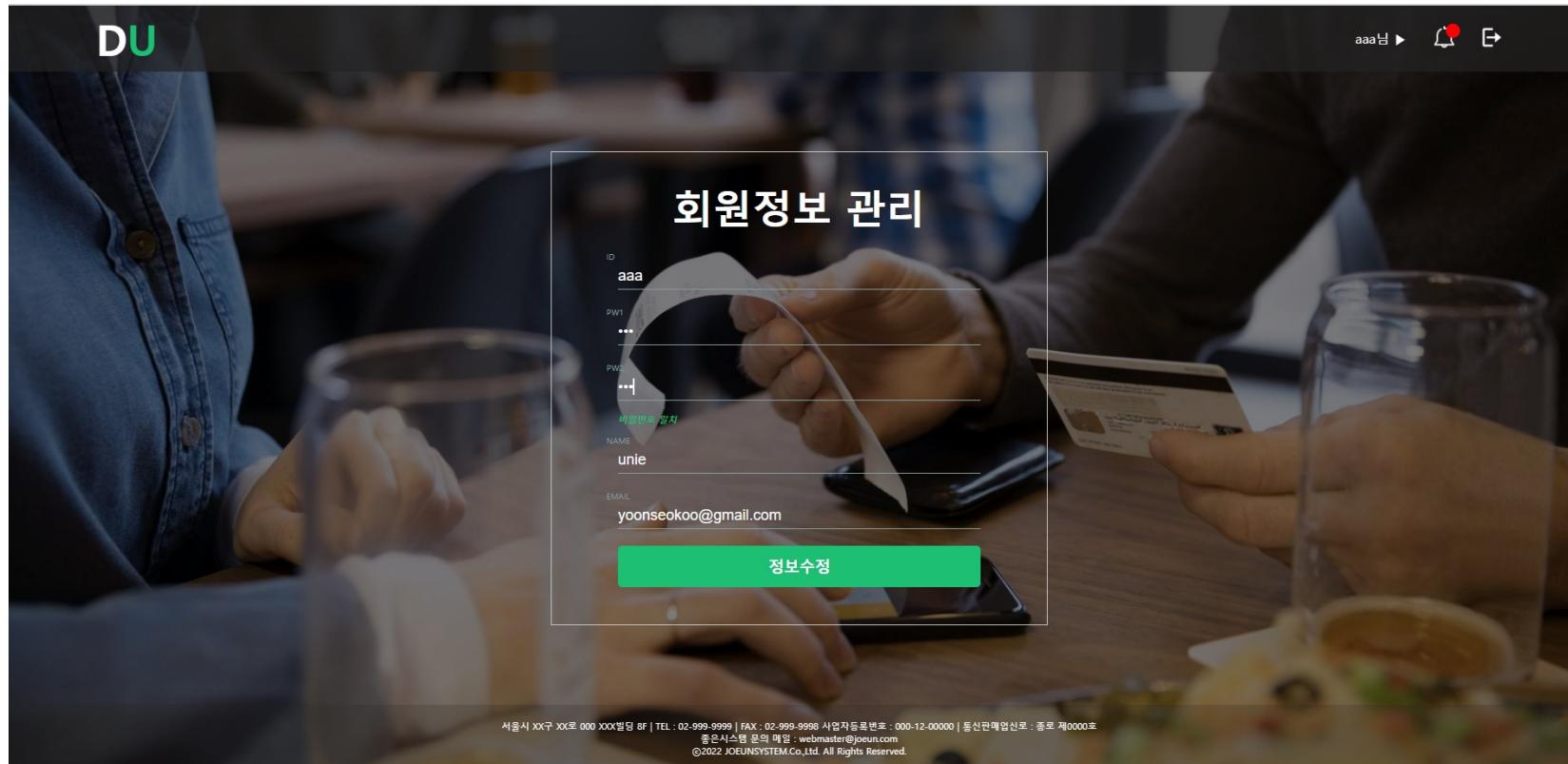
# 3.1 Demonstration



## Main page

- Once logged in, header changes
- When user hovers over their ID (top left), tabs appear

# 3.1 Demonstration



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## Modify Information (ajax)

Information can only be changed if the correct password is inputted

# 3.1 Demonstration



## Notification

- If user gets followed/unfollowed by another member, they receive a notification
- Notification list is visible if user clicks on the bell icon (top right) – ajax
- Once notification icon is clicked, its status is converted as 'read' and number on icon becomes 0

# 3.1 Demonstration



## 나의 문의 내역

NO.	글번호	제목	작성자	등록일	처리상태
13	15	문의사항이 있습니다 수정	aaa	2022-08-13	접수
12	14	저는 진영조이입니다 수정	aaa	2022-08-10	처리완료
11	12	문의글9	aaa	2022-08-09	접수
10	11	문의글8	aaa	2022-08-09	접수
9	10	문의글7	aaa	2022-08-09	접수
8	9	문의글6	aaa	2022-08-09	접수
7	8	문의글5	aaa	2022-08-09	접수
6	7	문의글4	aaa	2022-08-09	접수
5	6	문의글3	aaa	2022-08-09	처리완료
4	5	문의글2	aaa	2022-08-09	처리완료

1 2

When clicked

## 15번 글 상세보기

문의사항이 있습니다 수정

글번호 15 | 작성자 aaa | 등록일 2022-08-13 | 처리상태 접수

문의사항이 있습니다수정

문의글 수정하기 Modify inquiry

When clicked

## 문의글 수정하기

제목 문의사항이 있습니다 수정

작성자 aaa

해당글 15

문의사항이 있습니다수정

글 수정

## My inquires page

- Each inquiry can be clicked
- Modify button appears for inquires written by the logged in user

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종근시스템 문의 메일 : webmaster@jeoun.com  
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# 3.1 Demonstration

The screenshot displays the DU application's user interface. On the left side, there are three main sections: 'Following (5)', 'Followers (2)', and '친구찾기' (Find friend). The 'Following' section lists users 'a1409', 'aaa', and 'bbb' with options to 'UNFOLLOW'. The 'Followers' section lists users 'aaa' and 'bbb'. The '친구찾기' section includes search fields for '아이디 검색' and 'Search ID', and a list of found users: 'yerin' (서예린), 'owen6113' (김민), and 'kimb1n1042' (김민), each with a green plus sign for adding and a red minus sign for removing.

On the right side, a feed of posts is shown, each with a timestamp of '2022-08-17'. The posts are:

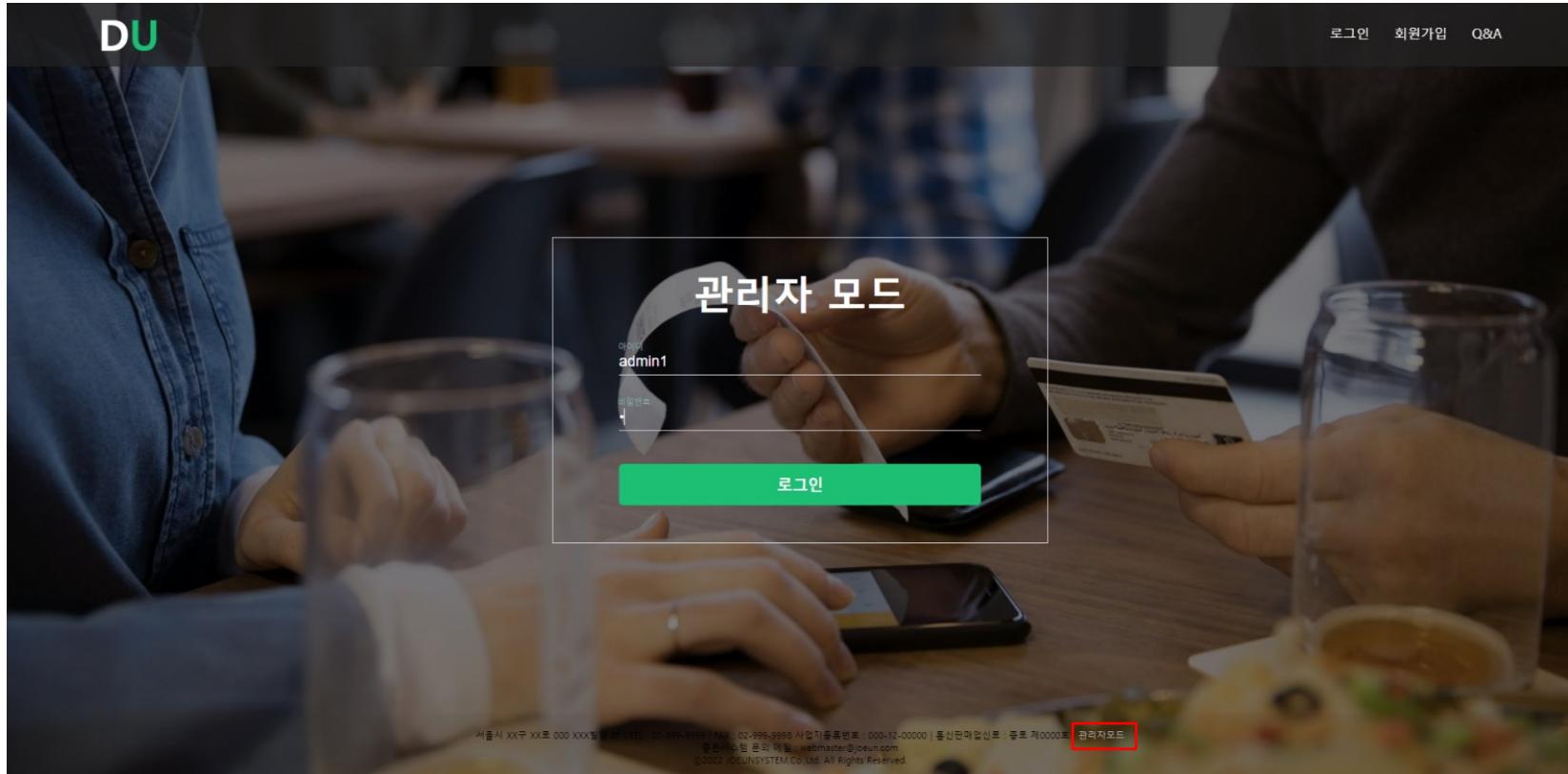
- Post 11: 19학번 동호회! (19th-grade hobby group!)
- Post 10: 축구 모임 목요일 종합운동장에서 다 모여! (Football gathering on Thursday at the comprehensive sports field!)
- Post 9: 교회그룹 소그룹 모임, 점심 정산하기! (Church group meeting, lunch settlement!)
- Post 8: 메가IT 아카데미 수요일 수요일은 전주식당 (MegaIT Academy Wednesday) Wednesday is at Jinju Restaurant
- Post 7: 데이트 설레네요 (Date, it's exciting)

At the bottom right of the feed area, there are buttons for '1 2' (page navigation) and '그룹 생성' (Create group).

## Follow

- User can search for members through the 'find friends' section and follow (unfollow) members through the green plus sign (red minus sign)
- Followers and Followees can each be found in the lists above.

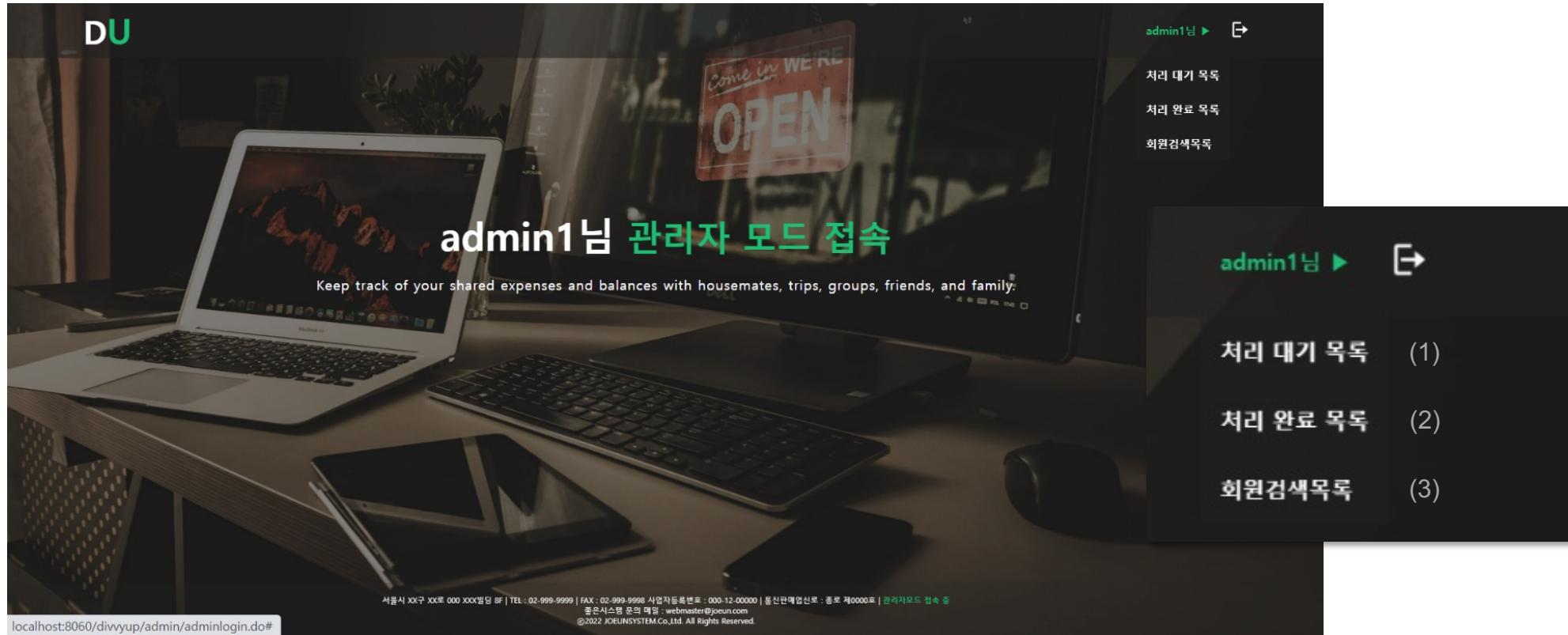
# 3.1 Demonstration



## Admin mode

- When the 'admin mode' button is clicked in the footer, admin login page appears
- With the correct admin ID and PW, admin can access the admin main page

# 3.1 Demonstration



## Admin main page

In the header, there is a submenu for each feature: (1) Inquiries waiting to be processed, (2) inquiries that has been answered, and (3) member search feature

# 3.1 Demonstration



DU

admin1님 ► E

### 문의글 처리 대기 목록 Inquiries waiting to be processed

NO.	글번호	제목	작성자	등록일	처리상태
9	16	화평짱	owen6113	2022-08-14	접수
8	15	문의사항이 있습니다 수정	aaa	2022-08-13	접수
7	13	화가 남니sk 테스트	owen6113	2022-08-09	접수
6	12	문의글9	aaa	2022-08-09	접수
5	11	문의글8	aaa	2022-08-09	접수
4	10	문의글7	aaa	2022-08-09	접수
3	9	문의글6	aaa	2022-08-09	접수
2	8	문의글5	aaa	2022-08-09	접수
1	7	문의글4	aaa	2022-08-09	접수

1

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When clicked →

### 16번 글 상세보기 Detail page for inquiry 16

화평짱

글번호 16 | 작성자 owen6113 | 등록일 2022-08-14 | 처리상태 접수

—

답변글 처리하기 answer

When clicked ↓

Admin's reply insert form

답변글 작성하기

제목  내용 입력

작성자 admin1 해당글 16

글 작성

## (1) Inquiries waiting to be processed

- List of unread (unprocessed) inquiries. When clicked, opens its details page
- The 'answer' button, allows admin to process the specific inquiry through a reply.

# 3.1 Demonstration



DU

admin1님 ► [Edit]

### 문의글 처리 완료 목록 *Inquiries that has been processed*

NO.	글번호	제목	작성자	등록일	처리상태
7	14	저는 진영조입니다 수정	aaa	2022-08-10	처리완료
6	6	문의글3	aaa	2022-08-09	처리완료
5	5	문의글2	aaa	2022-08-09	처리완료
4	4	문의글 1	aaa	2022-08-09	처리완료
3	3	저는 진영조입니다 수정	aaa	2022-08-07	처리완료
2	2	정말 잘쓰고 있습니다	bbb	2022-08-05	처리완료
1	1	정산하기에 오류가 있는 것 같습니다	aaa	2022-08-05	처리완료

1

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## (2) inquiries that has been answered

- List of inquiries that has been already processed by admin
- When clicked, opens its details page, its response and a modify button

14번 글 상세보기 *Detail page for inquiry 14*

저는 진영조입니다 수정

글번호 14 | 작성자 aaa | 등록일 2022-08-10 | 처리상태 처리완료

저는 진영조입니다 수정

14번 글에 대한 답변글 *Admin's reply for inquiry 14*

송이요

작성자 admin1 | 등록일 2022-08-12 | 글번호 7 | 해당글 14

123

답변글 수정하기

When clicked

Modify reply  
답변글 수정하기

제목

작성자 admin1 | 해당글 5

\* 모아

글 수정

# 3.1 Demonstration



The screenshot shows the 'Following' section of the DU application. It lists five items:

- ▶ a1409 UNFOLLOW
- ▶ aaa UNFOLLOW
- ▶ bbb UNFOLLOW
- ▶ ccc UNFOLLOW
- ▶ ddd UNFOLLOW

Below this is the 'Followers' section, which lists two items:

- ▶ aaa
- ▶ bbb

At the bottom is the '친구찾기' (Friend Search) section, which includes a dropdown menu set to '아이디 검색' (ID search), a search input field, and a list of users:

yerin	서예린	-
owen6113	오wen6113	-
김민	김민	-
kimbin1042	김민	+
김보	김보	-

ex. Session ID = unie0708

The screenshot shows the 'Following' section for session ID 'unie0708'. It lists five items:

- ▶ unie0708님 ► 🔍 6 🔍 ↗
- ▶ 11 19학번 동호회!
- ▶ 10 촉구 모임 목요일 종합운동장에서 다 모여!
- ▶ 9 교회그룹 소그룹 모임, 점심 정산하기!
- ▶ 8 메가IT 아카데미 수요일 수요일은 전주식당
- ▶ 7 데이트 설레네요

At the bottom right of the page, there is a '그룹 생성' (Group Create) button.

The screenshot shows the 'Following' section for session ID 'a1409'. It lists two items:

- ▶ a1409님 ► 🔍 6 🔍 ↗
- ▶ 11 19학번 동호회!

Below this is the 'Followers' section, which lists two items:

- ▶ bbb
- ▶ unie0708

At the bottom is the '친구찾기' (Friend Search) section, which includes a dropdown menu set to '아이디 검색' (ID search), a search input field, and a list of users:

yerin	서예린	-
owen6113	오wen6113	-
김민	김민	-
kimbin1042	김민	+
김보	김보	-

ex. Session ID = a1409

## Group list

- Displays only the groups to which the logged-in member (session ID) belongs in
- Through the paging feature prints five groups at a time



# 3.1 Demonstration

The screenshot shows a web application interface for managing a group. At the top, there's a navigation bar with the DU logo, user information (unie0708님), and a logout button. The main content area is titled "그룹 정보 Group info". It displays group details such as group number (10), name (축구 모임), creation date (2022-08-17), purpose (목요일 종합운동장에서 다 모여!), and creator (unie0708). Below this, a section titled "Group members" lists four members: bbb, aaa, a1409, and unie0708, each with their respective expense amounts (-7500 or 22500) and dates (2022-08-17). At the bottom, there are buttons for "이벤트 목록" (Event list), "이벤트 추가" (Add event), "정산하기" (Settle), and "뒤로가기" (Go back). A footer contains legal text and a copyright notice.

From left to right:  
Modify information, group chatting

From left to right:  
Expense history, add expense, settle, go back

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## Group detail

- By clicking on a group, its detailed information and its members can we seen.
- Modify group information button appears only when the group creator logins
- When group creator logins and there is existing expenses, a button to settle balances appear.

# 3.1 Demonstration



The screenshot shows two main windows of the DU application:

- Group info**: A modal window showing group details:
  - 그룹 번호: 10
  - 이름: 축구 모임
  - 생성일: 2022-08-17
  - 내용: 목요일 종합운동장에서 다 모여!
  - 생성자: unie0708

Buttons: Modify, 그룹 정보수정, 그룹 채팅
- 10번 정보수정**: A modify group page:
  - Group name: 축구 모임 (File selected, selected file is empty)
  - Group image: 그룹 이미지첨부
  - Group description: 그룹 설명 (Text area: 목요일 종합운동장에서 다 모여!)
  - Group members: 그룹 멤버 추가 (List: yerin, owen6113, bbb, aaa, a1409, checkboxes)
  - Group creator: 그룹 생성자: unie0708
  - Created date: 생성일: 17-Aug-2022

Buttons: 수정, 뒤로가기, 그룹삭제

Annotations:

- A green arrow points from the "그룹 정보수정" button in the first window to the "그룹 정보수정" button in the second window.
- A green arrow points from the "그룹삭제" button in the second window back to the "그룹삭제" button in the first window.
- Text at the bottom left: "localhost:8067 내용: 그룹을 삭제하시겠습니까? 삭제 후 복구 불가합니다" and "Confirm delete? Once deleted group cannot be recovered".
- Text at the bottom left: "From left to right: Confirm, abort" with "확인" and "취소" buttons highlighted.

## Modifying group detail

- Everything can be modifying except for the group creator and created date.
- Member's balance must be 0, in order to remove a member from the group
- Only the group leader has access to the 'delete group' button and when clicked, page alerts for a confirmation. Upon deletion, all activities that happened within the group (expenses, chatting...) that occurred within the group gets deleted.

# 3.1 Demonstration



## 그룹 정보

Group info

그룹 번호	10
이름	축구 모임
생성일	2022-08-17
내용	목요일 종합운동장에서 다 모여!
생성자	unie0708

[그룹 정보수정](#) [그룹 채팅](#)

### 그룹 멤버 :

bbb	-7500	2022-08-17
aaa	-7500	2022-08-17
a1409	-7500	2022-08-17
unie0708	22500	2022-08-17

[Expense history](#) [이벤트 목록](#) [이벤트 추가](#) [정산하기](#) [뒤로가기](#)

## DU

unie0708님 ▶ 홈으로 E

### Expense history 지출내역

#### 지출 (2022-08-17)

지출명	9시부터 10시 축구 풋살장 대여비
지출내용	
총지출액	30000
주소	서울 송파구 잠실로 12
참여자 수	4
지불한 사람	unie0708

[Modify expense](#) [이벤트 정보수정](#)

[Go back](#) [뒤로가기](#)

서울시 XX구 XXX동 8F | TEL : 02-999-9999 | FAX : 02-999-9999 | 사업자등록번호 : 000-12-00000 | 흥신원마입신료 | 통화 차0000호  
운영시스템 문의 메일 : webmaster@joeun.com  
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## Expense history

- All past expenses that occurred within the group

# 3.1 Demonstration



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이벤트 생성자 : unie0708

## 지출정보 수정 7 Modify expense no. 7

이벤트 명	9시부터 10시 축구
설명	풋살장 대여비
사진	파일 선택   선택된 파일 없음
총 금액	30000
주소	서울 송파구 잠실로 12

이벤트 참여자 :

멤버 아이디	발을 금액	낼 금액
a1409	0	-7500
aaa	0	-7500
bbb	0	-7500
unie0708	22500	0

From left to right:  
Confirm modify, delete expense

수정      이벤트 삭제

localhost:8067 내용:

이벤트를 삭제하시겠습니까? 삭제 후 복구 불가합니다

Confirm delete? Once deleted group cannot be recovered

확인      취소

From left to right:  
Confirm, abort

서울시 XX구 XX로 000 XXX빌딩 8F | TEL : 02-999-9999 | FAX : 02-999-9998 사업자등록번호 : 000-12-00000 | 통신판매업신고 : 종로 제0000호  
좋은시스템 문의 메일 : webmaster@joeun.com  
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## Modify expense/delete expense

- Only the member that made the expense has access to the 'delete expense' button and when clicked, page alerts for a confirmation. Upon deletion, the balances restores.

# 3.1 Demonstration



**그룹 정보** *Group info*

그룹 번호	10
이름	축구 모임
생성일	2022-08-17
내용	목요일 종합운동장에서 다 모여!
생성자	unie0708

[그룹 정보수정](#) [그룹 채팅](#)

**그룹 멤버 :**

bbb	-7500	2022-08-17
aaa	-7500	2022-08-17
a1409	-7500	2022-08-17
unie0708	22500	2022-08-17

[이벤트 목록](#) [이벤트 추가](#) [정산하기](#) [뒤로가기](#)

Add expense

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**1/n 정산** *Split equally*

**직접 입력** *Insert specific values*

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## Insert expense

- When adding an expense, user can select the type of split they want (equal split vs unequal split)

# 3.1 Demonstration



Split equally

1/n 정산

The screenshot shows a web-based application interface for managing group expenses. At the top, there's a navigation bar with the DU logo, user information (unie0708), and a logout link. The main content area has a title "그룹 10 지출입력" (Group 10 Expense Input). The form fields include:

- 지출명:** 식당 (Restaurant) / 전주식당 (Jeonju Restaurant)
- 지출내용:** 서울 강남구 가로수길 5 (Seoul Gangnam-gu Garosugil 5)
- 지출총액:** 30000
- 주소:** 서울 강남구 가로수길 5
- 관련사진:** 파일 선택 (File Selection) / 선택된 파일 없음 (No selected files)
- 참여멤버:** checkbox list with options bbb, aaa, a1409. The checkboxes for bbb and aaa are checked.
- 참여수:** 3

A gray callout box labeled "checkbox" points to the checkbox list under "참여멤버". At the bottom of the form, there are two buttons: "지출입력" (Expense Input) and "뒤로가기" (Back).

## Equal split

- Members involved in the expense are selected through a checkbox
- The payer's (member inserting the expense) balance increases by:  $\frac{TC}{N} \times (N - 1)$
- Rest of the member's (people who partook in the activity generating the expense but hasn't paid) balance decreases by  $\frac{TC}{N}$

## Key

**TC** = Total cost of expense  
**N** = Total number of people involved in activity that generated the expense

# 3.1 Demonstration

직접 입력

Insert specific values



이벤트 생성자 : unie0708

## 그룹 10 지출입력

지출명  
쇼핑타임  
현대백화점에서

지출내용

지출총액  
120000

주소  
서울 강남구 도산대로 402-2

관련사진  
파일 선택 선택된 파일 없음

참여멤버  
bbb: 24000  
aaa: 0  
a1409: 60000  
금액 확인완료

참여수  
4

이벤트 생성자  
unie0708

**Input box**

서울시 XX구 XX로 000 XXX빌딩 8F | TEL : 02-999-9999 | FAX : 02-999-9999 사용자등록번호 : 000-12-00000 | 통신판매업신고 : 종로 제0000호  
출은시스템 문의 메일 : webmaster@jeoun.com  
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이벤트 생성자 : unie0708

그룹 10 지출입력

지출명  
쇼핑타임  
현대백화점에서

지출내용

지출총액  
120000

주소  
서울 강남구 도산대로 402-2

관련사진  
파일 선택 선택된 파일 없음

참여멤버  
bbb: 0  
aaa: 0  
a1409: 190000  
금액을 확인해주세요

Please check

참여수  
4

이벤트 생성자  
unie0708

**Input box**

## Unequal split

- Each member's due is written next to their name
- If sum of each member's due, exceeds the total cost of the expense, system blocks user from inserting the expense (ajax)

# 3.1 Demonstration



The screenshot shows a web application interface for managing a group. On the left, there's a sidebar with a '그룹 정보' (Group Information) section containing details like group number (10), name (축구 모임), creation date (2022-08-17), content (목요일 종합운동장에서 다 모여!), and creator (unie0708). Below this is a '그룹 멤버' (Group Members) table with four entries: bbb, aaa, a1409, and unie0708, each with a date of 2022-08-17 and a value of -17500 or -7500. At the bottom of the sidebar are buttons for '이벤트 목록', '이벤트 추가' (highlighted with a green border), '정산하기', and '뒤로가기'. A large central area displays a modal dialog with the text 'localhost:8067 내용: 정산하시겠습니까? 정산이 시작되면 지출추가가 불가합니다' (localhost:8067 Content: Do you want to settle? Once it starts, new expenses cannot be added) and two buttons: '확인' (Confirm) and '취소' (Abort). An arrow points from the right side of the main page towards the modal.

localhost:8067 내용:  
정산하시겠습니까? 정산이 시작되면 지출추가가 불가합니다

localhost:8067 내용:  
정산하시겠습니까? 정산이 시작되면 지출추가가 불가합니다  
Would you like to begin the  
settlement process? Once it starts  
new expenses cannot be added

From left to right:  
Confirm, abort

## Settle

- Only the group leader has access to the 'settle' button and when clicked, page alerts for a confirmation. Upon initiation, no more expenses can be added to the group.

# 3.1 Demonstration



1

그룹 멤버 :			
bbb	-17500	2022-08-17	
aaa	-17500	2022-08-17	
a1409	-7500	2022-08-17	
unie0708	42500	2022-08-17	<button>받기</button>

GET

이벤트 목록

ex. Session ID = unie0708

2

그룹 멤버 :			
bbb	-17500	2022-08-17	
aaa	-17500	2022-08-17	<button>내기</button>
a1409	-7500	2022-08-17	
unie0708	42500	2022-08-17	PAY

ex. Session ID = aaa

## Settle – part 2

- When settlement process begins, each member gets either of the following buttons next to their name1.
  1. GET : Positive balances (members with money to retrieve)
  2. PAY : Negative balances (members with money to pay)

# 3.1 Demonstration



The screenshot shows a sequence of three browser windows illustrating the 'Settle – part 3 (PAY)' feature:

- Group Information Page:** Shows a group named '축구 모임' (Football Club) created on '2022-08-17'. It lists members with negative balances:
  - bbb: -17500 (2022-08-17)
  - aaa: -17500 (2022-08-17)
  - a1409: -7500 (2022-08-17)
  - unie0708: 42500 (2022-08-17)A red arrow points from the 'aaa' member row to the 'When clicked' label.
- Payment Confirmation Pop-up:** A modal window titled 'aaa님 결제진행' (aaa's Payment Processing) displays the amount '-17500' and a password input field. It shows an error message: '비밀번호 불일치' (Incorrect password).
- Final Payment Confirmation Pop-up:** Another modal window titled 'aaa님 결제진행' shows the same information and a confirmation message: '비밀번호 확인 완료 Password confirmed'. It includes a 'Proceed with payment' button and a '결제진행' (Proceed with payment) button.

**Group Member Table:** A table on the right side of the interface shows the group members and their current balance status:

그룹 멤버 :	아이디	정상잔액	가입일	상태
	bbb	-17500	2022-08-17	Settlement completed
	aaa	0	2022-08-17	정산완료
	a1409	-7500	2022-08-17	

**Event Log:** A sidebar labeled '이벤트 목록' (Event Log) is visible on the right.

## Settle – part 3 (PAY)

- If a member with a negative balance logs in and enters the group page, the 'PAY' button is displayed as shown above.
- On click, a pop-up window appears where member can pay after confirming their password.
- Once paid, 'Settlement completed' is displayed next to the member's name and their balance nullifies

# 3.1 Demonstration



localhost:8067 내용:  
잔액 부족으로 정산을 진행할 수 없습니다

unie0708님 ► 홈으로 ⌂

그룹 정보

그룹 번호: 10  
이름: 축구 모임  
생성일: 2022-08-17  
내용: 목요일 종합운동장에서 다 모여!  
생성자: unie0708

그룹 정보수정 그룹 채팅

그룹 멤버:

bbb	-17500	2022-08-17
aaa	-17500	2022-08-17
a1409	-7500	2022-08-17
unie0708	42500	2022-08-17

발기

GET

이벤트 목록

Since member 'bbb' and 'aaa' still have to pay, when member 'unie0708' clicks "GET", instead of proceeding to the payment page, an alert pops up

localhost:8067 내용:  
잔액 부족으로 정산을 진행할 수 없습니다

This action cannot be proceeded due to a lack of balance

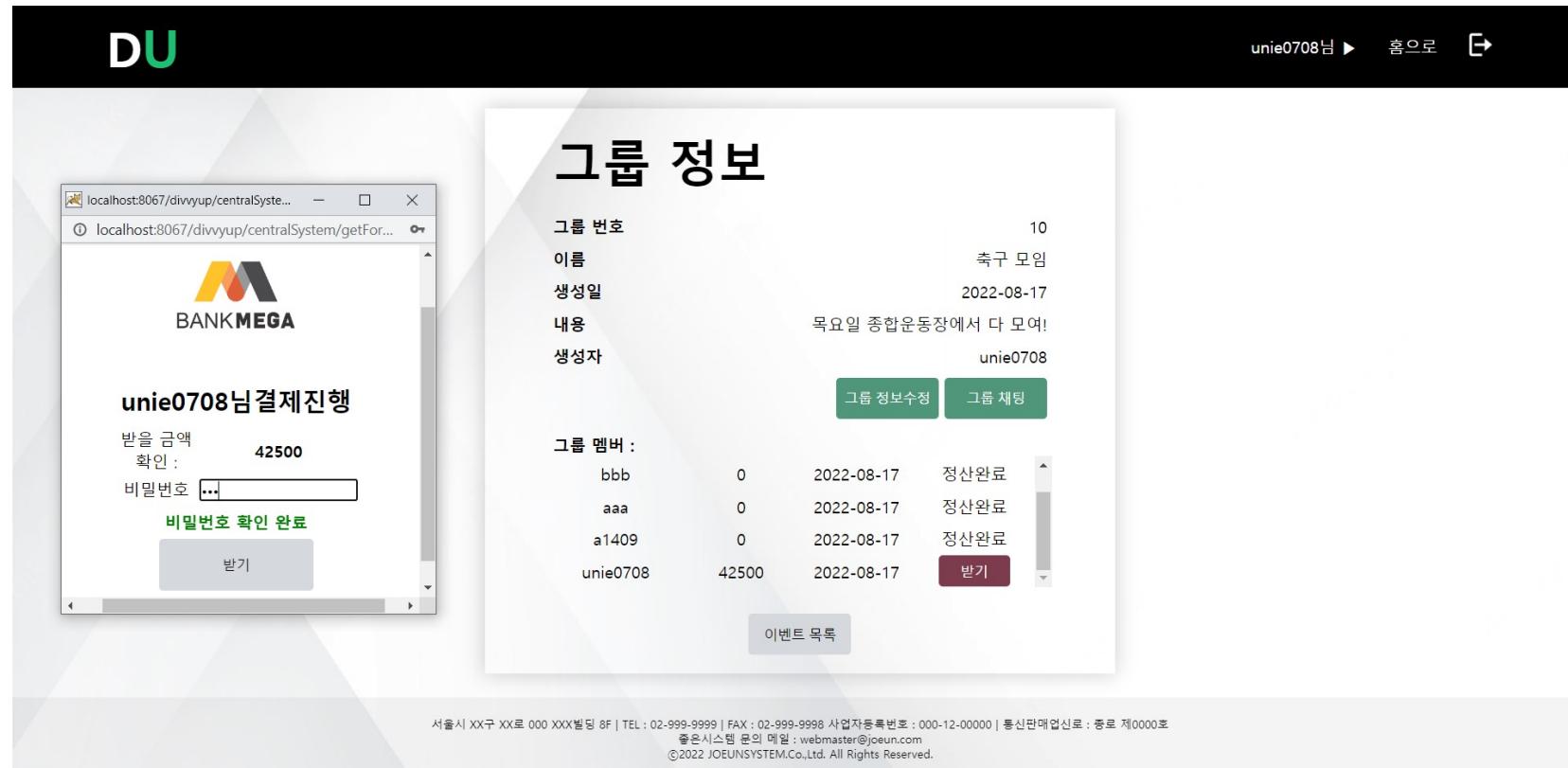
확인

서울시 XX구 XX로 000 XXX빌딩 8F | TEL : 02-999-9999 | FAX : 02-999-9999 사업자등록번호 : 000-12-00000 | 통신판매업신고 : 등록 제0000호  
풀온시스템 문의 메일 : webmaster@jeoun.com  
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## Settle – part 3 (GET)

- Until all members with a negative balance has paid their due, members with a positive value cannot retrieve their money.

# 3.1 Demonstration



## Settle – part 3 (GET)

- If a member with a positive balance logs in and enters the group page, the 'GET' button is displayed as shown above.
- On click, a pop-up window appears where member can get their money after confirming their password and once proceeded, 'Settlement completed' is displayed next to the member's name and their balance nullifies.

# 3.1 Demonstration



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## 그룹 정보

그룹 번호	10
이름	축구 모임
생성일	2022-08-17
내용	목요일 종합운동장에서 다 모여!
생성자	unie0708

그룹 정보수정 그룹 팀팅

그룹 멤버 :	아이디	정상잔액	가입일	정산완료
	bbb	0	2022-08-17	정산완료
	aaa	0	2022-08-17	정산완료
	a1409	0	2022-08-17	정산완료

정산이 끝났습니다 Settlement is complete

localhost:8067 내용:  
모든 정산이 끝났습니다  
Settlement is complete

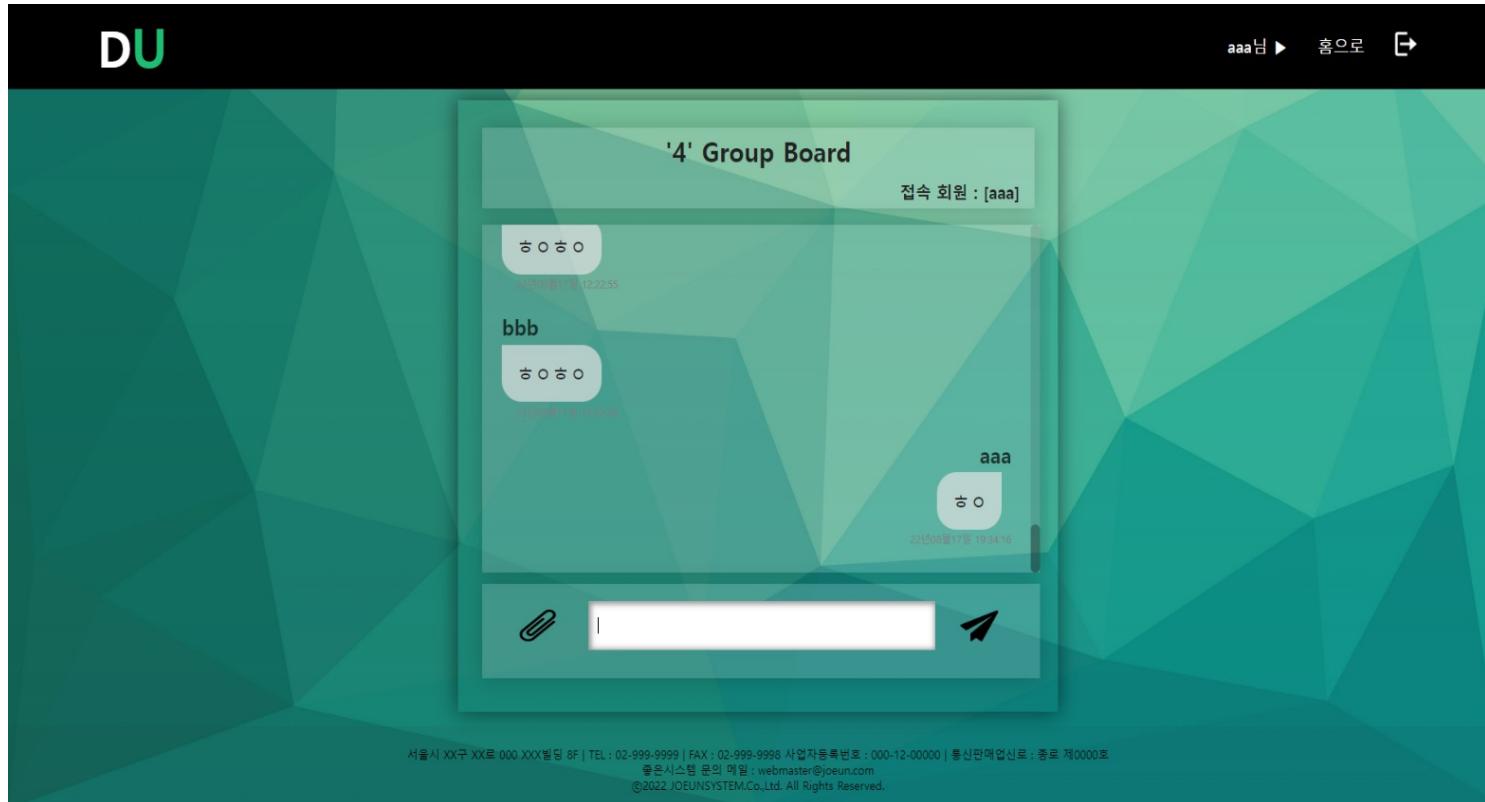
확인

서울시 XX구 XX로 000 XXX빌딩 8F | TEL : 02-999-9999 | FAX : 02-999-9999 사업자등록번호 : 000-12-00000 | 통신판매업신고 : 총괄 제0000호  
제작 및 운영 : 주식회사 DU | 웹사이트 : www.du.co.kr | 이메일 : webmaster@du.co.kr  
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## Settle – part 4

- When all members in the group has finished with their part of the settlement, a pop up indicates its completion.

# 3.1 Demonstration



## Group board (chatting feature)

- Periodic application data transmission with set timer to update recent posts (ajax)
- Scroll bottom position when entering text and sending new text
- Recognition of the 'Enter' key as a new text input

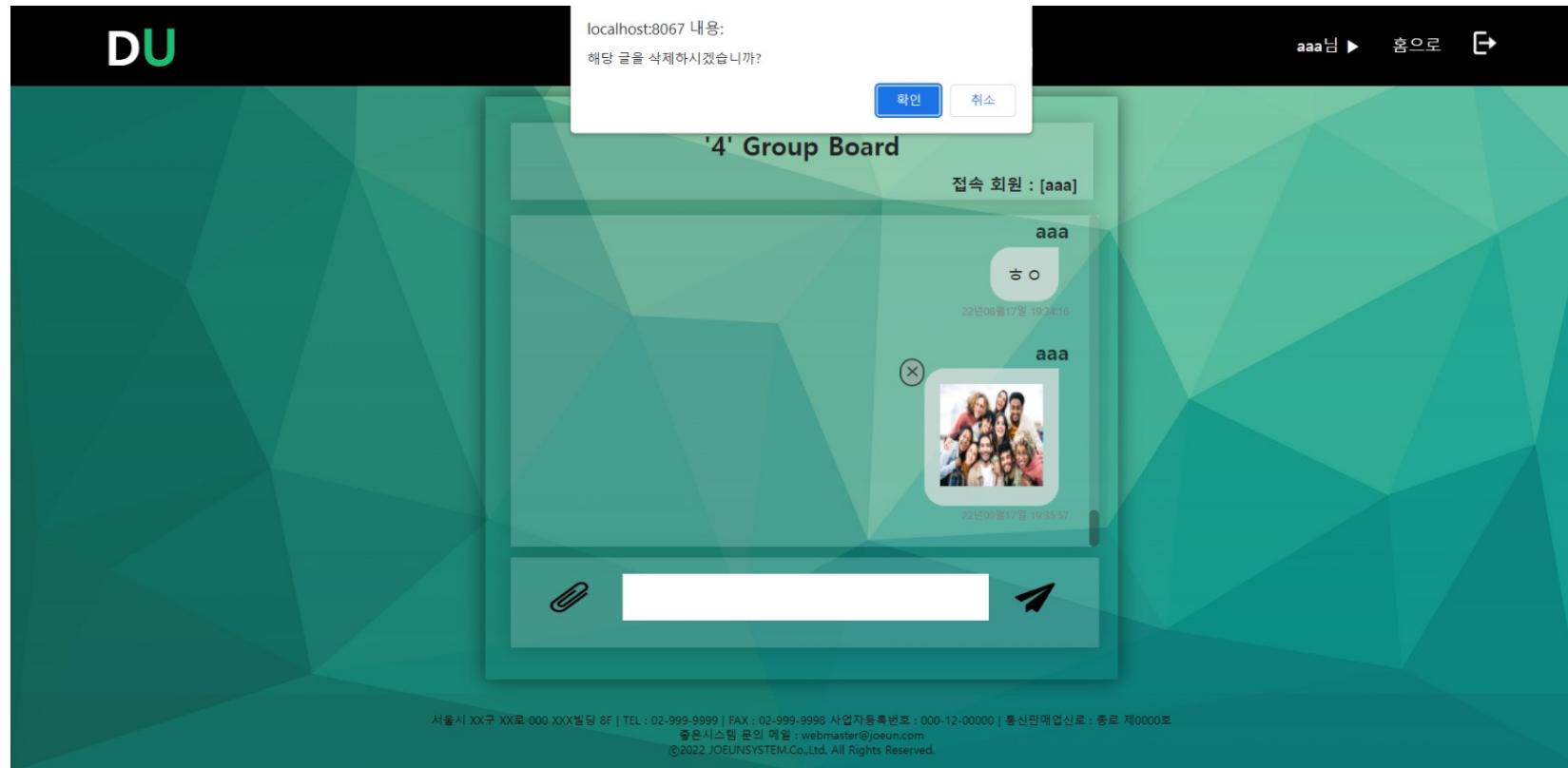
# 3.1 Demonstration



## Group board (chatting feature)

- Load previous post using the infinite scroll features
- Setting a tight-alignment for posts written by logged-in members (session) to replicate the chatting feature

# 3.1 Demonstration



## Group board (chatting feature)

- File upload function using ajax
- Possibility to delete posts

# 3.1 Demonstration

The screenshot shows a search interface titled "검색하기 게시판" (Search Board). At the top, there are three tabs: "회원 검색" (Member Search), "그룹 검색" (Group Search), and "지출기록 검색" (Expense History Search). The "회원 검색" tab is selected. Below the tabs, there is a dropdown menu with options: "회원 아이디", "회원 이름", "회원 아이디" (selected), and "회원 이메일". A search input field contains the letter "a", and a "검색" (Search) button is to its right. To the right of the search bar is a dropdown for "회원 가입일오름차순 정렬". The main area displays a table of search results:

회원 아이디	회원 이름	회원 이메일	회원 가입일
a1409	와길동	hon435@naver.com	2022-08-04
a1DH39	복길동	honFU@naver.com	2022-08-04
a13UF	이길동	hon45456@naver.com	2022-08-04
a11234	거길동	honF9OD@naver.com	2022-08-04
a126	수길동	hong4@naver.com	2022-08-04
a127	한길동	hong5@naver.com	2022-08-04

At the bottom of the table, there is a button labeled "검색결과 엑셀파일 다운로드" (Download search results as Excel file).

## Search features (Admin)

- Search by member, group, and expense history
- For each item admin can select search range (name, ID, email..etc)
- Result sorting can be specified (Name, ID and date)



# 3.1 Demonstration

The screenshot shows a user profile page with the following details:

**a11234 회원 상세정보**

회원 아이디	a11234
회원 이름	거길동
회원 이메일	honF9OD@naver.com
회원 가입일	2022-08-04

**following follower**  
해당 회원이 팔로잉 하는 해당 회원의 팔로워가 회원이 없습니다.  
회원이 없습니다.

**생성 그룹**  
해당 회원이 생성한 그룹이 없습니다.

## Search features (Admin)

- Shows detailed view page when clicking search result

# 3.1 Demonstration



The screenshot shows a web-based search interface titled "검색하기 게시판" (Search Board). The top navigation bar includes "회원 검색", "그룹 검색", and "지출기록 검색". A dropdown menu for "회원 아이디" is open. The main content area displays a table of event records:

회원 아이디	회원 이름	회원 이메일	회원 가입일
a11234	거길동	honF9OD@naver.com	2022-08-04
a123	종길동	hong1@naver.com	2022-08-04
a124	박길동	hong2@naver.com	2022-08-04
a125	김길동	hong3@naver.com	2022-08-04
a126	수길동	hong4@naver.com	2022-08-04
a127	한길동	hong5@naver.com	2022-08-04

At the bottom right of the table, there is a button labeled "검색결과 엑셀파일 다운로드" (Download search results as Excel file).

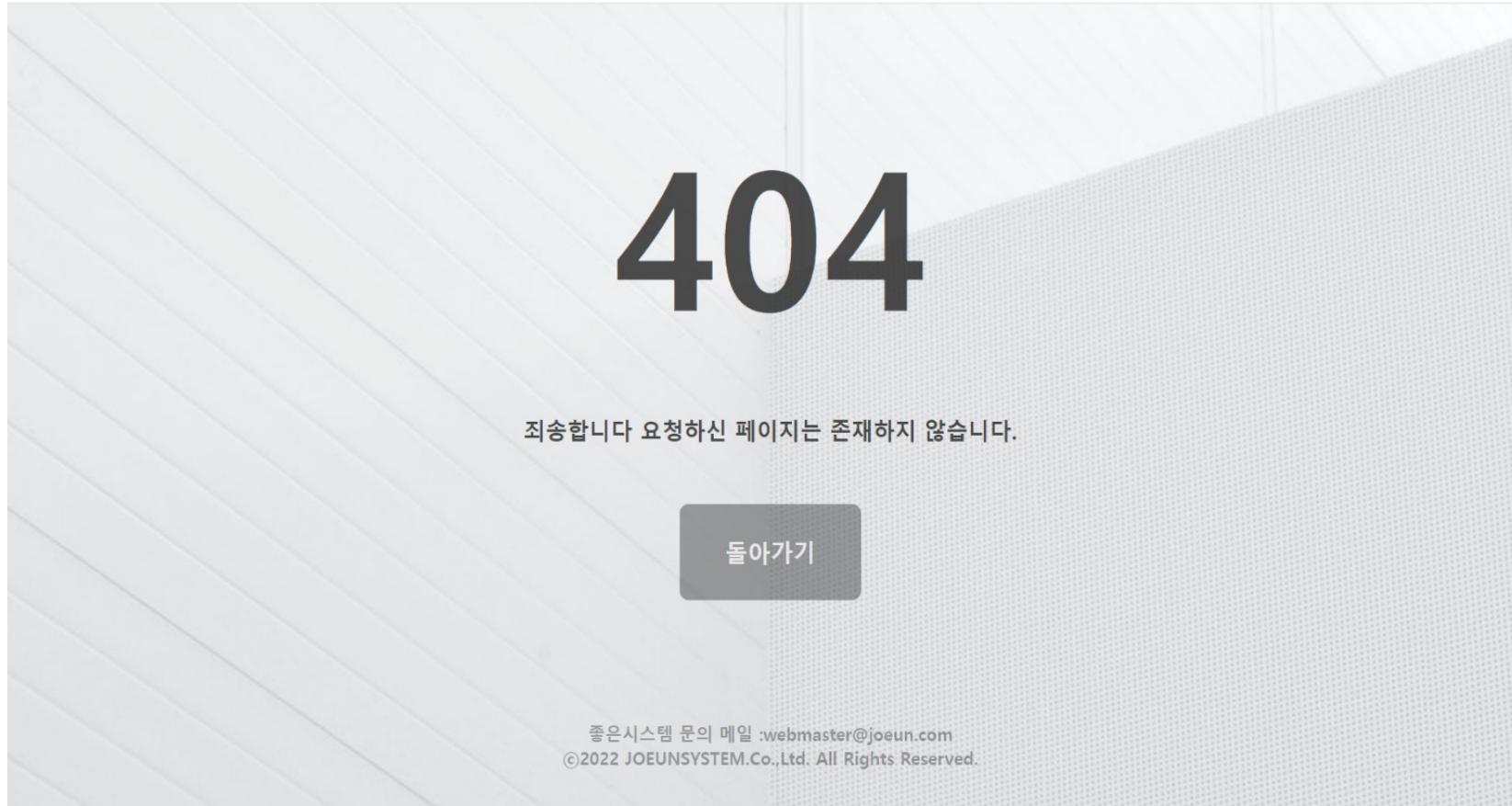
The screenshot shows an Excel spreadsheet titled "2022\_08\_12\_09\_23\_eventsSearch.xlsx". The table contains the same data as the search interface, with columns including "지출 기록 ID", "지출 기록명", "지출 기록 내용", "지출 금액", "지출 장소", "지출 기록 회원수", "지출 기록 생성일", and "지출 기록 생성 회". The data rows are numbered from 2 to 20.

A	B	C	D	E	F	G	H	I	J	K
1	지출 기록 ID	지출 기록명	지출 기록 내용	지출 금액	지출 장소	지출 기록 회원수	지출 기록 생성일	지출 기록 생성 회	지출 기록 생성 그룹	
2	1 pleasee	1234	<p>식당 </p>	30000	서울 강남구 가로수	3	44782 aaa		1	
3	2 식당	식당3	식당3	30000	서울 강남구 가로수	3	44782 aaa		1	
4	3 식당3			30000	서울 강남구 가로수	4	44783 aaa		1	
5	5 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
6	6 Dinner	somewhere		20000	london	2	44784 aaa		1	
7	7 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
8	8 Dinner	somewhere		20000	london	2	44784 aaa		1	
9	9 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
10	10 Dinner	somewhere		20000	london	2	44784 aaa		1	
11	11 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
12	12 Dinner	somewhere		20000	london	2	44784 aaa		1	
13	13 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
14	14 Dinner	somewhere		20000	london	2	44784 aaa		1	
15	15 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
16	16 Dinner	somewhere		20000	london	2	44784 aaa		1	
17	17 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
18	18 Dinner	somewhere		20000	london	2	44784 aaa		1	
19	19 Lunch	Pizza near the stat		55000	london	2	44784 aaa		1	
20										

## Other Admin features

- Search results can be downloaded as an excel file, using Apache poi software library

# 3.1 Demonstration



## Error page

- Creation and handling of error pages (for errors 404, 405, 500)

# 3.2 Future Developments



## **Yoonseo Koo**

Alter the settlement procedure to a more realistic process by linking member's information with a real bank account

## **Donggyu Park**

Implementation of chat function using web socket implementation of log record management function

## **Bin Kim**

Upgrade the notification service to maintain the number of unread notifications while moving pages

# 3.3 Evaluation



## **Yoonseo Koo**

Learnt the importance of keeping all information immediate, shared and completely transparent within the members, throughout the whole project.

## **Dong-gyu Park**

Realised that clear communication with team members is sometimes more important than the actual coding itself

## **Bin Kim**

Realised that clear separation of tasks and keeping to deadline was a prior factor in a team project