Design Document

Web Application Purpose

The purpose of the web app is to help people manage their tasks. By using Tasker, users can create their own task lists. Task lists will contain multiple tasks he/she created as well as some details, including task name, deadline, description, and priority level. People can also view their tasks in various ways. For example, the user can look at different tasks in different lists, and he/she can also sort tasks by deadline or priority to look at what tasks he/she needs to deal with right now. What's more, users are able to create groups in Tasker. Group members will have shared task lists where they can add tasks they need to handle together. We are sure Tasker will greatly improve people's productivity and make lives more efficient.

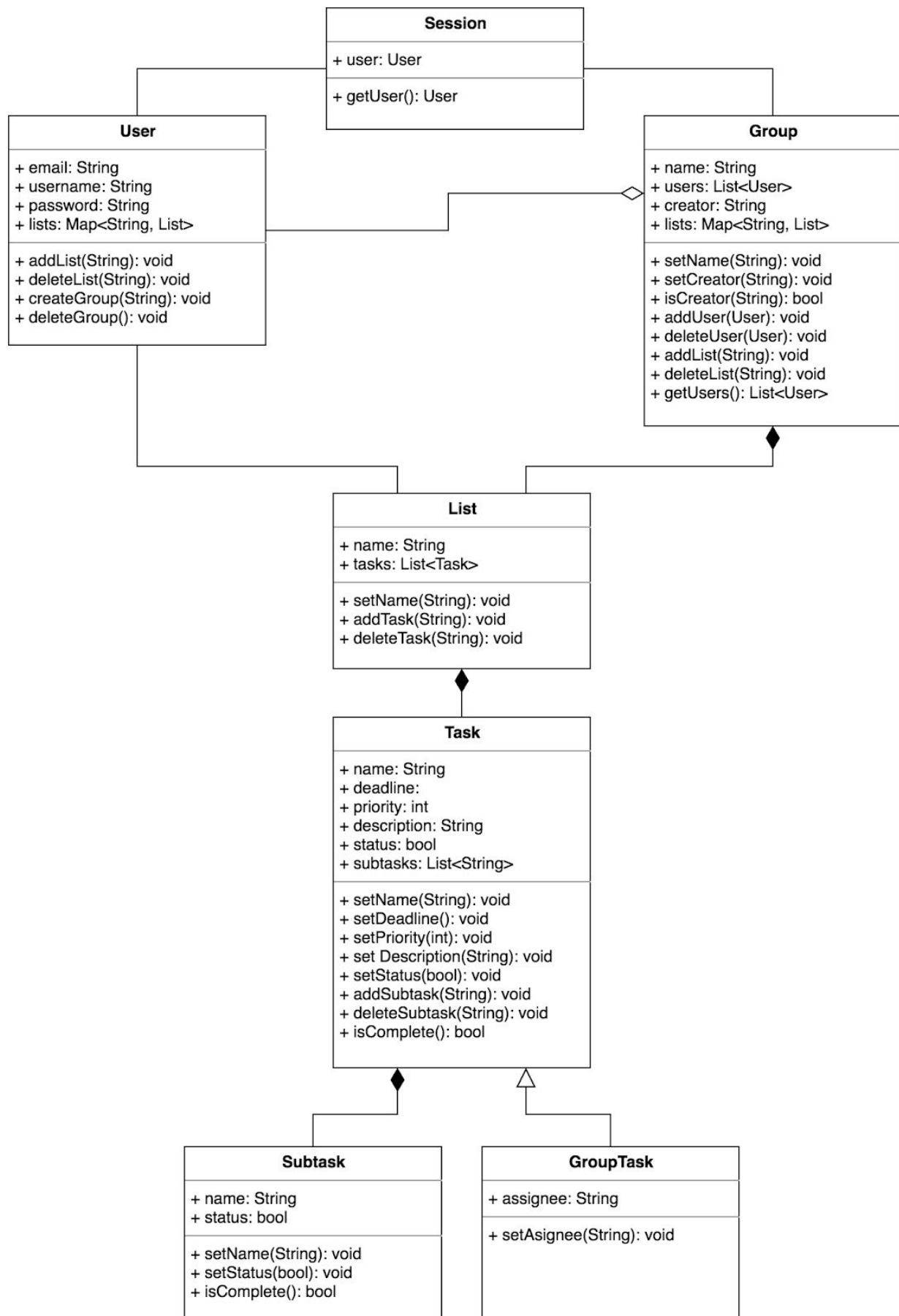**Information Included and How It Meets the Goal of the Web Site**

People who browse this website will find the following:
1. Personal account (or button to create a new account)
2. Task lists the user have
3. Tasks in each task list
4. Subtasks of each task
5. Button to sort the tasks
6. Button to create a new task list
7. Groups the user is in
8. Group members of each group
9. Group task lists each group has
10. Group tasks in the group task list
11. Button to create a new group
12. Button to delete the groups he/she created

Developer Tools

Our frontend will be done in Javascript with the use of React.js and possibly other libraries. Our backend will be done in Java, using Spring Framework. We will use MySQL Workbench for our database management.

Classes Design

Session

+ user: User

+ getUser(): User

User

+ email: String
+ username: String
+ password: String
+ lists: Map<String, List>

+ addList(String): void
+ deleteList(String): void
+ createGroup(String): void
+ deleteGroup(): void

Group

+ name: String
+ users: List<User>
+ creator: String
+ lists: Map<String, List>

+ setName(String): void
+ setCreator(String): void
+ isCreator(String): bool
+ addUser(User): void
+ deleteUser(User): void
+ addList(String): void
+ deleteList(String): void
+ getUsers(): List<User>

List

+ name: String
+ tasks: List<Task>

+ setName(String): void
+ addTask(String): void
+ deleteTask(String): void

Task

+ name: String
+ deadline:
+ priority: int
+ description: String
+ status: bool
+ subtasks: List<String>

+ setName(String): void
+ setDeadline(): void
+ setPriority(int): void
+ set Description(String): void
+ setStatus(bool): void
+ addSubtask(String): void
+ deleteSubtask(String): void
+ isComplete(): bool

Subtask

+ name: String
+ status: bool

+ setName(String): void
+ setStatus(bool): void
+ isComplete(): bool

GroupTask

+ assignee: String

+ setAsignee(String): void

Database design

User table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
User ID	√	×	×	string	Not null
password	×	×	×	string	Not null
username	×	×	×	char(50)	Not null

Group table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
GID	√	×	×	string	Not null
CreatorName	×	×	×	char(10)	Not null
GName	×	×	×	char(50)	Not null

UserList table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
LID	√	×	×	string	Not null
ListName	×	×	×	char(50)	Not null
UID	×	×	User	string	Not null

GroupList table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
LID	√	×	×	string	Not null

ListName	×	×	×	char(50)	Not null
GID	×	×	Group	string	Not null

UserTask table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
Tname	√	×	×	char(50)	Not null
LID	×	√	List	string	Not null
Status	×	×	×	boolean	Not null Default false
DDL	×	×	×	date	
Priority	×	×	×	int	
Description	×	×	×	string	

GroupTask table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
Tname	√	×	×	char(50)	Not null
LID	×	√	List	string	Not null
Status	×	×	×	boolean	Not null Default false
DDL	×	×	×	date	
Priority	×	×	×	int	
Description	×	×	×	string	
AssigneeID	×	×	User	string	

Subtask table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
Tname	√(?)	√	Task	char(50)	Not null
LID	√(?)	√	List	string	Not null
SubTname	(√)	×	×	char(50)	Not null
Subtstatus	×	×	×	boolean	Not null Default false

UserinGroup table					
Name	Primary key	Foreign key	Referenced table	Data type	constraint
GID	√	×	User	string	Not null
UID	√	×	Group	string	Not null