**Scheduling Module**

**This is a group lab, and all group members *must* participate.**

Sarah and Ted find it difficult to manage employee schedules for multiple locations.

Different locations have different set hours with some locations staying open late most evenings. Sarah and Ted prefer to have longer-term employees (Keyholders) always on site.

Sarah and Ted would like to schedule workshifts for their employees.

Your task is to create a class diagram and sequence diagrams to support the following user stories and systems use case specifications.

Copy your diagrams to a word file. Analyze your model and outline what the .h files would look like if you generated code from your model. Include pseudo code to indicate what each method would do. Attach this word file and your visual paradigm file to your submission.

User Story

As the owner of this business, I would like to schedule work shifts for my employees by location.

Acceptance Criteria:

1. Must be able to record multiple work shifts for an employee at one time.
2. Must be able to query work shifts by location.
3. Must be able to query work shifts by employee.

Use Case Descriptions

|  |  |  |  |
| --- | --- | --- | --- |
| Use Case Name | Create Employee Workshifts | | |
| Triggering Event | Planning for a future work week | | |
| Brief Description | Allows the Owner to schedule workshifts for employees by location. | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened the Main Menu. | | |
| Post Conditions | Workshifts are created and can now be queried | | |
| Flow of activities | Actor | | System |
|  | 1. | Requests to view already scheduled workshifts | Displays a list of locations and their required opening and closing hours. Prompts for selection.  Displays a calendar prompting for start and end date. |
|  | 2. | Selects a location and enters a start and end date. | Displays a list of scheduled workshifts for the entered time period.  Displays a list of employees including their name and job title and prompts for selection.  Prompts for day, start time and end time of workshift |
|  | 3. | Selects an employee. Enters date, start time and end time for the scheduled workshift. | Creates a workshift ID.  Adds workshift entry.  Displays a list of scheduled workshifts for the entered time period.  Displays a list of employees including their name and job title and prompts for selection. Prompts for day, start time and end time of workshift. |
|  | 4. | Repeats above step until done | Displays a list of scheduled workshifts for the entered time period.  Prompts to exit and save. |
|  | 5. | Chooses to exit and save | Saves the data.  Returns to the main menu. |
| Exception Conditions | * Owner chooses to abort adding the Workshift | | |

**Your tasks:**

1. Create a class diagram to support the above case study and Systems Use Case Specifications

A screenshot of a computer screen

Description automatically generated

1. Create sequence diagrams for the above Systems Use Case Specifications.

A diagram of a computer program

Description automatically generated with medium confidence

1. Analyze your model and outline what the “.h” files would look like if you generated code from your model.

Class Location {

int locationID;

string locationName;

string locationAddress;

LocHours locHours;

Workshift workshift;

Public:

retrieveLocations();

get(:Location);

create();

getLocations();

}

Class Workshift {

int startTime;

int endTime;

int workshiftID;

date date;

Location location;

Employee employee;

Public:

getWorkshifts();

get(Workshift, location, startDate, endDate);

retrieveWorkshifts(location, startDate, endDate);

generateWorkshiftID();

generateWorkshift(workshiftID, employeeID, date, startTime, endTime)

}

Class Employee {

int employeeID;

string employeeName;

string email;

JobTitle jobtitle;

Workshift workshift;

Public:

getEmployees();

get(:Employee);

}

Class JobTitle {

int jobtitleID;

string jobTitleDesc;

Employee employee;

}

Class LocHours {

int open;

int close;

string day;

Location location;

}