XCRAM
Data Design Document

Submitted to:

Asst. Prof. Ma. Rowena C. Solamo
Faculty Member
Department of Computer Science
College of Engineering
University of the Philippines, Diliman

Submitted by:
Submitted by:
Agluba, Gerry Jr. P.
Go, Sharleen Joy Y.
Silverio, Robelle C.

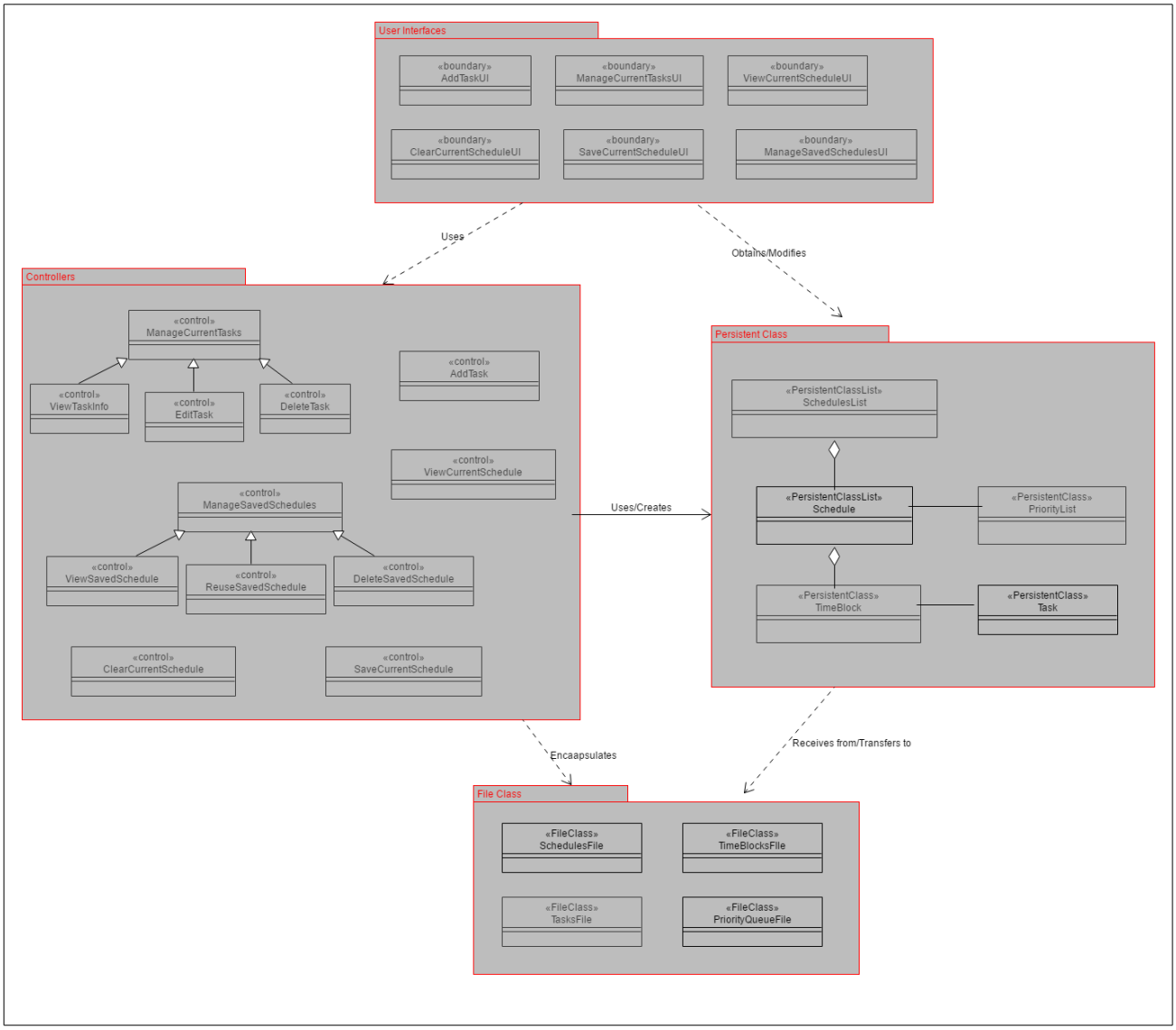
In partial fulfillment of Academic Requirements
for the course
CS 191 Software Engineering I
of the
1st Semester, AY 2016-2017

Revision Control

History Revision:

Revision Date	***Person Responsible***	***Version Number***	***Modification***
11/18/16	Gerry P. Agluba	1.0	Initial Document; Made csv format for data files: Schedules, TimeBlocks, Tasks, SaveScheduleList, and TaskPriorityQueue
11/18/16	Robelle C. Silverio	2.0	Added Data access object classes with their corresponding definition
11/18/16	Sharleen Joy Y. Go	3.0	Added Class Diagram and Transfer objects with their definitions

Data Design:


User Interfaces
«boundary» AddTaskUI
«boundary» ManageCurrentTasksUI
«boundary» ViewCurrentScheduleUI
«boundary» ClearCurrentScheduleUI
«boundary» SaveCurrentScheduleUI
«boundary» ManageSavedSchedulesUI
Uses
Obtains/Modifies
Controllers
«control» ManageCurrentTasks
«control» ViewTaskInfo
«control» EditTask
«control» DeleteTask
«control» AddTask
«control» ViewCurrentSchedule
«control» ManageSavedSchedules
«control» ViewSavedSchedule
«control» ReuseSavedSchedule
«control» DeleteSavedSchedule
«control» ClearCurrentSchedule
«control» SaveCurrentSchedule
Uses/Creates
Persistent Class
«PersistentClassList» SchedulesList
«PersistentClassList» Schedule
«PersistentClass» PriorityList
«PersistentClass» TimeBlock
«PersistentClass» Task
Encaapsulates
Receives from/Transfers to
File Class
«FileClass» SchedulesFile
«FileClass» TimeBlocksFile
«FileClass» TasksFile
«FileClass» PriorityQueueFile

Data Access Object (DAO) Classes:

Class Name	Description
AddTask	This control class will add the new task to the current schedule if nothing hinders its addition: space, priority and task type plays an important role in determining whether the new task will be added and/or some other tasks would be rescheduled or removed.
EditTask	This control class will modify the current schedule in order to fit the new information of a preexisting task. Editing a task may result in rescheduling or removal of any task in the current schedule including the edited task. Similar to the addition of a new task, the 3 mentioned properties also play an important role in determining the resulting schedule after an editing is done.
ReuseSavedSchedule	This control class will make the current schedule exactly like the chosen schedule to be reused.
DeleteTask	This control class will delete the selected task from the current schedule. Deletion only happens if it is verified by the user and selected task is present in the current schedule.
ClearSchedule	This control class will iteratively delete all the task in the current schedule.
DeleteSavedSched	This control class will delete the selected schedule the user has specified. Deletion only happens if it is verified by the user and selected task is present in the list of saved schedules.
CurrentScheduleStorage	This control class will first make a copy of the current schedule. Afterwards, the copy will be added to the list of saved schedules for future use.
Task Schedule Display	This control class will choose one viewing option.
View Current Schedule	This control class will retrieve the list of task for the day.
View Task Information	This control class will check if the task name entered is existing in the list of task. If it is existing, information of that task will be retrieved, otherwise a null information will be returned.
View Saved Schedule	This control class will check if the schedule name entered is existing in the list of saved schedule. If it is existing, that schedule will be retrieved otherwise no schedule will be returned.

TransferObject Classes:

Class Name	Description
Task	This transfer object represents any task that resides in either a Saved schedule or the current schedule. It contains all the important information of a task such as its: name, type, duration, priority (optional for flexible tasks), specified start time (for fixed task) and computed end time(for fixed task) and id --its unique identifier.
TimeBlock	This transfer object represents a block of time in a schedule. Its startime and endtime attributes specifies the range of time of the block. It may or may not contain a task. If it contains a task, the said task is kept in its status attribute; otherwise, the attribute's value is NULL. Also, its prev and next attributes are used to reference the TimeBlocks that come before and after it in a schedule.
Schedule	This transfer object represents a single day's schedule. By default, it doesn't have a name and contains a single TimeBlock with startime=0, endtime=2359 and status=NULL. After constant addition of Tasks by the user, the Schedule will contain a list of smaller, contiguous TimeBlocks. A schedule will only be named if it is to be saved. The attribute next refers to another Schedule which is stored in the list of saved schedules, for unsaved schedules the default value is NULL.
SchedulesList	This transfer object contains all the saved schedules in the system plus the current schedule. A schedule's contents (TimeBlocks+Tasks) may be obtained by first locating that schedule's entry in this list. The entry will contain the target schedule's id which uniquely identifies it.
PriorityList	This transfer object contains the flexible tasks in the current schedule. The flexible tasks are stored, sorted according to increasing priority. This object's main function is to make it easy for the controllers to locate which tasks are to be removed(temporarily or permanently) to give way to a task having a greater priority.

List of Data Source:

Data Source Name: Schedules.csv
Description: Schedule.csv contains all schedules

Sample Source File:
Format: <scheduleReferenceNumber>::<name>:<nextScheduleReferenceNumber>:

Data Source Name: TimeBlocks.csv
Description: TImeBlock.csv contains data involving Timeblocks and the Schedule they currently residing in.

Sample Source File:
Format: <timeblockid> ::<startTime>
:<endTime>:<duration>:<taskId>:<prevTimeblockId>:<nextTimeBlock>
:<scheduleReferenceNumber:

Data Source Name: Tasks.csv
Description: Tasks.csv contains all data involving a task

Sample Source File:
Format: <taksId> :: <taskname> : <type>
:<duration>:<mustart>:<mustend>:<priority>: <ScheduleReferenceNumber>:

Data Source Name: PriorityQueue.csv
Description: PriorityQueue.csv is a queue of tasks kicked by the scheduler, either to be rescheduled or to be vanished permanently from the current schedule.

Sample Source File:

Format: <taksId> ::<taskname>:<priorityKey>