**SOFTWARE DEVELOPMENT PROJECT REQUIREMENTS**

Students, as members of instructor-assigned teams, must complete the software development project specified in this handout.

**Teams must use the concepts and techniques from this course to do the project.** The use of other approaches, including traditional waterfall methods and project management tools, is discouraged. Teams should concentrate on being able to create software using the agile software development method from the Pilone & Miles text, as well as the various programming-related tools covered in the course.

The user interface for the software does not need to be fancy. It can be text-intensive, rather than graphical. Teams should not spend time or effort on making the user interface slick or pretty.

Each team must deliver two presentations about the project, on the days shown in the schedule. Both presentations must demonstrate working software, as well as explain clearly what was done to produce it, justifying all project actions and decisions in terms that would be understandable to clients. All team members must contribute equally to the project in terms of creating the software and making the presentations.

In agile development terms, each presentation corresponds to a milestone. Given the constrained schedule of this course, each milestone will correspond to a single iteration. This is in contrast to many real-world projects, in which each milestone comprises several iterations.

The first presentation must provide an initial solution for the project; the second must provide an improved, basically complete solution. Teams must submit working code with each presentation. They must demonstrate their working code to the class. All code must be written in Python 3. Any slides or handouts used during the presentation must be submitted, as well. Slides must be done in either PowerPoint or Keynote.

Presentations should run no more than 25 minutes (20 minutes software demo and explanation, plus 5 minutes questions and answers). Penalties will apply for significant deviations (+/-) from the 25-minute limit.

Each student will receive the grade assigned to her/his team. Team grades will depend on the use of concepts and techniques from the course, the quality of the software developed, and the quality of the presentations made.

The instructor will include peer evaluations in determining presentation grades. The instructor will explain the peer evaluation rating form(s) and procedures prior to the first presentation.

No individual submissions will be allowed. Team members must share the work involved equally and must strive to resolve any issues related to unequal participation, should these arise. The instructor reserves the right to remove uncooperative team members from teams and assign them grades indicative of non-performance.

The project is to create software for “Mud in Your Eye” (MiYE), a new, small hot spring health spa, located in a remote, scenic part of the US. The software must support the spa’s front desk clerks in managing service reservations and statements of service usage for customers.

MiYE is a full-time resort spa facility[[1]](https://cgu.instructure.com/courses/9791/assignments/119283?module_item_id=386567" \l "_ftn1), but it has just one front desk clerk on duty at any time. Front desk clerks are local people, hired primarily for their friendliness, not their computer skills—one can’t assume any sophistication in the use of computer software.

For now, the **only** purpose of the software is to support service reservations and statements of service usage. MiYE’s management has chosen to defer any elaboration of the software, connection to the Internet, or interconnection with other applications.

A typical hot springs health spa provides a range of services, including mineral baths, massages, facials, and specialty treatments. MiYE offers such services seven days a week, from 8 am to 8 pm. (Services are scheduled to end by 8 pm.)

Each guest has a unique number, which is assigned at check-in (a separate process) and allows, among other things, the looking-up of the beginning and end of the guest’s stay at the spa. To reserve or receive a service, the guest must use this number. Services can only be scheduled during the guest’s stay—no reservations for future stays are allowed.

Guests are charged for every service they reserve. Charges are incurred at the time of reservation. Reservations are necessary for all services. Payment of charges occurs as a separate manual process at checkout. The payment process also includes charges for rooms, food, and other things besides services. Assume that whoever handles the payment process will be able to obtain a printed copy of the statement of services used for any guest.

A guest may cancel a reservation for a service at no charge if he or she does so within 10 minutes of making the reservation or at least 90 minutes before the reservation time. Outside these time limits, the guest is charged for the service, whether received or not.

**SERVICES**

Guests can reserve:

* Mineral baths for 60 minutes or 90 minutes, @ $2.50/minute.
* Massage services (Swedish, shiatsu, or deep tissue) for 30 or 60 minutes, @ $3.00/minute.
* Facial services (normal or collagen) for 30 or 60 minutes, @ $2.00/minute.
* Specialty treatment services (hot stone, sugar scrub, herbal body wrap, or botanical mud wrap) for 60 or 90 minutes, @ $3.50/minute.

For any guest, no service reservations may overlap--no guest may have two reservations at the same time and day. Consecutive services are permitted. There can be only one reservation at a time for any service, except mineral bath services, which have no limit. (For instance, if a reservation exists for a 30-minute Swedish massage at 10 am on Friday, no one may reserve this service then.) The software should make it clear to the front desk clerk what appointments are available at any particular day/time. It should only allow a reservation for a service to be made if: 1) the guest has no overlapping reservation already booked, 2) there is no other reservation for the service at that time and day, and 3) the reservation would begin no earlier than 8 am and end no later than 8 pm.

The system should produce a statement of service usage that lists reservations made, reservations canceled (if any), the amount charged for each service, and a total of service-related charges before taxes.

The software will be implemented on a stand-alone, single-workstation system. Neither multi-user nor network capabilities are desired by MiYE’s management.

The software must be correct. Full testing is expected and should be explained during the presentation.

The software must be flexible enough to easily accommodate changes in the number, types, times, and prices of services. The software must be maintainable by management or their designees. It should have one interface for operation by front desk clerks and another for maintenance by management. Both should be demonstrated during the presentation.

Teams should consider the instructor to be the client for project purposes, including answering questions not answered by this document. For purposes of the project, teams should treat the instructor as one would treat an actual client—make an appointment to discuss work on the project, including resolution of questions about requirements.

[[1]](https://cgu.instructure.com/courses/9791/assignments/119283?module_item_id=386567" \l "_ftnref1) A resort spa is one at which services are provided only to overnight guests, and the emphasis is on providing guests with a relaxing, vacation-like experience, centered on spa services.