# Homework: OOP in PHP

This document defines the homework assignments from the ["OOP" Course @ Software University](https://softuni.bg/trainings/coursesinstances/details/8). Please submit as homework a single zip / rar / 7z archive holding the solutions (source code) of all below described problems. The solutions should be written in PHP.

## Hotel Reservation System

Create a hotel reservation system where guests book rooms for a given period of time.

* **Room** – a class for all rooms. Holds **room information** and an array of **reservations**. Implements **iReservable**.

Implement several types of rooms as subclasses:

* + **Single room** – 1 bed, Standard room, with restroom, no balcony, extras – TV, air-conditioner
  + **Bedroom** – 2 beds, Gold room, with restroom and balcony, extras – TV, air-conditioner, refrigerator, mini-bar, bathtub
  + **Apartment** – 4 beds, Diamond room, with restroom and balcony, extras – TV, air-conditioner, refrigerator, kitchen box, mini-bar, bathtub, free Wi-fi
* Keep the following **room information** for each room – holds the following fields: **room type** (can be **Standard**, **Gold** or **Diamond**), has **restroom**, has **balcony**, **bed count**, **room number**, **extras** (e.g. TV, air-conditioner, refrigerator, etc.) and **price**
* **Guest** – holds **first name**, **last name**, **id** (EGN)
* **Reservation** – holds **startDate** and **endDate**, representing the time period when the room is booked, and **guest**

Create each class in a separate **.class.php** file. Use **autoloading** to include them in your main script.

Implement the following interfaces:

* **iReservable** – holds methods **addReservation($reservation)** and **removeReservation($reservation)**

Override the **\_\_toString()** method for each class to print information about the object.

Write a static class **BookingManager** with method **bookRoom($room, $reservation)** that handles room booking and prints a message whether the operation was successful or not.

Create an array of different rooms. Perform the following operations:

* Filter the array by all rooms with a **balcony**
* Return the **room numbers** of all rooms which have a **bathtub** in their extras