

# Computer Programming

C20013

## Programming Assignment #1

### Brief:

You are to write a CGI program in Perl which enables a website to accept reservation input data from a customer, verify that the data meets certain criteria and then displays output based on the input. The booking data will be saved to a MySQL database. You will interact with this database via an API. This is part of The Quinlough Adventure Centre and Hostel combined subjects project.

### Summary:

The reservations process will be a two-stage process. First the guest will indicate the type of room required and when they wish to stay. You will call an API to test for vacancies. If the customer request can be satisfied, the second stage will seek personal, contact and payment details. After these are validated you will call a second API which will complete the booking process.

When the client clicks the submit button the CGI program validates the input:

1. All details should be provided and common sense restrictions should apply.
2. The booking date should commence no earlier than the day of booking and should be for no more than 6 months into the future.
3. Only VISA, MasterCard and American Express credit cards are accepted.
4. The credit card number should be valid.
5. The card expiry date should be potentially viable.

Restrictions on reservations include the following:

1. Rooms sleep 1, 2 or 4.
2. All rooms have showers; some also have a bath.
3. Most rooms have a TV but guests may request a room without TV.
4. No room which sleeps 1 has no TV and no bath.

Faults will be flagged and handled appropriately. Error checking should be performed *prior* to calling either API.

### Presentation:

Marks are awarded for attractive presentation both of the screen output and the source code. Code indentation and commenting are *vital*. Script output should be validated HTML.

## API:

In your program include these lines:

```
require "/home/public/check_vacancy.pl";  
require "/home/public/confirm_booking.pl";
```

The **check\_vacancy** API is defined as:

```
sub check_vacancy {  
  # Expects: Array containing: Room Sleeps, TV, Bath, Check-In date, Check-Out  
  # date  
  # Returns: array containing:  
  #   success: "OK", No of rooms available, No of rooms suitable  
  #   failure: "ERR", a reason as one of  
  #           1: No suitable rooms  
  #           2: No available rooms  
  
}
```

The **confirm\_booking** API is defined as:

```
sub confirm_booking {  
  
  # Expects: in one array: username, continue_url, goback_url, css_url,  
  #           guests, room_type, tv, bath, arrive_date, depart_date  
  #           fname, lname, address1, address2, address3, address4, dob  
  #           phone, email, creditcard_type, card_number, card_expiry  
  # Returns: Doesn't return a value; instead end-user clicks through to the  
  # complete_booking script and is directed to goback_url or continue_url as  
  # required  
  #  
}
```

## Submission Mechanism:

By paper via the submission box in Room 15, and by e-mail. Include:

- Cover sheet ('My Own Work')
- Methodology planner
- Flow chart *or* Decision tree (Read the programming website for information).
- Source code (The perl program, printed)
- HTML sources
- Sample data used
- Other screen capture(s) as required

Any other relevant supporting materials.

## Due Date:

**20121207, 15:15, Friday**  
(subject to on-line Calendar changes)