

Module 2 Capstone - National Park Campsite Reservation

Congratulations! You did such a great job on your previous application we want you to build our new campsite reservation application. We are tasking you to build a command line driven application that our National Park Service can use to book campsite reservations.

The requirements for your application are listed below:

1. As a user of the system, I need the ability to view a list of the available parks in the system, sorted alphabetically by name.
 - a. A park includes an id, name, location, established date, area, annual visitor count, and description.
2. As a user of the system, I need the ability to select a park that my customer is visiting and see a list of all campgrounds for that available park.
 - a. A campground includes an id, name, open month, closing month, and a daily fee.
3. As a user of the system, I need the ability to select a campground and search for date availability so that I can make a reservation.
 - a. A reservation search only requires the desired campground, a start date, and an end date.
 - b. A campsite is unavailable if any part of their preferred date range overlaps with an existing reservation.
 - c. If no campsites are available, indicate to the user that there are no available sites and ask them if they would like to enter in an alternate date range.
 - d. The TOP 5 available campsites should be displayed along with the cost for the total stay.
 - e. *BONUS*: If a date range is entered that occurs during the park off-season, then the user should not see any campsites available for reservation.
 - f. *BONUS*: Provide an advanced search functionality allowing users to indicate any requirements they have for maximum occupancy, requires wheelchair accessible site, an rv and its length if required, and if a utility hookup is necessary.

4. As a user of the system, once I find a campsite that is open during the time window I am looking for, I need the ability to book a reservation at a selected campsite.
 - a. A reservation requires a name to reserve under, a start date, and an end date.
 - b. A confirmation id is presented to the user once the reservation has been submitted.
5. BONUS: As a user of the system, I want the ability to select a park and search for campsite availability across the entire park so that I can make a reservation.
 - a. Up to 5 campsites for each campground (if applicable) should be displayed if they have availability along with the cost of the total stay.
 - b. The same rules apply as the campground search.
6. BONUS: As a user of the system, I would like the ability to see a list of all upcoming reservations within the next 30 days for a selected national park.

Sample Screens

View Parks Interface

Select a Park for Further Details

- 1) Acadia
- 2) Arches
- 3) Cuyahoga National Valley Park
- 4) ...
- Q) quit

Park Information Screen

Acadia National Park

Location: Maine
Established: 02/26/1919
Area: 47,389 sq km
Annual Visitors: 2,563,129

Covering most of Mount Desert Island and other coastal islands, Acadia features the tallest mountain on the Atlantic coast of the United States, granite peaks, ocean shoreline, woodlands, and lakes. There are freshwater, estuary, forest, and intertidal habitats.

Select a Command

- 1) View Campgrounds
- 2) Search for Reservation
- 3) Return to Previous Screen

Park Campgrounds

Acadia National Park Campgrounds

	Name	Open	Close	Daily Fee
#1	Blackwoods	January	December	\$35.00
#2	Schoodic Woods	May	October	\$30.00
#3	Seawall	May	September	\$30.00

Select a Command

- 1) Search for Available Reservation
- 2) Return to Previous Screen

Search for Campground Reservation

	Name	Open	Close	Daily Fee
#1	Blackwoods	January	December	\$35.00
#2	Schoodic Woods	May	October	\$30.00
#3	Seawall	May	September	\$30.00

Which campground (enter 0 to cancel)? __

What is the arrival date? __/__/____

What is the departure date? __/__/____

Results Matching Your Search Criteria

Site No.	Max Occup.	Accessible?	Max RV Length	Utility	Cost
1	4	No	N/A	N/A	\$XX
4	6	Yes	N/A	N/A	\$XX
13	12	Yes	20	Yes	\$XX

Which site should be reserved (enter 0 to cancel)? __

What name should the reservation be made under? __

The reservation has been made and the confirmation id is {Reservation_id}

BONUS: Search for Park-wide Reservation

What is the arrival date? __/__/____

What is the departure date? __/__/____

Results Matching Your Search Criteria

Campground	Site No.	Max Occup.	Accessible?	RV Len	Utility	Cost
Blackwoods	1	4	No	N/A	N/A	\$XX
Seawall	4	6	Yes	N/A	N/A	\$XX
Seawall	13	12	Yes	20	Yes	\$XX

Which site should be reserved (enter 0 to cancel)? __

What name should the reservation be made under? __

The reservation has been made and the confirmation id is {Reservation_id}

Data Sources

Your application will have access to a Relational Database populated with data.

Park Table

A parks table is provided to the system that provides the data for each of the supported national parks. The data columns are as follows:

	Field	Description
PK	park_id	A surrogate key for the park.
	name	The name of the park
	location	The location of the park
	establish_date	The date that the park was established
	area	The size of the park in square kilometers
	visitors	The annual number of visitors to the park
	description	A short description about the park

Campground Table

A campground table is provided to the system that provides a list of the one or many campgrounds located inside of a national park. The data columns are as follows:

	Field	Description
PK	campground_id	A surrogate key for the campground.
FK	park_id	The park that the campground is associated with.
	name	The name of the campground.
	open_from_mm	The numerical month the campground is open for reservation. (01 - January, 02 - February, ...)
	open_to_mm	The numerical month the campground is closed for reservation. (01 - January, 02 - February, ...)
	daily_fee	The daily fee for booking a campsite at this campground

Site Table

A site table lists all of the available campsites available for reservation in a campground. The data columns are as follows:

	Field	Description
PK	site_id	A surrogate key for the campsite.
FK	campground_id	The campground that the park belongs to.
	site_number	The arbitrary campsite number
	max_occupancy	Maximum occupancy at the campsite
	accessible	Indicates whether or not the campsite is handicap accessible
	max_rv_length	The maximum rv length that the campsite can fit. 0 indicates that no RV will fit at this campsite.
	utilities	Indicates whether or not the campsite provides access to utility hookup.

Reservation

The reservation table lists all of the past, current, and future reservations for a campsite in the national park system. The data columns are as follows:

	Field	Description
PK	reservation_id	A surrogate key for the reservation.
FK	site_id	The campsite the reservation is for.
	name	The name for the reservation.
	from_date	The start date of the reservation.
	to_date	The end date of the reservation.
	create_date	The date the reservation was booked.