

A SYSTEM ANALYSIS, DESIGN, AND DEVELOPMENT CASE STUDY: XTREME ADVENTURE TOURS RESERVATION SYSTEM

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CASE DESCRIPTION

The primary purpose of this case study is for Systems Analysis and Design, Systems Development, and Database courses. Students examine realistic dialog and Interview Notes, as well as existing documents. For Systems Analysis and Design courses, the students should be able to follow this realistic case study of a small business which arranges “adventure-style” tours and conduct the planning, analysis, and design phases of the System Development Life Cycle (SDLC), using either a traditional or object-oriented approach. Deliverables would include process and data diagrams and modeling, and user interface designs, and should require approximately 12-15 hours to complete, outside normal class time. In System Development courses, e.g., capstone courses for a computer information systems major, students can use this case study to not only analyze and design a solution, but actually develop the solution using various windows or web-based tools. This solution could be Windows, web or mobile-based, although the recommended solution is for a Windows environment. The entire project should require approximately 20-25 hours to develop a working system. For Database courses, this case could be used to illustrate database design techniques, resulting in the creation of appropriate data models and physical database designs. This should require approximately 10-12 hours to complete. The case study is of moderate difficulty – ranging from a three to five on the GJPB difficulty scale, and is designed for junior and senior level students, but could also be used in similar graduate courses.

CASE SYNOPSIS

Dr. Thomas Waggoner, an information systems professor at the local university, wants to book a camping and kayaking adventure tour for his family through a local tour agency. In the course of the conversation, he realizes that the tour agency could greatly benefit by using a computerized system to track customer reservations. He discusses the idea with the students in his classes. Dr. Waggoner’s students interview the tour agency’s owner and develop a list of the requirements for this new system.

CASE BODY

“Xtreme Adventure Tours – We don’t take the easy way out! This is J.C., how can I help you?” answered the recipient of the call just placed by Dr. Thomas Waggoner.

“Hi, J.C. My Name is Tom Waggoner, and I was wondering if you could provide me with some information about some of your adventure tours,” replied Dr. Waggoner.

“Sure, I will be happy to. What type of tour are you interested in? We have a variety to chose from - high adventure, not-so-high adventure, family-oriented, short overnight tours, and longer-length tours.”

“It sounds like you have a lot to choose from. I am thinking about the 3 day kayaking adventure for my family, camping each night. Do you have availability the 10th through the 12th next month, or possibly the weekend after that?”

“Of course we do. Or, I think we do. I mean, I think we might still have availability on that tour. Uh, could I get your number and call you back?” answered J.C.

“I guess. It sounds like you don’t really know what tours you have available.” asked Dr. Waggoner. “Your website had pictures of kayaking and camping, and it said you had packages readily available.”

“Well, yes, we have several tour packages available, but I have to go through several different reports and calendars and our signup sheet to see what is available. I think we have openings that weekend, but I am not really sure. It will take me a little while to check.”

“Okay, but you are making me a little nervous. I am not sure I want to trust my family’s safety on an adventure tour if you aren’t organized enough to know if the tour is available.”

“I’m sorry – I understand your concerns. Actually, our adventure tours are well organized and very safe, it’s our paperwork that’s the most challenging aspect,” explained J.C. “We have been talking about computerizing everything, but we just haven’t been able to find anything that will work for us.”

“I might be able to help you with that, if you are able to put our tour together,” offered Dr. Waggoner. “I teach several different classes on systems design and development at the university. I think this might be a good project for my students.”

“We would be ‘xtremely’ grateful if you could do something like that. Give me about an hour and I will call you back with all the information about your adventure tour,” responded J.C.

“Okay. And let me talk with some of my students, and we will get back in touch with you about a potential system. We will need to spend some time with you to gain an understanding of how your business operates, as well as what type of information you maintain on your customers and tours,” concluded Dr. Waggoner.

By the end of the week, the Waggoner’s adventure tour was scheduled, and Dr. Waggoner’s students had met with J.C. They had interviewed him, gained an overview of the operations at Xtreme Adventure Tours, and identified their information needs. They compiled their notes and developed the detailed requirements below.

Xtreme Adventure Tours: Detailed Requirements

Xtreme Adventure Tours offers a variety of packages, on predetermined dates. Tours are generally scheduled up to six months in advance. Their tours are as follows:

3 Day Tours

<u>Tour Number</u>	<u>Tour Name</u>	<u>Price per Person</u>
3WW12	Class 1-2 Whitewater Rafting/Camping	\$100.00
3WW34	Class 3-4 Whitewater Rafting/Camping	\$125.00
3KC	Kayaking/Camping	\$70.00
3HC	Hiking/Camping	\$50.00

5 Day Tours

<u>Tour Number</u>	<u>Tour Name</u>	<u>Price per Person</u>
5WW12	Class 1-2 Whitewater Rafting/Camping	\$145.00
5WW34	Class 3-4 Whitewater Rafting/Camping	\$175.00
5KC	Kayaking/Camping	\$95.00
5HC	Hiking/Camping	\$70.00

Each tour can be scheduled many times on different dates. A customer can take more than one tour over time, i.e., repeat customers.

Information needed for Tours include the Tour Number, Tour Name, Tour Duration, and Price per Person. A Tour is scheduled for a specific Start Date. Each tour can accommodate a maximum of 15 people.

When a customer calls to make a tour reservation, Xtreme records their first and last name, address, city, state, zip code, phone number, and email address. For the purpose of the system, a unique customer number will need to be created.

As shown in Appendix 1, the reservation consists of a reservation number, date the reservation was made, and tour being reserved. Note the tour is a specific tour on a specific date. The number of people for each reservation will also be recorded.

Appropriate and user-friendly data entry/edit user interfaces need to be created. In addition, the system needs to generate a report showing, for a specific tour, the customers on that tour. The system also needs to generate a reservation confirmation that can be sent to the customer, listing the reservation number, tour, date, and total price. Lastly, the system should generate a report showing upcoming tours for a specific date range, listing the number of people scheduled for each tour.

Dr. Waggoner explained to his analysis and design students what Xtreme really needed was a database system which would maintain information about each customer and each tour. The system should generate several reports including a reservation confirmation, a listing of customers for a specific tour, and a listing of upcoming tours and the number of customers registered for each tour.

After gathering the detailed requirements for the system, Dr. Waggoner assigned his students the requirements shown below. His systems analysis and design students began

developing data and process models and designing the user interfaces. As the semester progressed and the analysis and design phases were completed, Dr. Waggoner had his system development class use the specifications and start creating the working system. By the end of the semester the system was completed and implemented, and Xtreme Adventure Tours was able to keep track of their customers and tours much more efficiently.

APPENDIX 1

Xtreme Adventure Tours Reservation Form

XTREME ADVENTURE TOURS RESERVATION FORM			
Reservation #	<u>1027</u>	Reservation Date	<u>08-21-xx</u>
First Name	<u>Toby</u>	Last Name	<u>Barlow</u>
Street Address	<u>512 Oak Tree Lane</u>		
City	<u>Evansburg</u>	State	<u>IA</u> Zip <u>52501</u>
Phone Number	<u>441-080-8123</u>	Email address	<u>tbarlow@hmail.com</u>
Tour	<u>3ww12 - Class 1-2 Whitewater Rafting/Camping</u>		
Date Begin	<u>09-17-xx</u>	Tour Length	<u>3 days</u>
# of People	<u>4</u>	Cost Per Person	<u>\$100.00</u>
Total to be Collected	<u>\$ 400.00</u>		

APPENDIX 2

Xtreme Adventure Tours Logo

