We approach the challenge of scheduling river rafting trips throughout a 6 month season as an assignment problem. That is, for each day we seek to assign each travelling group (boats travelling together) to a campsite destination such that no two groups are assigned to reach the same site on the same day. It is also desirable that groups should encounter each other as little as possible, epitomizing the outdoor experience, and that we should be able to assign as many groups as possible throughout the season. Based on research and necessity, we assume that there are approximately 100 camping sites; groups are capable of passing one another at any point; the river does not increase travel speed at any time in the trip; a group stays as a unit throughout the entire length of the river; and the system is deterministic, with travelling groups allowing us to dictate their exact schedule. While there are crafts that travel only 4 or only 8 mph, we relax the problem by introducing variable times on the river and *tolerance* (possible deviation on number of campsites passed each day) for all groups. These relaxations lead to a significantly higher number of possible assignments.

The program we wrote utilizes constrained but randomly generated travel groups to conduct simulations in testing the solution algorithm. Our solution approaches scheduling as a constraint satisfaction problem (CSP). This class of problem seeks to assign values to variables: campsites to travelling groups in our case. This approach allows us to explore solutions with preference for group satisfaction (proximity of actual schedule to ideal trip) or any other number of variables. Additionally, we shaped the problem such that each day is a CSP in and of itself, creating a dynamic CSP where each day depends on the last. Our model found that not all numbers of travelling groups are possible under "standard" conditions, but we expected this and still managed to find promising results.

In analyzing the model, we focused primarily on the size of groups possible in a given season. Our findings suggested that a successful schedule is nearly always found for 200 groups in a season, with tolerance 2. It is certainly possible to schedule many more groups in a season, but there is a diminishing probability that a schedule will be found. At about 300 travelling groups, the scheduling success rate begins to drop, sharply, below 91% until around 600 groups the success rate begins to level off, asymptotically, at 5%. We note that this drop in success roughly follows an inverse of the possible number of schedules given group size (an exponential growth) and that satisfaction is relatively equivalent to success rate. Lastly, our model found that utilizing more motorboats than oar-powered rafts led to a greater number of successes. Further discussion and analysis within the paper addresses the greater implications of these results along with possible extensions to the model.