

Homework 12

Due: 4/26/2018

- Assignments are due at the beginning of class on the due date.
 - Any Matlab/R files are to be submitted as .m or .R files via Moodle (with a corresponding run/driver file if necessary).
 - Each file must be uploaded individually. Zipped files will not be graded.
 - Show all work and provide discussion where needed in order to receive full credit.
1. Run simulations on the Harbor algorithm we coded in class (Lecture 19) for $n = 100$ ships. Display your results for the average time of a ship in the harbor, maximum waiting time for a ship in the harbor, average waiting time of a ship, maximum waiting time of a ship, and percentage of time dock facilities are idle.
 2. Use your cubic spline submodel From Homework 11 to answer the following parts. Generate a random number x in the interval $[0, 1]$. (The generated random number x should corresponding to an arrival time between ships at a harbor.) Plug the random number into its corresponding inverse spline of the empirical cdf to obtain the time between arrivals of successive ships (in minutes). Do this for $n = 100$ ships, and compute the average time of a ship in the harbor, maximum waiting time for a ship in the harbor, average waiting time of a ship, maximum waiting time of a ship, and percentage of time dock facilities are idle.