1. For the star game (tara khela) problem represent the initial state, goal state and operators. Write program in pseudo code to solve the problem applying search algorithms. You are not allowed to apply any heuristic.
2. Develop a program in pseudo code to solve the two player game Tiger – Goat. Either Tiger or Goat can be AI. For this problem, show the board representation, find the evaluation / utility function and write mini – max algorithm.
3. For the following card problem develop a solution using genetic algorithm.

**Problem Description:** You have 10 cards numbered from 1 to 10. You have to choose a way of dividing them into 2 piles, so that the cards in Pile\_0 \*sum\* to a number as close as possible to 36, and the remaining cards in Pile\_1 \*multiply\* to a number as close as possible to 360.

**Genotype encoding:** Each card can be in Pile\_0 or Pile\_1, there are 1024 possible ways of sorting them into 2 piles, and you have to find the best. Think of a sensible way of encoding any possible solution-attempt as a genotype.

**Fitness:** Some of these solution-attempts will be closer to the target than others. Think of a sensible way of evaluating any solution-attempt and scoring it with a fitness-measure.

**The GA:** Write a program, in pseudo code, to run a GA with your genotype encoding and Fitness function.