```
import random
def score(parent1, parent2):
  # doing crossover
  for i in range(len(parent1)-1, len(parent1)-4, -1):
    parent1[i], parent2[i] = parent2[i], parent1[i]
  #doint mutation by randomly selecting the genes
  mutation_index = [random.randint(0, len(parent1)-1) for i in range(len(parent1)//2)]

  for i in mutation_index:
    if parent1[i] == '0':
      parent1[i] = '1'
    else:
      parent1[i] = '0'

    if parent2[i] == '0':
      parent2[i] = '1'
    else:
      parent2[i] = '0'

  score1 = parent1.count('1')
  score2 = parent2.count('1')
  #checking which child is better with more gene of type1
  if score1 > score2:
    return [''.join(parent1), score1]
  else:
    return [''.join(parent2), score2]

def genetic_algo():
  # Taking input as no. of parents
  n = int(input('Enter the number of parents: '))
```

```
  parents = []
  #taking parents genes as input 1 by 1

  for i in range(n):
    parents.append(list(input(f'Enter the parent{i+1}: ')))
  results = []

  #finding the score and storing it in results
  for i in range(len(parents)):
    for j in range(i+1, len(parents)):
      arr = [parents[i].copy(), parents[j].copy()]
      scores = score(parents[i], parents[j])
      results.append(scores + arr)

  # finding the best score among all combination of parents
  results.sort(key=lambda x: x[1], reverse=True)
  print(f'The best offspring among the parents is : {results[0][0]} and the parents are
{"".join(results[0][2])} and {"".join(results[0][3])}')

genetic_algo()
```