```python
from prettytable import PrettyTable
parta_table = PrettyTable(['Code', 'x', 'Fitness', 'Probability',
    'Cumulative Probability'])
partb_table = PrettyTable(['Code', 'x', 'Fitness', 'Rank',
    'Probability', 'Cumulative Probability'])

from bisect import bisect

individuals = [
        0b100001,
        0b100011,
        0b011100,
        0b011000,
        0b010000,
        0b110010,
        0b001010,
        0b000101,
        0b111101,
        0b000010,
    ]

random_numbers = [
        0.2319,
        0.2393,
        0.0498,
        0.0784,
        0.6408,
        0.1909,
        0.8439,
        0.1739,
        0.1708,
        0.9943,
    ]

fitness_function = lambda x: 1/(1+ (x-32)**2)

data = [(f"{x:06b}", int(x), fitness_function(x)) for x in
    individuals]
data = sorted(data, key=lambda x: x[2])

fitness_sum = sum(f for (_, _, f) in data)

parta = [(*data[0], data[0][2]/fitness_sum,
    data[0][2]/fitness_sum)]
for i in range(1, 10):
    prob = data[i][2]/fitness_sum
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43        parta.append((*data[i], prob, prob + parta[i-1][4]))

44

45    for (code, x, fitness, prob, cum_prob) in parta:
46        parta_table.add_row([code, x, fitness, prob, cum_prob])

47

48

49    cum_prob = [c[4] for c in parta]
50    chosen_ones = list()
51    for r in random_numbers:
52        chosen_ones.append(parta[bisect(cum_prob, r)][0])

53

54    print("Part a) Fitness Proportional selection")
55    print(parta_table)
56    print()
57    print("Selected intermediate population using the random
    ↪  numbers")
58    print(chosen_ones)
59    print([int(i, 2) for i in chosen_ones])

60

61    print()
62    print()
63    rank_sum = sum(range(1, 11))
64    partb = [(*data[0], 1, 1/rank_sum, 1/rank_sum)]
65    for i in range(1,10):
66        rank = i + 1
67        partb.append((*data[i], rank, rank/rank_sum, partb[i-1][5] +
    ↪  rank/rank_sum))

68

69    for x in partb:
70        partb_table.add_row([*x])

71

72    cum_prob = [c[5] for c in partb]
73    chosen_ones = list()
74    for r in random_numbers:
75        chosen_ones.append(parta[bisect(cum_prob, r)][0])
76    print("Part b) Ranked Selection")
77    print(partb_table)
78    print()
79    print("Selected intermediate population using the random
    ↪  numbers")
80    print(chosen_ones)
81    print([int(i, 2) for i in chosen_ones])
```