```python
#dejong_test.py

from simple_genetic_algorithm import SGA

ALNUM = ["0", "1"]
VAR_STRING_LEN = 20
NUMBER_OF_VARIABLES = 4
VARIABLE_LEN = int(VAR_STRING_LEN / NUMBER_OF_VARIABLES)
PROBABILITY_OF_MUTATION = 0.05
POP_SIZE = 40
NUM_GENERATIONS = 1000
DOMAIN_MIN = -5.12
DOMAIN_MAX = 5.12

def dejong(*xs):
    """
    The function is defined on n-dimensional space.
    The function can be defined on any input domain but it is usually evaluated on
    x_i element of [-5.12, 5.12] for i = 1, ..., n.

    Takes in n dimensional coordinates and returns output of:
        f(x,y) = sum[b(x_i + 1 - (x_i)^2)^2 + (a - x_i)^2]]
    for i = 1, ..., n; and the parameters a and b are constants set to a = 1 and b =
    100..

    The function has one global minimum f(x^*) = 0 at x^* = (0, ..., 0).

    Args:
        xs (List[num]): n dimensional coordinates for Euclidean (n + 1)-space
    Returns:
        (float): f(x,y) = value closer to 0 indicates a coordinate closer to know
        global minimum
    """

    return sum(xi ** 2 for xi in xs)

print("Running Simple Genetic Algorithm on De Jong Sphere benchmark function")
SGA(dejong, POP_SIZE, ALNUM, VAR_STRING_LEN, VARIABLE_LEN, DOMAIN_MIN, DOMAIN_MAX,
NUM_GENERATIONS,
    PROBABILITY_OF_MUTATION)

print("\nDe Jong benchmark test complete\n")
```