PARTICLE SWARM OPTIMISATION - ASSIGNMENT 3
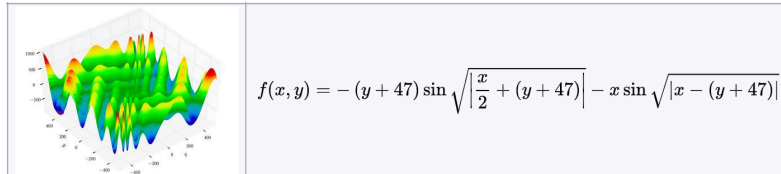
DHRUV SRIVASTAVA - 160514
HRITIK NARAYAN - 160520
JASHAY LILANI - 160523
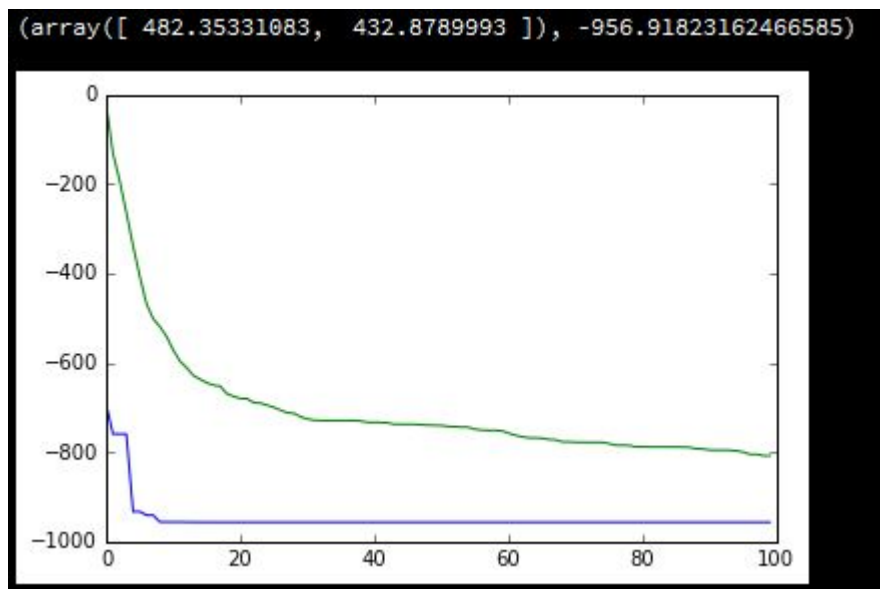
1. Egg Holder Function:
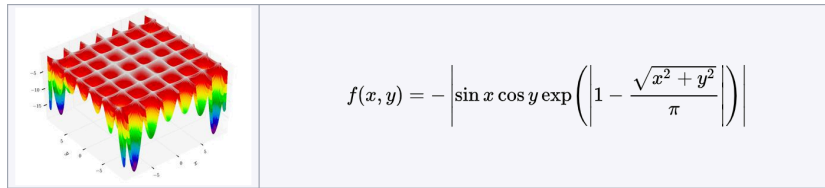

$$f(x, y) = -(y + 47) \sin \sqrt{\left|\frac{x}{2} + (y + 47)\right|} - x \sin \sqrt{|x - (y + 47)|}$$

Correct Solution:

$f(512, 404.2319) = -959.6407$	$-512 \leq x, y \leq 512$

Our Result:

(array([482.35331083, 432.8789993]), -956.91823162466585)

2. Holder Table Function:

$$f(x,y) = -\left|\sin x \cos y \exp\left(\left|1 - \frac{\sqrt{x^2 + y^2}}{\pi}\right|\right)\right|$$

Correct Solution:

$$\text{Min} = \begin{cases} f\left(8.05502, 9.66459\right) & = -19.2085 \\ f\left(-8.05502, 9.66459\right) & = -19.2085 \\ f\left(8.05502, -9.66459\right) & = -19.2085 \\ f\left(-8.05502, -9.66459\right) & = -19.2085 \end{cases} \qquad -10 \leq x, y \leq 10$$

Our Result:

(array([-8.1235358 , 9.62444594]), -19.146358388925421)