# Package's contents introduction

#### 1. Set up

When imported this packge to your project, the first thing you need to do is to add the four demo scene in this package to the Scenes In Build Window(File->Build Settings->Scenes In Build).





## 2. Four scene Introduction

(1) Menu

This is the program application start menu interface, click one of the buttons, to jump to the corresponding demo scene

	Genetic Algorithm	1
	Binary_Demo	123
The second secon	Word_Demo	1
A	TSP_Demo	
	Quit	
X		X

(2) Binary Demo

This scene shows that, using genetic algorithms to find the maximum value for a given length of the binary number.

genome length:	20	target value:	1048575
population size:	20	the fittest value:	0
crossover rate:	0.7	the fittest genome:	1101100010110 0010000
mutate rate:	0.01		
use elite	True		1
generation:	0		1
IsRunning:	False		
	Sta	irt Run	X

The genetic algorithm core logic is attached to the Gameobject which name is the GA\_BinaryCore.You can select this gameobject ,then adjust the parameters of genetic algorithm on its inspector:

1	<li>Inspec</li>	tor			<u> </u>	
	<b>7</b>	Binary_G	ACore		Static 🔻	
	Tag	Untagged	‡ La	yer Defa	iult 🛊	
	Tr	ansform			💽 🌣,	
	Position	X 1.23	167 Y 1.	53108 Z	94.3476	
	Rotation	X 0	Υ 0	Z	0	
	Scale			Z	1	
	🛙 💽 🔽 Bi	nary_GA	Core (S	cript)	🔊 🗘	
'≔ Hierarchy Create - @rAll ▼ � Binary_Demo ==	binary Length population size		20	20		
			20	20		
	crossov	ver rate	0.7			
	mutation rate		0.01	0.01		
	use el	ite selectio	n 🔽			
Main Camera Directional Light	num		4			
Binary_GACore ▶ Binary_UIManager EventSystem	copy r	num	2			
	genera	tion	0			
		Add C	ompone	ent		

(3) Word Demo

This scene shows that, for a given length of the string, using genetic algorithms to make the contents of this string converge to the contents of a string of the same length, Until exactly the same  $\circ$ 

genome length:	11	target value:	I love you!
population size:	200		
crossover rate:	0.7	the fittest genome:	Lk:o&%rloO0
mutate rate:	0.1		
use elite	True		
generation:	0		1
IsRunning:	False		
	Sta	irt Run	X

The genetic algorithm core logic is attached to the Gameobject which name is the GA\_WordCore.You can select this gameobject ,then adjust the parameters of genetic algorithm on its inspector:



#### (4) TSP Demo

This scene shows the travelling salesman problem(TSP). In the yellow area, each point represent a city, the traveling salesman must determine the shortest route that will enable him to visit each city precisely once and then return back to his starting point. The green point stand for the first city which the sales man will visit, the red point stand for the last city he will visit, and then he return to the green point, to finsh this path.



The genetic algorithm core logic is attached to the Gameobject which name is the GA\_TSPCore.You can select this gameobject ,then adjust the parameters of genetic algorithm on its inspector:

	<ol> <li>Inspector</li> </ol>		a,
	🔻 健 🔽 TSP_GA Core	(Script)	24,
	🕈 cityPointArray		
	Size	16	
	Element 0	CityPoint0	0
	Element 1	CityPoint1	•
	Element 2	CityPoint2	
	Element 3	CityPoint3	
	Element 4	🍞 City Point 4	
	Element 5	CityPoint5	
	Element 6	CityPoint6	
	Element 7	CityPoint7	
	Element 8	CityPoint8	
	Element 9	CityPoint9	
	Element 10	CityPoint10	
	Element 11	CityPoint11	
	Element 12	CityPoint12	
	Element 13	CityPoint13	
	Element 14	CityPoint14	
Create - QrAll	Element 15	CityPoint15	
▼ 🕏 TSP_Demo 🔹	population size	200	
Directional Light	crossover rate	0.7	
Main Camera	mutation rate	0.2	
► CityPoints			
TSP_GACore	use elite selection		_
TSP_DrawlineTool	num	4	
EventSystem	copy num		
Lventaystem	generation	0	

### 3. Contect

If you have technical question, please contact me by email. My email address is 18311310080@163.com