Práctica 1: Implementación de algoritmos paralelos de datos en GPU usando CUDA

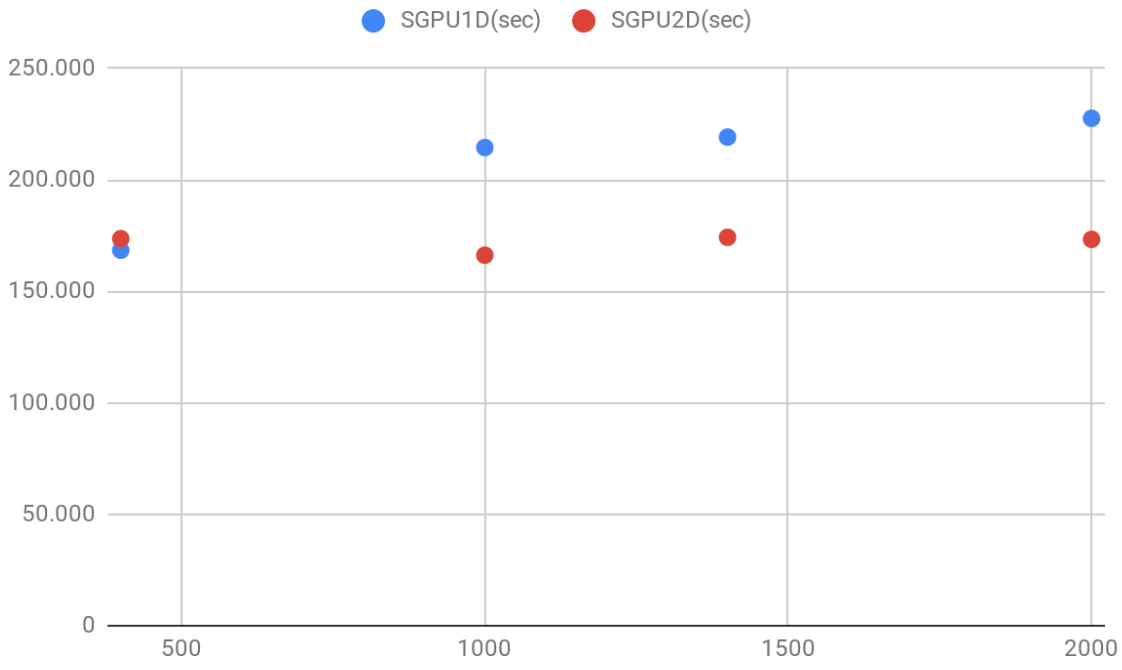
Caracteristicas del PC usado:

CPU: Intel(R) Core(TM) i7-4790K CPU @ 4.00GHz
GPU:GeForce GTX 970
RAM: 16GB

1.1 Implementación en CUDA del Algoritmo de Floyd

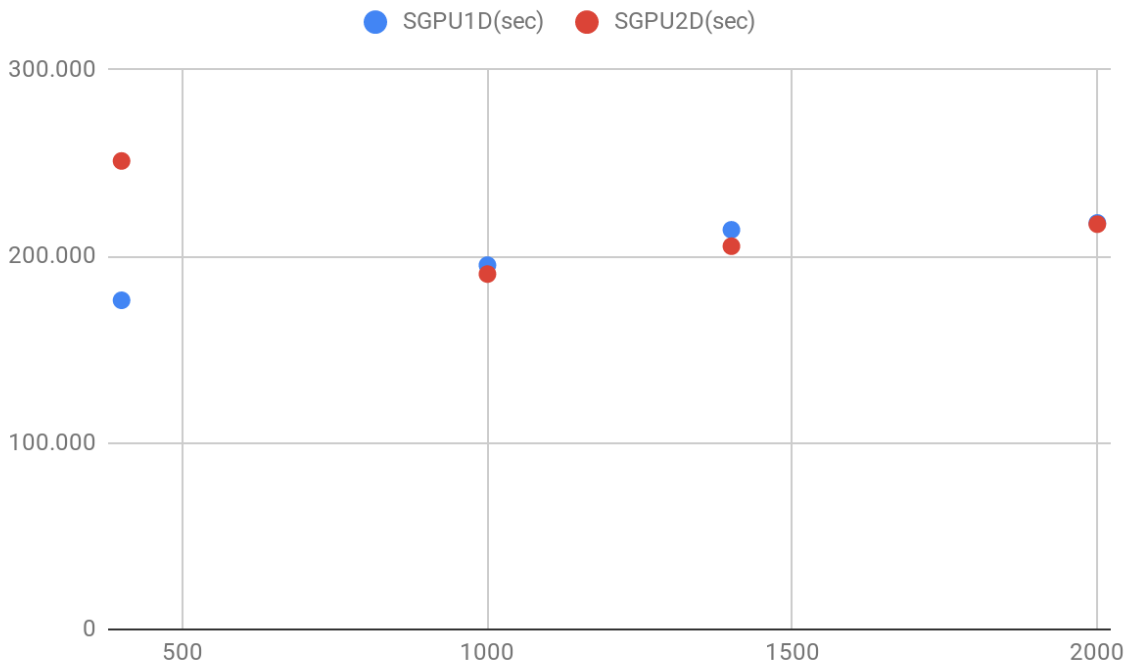
Medidas para tamaño de bloque 8 x 8

Tamaño	TCPU(sec)	TGPU1D(sec)	SGPU1D(sec)	TGPU2D(sec)	SGPU2D(sec)
400	0.084245	0.00500107	16.8454	0.00485206	17.3627
1000	1.30924	0.0610309	21.4521	0.0787709	16.6209
1400	3.66653	0.167266	21.9204	0.210429	17.4241
2000	10.6934	0.469741	22.7646	0.616934	17.3332



Medidas para tamaño de bloque 16 x 16

Tamaño	TCPU(sec)	TGPU1D(sec)	SGPU1D(sec)	TGPU2D(sec)	SGPU2D(sec)
400	0.0850649	0.00482106	17.6444	0.00338697	25.1153
1000	1.33145	0.0681839	19.5274	0.0698919	19.0502
1400	3.71928	0.173605	21.4238	0.181033	20.5448
2000	11.0695	0.507964	21.7919	0.509513	21.7257



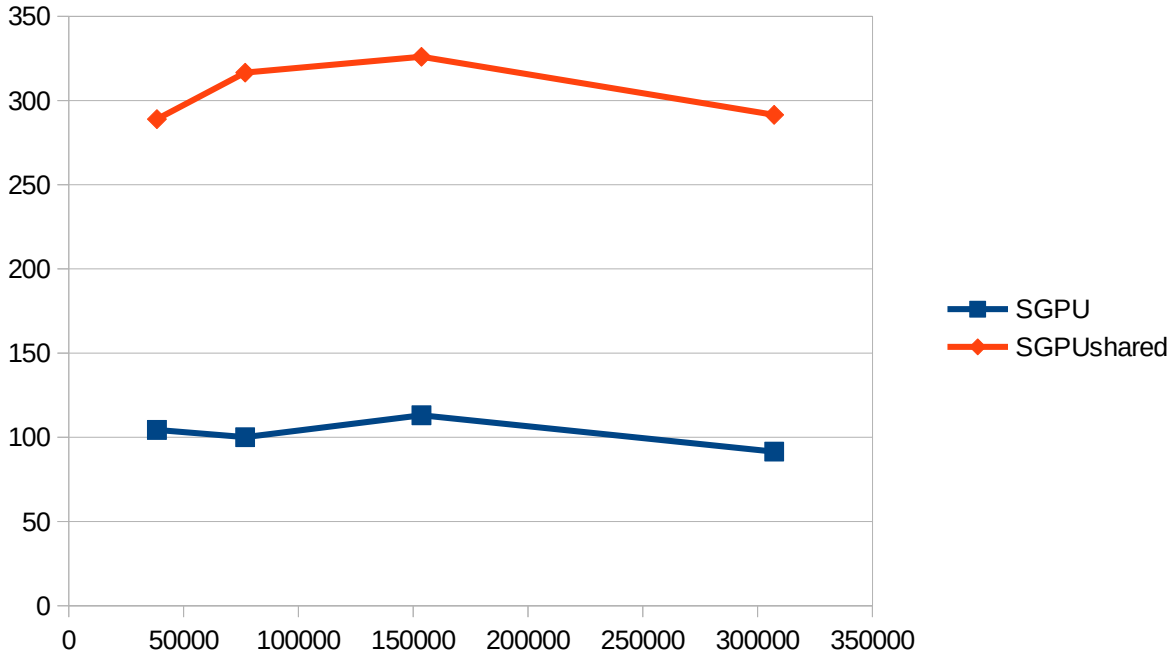
Medidas para tamaño de bloque 32 x 32

Tamaño	TCPU(sec)	TGPU1D(sec)	SGPU1D(sec)	TGPU2D(sec)	SGPU2D(sec)
400	0.085304	0.00646615	13.1924	0.004565	18.6865
1000	1.38883	0.075989	18.2767	0.0707741	19.6234
1400	3.6939	0.175633	21.0319	0.171114	21.5874
2000	11.2071	0.53354	21.0052	0.531689	21.0783

1.2 Implementación CUDA de una operación vectorial

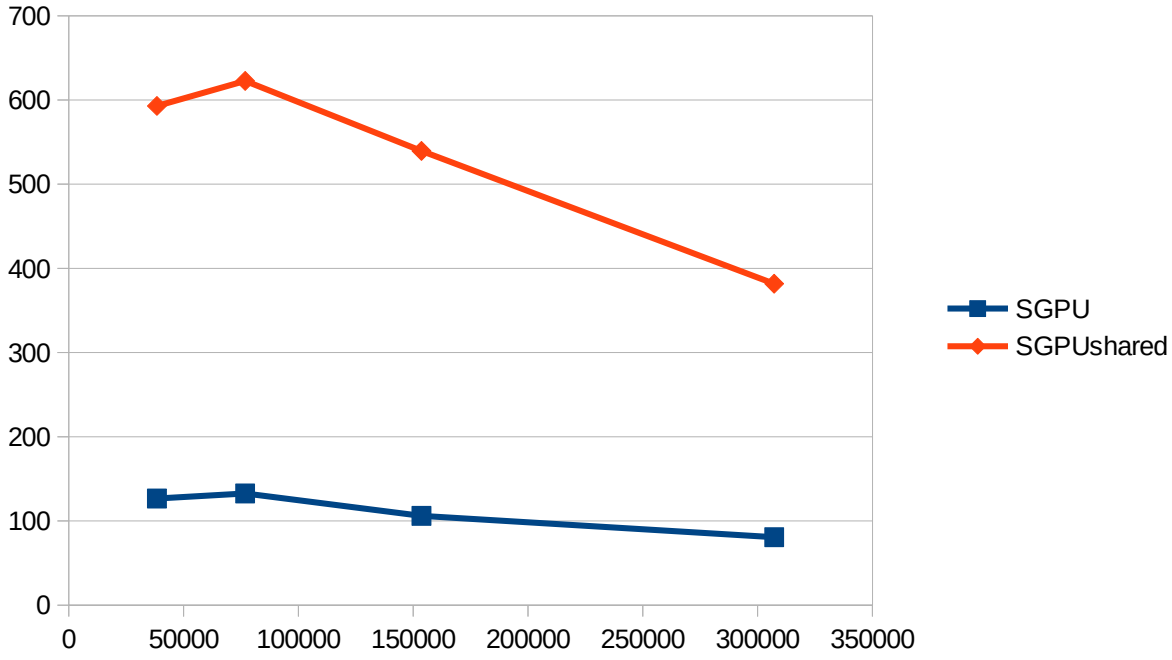
Tamaño de bloque de 64

N	TCPU	TGPU	SGPU	TGPUshared	SGPUshared
38400	0,442938	0,0042429	104,395	0,00153303	288,93
76800	0,926508	0,00925612	100,097	0,00292706	316,531
153600	1,90021	0,016804	113,081	0,0058291	325,987
307200	3,30404	0,0361071	91,5066	0,0113358	291,468



Tamaño de bloque de 128

N	TCPU	TGPU	SGPU	TGPUshared	SGPUshared
38400	1,73084	0,013665	126,663	0,00291896	592,965
76800	3,55202	0,026772	132,677	0,00570488	622,628
153600	6,19941	0,058496	105,98	0,0114901	539,544
307200	8.60144	0.106625	80.67	0.0225348	381695



Tamaño de bloque de 256

N	TCPU	TGPU	SGPU	TGPUshared	SGPUshared
38400	6,41453	0,0472281	135,82	0,00584602	1097,25
76800	10,5971	0,0946689	111,938	0,0116961	906,033
153600	15,3542	0,189195	81,1554	0,023041	666,386
307200	24,9209	0,365889	68,1107	0,0457301	544,957