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In [48]: %runfile 'C:/Users/jacks/OneDrive/Desktop/E94111229_石茂宏_HW1/untitled0.py' --wdir
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第一題結果：

t值	Euler近似值	Taylor近似值	真實值	Euler相對誤差	Taylor相對誤差
1.0	0.000000	0.000000	0.000000	0.000000	0.000000
1.1	0.100000	0.105000	0.105160	0.049066	0.001520
1.2	0.209917	0.220919	0.221243	0.051190	0.001463
1.3	0.330471	0.348612	0.349121	0.053421	0.001457
1.4	0.462354	0.488954	0.489682	0.055808	0.001486
1.5	0.606285	0.642883	0.643875	0.058381	0.001542
1.6	0.763041	0.811438	0.812753	0.061164	0.001617
1.7	0.933475	0.995787	0.997494	0.064180	0.001712
1.8	1.118537	1.197252	1.199439	0.067450	0.001823
1.9	1.319293	1.417344	1.420116	0.070996	0.001952
2.0	1.536943	1.657795	1.661282	0.074845	0.002099

第二題結果 (Runge-Kutta h=0.05)：

t值	u1近似值	u2近似值	u1相對誤差	u1真實值	u2真實值	u2相對誤差
0.00	1.333333	0.666667	0.000000	1.333333	0.666667	0.000000
0.05	1.721880	-0.499599	0.099463	1.912059	-0.909077	0.450432
0.10	1.726915	-0.832598	0.036891	1.793063	-1.032002	0.193221
0.15	1.617161	-0.890373	0.009485	1.601967	-0.961459	0.073935
0.20	1.481687	-0.861042	0.040582	1.423902	-0.874681	0.015593
0.25	1.348945	-0.807505	0.064134	1.267646	-0.795221	0.015447
0.30	1.227063	-0.750341	0.084384	1.131577	-0.724999	0.034955
0.35	1.117478	-0.695886	0.103139	1.012999	-0.663060	0.049507
0.40	1.019525	-0.645732	0.121086	0.909409	-0.608214	0.061685
0.45	0.931977	-0.599934	0.138460	0.818630	-0.559389	0.072481
0.50	0.853541	-0.558092	0.155326	0.738788	-0.515658	0.082293
0.55	0.783017	-0.519706	0.171700	0.668275	-0.476225	0.091305
0.60	0.719337	-0.484290	0.187594	0.605710	-0.440411	0.099633
0.65	0.661560	-0.451407	0.203035	0.549909	-0.407635	0.107380
0.70	0.608868	-0.420673	0.218076	0.499860	-0.377404	0.114649
0.75	0.560547	-0.391754	0.232798	0.454695	-0.349296	0.121555
0.80	0.515980	-0.364365	0.247318	0.413671	-0.322954	0.128226
0.85	0.474633	-0.338259	0.261791	0.376158	-0.298076	0.134806
0.90	0.436043	-0.313226	0.276418	0.341614	-0.274409	0.141458
0.95	0.399812	-0.289089	0.291454	0.309583	-0.251739	0.148370
1.00	0.365600	-0.265698	0.307231	0.279675	-0.229888	0.155772

第二題結果 (Runge-Kutta h=0.1)：

t值	u1近似值	u2近似值	u1相對誤差	u1真實值	u2真實值	u2相對誤差
0.00	1.333333	0.666667	0.000000	1.333333	0.666667	0.000000
0.10	-3.052437	8.989305	2.702359	1.793063	-1.032002	9.710546
0.20	-23.847795	51.192704	17.748195	1.423902	-0.874681	59.527283
0.30	-130.165202	269.269193	116.029960	1.131577	-0.724999	372.406517
0.40	-680.231485	1399.368584	748.993250	0.909409	-0.608214	2301.782465
0.50	-3531.299585	7258.241839	4780.856145	0.738788	-0.515658	14076.698288
0.60	-18312.795052	37634.955483	30234.619544	0.605710	-0.440411	85455.214395
0.70	-94951.331907	195131.871735	189956.755587	0.499860	-0.377404	517038.346525
0.80	-492306.465639	1011721.872078	1190091.431107	0.413671	-0.322954	3132717.628867
0.90	-2552513.623867	5245578.826590	7471916.734936	0.341614	-0.274409	19115926.393205
1.00	-13234278.789168	27197287.206587	47320223.642809	0.279675	-0.229888	118306769.912275
1.10	-68617112.328351	141012541.218338	305012334.184317	0.224965	-0.188082	749740195.587571