شرح پروژه:

برنامهای بنویسید که مقدار *ای* را برای اینکه دو تابع زیر بیشترین شباهت را به هم داشته باشند، پیدا کن.

f(t) = 1/sqrt(1+t\*\*2) , g(t) = e\*\*-(a\*t\*\*2)

از 5 تا 0

در بازه ی 0 تا 0.2 با قدم های 0.001 آی را متغییر در نظر می گیریم و برای هر *ای* شباهت زاویه ای را روی بازه ی 0 تا 5 با قدم های 0.001 بدست آورده که به شرح زیر می باشد.

مقادیز شباهت زاویه ای:

0.48976879164547793\_0.4867029086604084\_0.4836755260754632\_0.4806864798256852

0.47482270022701095\_0.47194759980288814\_0.4691101021529031\_0.4663100060346906

0.46354710363835677\_0.46082118086472224\_0.45813201759868233\_0.45547938797744275

0.45286306065376025\_0.45028279905394586\_0.44773836163064135\_0.4452295021104256

0.44275596973605436\_0.44031750950342924\_0.43791386239331087\_0.43554476559766003

0.433209952740794\_0.43090915409516195\_0.4286420967919193\_0.4264085050263371

0.4242081002579509\_0.4220406014055856\_0.41990572503737167\_0.4178031855555973

0.4157326953767073\_0.413693965106254\_0.41168670370909105\_0.4097106186746969

0.4077654161778342\_0.40585080123442996\_0.4039664778530847\_0.4021121491817652

0.40028751765036136\_0.39849228510867235\_0.396726152960178\_0.3949888222916167

0.39327999399832847\_0.391599368905722\_0.3899466478865824\_0.38832153197455666

0.38672372247384645\_0.3851529210651214\_0.38360882990764744\_0.3820911517380825

0.38059958996551013\_0.37913384876318046\_0.3776936331567598\_0.3762786491094292

0.3748886036036054\_0.37352320471963163\_0.3721821617113261\_0.3708651850785317

0.36957198663676727\_0.36830227958386286\_0.3670557785639643\_0.3658321997287214

0.3646312607957265\_0.3634526811044611\_0.36229618166958394\_0.361161485231815

0.3600483163062861\_0.35895640122870964\_0.35788546819889655\_0.3568352473223987

0.3558054706497052\_0.3547958722133413\_0.35380618806297387\_0.35283615629832826

0.351885517100275\_0.35095401275982535\_0.35004138770533555\_0.3491473885279748

0.3482717640051458\_0.3474142651224638\_0.34657464509375185\_0.3457526593797458

0.34494806570491787\_0.34416062407277703\_0.3433900967798416\_0.3426362484279726

0.3418988459354091\_0.34117765854631366\_0.34047245783903335\_0.3397830177331429

0.3391091144950566\_0.33845052674262155\_0.33780703544831603\_0.33717842394159486

0.33656447790982275\_0.33596498539837605\_0.3353797368095341\_0.3348085249005658

0.3342511447806429\_0.3337073939070843\_0.3331770720804362\_0.3326599814388937

0.33215592645179803\_0.33166471391239133\_0.3311861529297392\_0.3307200549199822

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0.32705601897789177\_0.32670467854804247\_0.32636387577964754\_0.3260334488615298

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0.32453143745212226\_0.32425998623649205\_0.3239978371571312\_0.3237448450441395

0.32350086672869405\_0.3232657610244924\_0.3230393887093225\_0.32282161250608843

0.32261229706405176\_0.3224113089396761\_0.3222185165773468\_0.32203379029016593

0.32185700224043556\_0.3216880264201937\_0.3215267386315635\_0.32137301646719607

0.32122673929048917\_0.32108778821585543\_0.320956046089048\_0.32083139746729217

0.3207137285995927\_0.32060292740692264\_0.3204988834624795\_0.32040148797198076

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0.3200105413291562\_0.31995084082984987\_0.3198970712884536\_0.3198491362671761

0.31980694078586047\_0.3197703913029765\_0.31973939569689164\_0.31971386324700013

0.319693704614965\_0.3196788318263633\_0.319669158252211\_0.3196645985907226

0.3196650688490703\_0.3196704863255759\_0.31968076959164643\_0.3196958384742662

0.3197156140383815\_0.31974001856948603\_0.3197689755564301\_0.31980240967426604

0.3198402467673833\_0.3198824138327764\_0.319928839003424\_0.31997945153188345

0.32003418177402565\_0.32009296117293695\_0.32015572224302147\_0.3202223985542777

0.3202929247167128\_0.320367236364932\_0.3204452701429864\_0.3205269636891953

0.3206122556214327\_0.32070108552227866\_0.3207933939246275\_0.3208891222972651

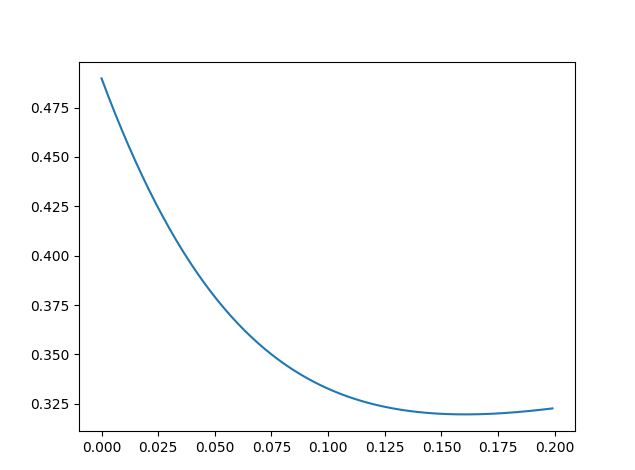
0.320988213030705\_0.32109060942325\_0.321196255667071\_0.3213050968346759

0.3214170788653216\_0.32153214855179835\_0.3216502535272418\_0.32177134225221765

0.321895364002004\_0.322022268853778\_0.3221520076743755\_0.32228453210788804

0.322419794563621\_0.32255774820411426\_0.3226983469333851

نمودار شباهت زاویه بر حسب *ای*:



بر طبق تحلیل بالا می توان گفت که کمترین شباهت زاویه ای :

0.3196650688490703

که برای این مقدا ر*ای* بدست آمده برابر با:

0.162