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Data inženjer pozicija - Tehnički zadatak - MDS Informatički inženjering

1 message

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Tue, Dec 16, 2025 at 12:52 PM

To: ddzinic@mds.rs

Cc: izivanovic@mds.rs

Pozdrav,

Po dogovoru šaljem zadatak:

Data source emits messages following Poisson distribution at rate of about 10msgs/min. Data processing system should create minibatches formed so that minibatch creation is triggered with the first message and contains messages that come in in next 5 minutes. Once minibatch is formed it is sent to a worker pool (10 threads). Creation of new minibatch should not wait for first one to complete.

In parallel with this another process is gathering 100 files nightly and sending them for processing. File sizes are following exp distribution. Processing of small files by individual workers is inefficient and files should be packed into buckets with 10MB in size before being sent to worker pool. Model this system using OOP & SOLID principles. Strategy for bucketing should be easy to change (concrete strategy does not need to be optimal). System should be easy to extend and maintain. Write tests and mocks for data sources and files.

Bonus problem (optional, harder)

Friend who studies psychology organizes weekly game nights for N participants. Room in which games are played has T tables. Each table hosts G game participants (all of them playing a single game). Each game finishes with single winner. Once all tables play a game simultaneously new round is started. Friend asked for help in finding optimal sitting schedule so that both (1) overall tournament winner is found, and (2) all tables during tournament are used for playing games and players who do not win play with as many different people as possible.

O načinu izrade

Potrebno je napraviti javni git repo, i omogućiti nam pristup. Rok za izradu i za „finalni commit“ je **utorak (23.12.2025.) u 08h**. Naravno – sigurno ti za zadatak neće biti potrebno toliko vremena, ali želimo da izađemo u susret kandidatima kako bi mogli organizuju svoje poslovne/privatne obaveze.

Evo svih detalja i smernica za test:

- * Test je koncipiran za poziciju Data inženjer u kompaniji MDS Informatički inženjering
- * Test se radi samostalno, uz mogućnost korišćenja sve raspoložive literature
- * Kandidati rade test u programskom jeziku/framework-u po želji
- * Ukoliko bila kakva pitanja ili nejasnoće bude bilo u radu, slobodno pošalji mejl
- * Obavezno je dockerizovati projekat nakon završetka radi lakšeg testiranja urađenih funkcionalnosti

Samo kandidati koji najbolje urade test biće pozvani na tehnički intervju i odbranu zadatka uživo u prostorijama kompanije.

Molim za potvrdu prijema mejla odgovorom sa opcijom "Reply To All"..

Dušan Džinić, dipl.ing, M.Sc.

Rukovodilac službe za razvoj softvera



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