

PROJEKAT: III 44010

Fakultet tehničkih nauka, Novi Sad

TIM 2

Članovi tima

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 - Prof. dr Sonja Ristić
 - Mr Slavica Aleksić
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 - Vladimir Ivančević
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- Vladimir Dimitrieski
 - Marko Knežević
 - Stefan Nikolić

Oblasti istraživanja

- Information system development, Domain Specific Modeling
- Data Warehouse, Data Mining, Business Intelligence
- Document Engineering

Information system development, Domain Specific Modeling

- Glavni cilj predstavlja oblikovanje pristupa, metoda, koncepata i alata za razvoj informacionih sistema:
 - zasnovanih na različitim *Model-Driven Software Development* (MDSD) pristupima
- IIS*Studio okruženje
 - konceptualno projektovanje šeme baze podataka, transakcionih programa i informacionog sistema
 - projektovanje aplikacija informacionog sistema i vizuelnih atributa ekranskih formi
 - zasnovano na konceptu tipa forme
- *Lukovic I, Ivancevic V, Celikovic M, Aleksic S, "DSLs in Action with Model Based Approaches to Information System Development", in the book: Formal and Practical Aspects of Domain-Specific Languages: Recent Developments, IGI Global, USA, 2013, ISBN: 978-1-4666-2092-6, DOI: 10.4018/978-1-4666-2092-6, pp. 502-532. (M13)*

Information system development, Domain Specific Modeling

- Specifikacija IIS*Studio meta-modela kojim su specificirani
 - PIM koncepti za opis modela jednog konkretnog informacionog sistema
- Na osnovu IIS*Studio meta-modela
 - razvoj domenski specifičnih jezika za opis modela informacionih sistema
- *Celkovic M, Lukovic I, Aleksic S, Ivancevic V, "A MOF based Meta-Model and a Concrete DSL Syntax of IIS*Case PIM Concepts", Computer Science and Information Systems (ComSIS), Consortium of Faculties of Serbia and Montenegro, Belgrade, Serbia, DOI: 10.2298/CSIS120203034C, ISSN: 1820-0214, Vol. 9, No. 3, 2012, pp. 1075-1103. (M23)*
- *Obrenovic N, Popovic A, Aleksic S, Lukovic I, "Transformations of Check Constraint PIM Specifications", Computer and Informatics (CAI), Slovak Academy of Sciences, Institute of Informatics, Bratislava, Slovakia, ISSN: 1335-9150, Vol. 31, No. 5, pp. 1045-1079. (M23)*

Information system development, Domain Specific Modeling

- *Dimitrieski V, Celikovic M, Ivancevic V, Lukovic I. "A Comparison of Ecore and GOPRRR through an Information System Meta Modeling Approach", 8th European Conference on Modelling Foundations and Applications (ECMFA 2012), Workshop on Graphical Modeling Language Development (GMLD 2012), July 2-5, 2012, Technical University of Denmark, Kongens Lyngby, Denmark, Joint Proceedings, ISBN 978-87-643-1014-6, pp. 217-228. (M33)*

IIS*Studio

- Окружење је организовано кроз два алата:
 - IIS*Case
 - IIS*UIModeler
- Извршна верзија алата је на адреси
 - <http://www.acs.uns.ac.rs/sr/node/237/1430140>

Educational Data Mining

- Data Mining u obrazovanju
 - analize podataka dobijenih u
 - obrazovnom procesu
 - inteligentnim tutorskim sistemima
 - web platformama za učenje
 - formalne procedure i kvantitativni pokazatelji
 - ciljevi
 - razumevanje i predviđanje ishoda obrazovnog procesa
 - istraživanje ponašanja studenata u tutorskim sistemima
 - automatska pomoć prilikom učenja i rešavanja problema
 - modelovanje studenata
 - unapređenje procesa učenja i obrazovanja

Educational Data Mining

- EDM@FTN
 - Data Mining i analize podataka dobijenih na Fakultetu tehničkih nauka u Novom Sadu
 - studijski program Računarstvo i automatika
 - studijski program Energetika, elektronika i telekomunikacije
 - vrste analiziranih podataka
 - podaci o izvršenju studentskih predispitnih i ispitnih obaveza
 - podaci o studentskim rasporedima sedenja

Educational Data Mining

- EDM@FTN - Studije
 - raznovrsne mogućnosti primene Data Mining tehnika
 - predviđanje studentskog uspeha
 - formiranje studentskih timova
 - otkrivanje specifičnih slučajeva
 - analiza studentskih obrazaca u sedenju
 - zone sedenja, pređene razdaljine u migracijama unutar učionica, učestalost promene mesta sedenja
 - povezanost sa polom i uspehom studenata
 - analiza studentskog uspeha na grupi predmeta u toku odabranog perioda
 - promene u nivou znanja studenata (teoretskog i praktičnog), prisutnosti studenata, uticaj promena u studijskom programu
 - povezanost sa polom i nivoom studija

Educational Data Mining

- Reference 1/2
 - *Ivančević V, Čeliković M, Aleksić S, Luković I. An application of educational data mining techniques at Faculty of Technical Sciences in Novi Sad. In: Ali AD, editor. Proceedings of the 5th International Conference on Information Technology; 2011 May 11-13; Amman, Jordan. Amman, Jordan: Al-Zaytoonah University of Jordan; 2011. p. 1-7. (M33)*
 - *Ivančević V, Čeliković M, Luković I. Analysing student spatial deployment in a computer laboratory. In: Pechenizkiy M, Calders T, Conati C, Ventura S, Romero C, Stamper J, editors. Proceedings of the 4th International Conference on Educational Data Mining; 2011 Jul 6-8; Eindhoven, the Netherlands. Eindhoven, the Netherlands: Eindhoven University of Technology; 2011. p. 265-9. (M33)*

Educational Data Mining

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- *Ivančević V, Čeliković M, Luković I. The individual stability of student spatial deployment and its implications. In: García FJ, Vicent LI, Ribó M, Climent A, Sierra JL, Sarasa A, editors. Proceedings of the 14th International Symposium on Computers in Education; 2012 Oct 29-31; Andorra la Vella, Andorra. Red Hook (NY): Curran Associates; 2012. p. 1-4. (M33)*
- *Ivančević V, Knežević M, Čeliković M, Aleksić S, Luković I. Database courses: Curriculum changes and student results. In: Katić V, editor. Proceedings of the 6th PSU-UNS International Conference on Engineering and Technology; 2013 May 15-17; Novi Sad, Serbia. Novi Sad, Serbia: PSU-UNS ICET 2013 Conference Secretariat, University of Novi Sad, Faculty of Technical Sciences; 2013. p. 1-5. (M33)*
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Motivi za primenu BI

- Motivi
 - formiranje svesti o situaciji
 - kvantitativne analize pokazatelja poslovanja
 - strateško, taktičko pa i operativno planiranje poslovanja
 - upravljanje rizicima
 - podrška odlučivanju
 - optimizacija korišćenja resursa

Motivi za primenu BI u zdravstvu Srbije

- Reforma zdravstvenog sistema Srbije
 - proces modernizacije
 - prelazak na digitalne zapise
 - bolji pristup i razmena medicinskih podataka

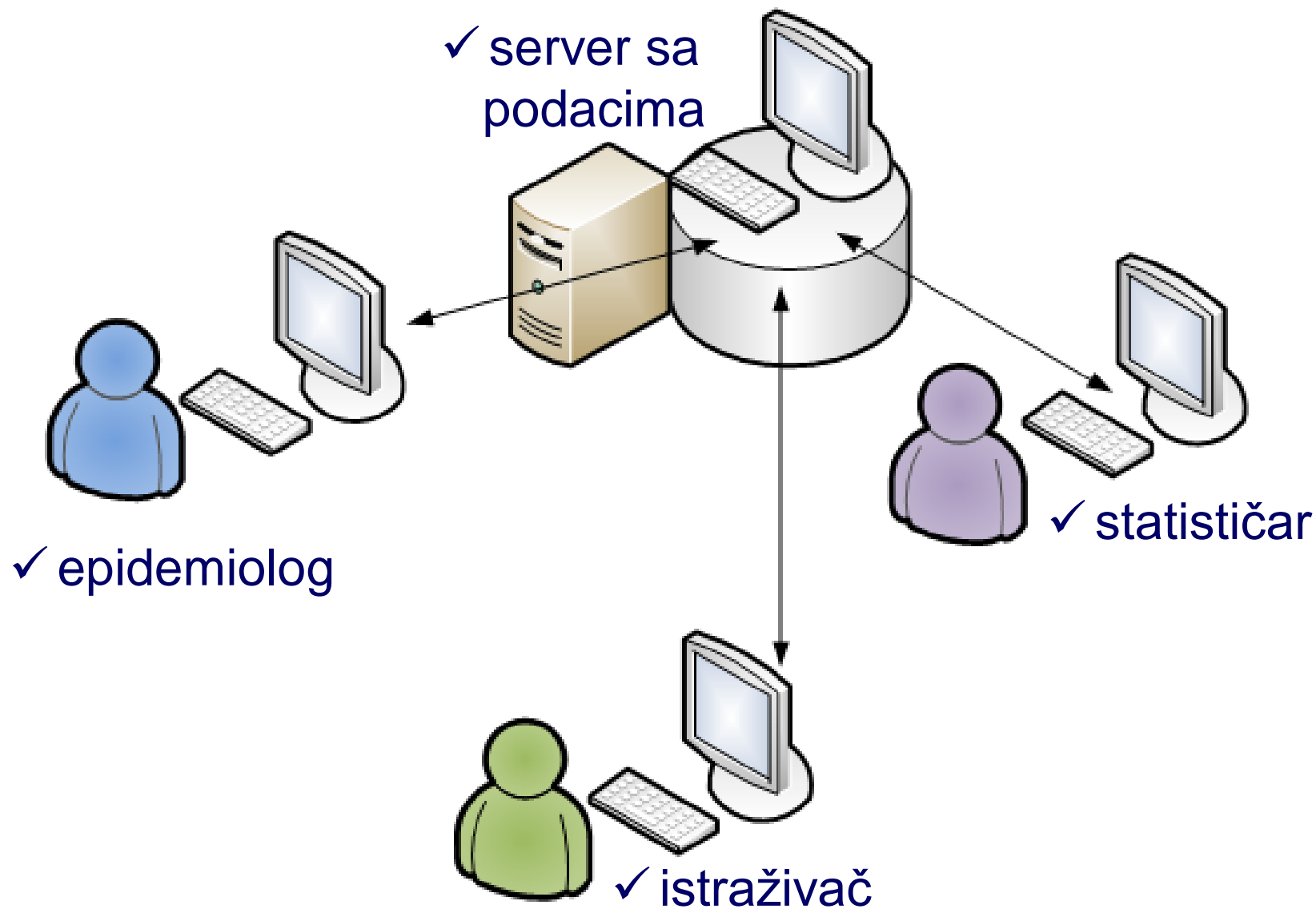
Dr Warehouse

- Saradnja sa Institutom za javno zdravlje Vojvodine
 - pilot projekat - softverski sistem
 - BI u javnom zdravstvu
 - analiza absentizma
 - radi povećanja produktivnosti
 - radi prevencije
 - potencijalni korisnici
 - instituti za javno zdravlje
 - istraživači
 - opšta populacija
 - motivacija
 - zdravlje populacije
 - socio-ekonomska opravdanost

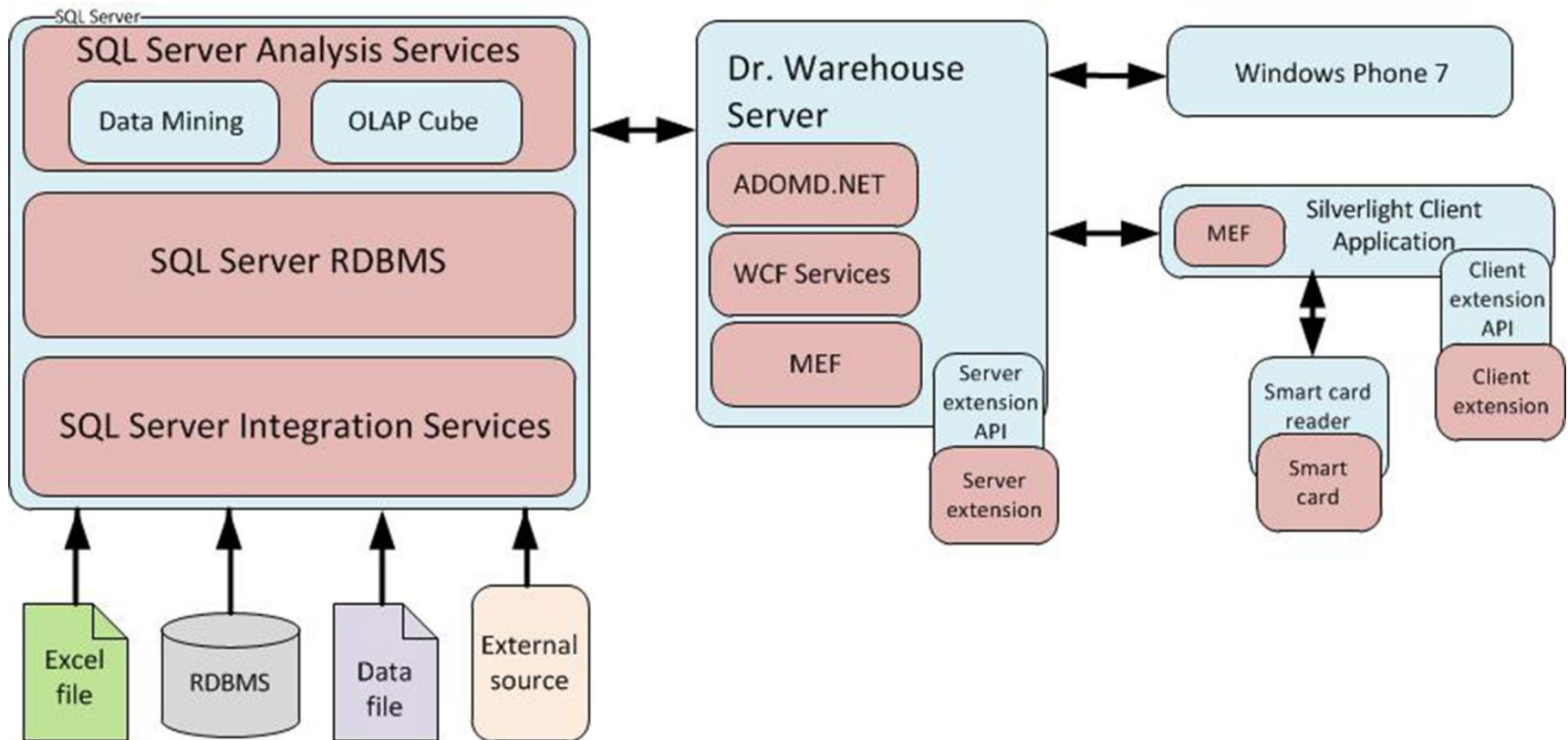
Dr Warehouse

- Kompleksni softverski sistem
 - domen epidemiologije
 - prikupljanje i čuvanje podataka radi analize
 - vizualizacija podataka
 - predviđanje
 - simulacije epidemija
 - proširivost

Dr Warehouse



Dr Warehouse - Arhitektura



Dr Warehouse

- Mogućnosti rešenja
 - pristup najčešćim uzrocima apsentizma za tekući mesec
 - izvršavanje naprednih analiza i prognoza
 - generisanje predikcija za određenu subpopulaciju
 - otkrivanje najčešćih slučajeva nepodudaranja dijagnoza
 - generisanje personalizovanih predikcija
 - izvršavanje analitičkih operacija i pristup istorijskim podacima
 - proširenje rešenja novim analizama, tipovima prognoza i izveštaja (npr, SIR model i varijacije)
 - sadrži MKB – 10 i set šifrnika neophodnih u zdravstvenim evidencijama

Dr Warehouse

- Reference

- *Knežević M.*

- Razvoj BI sistema za analizu podataka o apsentizmima, Master rad, Fakultet tehničkih nauka, Novi Sad, 2012.*

- *Ivančević V, Knežević M, Simić M, Luković I, Mandić D.*

- Dr Warehouse - an intelligent software system for epidemiological monitoring, prediction, and research. In: Laux F, Strömbäck L, editors. Proceedings of the 5th International Conference on Advances in Databases, Knowledge, and Data Applications; 2013 Jan 27-Feb 1; Seville, Spain. Red Hook (NY): Curran Associates; 2013. p. 204-10. (M33)*

- *5th International Conference on Intelligent Decision Technologies, Sesimbra, Portugal, June 2013.*

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Document Engineering

- Djukic V, Lukovic I, Popovic A, Ivancevic V, " Model Execution: An Approach based on extending Domain-Specific Modeling with Action Reports", *Computer Science and Information Systems (ComSIS), Consortium of Faculties of Serbia and Montenegro, Belgrade, Serbia, ISSN: 1820-0214, Vol. 10, No. 4, 2013, (Accepted for publication). (M23)*
- Djukic V, Lukovic I, Popovic A, Ivancevic V. "Using Action Reports for Testing Meta-models, Models, Generators and Target Interpreter in Domain-Specific Modeling", *Federated Conference on Computer Science and Information Systems (FedCSIS), 2nd Workshop on Model Driven Approaches in System Development (MDASD 2012), September 9-12, 2012, Wroclaw, Poland, Proceedings, IEEE Computer Society Press and Polish Information Processing Society, ISBN: 978-83-60810-51-4, pp. 1365-1372. (M33)*
- Djukic V, Lukovic I, Popovic A, Dimitrieski V. "Domain-Specific Modeling Tools as Client Applications Providing the Production of Documents", *Industrial Track of Software Language Engineering (ITSLE 2012), September 25, 2012, Dresden, Germany, CEUR Workshop Proceedings, ISSN 1613-0073, pp. 3-14. M(33)*