



LEGACY I BESPLATNI ALATI,
ORACLE I ERP RJEŠENJA
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Uvod

- Usporedba rješenja za poslovnu informatiku
- Legacy rješenja
- Profesionalna Oracle rješenja (Forms/Reports)
- Besplatni Forms/Reports alati, web i aplikacijski serveri te baze
- Integrirana ERP rješenja

Legacy rješenja

- Rade u karakter modu
 - COBOL
 - dBase
 - Clipper
- Rade na nezahjevnom hardware-u



Karakter mod



```

Credit Limit:$      0      Finance Charge? Y      Area:      Sort C
                                BILLING                                SHIPPING
Name: A CLEAN WELL LIGHTED PLACE FOR      Name: A CLEAN WELL LI
Address: 601 VAN NESS AVENUE      Address: 601 VAN NESS AV
:
:
City: SAN FRANCISCO      City: SAN FRANCISCO
State: CA      State: CA
Zip: 94102      Zi: 94102
Country: U.S.A      CouAr:
Phone:      Phon:

```

COBOL

COBOL

Star 60 godina

Još uvijek aktivan, moderne varijante:

Visual COBOL, GnuCOBOL



```

***** Top of Data *****
000001 IDENTIFICATION DIVISION.
000002 PROGRAM-ID. MARBJPMN.
000003 ENVIRONMENT DIVISION.
000004 CONFIGURATION SECTION.
000005 INPUT-OUTPUT SECTION.
000006 FILE-CONTROL.
000007     SELECT REPOUT
000008         ASSIGN TO UT-S-SYSPRINT.
000009
000010 DATA DIVISION.
000011 FILE SECTION.
000012 FD REPOUT
000013     RECORD CONTAINS 127 CHARACTERS
000014     LABEL RECORDS ARE OMITTED
000015     DATA RECORD IS REPREC.
000016 01 REPREC          PIC X(127).
F1=Help      F2=Split      F3=Exit      F4=Expand      F5=Rfind      F6=Rchange
F7=Up        F8=Down        F9=Swap      F10=Left       F11=Right     F12=Cancel
  
```

DBASE i CLIPPER

Karakter mod, ali potpuno funkcionalna aplikacija



```

DBASE
Auto
15:34:16          RECORD NO. 42          07/18/01
*** KURSK DATABASE AIR DATA EDIT SCREEN ***
-----
1) Day (MM/DD/YY): 07/07/43
2) # of Sorties flown: 33
3) Aircraft Type: FB
4) Aircraft Name: Fw-190
5) General Location of Mission: Area to the east of the II SS Pz Corps (6th/7th Gds Army area).
6) Airbase of Origin:
7) Specific Location of Mission:
8) Aircraft Nationality: G (G=German, B=British, A=USA)
                          S=Soviet)
9) Air Unit Name: Scht61
10) Mission: Attack
11) Sources:
12) Remarks: Assumed. An estimated 1/6th of missions went to the area east of the II SS Pz Corps.
  
```


Legacy rješenja

- File sistem
 - Pohrana nestrukturiranih podataka
 - Korisnik piše procedure za upravljanje podacima
- Relaciona baza
 - Baza brine o upravljanju podacima
 - Detalji su skriveni od korisnika



Legacy hardware

- Stari i odbačeni hardware
- Postiže još uvijek svemirske brzine za legacy software
- Održavanje nabavom i skladištenjem jeftinog rezervnog hardware-a



Moderan hardware

- Obično drastično predimenzioniran za legacy software
- Uporaba virtualizacije
 - Mnogo virtualnih servera na istom hardware-u
 - Dedicirani virtualni serveri za pojedinačne aplikacije





Profesionalna Oracle rješenja (Forms/Reports)

Klijent/server arhitektura

- Klijent
- Baza

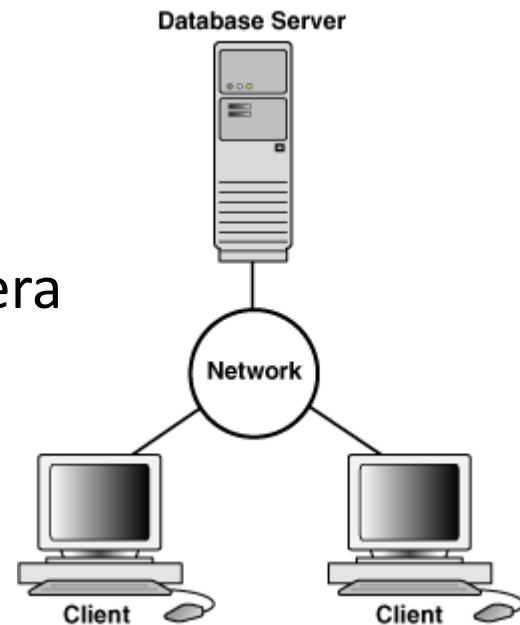
Troslojna arhitektura

- Klijent
- Aplikacijski server
- Baza

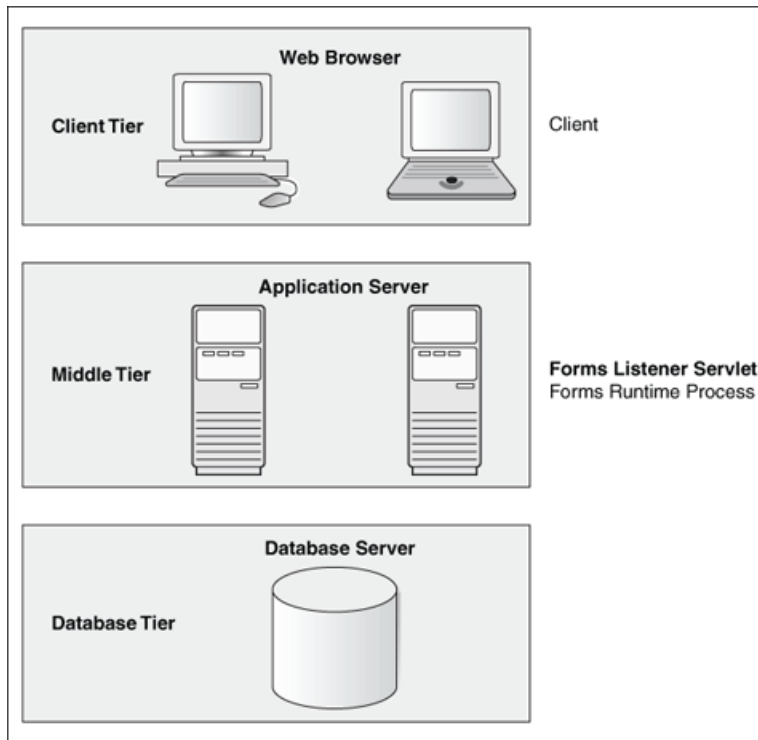
Oracle klijent/server arhitektura



Bez aplikacijskog servera



Troslojna arhitektura



Oracle Forms aplikacija



FIN

Akcija Urednik Pregled Blok Zapis Polje Pomoć Prozor

FIN_TE

HRVATSKA ELEKTROPRIVREDA D.D.

Tečajna lista NARODNE BANKE HRVATSKE

Unos tečaja

Punjenje tečajne liste s interneta

Unos tečajne liste

Prijenos tečajne liste u područja

Tečajna lista od: 08.01.2003 **do:** 10.10.2020

Pregled tečajne liste

Ispis tečajne liste

Zemlje i valute iz tečajne liste

Arhiva od: 02.01.1992 **do:** 21.12.2002

Pregled tečajne liste iz arhive

Ispis tečajne liste iz arhive

Datum	R.b	Zemlja	Šifra	Val	Jed	Kupovni	Srednji	Prodajni
10.10.2020	1	Australija	36	AUD	1	4,593963	4,607786	4,621609
10.10.2020	2	Kanada	124	CAD	1	4,854869	4,869477	4,884085
10.10.2020	3	Češka Republika	203	CZK	1	0,277641	0,278476	0,279311
10.10.2020	4	Danska	208	DKK	1	1,013048	1,016096	1,019144
10.10.2020	5	Mađarska	348	HUF	100	2,113534	2,119894	2,126254
10.10.2020	6	Japan	392	JPY	100	6,036518	6,054682	6,072846
10.10.2020	7	Norveška	578	NOK	1	0,692057	0,694139	0,696221
10.10.2020	10	Švedska	752	SEK	1	0,721805	0,723977	0,726149
10.10.2020	11	Švicarska	756	CHF	1	6,997968	7,019025	7,040082
10.10.2020	12	Vel. Britanija	826	GBP	1	8,271652	8,296542	8,321432
10.10.2020	13	SAD	840	USD	1	6,392210	6,411444	6,430678
10.10.2020	14	Europska zajed.	978	EUR	1	7,539611	7,562298	7,584985
10.10.2020	15	Poljska	985	PLN	1	1,683287	1,688352	1,693417
10.10.2020	30	Bosna i Herceg.	977	BAM	1	3,854942	3,866542	3,878142
10.10.2020	31	Srbija	941	RSD	100		6,438000	

Iskustva korisnika

- Oracle Forms sučelje je ljepše
- Rad s karakter modom je brži
 - Nema pozicioniranja miša u formi
 - Korisnici se priviknu na vrlo brz prelazak između polja s Tab-om



Besplatni Forms/Reports alati

- Free Forms Builder
- Free on-line Forms Builder
- Free Reports Builder
- Free on-line Reports Builder



JasperReports



Web vs. Aplikacijski server



Web Servers	Application Servers
Servlets	Servlets
JSP	JSP
Expression Language	Expression Language
WebSocket	WebSocket
JTA	JTA
JASPIC	Batch
	CDI
	Bean Validation
	EJB
	JPA
	JMS
	JSON-P
	JavaMail
	JAX-RS
	JAX-WS

baeldung

Besplatni web i aplikacijski serveri

- Apache Tomcat
- GlassFish
- JBoss
- Jetty



Besplatne baze

- MySQL
- PostgreSQL
- Microsoft SQL



ERP - Enterprise Resource Planning

- Poslovni informacijski sustav koji omogućuje potpunu kontrolu nad poslovnim procesima u poduzeću
 - računovodstvo
 - nabava
 - ljudski resursi
 - odnos s klijentima
 - skladište
 - prodaja
 - ...



ERP rješenja

- Bolja kontrola troškova i prihoda
 - Uštede u poslovanju
- Komercijalni ERP software
 - Napredni i vrlo skupi
- Open Source ERP software
 - Često besplatan za jednog korisnika 😊
 - Besplatni moduli (bazična funkcionalnost)
 - Proprietary features (plaća se)



Gartner, July 2019

ERP nije uvijek rješenje

- ERP nije "miracle" software
- Može biti presložen za tvrtku i namjenu
- Preskup
- Rigidna rješenja
- Dug period adaptacije
- Rijetko ispuni sva obećanja



CIN7

ERP rješenja

- Tri važna koraka implementacije
 - Konfiguracija
 - Prilagodba
 - Migracija podataka



Komercijalna ERP rješenja

- Prednosti

- Napredna i provjerena rješenja
- Fleksibilnost
- Produktivnost
- Pouzdanost
- Korisnička podrška

- Nedostaci

- Izrazito visoka cijena
- Složenost
- Zahtjevno programiranje
- Dugotrajna implementacija
- Značajan udio nezadovoljavajućih implementacija

Oracle ERP

- Cloud ERP NetSuite
- Model Software as a Service (SaaS)
- Najveći tržišni udio cloud implementacija
- Manja inicijalna investicija
- Redovite troškovi pretplate



SAP ERP

- On-premise i cloud rješenja
- Najveći ukupni tržišni udio
- Čest izbor najvećih tvrtki
- Dosta skuplji
 - U prosjeku 4,1% godišnjeg prihoda tvrtke (za Oracle 1,7 %)
- Brojne opcije prilagodbe



ERP tržišni udio

Ukupan udio

Udio cloud implementacija

EXHIBIT 1: 2018 ERP APPLICATIONS MARKET SHARES
SPLIT BY TOP 10 ERP VENDORS AND OTHERS, %

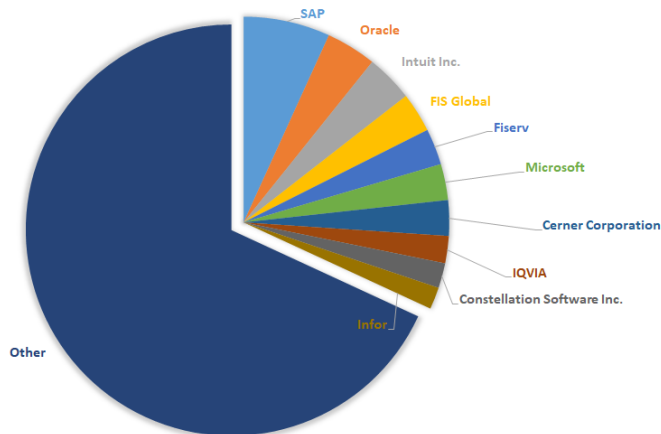
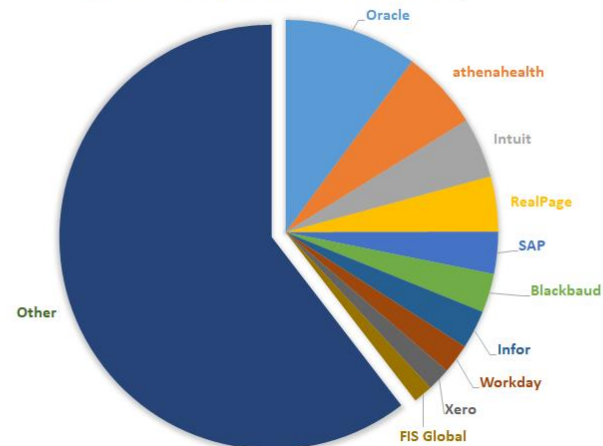


EXHIBIT 1: 2019 CLOUD ERP APPLICATIONS MARKET SHARES
SPLIT BY TOP 10 CLOUD ERP VENDORS AND OTHERS, %



Usporedba Oracle i SAP ERP-a































	SAP	ORACLE
Accounting <i>Manages your organization's expenditures and invoices</i>	✓	✓ ADVANTAGE
Budgeting <i>Manage your budget as an accountant, project manager or department manager</i>	✓	✓ ADVANTAGE
Pricing <i>A fundamental part of trade</i>	✓	✓ ADVANTAGE
Human Resources <i>Streamline and automate your HR functions</i>	✓ ADVANTAGE	✓
Customer Relationship Management <i>Keep track of your customers' histories and habits</i>	✓	✓
Supply Chain Management <i>Manage your product from manufacture to distribution</i>	✓	✓
Inventory Management <i>Related to SCM, inventory management is necessary to keep a strong warehouse</i>	✓	✓

SelectHub

	SAP	Oracle
Target Customer	\$1 billion+ annual revenue	\$750 million+ annual revenue
Implementation Duration	15 months	14 months
Resource Strategy	66% internal resources	57% internal resources
Project was Digital Business Transformation	41%	36%
Multi-currency Demo Score	Advantage <input checked="" type="checkbox"/>	
Audit Management Demo Score	Advantage <input type="checkbox"/>	
User-defined Dashboards Demo Score	Advantage <input checked="" type="checkbox"/>	
Workflow Configuration Demo Score		Advantage <input type="checkbox"/>
Customer Contract Management Demo Score		Advantage <input checked="" type="checkbox"/>
Purchasing Demo Score		Advantage <input type="checkbox"/>
Quality Assurance Demo Score		Advantage <input checked="" type="checkbox"/>

Panorama Consulting

ERP – najčešći komercijalni sustavi po tržišnom udjelu

	Oracle ERP Cloud	Deployment:  	Platform:   
		Price: \$\$\$\$\$	Company Size Suitability: S M L
	SAP Business One	Deployment:  	Platform:   
		Price: \$\$\$\$\$	Company Size Suitability: S M L
	Sage 100 Cloud	Deployment:  	Platform:   
		Price: \$\$\$\$\$	Company Size Suitability: S M L
	SAP S/4 HANA	Deployment:  	Platform:   
		Price: \$\$\$\$\$	Company Size Suitability: S M L
	Infor ERP	Deployment:  	Platform:   
		Price: \$\$\$\$\$	Company Size Suitability: S M L



Open Source ERP

- ERP s javno dostupnim izvornim kodom
- Prednosti
 - Bitno niža cijena
 - Jednostavnija prilagodba
 - Jednostavnija skalabilnost
 - Kvalitetan kod
 - Velike udruge korisnika
 - Dobar izbor za manje i srednje tvrtke
- Nedostaci
 - Podcijenjeni stvarni troškovi
 - Inicijalna ponuđena rješenja su često rudimentarna
 - Zahtijevaju sposobne IT zaposlenike
 - Slabija dokumentacija
 - Povećan rizik implementacije
 - Povećan operativni rizik

Open Source ERP

Poznati predstavnici

odoo

E ERPNext

xTuple®

Dolibarr ERP/CRM

Što nam je cilj?

- Sustav koji ispravno radi i zadovoljava potrebe korisnika (pa makar u karakter modu)?
- Moderna grafička korisnička sučelja?
- Skupocjeni komercijalni ERP sustav?
 - Pogodan za srednje i velike poslovne sustave
 - Pogodan za globalne poslovne sustave koji kupuju druge tvrtke (prije kupovine tvrtke koriste ili prelaze na isti ERP software)

Zaključak

- Svako od rješenja ima svoje prednosti i mane
- Sva rješenja korektno odrađuju zadatke
- Nova rješenja su bez sumnje naprednija
- Nova komercijalna rješenja su jako skupa
- Da li ona donose toliki napredak koliko više koštaju?

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Hvala na pažnji!