



# OO P u Oracle 11g bazi

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# SADRŽAJ

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# SADRŽAJ

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# Kreiranje objektnih tipova

```

create type t_adresa as object
(
  ulica varchar2(15),
  grad varchar2(15),
  post_brd varchar2(5)
);
/

```

```

create type t_product as object
(
  id integer(10),
  naziv varchar2(15),
  opis varchar2(22),
  cijena number(2,5),
  vrijedi_dana integer(3)
  prodani do kada mora biti prodan -- return date by sell_date function
);
/

```

# Uporaba objektnih tipova u baznim tablicama

```
insert into proizvodi  
(proizvod,  
kolicina,  
P,  
values  
(51, 88.54, 'sir', 'sir trapist', 45.88, 15)  
50,  
P;  
P  
P  
select  
from  
P
```

PROIZVOD	KOLICINA
(1; sir; sir trapist; 45,88; 15)	50

# Nove mogućnosti Oracle 11g

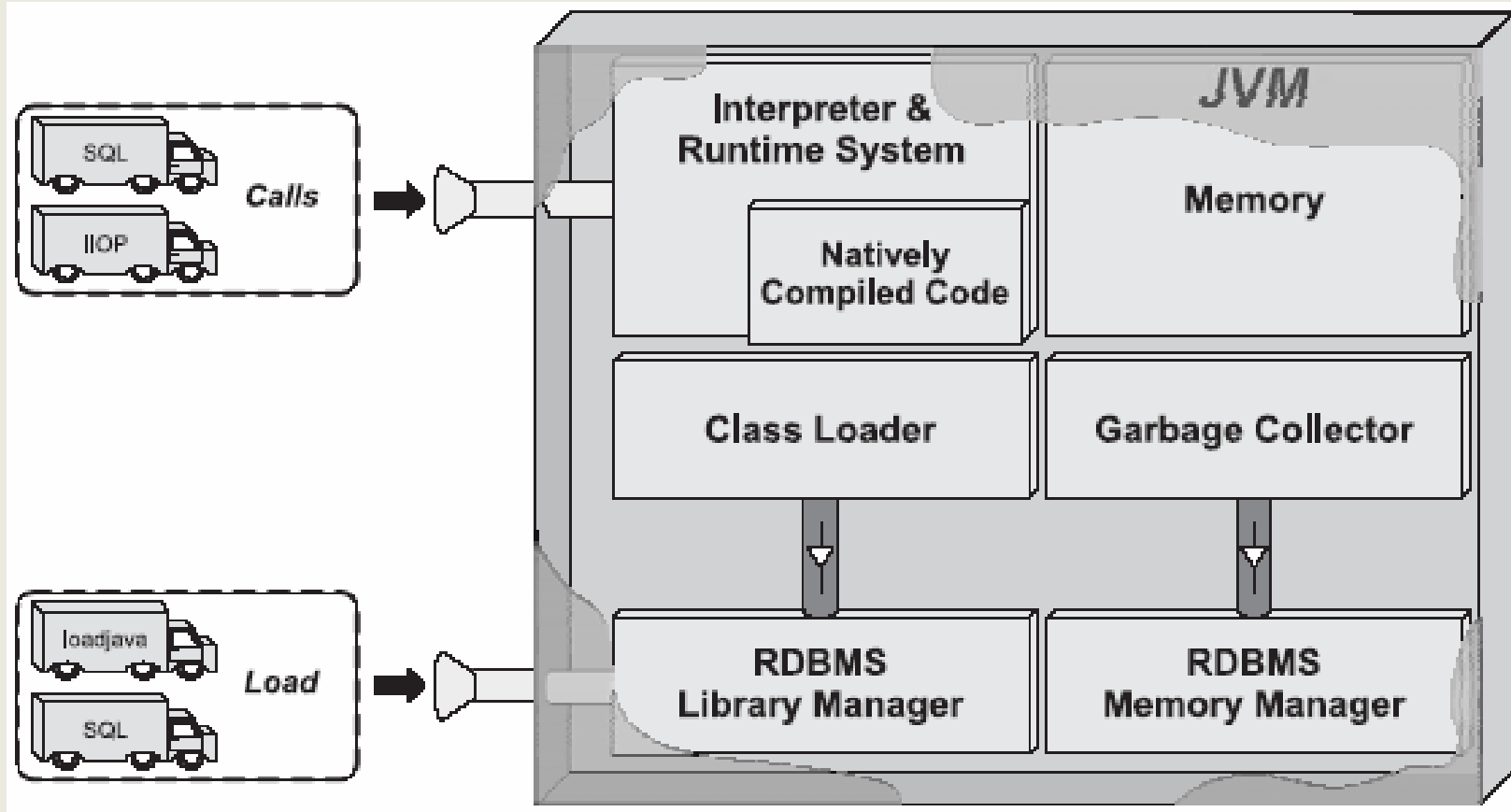
## JVM



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- ◆ podrška za loadjava URL
- ◆ list-based operacije s dropjava
- ◆ mogućnost za rješavanje referenciranja eksterne klase pomoću ojvmmtc utilitya, i poboljšanja u ojvmjava toolu.
- ◆ mogućnost definiranja database-resident JAR datoteke.
- ◆ dijeljenje metapodataka između korisnički definiranih klasa
- ◆ trajanje Java sessiona kroz dva tiera

# Java arhitektura u Oracle bazi podataka



# Oracle JDBC konekcijski tipovi

- ◆ thin
- ◆ thick
- ◆ default



# Razvoj Internal Server Java Funkcija

```
c:\>loadjava -r -f -o -user hroug2008/h@skola11win Test1.class
```

```
1 | select hello_world2.hello('Nino')
2 | from dual;
3 |
```

Data Grid

Data Grid | Auto Trace | DBMS Output (disabled)

HELLO\_WORLD2.HELLO('NINO')

▶ Hello Nino.

Oracle SQL\*Plus

File Edit Search Options Help

```
SQL> ED
Wrote file afiedt.buf

1 create or replace and resolve java source named helloworldsql as
2 public class helloworldsql {
3   public static String hello() {
4     return "Hello World.";
5   }
6   public static String hello(String name) {
7     return "Hello " + name + ".";
8   }
9* }
10
11 /

Java created.
```

HELLO\_WORLD\_SQL | HELLO\_WORLD\_SQL | SQL <No name>

```
1 | select hello_world_sql.hello('Nino')
2 | from dual;
3 |
```

Data Grid

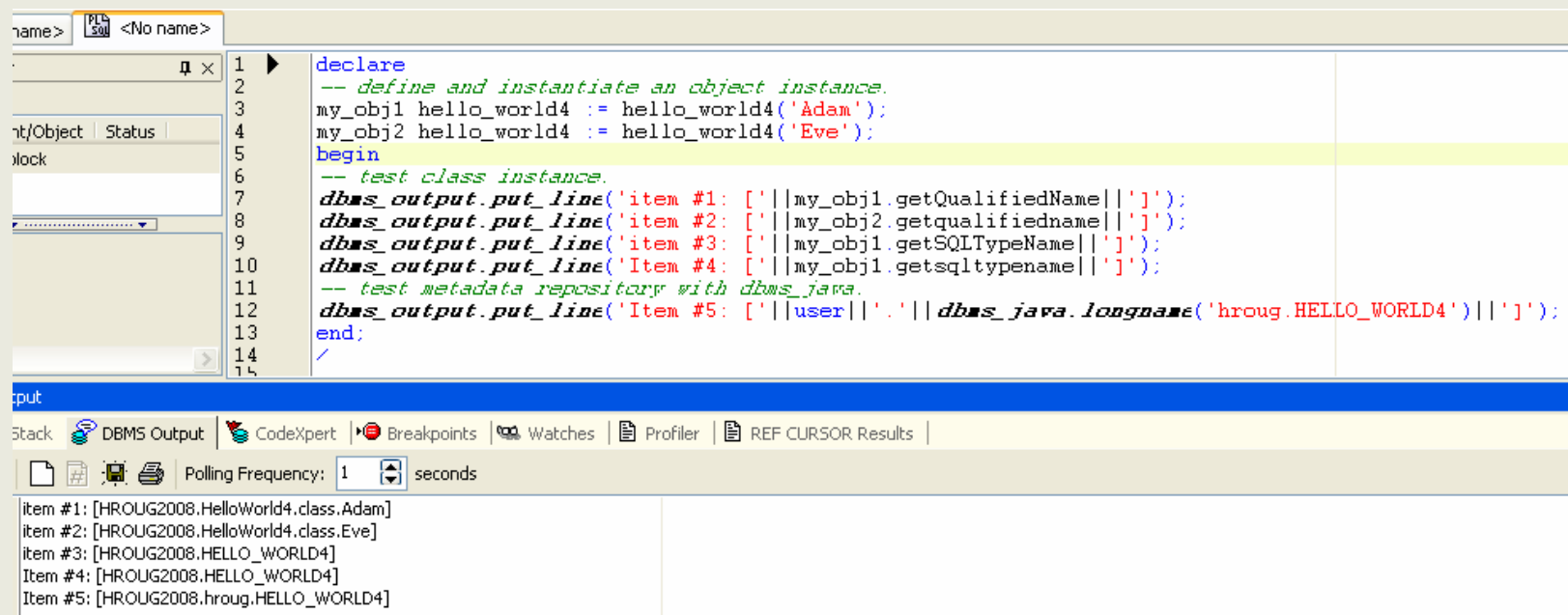
Data Grid | Auto Trace | DBMS Output (disabled) | Query Viewer

HELLO\_WORLD\_SQL.HELLO('NINO')

▶ Hello Nino.

# Kreiranje internih Server Java Objekata

```
c:\>loadjava -r -f -o -user hroug2008/h@skola11win HelloWorld4.java
c:\>
```



The screenshot shows a database IDE interface. The main window displays a PL/SQL script with the following code:

```
1 declare
2   -- define and instantiate an object instance.
3   my_obj1 hello_world4 := hello_world4('Adam');
4   my_obj2 hello_world4 := hello_world4('Eve');
5   begin
6     -- test class instance.
7     dbms_output.put_line('item #1: ['||my_obj1.getQualifiedname||']');
8     dbms_output.put_line('item #2: ['||my_obj2.getqualifiedname||']');
9     dbms_output.put_line('item #3: ['||my_obj1.getSQLTypeName||']');
10    dbms_output.put_line('Item #4: ['||my_obj1.getsqltypename||']');
11    -- test metadata repository with dbms_java.
12    dbms_output.put_line('Item #5: ['||user||'.'|| dbms_java.longname('hroug.HELLO_WORLD4')||']');
13  end;
14 /
```

The output window at the bottom shows the results of the script execution:

```
item #1: [HROUG2008.HelloWorld4.class.Adam]
item #2: [HROUG2008.HelloWorld4.class.Eve]
item #3: [HROUG2008.HELLO_WORLD4]
Item #4: [HROUG2008.HELLO_WORLD4]
Item #5: [HROUG2008.hroug.HELLO_WORLD4]
```

# Mapiranje Oracle tipova

SQL Datatypes	Java Class Datatypes
OPAQUE	oracle.sql.OPAQUE
RAW	oracle.sql.RAW
LONG RAW	byte[]
ROWID	oracle.sql.CHAR oracle.sql.ROWID java.lang.String
BFILE	oracle.sql.BFILE
BLOB	oracle.sql.BLOB oracle.jdbc2.Blob
CLOBNCLOB	oracle.sql.CLOB oracle.jdbc2.Clob
OBJECT	oracle.sql.STRUCT
Object types	java.sql.Struct java.sql.SqlData oracle.sql.ORAData
REF	oracle.sql.REF
Reference types	java.sql.Ref oracle.sql.ORAData
TABLE	oracle.sql.ARRAY
VARRAY	java.sql.Array
Nested table and types	oracle.sql.ORAData
VARRAY types	
Any of the preceding SQL types	oracle.sql.CustomDatum oracle.sql.Datum