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optimal cutting regime,
MySql data base, internet

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THE INTERNET/INTRANET APPLICATION FOR CUTTING REGIME SETTING

In the paper Inter for cutting conditions setting during turning is presented. For this task realization MySql data base and program language PHP was used. For this task realization MySql data base and program language PHP was used. This data base is completely free and functions on many operative systems (MS Windows, Linux, FreeBSD ...). Program language PHP has very simple syntax and les experienced users can learn how to use it very quickly. As the result of this created was Internet/Intranet application that can be used on Internet also as on own net (Intranet). Application is located on Apache web server.

1. INTRODUCTION

Selection of adequate cutting conditions is a very important condition for Computer Aided Manufacturing. Machinability data for this type of production are stored in data bases. The data bases are ideal solution for manipulation and aces to massive dates about machinability. Today are developed many data bases that can be used for this purposes like Oracle, MS SQL, MySql, PostgreSQL and dBase.

In the paper cutting conditions setting during turning is presented. For this task realization MySql data base and program language PHP was used. This data base is available completely free and is working on many operative systems (MS Windows, Linux, FreeBSD ...). Program language PHP has very simple syntax and less experienced users can learn to use it very quickly. Based on this created was Internet/Intranet application that can be used on Internet also as on own net (Intranet).

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For determination of feed during turning there are limitations according:

1. Limitations of machine tool
2. Limitations according tool
3. Limitations according worpiece

Feed depends upon different parameters (workpiece and tool material, dimension of wokpiece and tool holder, depth of cut and etc.) After adopting value of feed according tables (mostly of tool producers) are checked according cutting conditions.

Usually are checked:

- Conditions of chip production
- Tool holder strength
- Stability of workpiece during machining
- Surface roughness

The aim of the paper was to build informational system for proper feed selection during turning. Access to this net application will be possible from compute with any operational system through TCP and IP Protocol.

For thes problem next solution was selected

1. Base dates and recommended values will be stored in MySQL data base
2. Application will be written in PHP language
3. Application will be located on Apache server
4. Realization will be trough web explorer

MySQL data base is published as GPL (General Public License) what means it is open code software. It is suitable for small applications like this or the big projects, where is need huge data storage and many users access.

PHP language is developed for simple and quick development of Internet/Intranet applications. The language syntax is simple but without possibilities of data base creation decreasing. This database like Ms Language has possibility to access different data bases like Oracle, MS SQL, MySql, PostgreSQL, dBase, InterBase, Microsoft SQL and Infomix.

Apache is Web server like MYSQL and PHP open cod software. The most of internet site are on the server. Integration of these three components: server, PHP language and date base is very stable and whole system functions like integrated complex. Access to application is possible trough any web browser. Only limitation is for web browser is to have JavaScript support which was used for generation of associate menu and for correctness of entered information.

2. PHASES OF THE INFORMATION SYSTEM REALIZATION

Phases of the informational system realization are next:

1. Installation and setting of all components in the informational system(data base, web server, PHP interpreter)
2. Data base modeling

3. Store of information in data base
4. Writing of program
5. Testing

On the computer, where system will be realized, installation of web server, data base and PHP interpreter is needed. Next step is setting of all components. On the computer operational system Linux is installed.

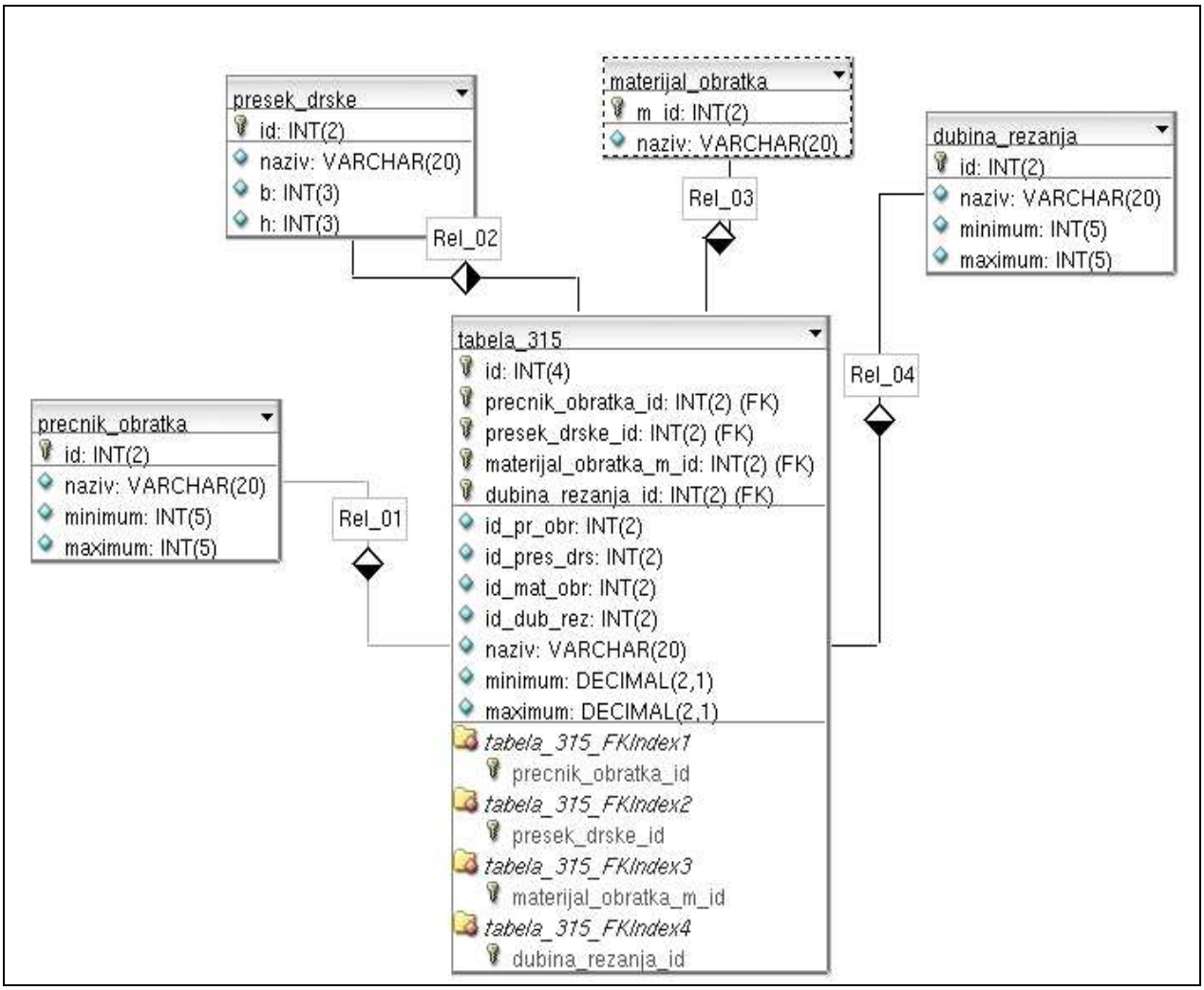

Fig. 1. Values and mutual connections between

During data base realization organizing of input dates were performed. For calculation of proper cutting feed many tables with different dates are needed. For data base creation, as example, machinability tables are used [3,5]. In the table are entities that contain information about workpiece diameter, cross section of tool holder, material of workpiece, and depth of cut. According this in MySQL data 4 tables are created: workpiece diameter, tool holder cross section, workpiece material and depth of cut. Fig. 1 shows visual image of mutual connections between created tables. After this table definition, table for the feed had to be

created. This table contains information about the feed and had to be connected with all parameters according which is feed defined and had to be related with all 4 tables.

Next procedure is the same for all tables that are used during calculation. Table creation in all wanted fields was done by phpMyAdmin tool. Actually it is application written in PHP language and is executed in the web window and is also used for MySQL data base administration. By use of this tool beside table structure creation of data enter is performed. In Fig. 2 is shown whole data base structure with all tables that are used during calculation.

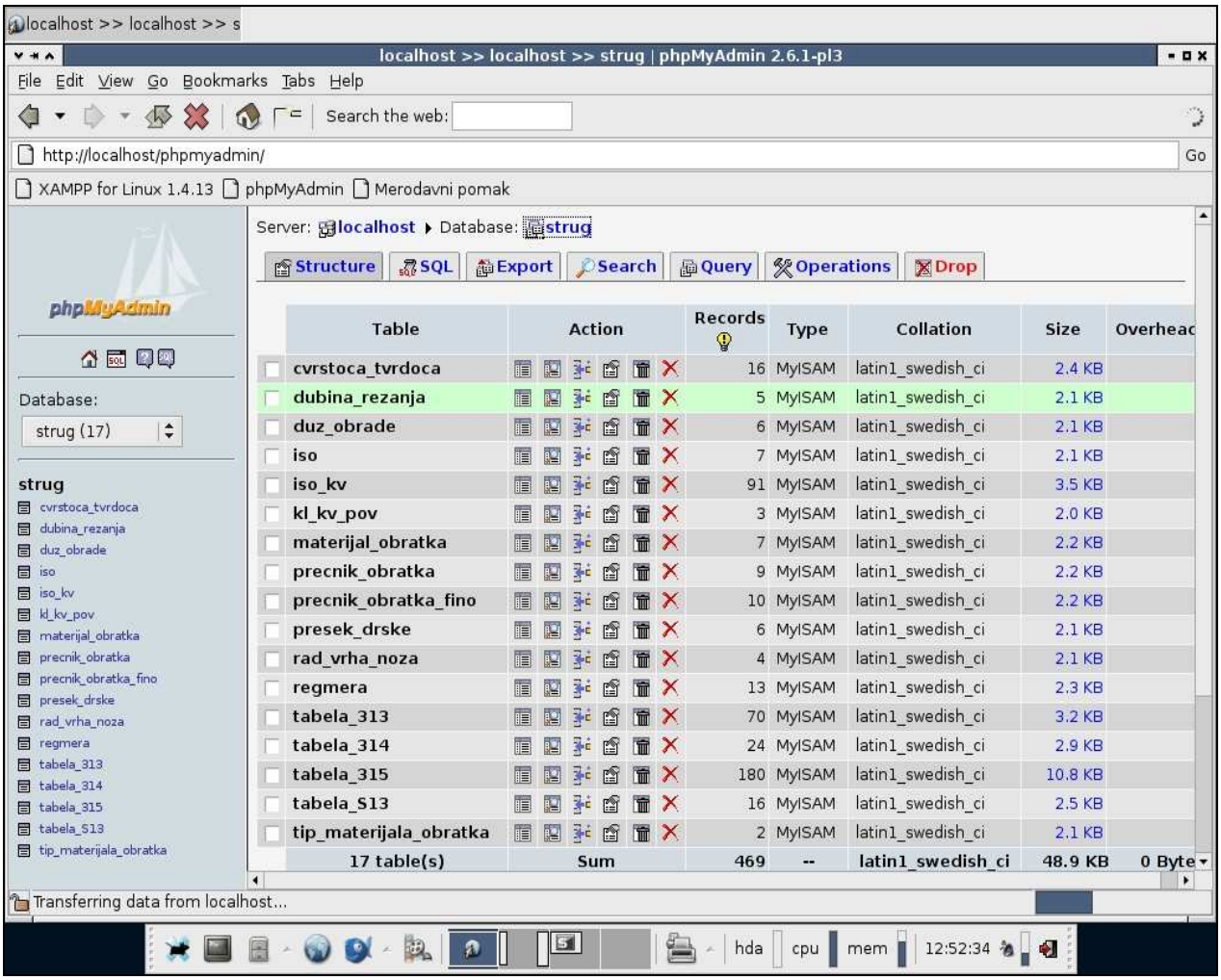

Fig. 2. Data base structure with all tables

Beside tables creation this programme can be used for exportation of so cold dump data base which is actually SQL script (see Fig. 3). This script is possible to use for data migration in another data base.

This script also contains all SQL commands which are used for table creation in the data base. It can be also used as excellent indicator how can directly manipulate with tables

in the data base from terminal without use of visual tools like before mentioned program phpMyAdmin.

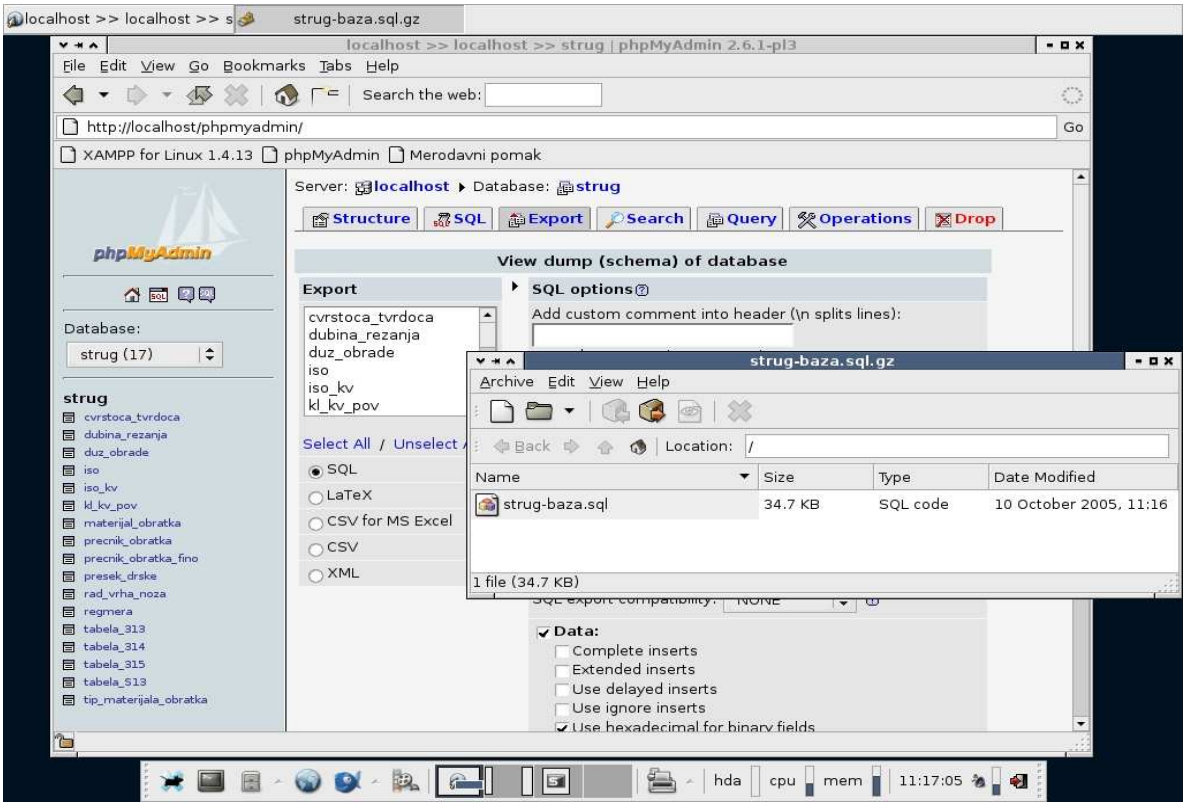

Fig. 3. Dump data base

```
-- phpMyAdmin SQL Dump
-- version 2.6.1-pl3
-- http://www.phpmyadmin.net
--
-- Host: localhost
-- Generation Time: Oct 10, 2005 at 11:16 AM
-- Server version: 4.1.11
-- PHP Version: 5.0.4
--
-- Database: `strug`

-- --------------------------------------------------------

-- Table structure for table `cvrstoca_tvrdoca`
--

CREATE TABLE `cvrstoca_tvrdoca` (
`id` int(2) NOT NULL auto_increment,
`naziv` varchar(20) NOT NULL default '',
`minimum` int(4) NOT NULL default '0',
`maximum` int(4) NOT NULL default '0',
PRIMARY KEY  (`id`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT=17 ;

--
-- Dumping data for table `cvrstoca_tvrdoca`
--

INSERT INTO `cvrstoca_tvrdoca` VALUES (1, '140 HB', 140, 140);
```

3. THE PROGRAM CREATION

When first two steps are finished all system components are adjusted, all data are stored in the data base follows next step in program creation. Program is developed on the local computer, and one of conditions is portability, for which migration is easier. According to this reasons it is necessary to avoid that base connection commands explicitly not comprehend direct server rote, user name, and password and data base name. Special PHP data is created config.php which consists of all necessary information about connections and allocates it to all changes that appear in program.

Last and execution step is entered values check. JavaScript function doesn't allow execution of program if all values are not chosen or entered. Calculation will not be executed if are entered illogically gig numbers or words instead of numbers. Fig. 4 shows page for data entrance of system and Fig. 5 shows page with calculation results for an example.

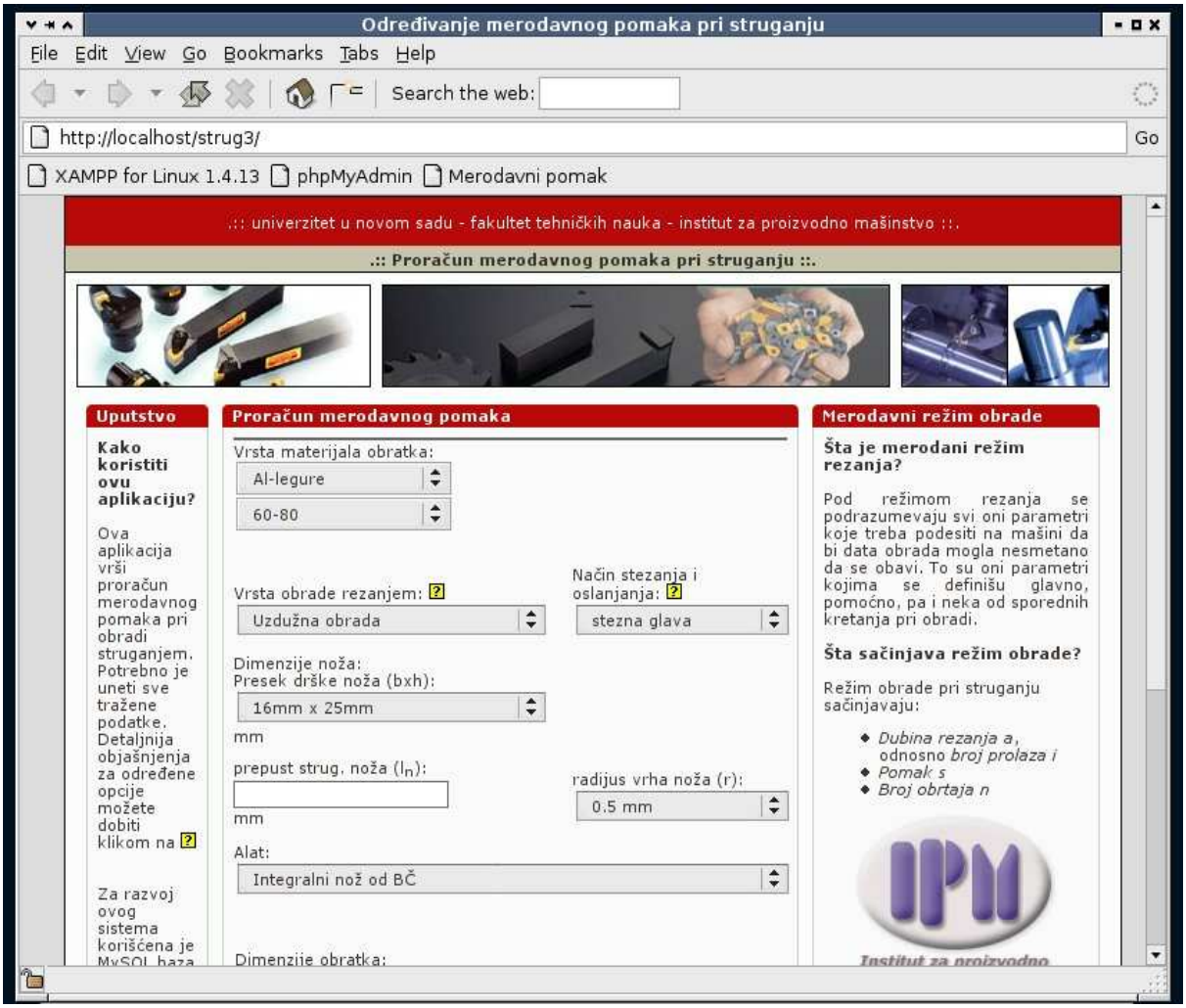

Fig. 4. Entrance page

With this last step programm is created and it is necesery to figure page with results.

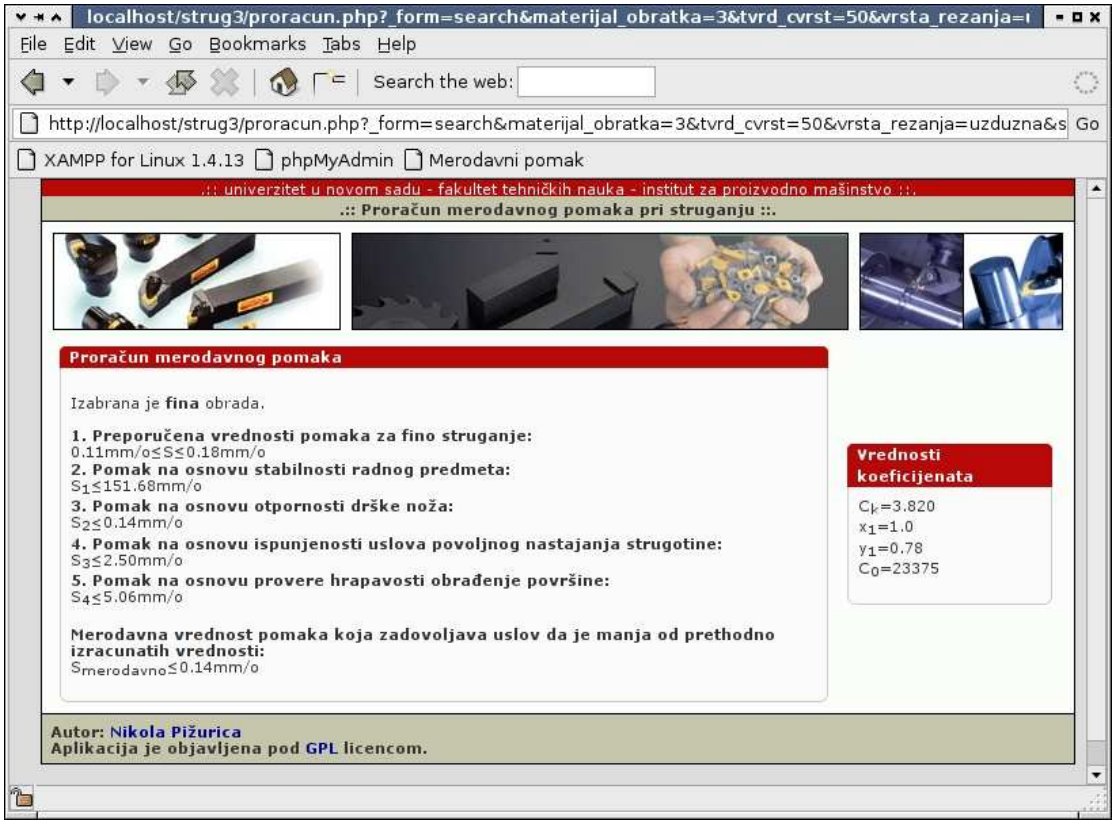

Fig. 5. Page with calculation results

4. CONCLUSIONS

Presented solution for the program realization provides significant prerogatives than other solutions written for example in MS Visual Basic or MS Access. MySQL data base has great opportunity is completely free and is possible installation on many operational systems. Programmed language has simple syntax and les experienced users learn it very quickly. Information system was successfully used for proper cutting feed selection.

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