



ŽILINSKÁ UNIVERZITA V ŽILINE  
Fakulta riadenia  
a informatiky

# **FRI MAGE**

<https://mamanuc.fri.uniza.sk/login>



**GAME MANUAL**  
**(online version 2026)**

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**FAKULTA RIADENIA A INFORMATIKY**  
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## **Preamble**

This manual serves to introduce the game FRI MAGE. It is divided into five parts. The first part is the introduction, which describes the course of the game in more detail. The second part addresses the lecturer's responsibilities. The third part describes the player's responsibilities. The second and third parts contain subchapters explaining specific tasks in the game. The fourth part, titled Conclusion, explains how the game ends. The final part consists of appendices with templates that the player can choose during the game. The manual is intended for those interested in playing, teaching, or understanding the FRI MAGE game.

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## **Introduction**

The management game FRI MAGE is designed for players who want to test their knowledge and reaction speed while solving tasks connected with business operations and management. The game requires one lecturer and at least one player. The lecturer must create a game template first. After it is created, players can join the game. Various templates allow managing different types of companies (manufacturing or service-based) in different industries. The number of players is limited. A player can play solo, or in a team of up to 4 members. Up to 8 teams can participate. The playing time depends on the number of rounds and the set duration per round. When all rounds are completed, the game ends and a summary of results is displayed to both players and the lecturer.

## **Course of the game (essence)**

After the player(s) log in, the lecturer may start the prepared game. The game may last several rounds, and each round has a precisely defined time limit. The goal of the players is to communicate within their team and solve the given game model as well as possible. Each player is responsible for one of the divisions. First division – Finance Division – responsible for setting budgets for all other departments. Budgets often need to be adjusted during the game, so they match the needs of each division as accurately as possible. Second division – HR Division – responsible for defining personality traits of new employees that the company wants to hire for specific positions. It is also necessary to consider expected costs and wages based on the given personality traits. Third division – Purchasing Division – responsible for planning production in the company. Based on calculations of the given parameters, the best and most efficient production plan must be created. Several production models can be planned. Fourth division – Production Division – responsible for planning the smooth and successful operation of the company based on the provided parameters. Detailed planning of changes in the company is useful for efficient production. Once the time starts to run out, it is important for players to make a final decision, fill in all the parameters and save them. At the end of the game, statistics appear for both players and the lecturer showing the performance of each team.

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## Lecturer

### Registration:

Registration is required if the lecturer is not yet registered. To register, the lecturer must fill in: First Name, Last Name, Email, Password, and repeated password to confirm its correctness.

The lecturer, as a future user of the game, is obliged to provide his login details. First, it is necessary to fill in his first and last name. Then, it is necessary to provide his e-mail address, through which the lecturer will log in to the game. The last step is to come up with a login password. This login password must be entered twice to prevent mistakes.

## Registrácia

Meno:

Priezvisko:

Email:

Heslo:

Heslo (znovu):

Registrovať

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*Login:* To start the game, the lecturer must log in using their email and password. Login is possible only after registration.

Prihlásenie

Email:

Heslo:

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*Game setup:* After logging in successfully, the lecturer can begin creating a game. They enter the lecturer's game section. There is no time limit for creating a game. The lecturer sets the parameters on which the game will run.

To create a new game, the lecturer must first choose a template. They can select a specific template from the list of available templates. They can also choose a model situation that players will solve.

Vytvorenie novej hry

Šablona:

Modelová situácia:

Šablona:

Modelová situácia:

Celozávodní odstavka po dobu 14 dní

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After selecting the template, various parameters required for the given game will appear. The lecturer fills in these parameters individually within the allowed range of the template. Numbers must be entered as whole numbers, e.g., 100000.

Vstupný rozpočet	<input type="text"/>
	Rozsah: 250 000 000 - 500 000 000 (€)
Priemerná absencia	<input type="text"/>
	Rozsah: 0 - 30 (%)
Prestávka (po 6 hod.)	<input type="text"/>
	Rozsah: 10 - 60 (min.)
Daň neprodukcie (priemerné mzdové náklady)	<input type="text"/>
	Rozsah: 50 - 100 (%)
Náklady na nábor zamestnanca	<input type="text"/>
	Rozsah: 10 - 2 000 (€/osoba)
Vstupné školenie zamestnanec	<input type="text"/>
	Rozsah: 10 - 1 000 (€)
Priplatok za prácu cez víkend	<input type="text"/>
	Rozsah: 20 - 150 (%)
Priplatok za prácu cez sviatok	<input type="text"/>
	Rozsah: 20 - 200 (%)
Hodinový príplatok za poobednú prácu	<input type="text"/>
	Rozsah: 0 - 5 (€)
Hodinový príplatok za nočnú prácu	<input type="text"/>
	Rozsah: 1 - 10 (€)
Počet pracovných dní	<input type="text"/>
	Rozsah: 19 - 23 (poč.)
Počet víkendových dní	<input type="text"/>

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A screenshot of a web form for configuring game parameters. The form consists of several rows, each with a label on the left and an input field on the right. Below each input field, a range of values is displayed. The parameters and their ranges are: 'Počet sviatkov' (Range: 0 - 3 [min]), 'Mesačný poplatok za skladovanie auta' (Range: 50 - 500 [€]), 'Mesačný poplatok za skladovanie materiálu' (Range: 20 - 250 [€]), 'Minimálny čas operácie' (Range: 20 - 30 [sekundy]), 'Maximálna výrobná kapacita' (Range: 20 - 10 [hrn]), 'Dĺžka kola' (Range: 5 - 120 [min]), and 'Počet kôl' (Range: 1 - 12 [hrn]).

After filling in the parameters, the lecturer scrolls down to create teams and to assign players into them.

A screenshot of a 'Nastavenie tímov' (Team Settings) interface. It features a 'Viber hráčov' (Select players) section with a list of player names. One player, 'Prvý Hráč', is highlighted with a blue background and a red circle. Below the list, there is a legend with three status indicators: 'Priradení' (Assigned) in blue, 'Online' in green, and 'Offline' in grey. At the bottom, it shows 'Počet tímov: 0/1' and a 'Nastaviť model' button.



The lecturer can see all players at once and each with their assigned identification name. Players can appear in 3 colors. Grey if the player is offline, turquoise if they are online and blue if the player has been assigned to a team.

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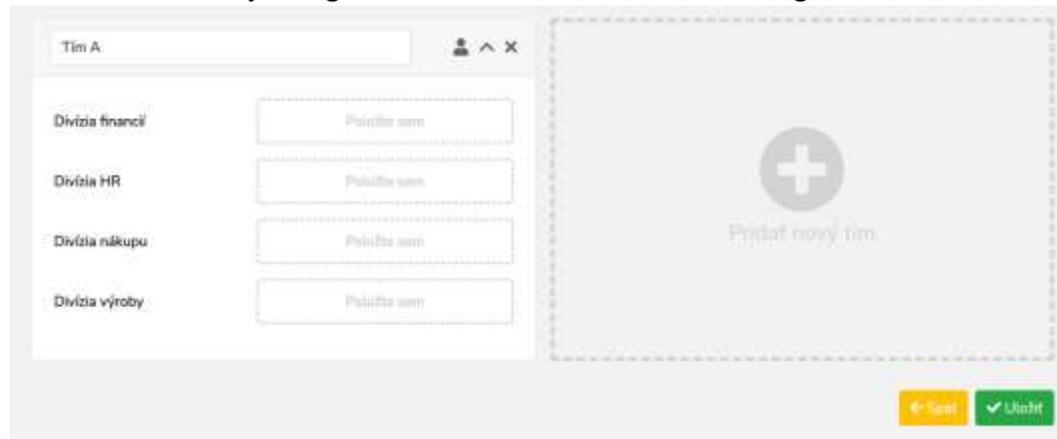
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The lecturer can create up to 8 teams. Each team must have at least 1 player and it is not possible for the same player to be assigned into multiple teams. A team may consist of up to 4 players.



The lecturer assigns players to division positions. This can be done manually by dragging a player into a team and a specific division or automatically using a button for automatic random assignment.



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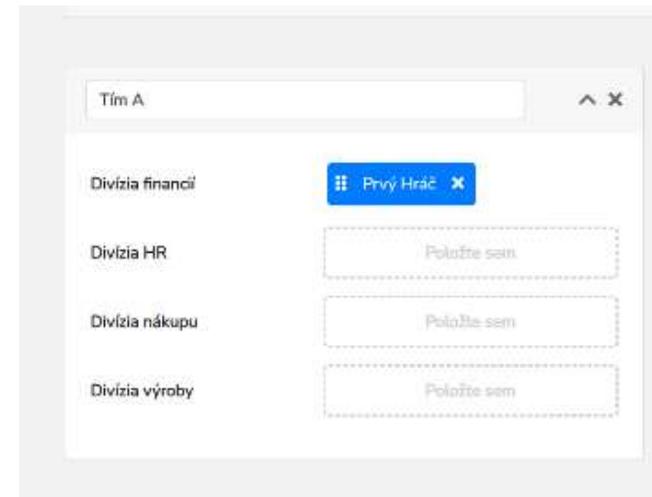
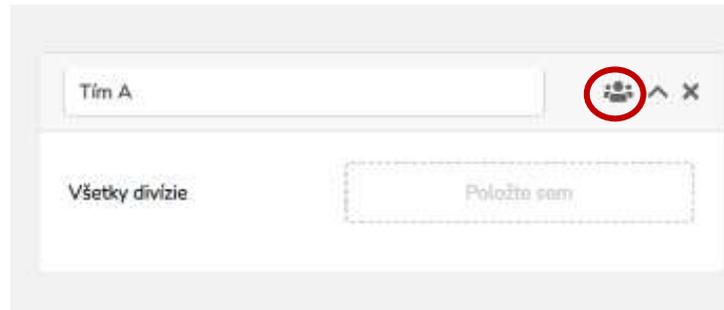
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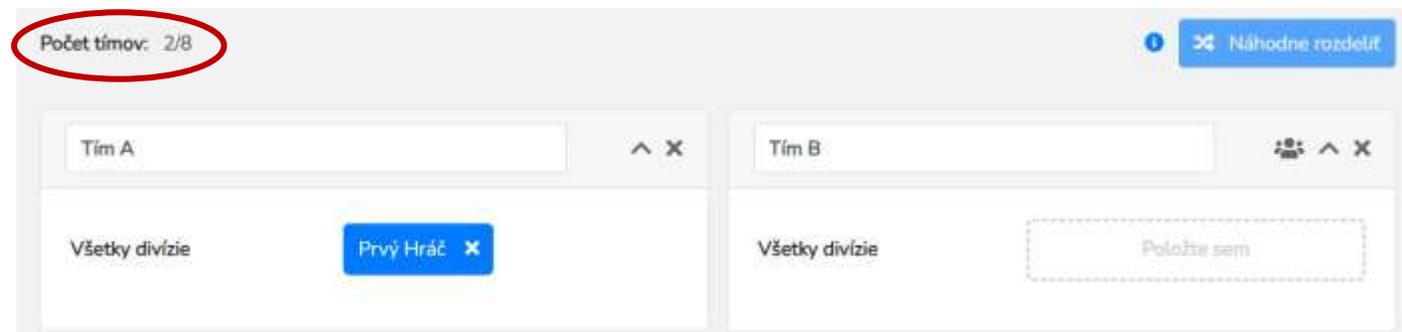
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A single player can be assigned to all divisions at once. If there are more players, each can be assigned separately into given division. The lecturer can switch between assignment modes using the icon in the upper right corner.



If more than one player is available, multiple teams can be created. The number of teams created appears on the left side.



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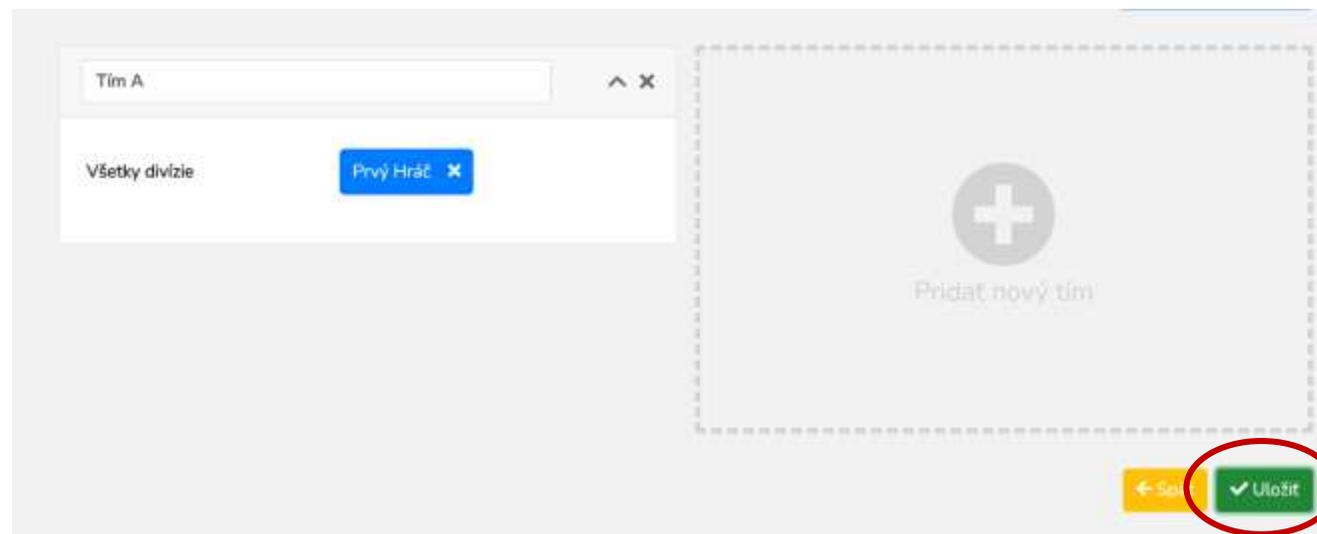
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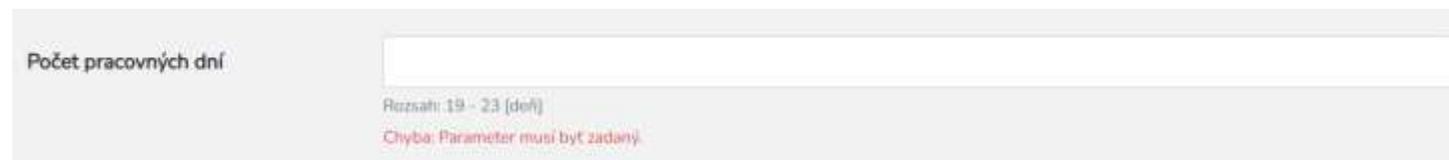
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### Starting the game:

If the lecturer has finished setting up the game template, they must save it at the end of the settings menu.



If any parameter has been entered incorrectly, the system will warn the instructor after clicking the save button and the incorrect value must be corrected before saving the template settings again. The system also warns the lecturer about missing parameters necessary for the correct creation of the template. All parameters must be within the allowed range.



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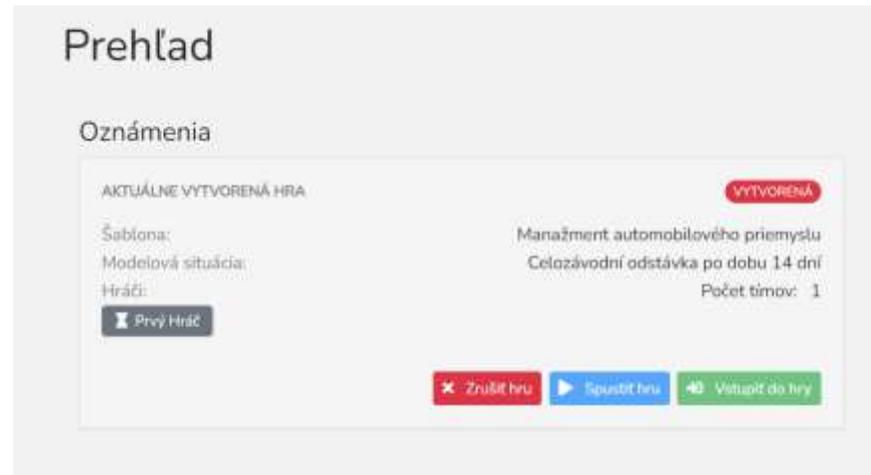
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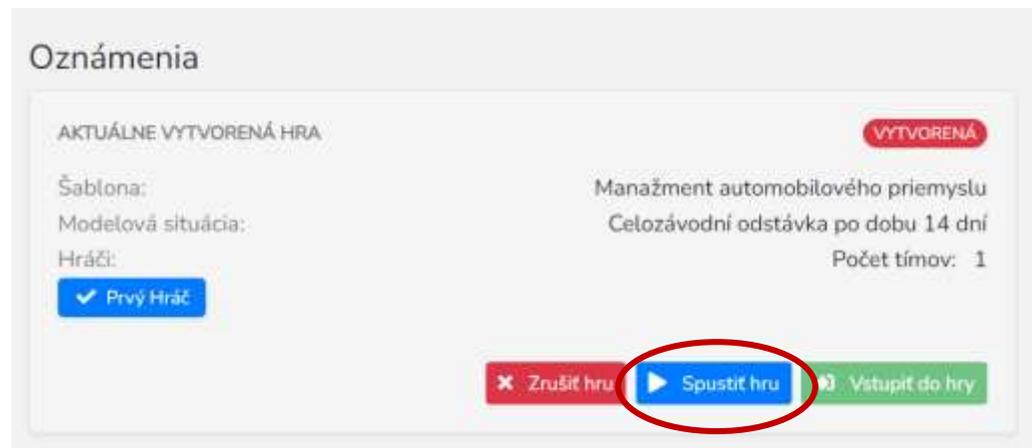
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After saving the game settings, a summary of the created game appears. In this summary, the lecturer can see the number of players, chosen template, model situation and number of teams.



The instructor may still cancel the game using the Cancel game button. To start the game, the instructor needs confirmation from all online players. Once all players confirm, the Start game button lights up.



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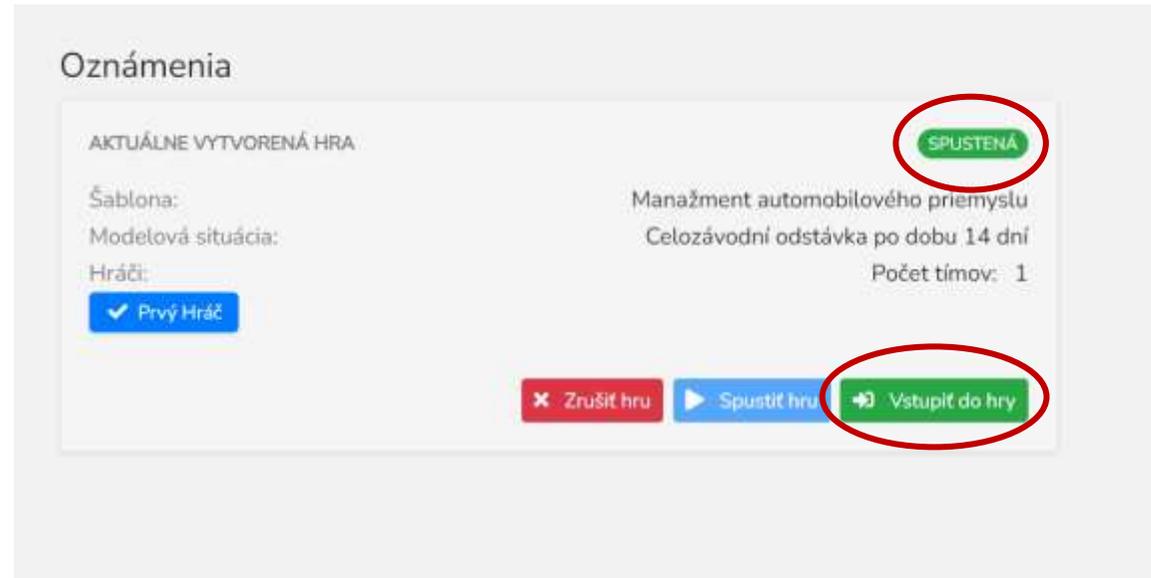
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After the instructor starts the game, they get an Enter game button. The game status changes from Created (red) to Running (green).



### **Course of the game:**

During gameplay, the lecturer does not see the game environment or progress of the players. They simply wait for the round to finish, where final player decisions appear. However, the lecturer may communicate with players via chat. Through communication, the lecturer can solve their questions, problems, etc.

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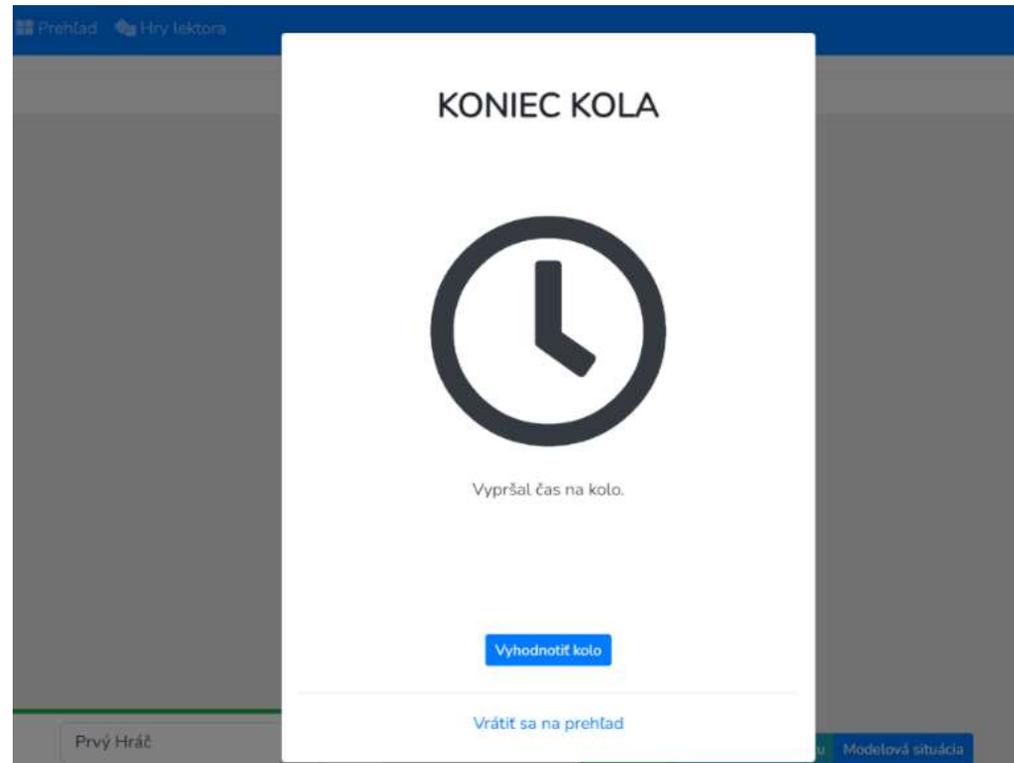
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## **End of the round**

A notification appears when a round ends. The lecturer can then view the round results using the Evaluate round button.



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At the end of the round, the lecturer will be shown an evaluation of how the individual teams performed during the game. The lecturer can then end the game by pressing the End game button. If any of the teams has not saved all their answers within the given time, the team will be disqualified. (see image)



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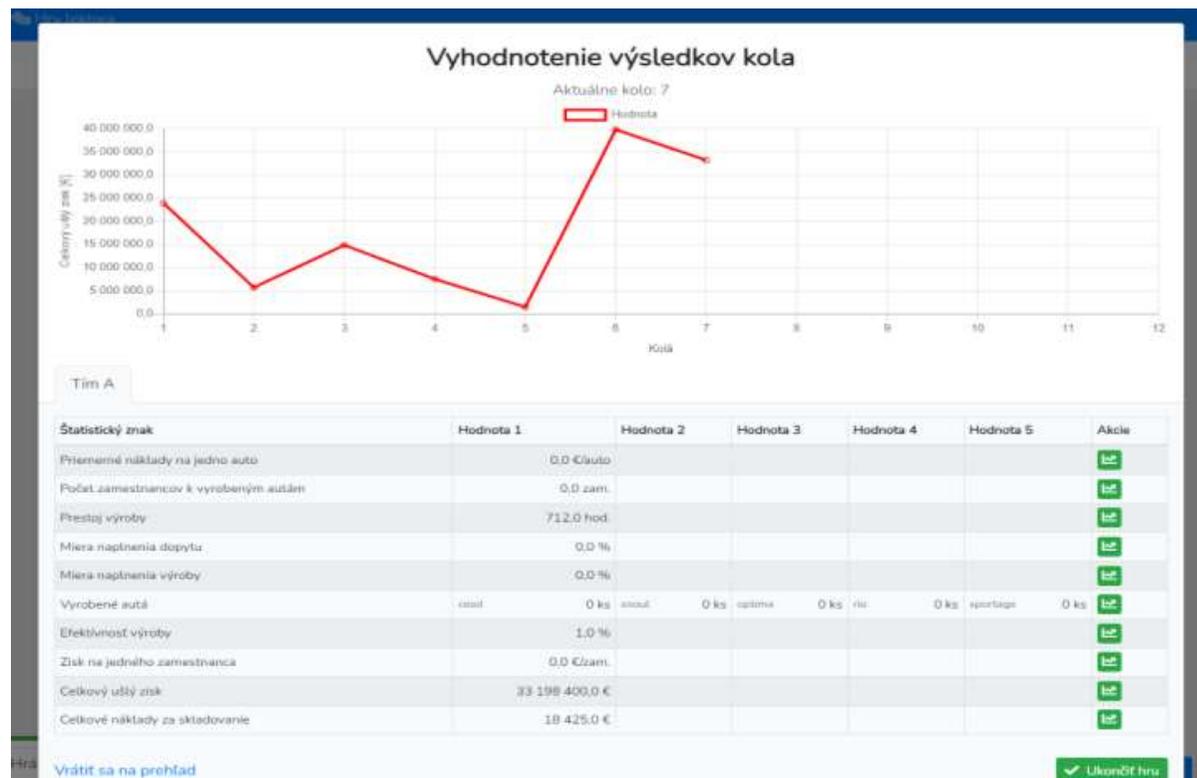
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Teams that submitted all parameters and saved them correctly are statistically evaluated. The lecturer has access to various statistics for all teams in all rounds. (see image)



### End of the game:

The lecturer can end the game at any time, even mid-round, using the End game button at the bottom part of the screen.



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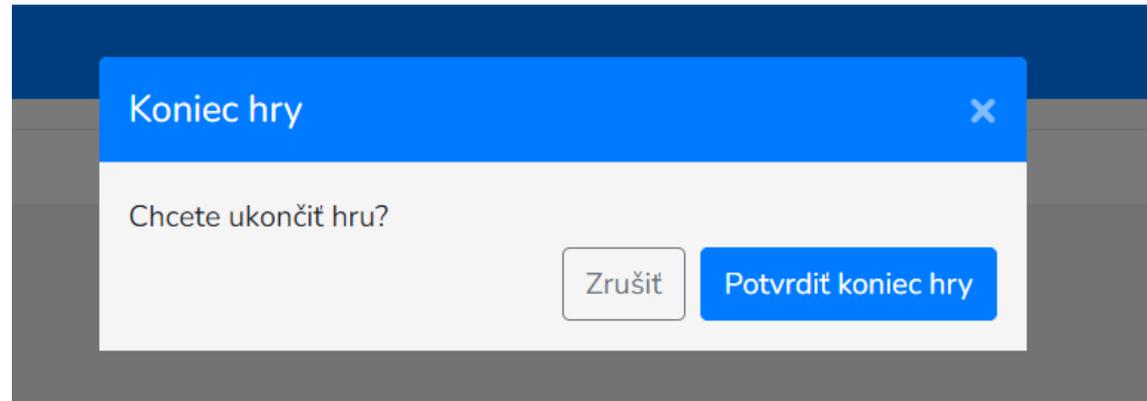
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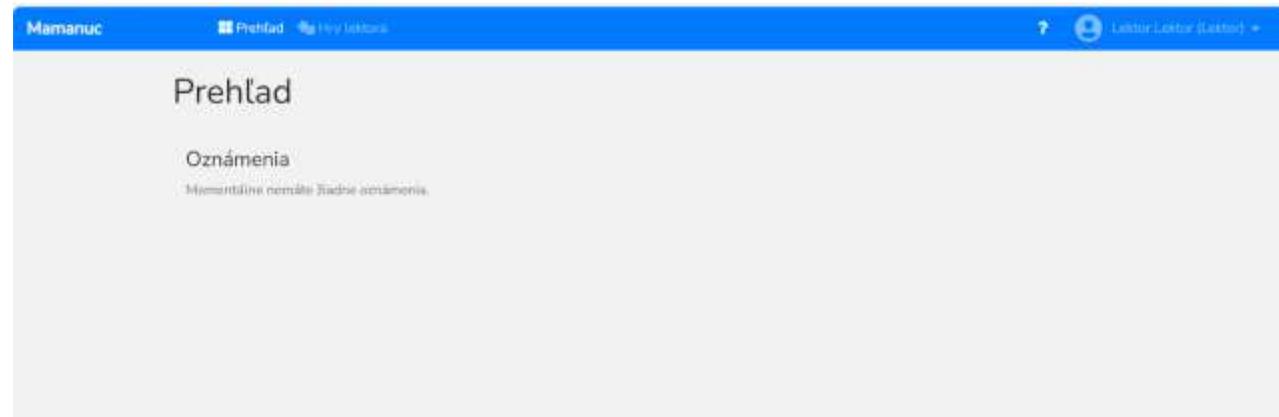
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The lecturer will then see a confirmation prompt asking if they really want to end the game. From this prompt, the lecturer can return or confirm the end of the game by pressing the **Confirm End of Game** button.



If confirmed, the game ends and the instructor is redirected to the Dashboard screen.



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### Registration:

To start playing the game and log in to the system, the player must first register, similar to a lecturer. To register, the player also needs to fill in all the details such as Name, Surname, Email, Password and then repeat the Password again to confirm its accuracy.

### Login:

After the player has successfully registered, they can log in to the system and start playing the game. Players can use their email and password they created during registration to log in to the game.

## Registrácia

Meno:

Priezvisko:

Email:

Heslo:

Heslo (znovu):

Registrovať

Už máte vytvorený účet? [Prihlásiť sa!](#)

## Prihlásenie

Email:

Heslo:

Prihlásiť

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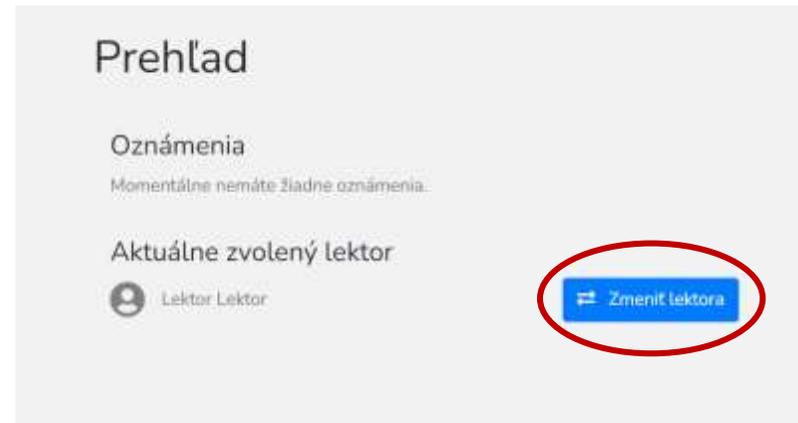
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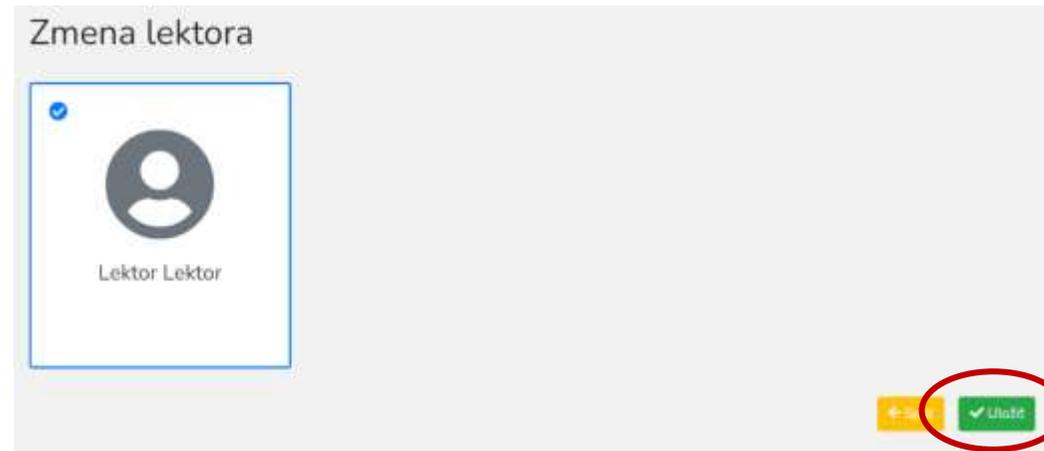
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When the player logs into their account, they can select the lecturer they want to play the game under in the overview. If the player is interested in changing the lecturer, they click the change lecturer button.



With multiple lectures online, the player would select the one they wanted and click on their name. Then, to save their selection, the player would click on the save button.



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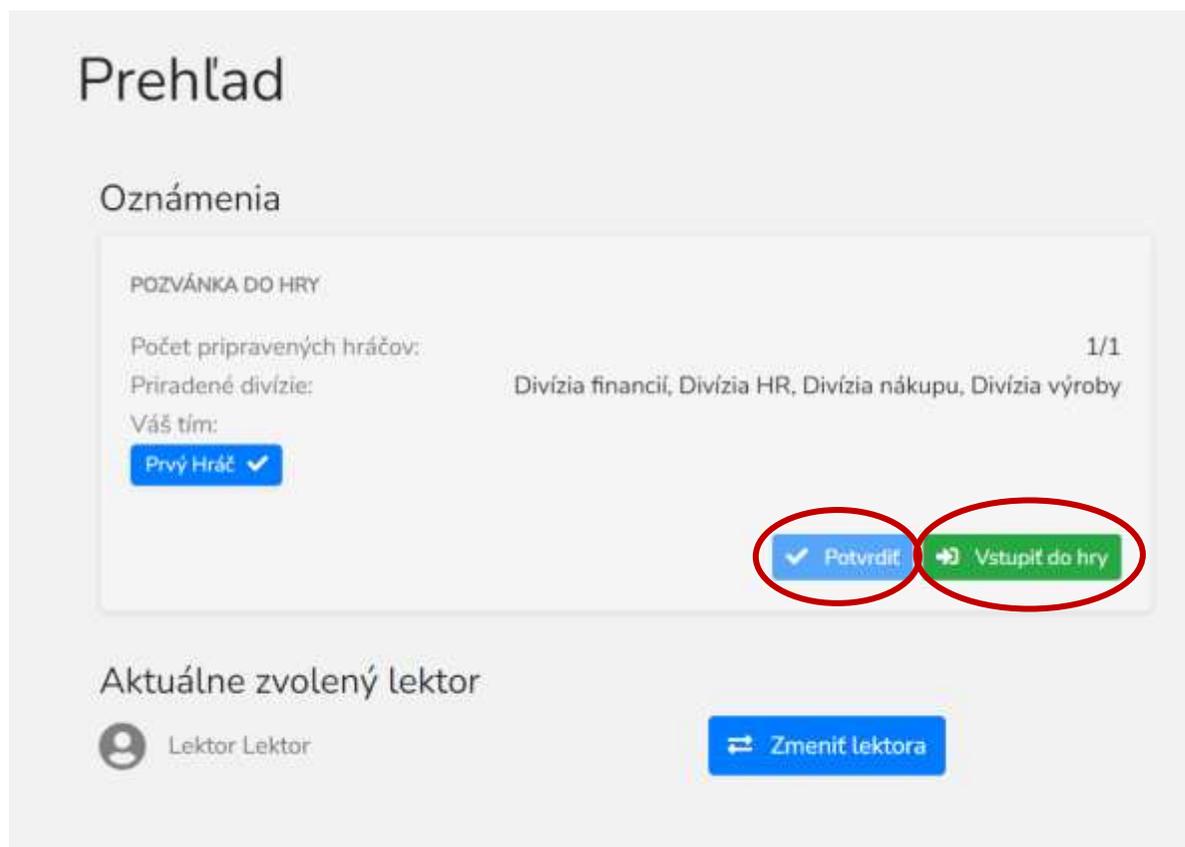
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### Entering the game:

When the lecturer has the game set up and ready, the player will be able to see a notification (see image). The notification informs the player of the number of rounds that are planned to be played. The player will also see all the divisions to which they have been assigned as well as the list of names of members of their team. If the player is ready to play, they must press the confirm button. The lecturer will then determine whether all players are ready and, if so, start the game. To enter the game, the player will then press the enter game button.



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### Gameplay:

The player is automatically shown the game after entering the game. The finance division is displayed first. On the left side, the player can see general information that he can take into account. Below the general information, the input budget is set, which was entered by the lecturer. The right side of this division is focused on entering individual decisions. When the player decides to set the given parameters and share them with other players in the division, he presses the **save** button. During the game, the player can communicate with the team in the chat in case of possible discrepancies and can change the given parameters. Only at the end of the round, when the player is sure of his parameters, he presses the **save and exit** button. After this step, the player will no longer be able to make changes to the entered decisions (parameters).

The screenshot displays the 'Mamanuc' game interface for the 'Divízia financií' (Finance Division). The interface is divided into two main sections: 'VŠEOBECNÉ INFORMÁCIE' (General Information) on the left and 'ZADÁVANIE ROZHODNUTÍ' (Decision Making) on the right. The 'VŠEOBECNÉ INFORMÁCIE' section includes a table for 'Výška pôžičky' (Loan Amount) and 'Platba za pôžičku' (Loan Payment), with values ranging from 1,000,000.0 to 5,000,000.0. Below this table, the 'Vstupný rozpočet' (Input Budget) is set to 250,000,000.0 €. The 'ZADÁVANIE ROZHODNUTÍ' section contains several input fields for 'Rozpočet výroby/kolo' (Production Budget/Cycle), 'Rozpočet HR/kolo' (HR Budget/Cycle), 'Rozpočet nákupu/kolo' (Purchase Budget/Cycle), and 'Odhad výnosov' (Estimated Revenue). There are also buttons for 'Uložiť' (Save) and 'Uložiť a ukončiť' (Save and Exit). At the bottom right, a red circle highlights the status bar showing 'Aktuálne kolo: 1/1' (Current Round: 1/1) and 'Dĺžka kola: 06:28' (Round Length: 06:28).

Hráč The player has an overview of the number of rounds that will be played in one game and the length of each round. This information is displayed in the lower right corner. The time for each round is counted down.

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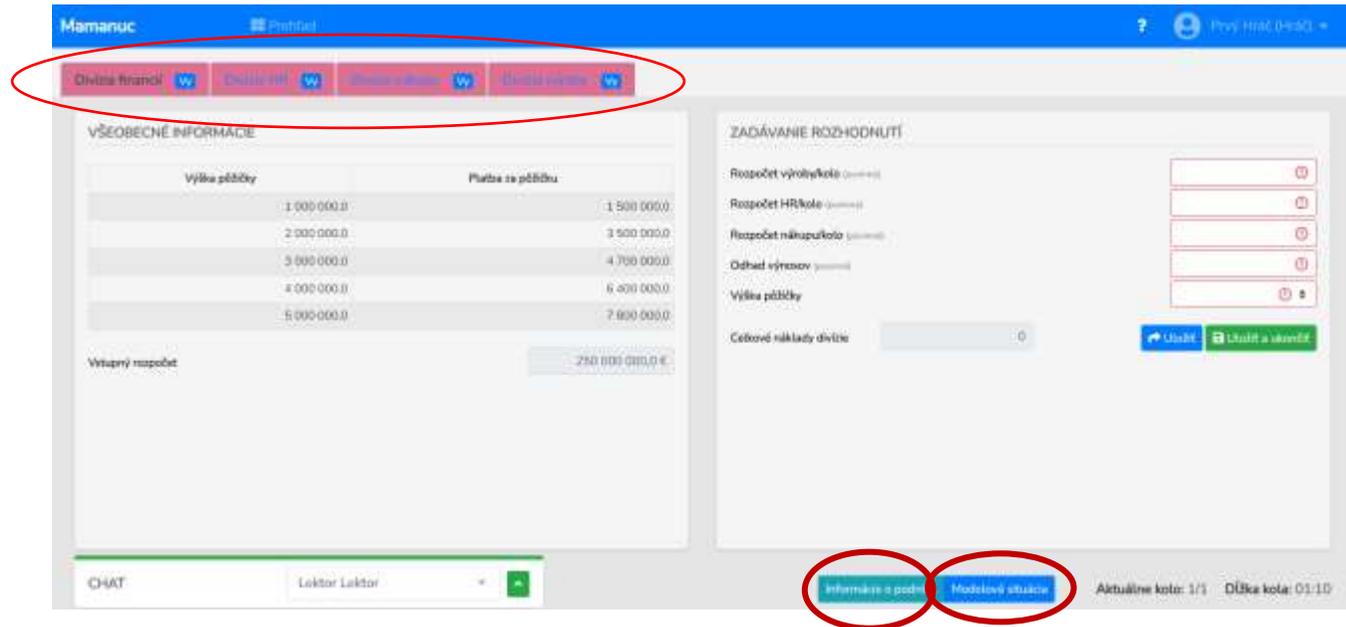
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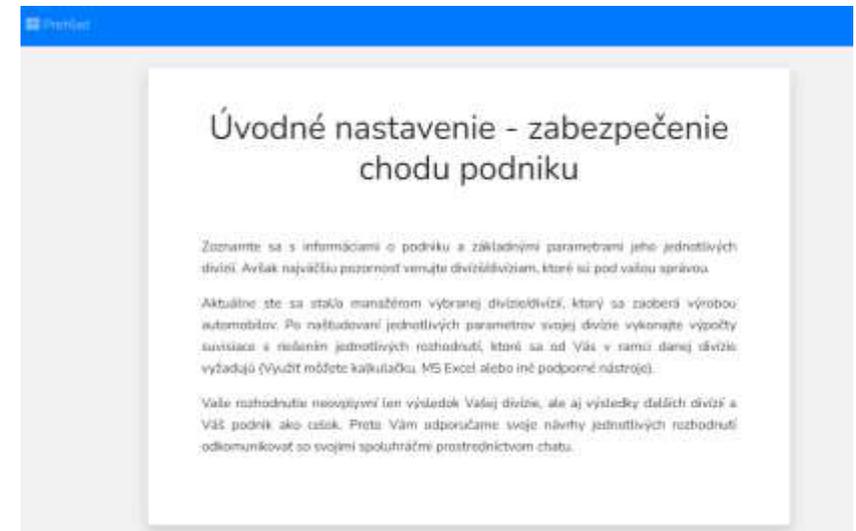
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When there are 3 minutes remaining until the end of the round, the player's individual divisions will light up red to inform them that they are running out of time to complete them.



To get a closer look at the model situation, the player can click the **Model situation** button. Also, if the player needs or wants to learn basic information about the company, the **Company Information** button allows him to do so.

The player learns about the model situation in a continuous text that informs him about various important points in the game.



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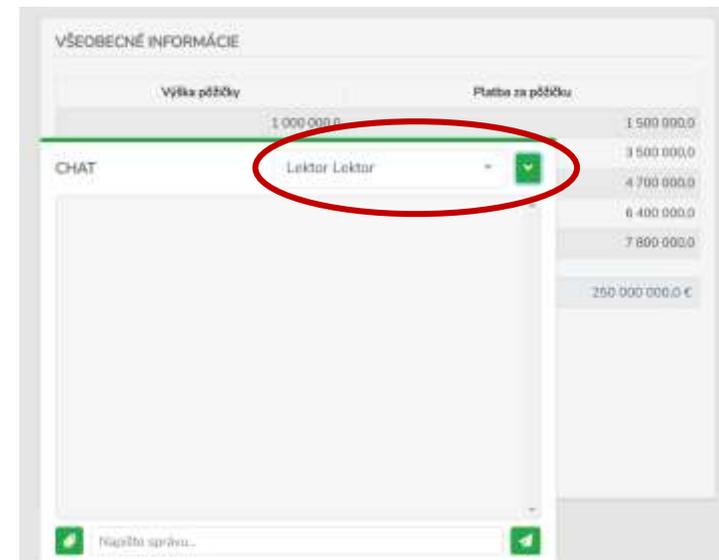
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Information about the company will also be displayed to the player in a continuous text, similar to the model situation. The player can return to the game by closing the new card that has been created and returning to the original card or via the overview and then clicking the enter game button.



The player can click on the chat in the lower left part of the screen. The chat is used to communicate with individual players, the entire team or the lecturer. The player can select the target recipient of the message in the upper part of the chat.



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A player can play the game alone or in a team with other players. If the player plays the game alone, they take care of all divisions. If the game is played by multiple players, each player is in charge of division(s) assigned to them. The individual divisions look as follows. On the left side, general information and inputs from other divisions are provided for the player. On the right side of the screen, decisions are entered that the player of the given division is in charge of. As mentioned above, these values can be saved via the save button (decisions will become visible to other players). These values can always be changed. Only after the final save and exit via clicking the save and exit button will the values be unchangeable.

The screenshot displays the Mamanuc web application interface. At the top, there is a blue header with the logo 'Mamanuc' and a navigation menu with 'Prehľad'. On the right of the header, there is a user profile icon and the text 'Prvý hráč (HR)'. Below the header, there are four tabs for different divisions: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The 'Divízia výroby' tab is selected.

The main content area is divided into two panels. The left panel, titled 'VŠEOBECNÉ INFORMÁCIE', contains a table with various cost and wage parameters:

Parameter	Value
Pracovné dni	22 dní
Hodinová mzda operátora	11,2 €/h
Hodinová mzda kvalifikára	12,43 €/h
Hodinová mzda údržbára	14,3 €/h
Príplatok za poobednú zmenu	-1 €
Príplatok za nočnú zmenu	-2 €
Príplatok za víkendový deň	50 %
Príplatok za sviatkový deň	50 %
Vstupný tréning zamestnanca	20 €
Cena za nábor	20 €/zam.
Priemerné náklady za fluktuáciu	1 €/rok
Neprodukčný deň (priemerné náklady)	80 %

Below the table, there is a section 'VSTUPY Z INÝCH DIVÍZIÍ'. The right panel, titled 'ZADÁVANIE ROZHODNUTÍ', contains several input fields and buttons for decision-making:

- Operátor výroby: Zdvíhať požiadavky na zamestnanca (SI) [Save] [Cancel]
- Operátor kvality: Zdvíhať požiadavky na zamestnanca (SI) [Save] [Cancel]
- Udržba: Zdvíhať požiadavky na zamestnanca (SI) [Save] [Cancel]
- Odhadované náklady na nábor (priemerné): [Input field] [Reset]
- Odhadované náklady na mzdy (priemerné): [Input field] [Reset]
- Celkové náklady divízie: [Input field] [0] [Save] [Save & ukončiť]

At the bottom of the interface, there is a 'CHAT' section with a dropdown menu showing 'Lektor Lektor' and a green button. On the right, there are buttons for 'Informácie o podniku' and 'Modelová situácia'. The bottom right corner shows 'Aktuálne kolo: 1/1' and 'Dĺžka kola: 09:16'.

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The screenshot displays the Mamanuc web application interface. The top navigation bar is blue with the Mamanuc logo and a user profile icon labeled 'Prvý hráč (Hráč)'. Below the navigation bar, there are four tabs: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The main content area is divided into two panels.

The left panel, titled 'VŠEOBECNÉ INFORMÁCIE', contains several data points and tables:

- Mesačné náklady na skladovanie auta: 55 €
- Mesačné náklady na skladovanie materiálu: 55 €
- Tabuľka modelov:

Model	Sportage	Ceed	Optima hybrid	Rio	eSoul
Cena za modifikáciu linky + licencie	14 000 000 €	12 000 000 €	19 000 000 €	10 000 000 €	26 000 000 €
Cena predaja	22 300 €	16 400 €	39 750 €	8 950 €	36 000 €
Odhadovaný ročný dopyt	108 000 ks	92 300 ks	64 200 ks	124 000 ks	21 000 ks

Below the table are links for 'Tabuľka dodávateľov - ceny materiálov', 'Tabuľka dodávateľov - ceny prepravy', and 'Tabuľka odhadovaných dopytov'. At the bottom of the left panel, there is a 'VSTUPY Z INÝCH DIVÍZIÍ' section with a 'Pridelený rozpočet (divízia financií)' field set to 0.

The right panel, titled 'ZADÁVANIE ROZHODNUTÍ', features a table for decision-making:

Produkt	Model	Dodávateľ	Preprava	Materiál	Výrobný plán
1. produkt	<input type="text"/>				
2.	<input type="text"/>				
3.	<input type="text"/>				
4.	<input type="text"/>				

Below the table, there is a 'Celkové náklady divízie' field set to 0, and two buttons: 'Uložiť' and 'Uložiť a ukončiť'.

The bottom of the interface includes a chat window with the text 'CHAT' and 'Lektor Lektor', and a footer with 'Informácie o podniku', 'Modelová situácia', 'Aktuálne kolo: 1/1', and 'Dĺžka kola: 06:35'.

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The screenshot displays the Mamanuc web application interface. At the top, there is a blue header with the logo 'Mamanuc' and a 'Prehľad' (Overview) button. Below the header, there are navigation tabs for different departments: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The main content area is divided into two panels. The left panel, titled 'VŠEOBECNÉ INFORMÁCIE', contains a table of general information and a section for 'VSTUPY Z INÝCH DIVÍZIÍ'. The right panel, titled 'ZADÁVANIE ROZHODNUTÍ', contains several tables for configuring production lines, including 'Rýchlosť linky', 'Dĺžka zmeny', 'Pracovné dni', 'Vikendové dni', 'Sviatky', 'Operátori', 'Kvalitári', and 'Údržbári'. At the bottom, there is a chat window and a status bar with 'Aktuálne kolo: 1/1' and 'Dĺžka kola: 05:22'.

VŠEOBECNÉ INFORMÁCIE	
Počet výrobných operácií	986 operácií
Minimálny čas na operáciu	55 sekúnd
Maximálna výrobná kapacita	55 kusů
Diverzita línií	4 modelov
Priemerná absencia	10 %
Príplatok za vikendový deň	50 %
Príplatok za sviatkový deň	50 %
Pracovné dni	22 dní
Vikendové dni	9 dní
Vikendové dni	9 dní
Sviatky	1 deň

Zmena	Rýchlosť linky	Dĺžka zmeny
Ranná (prevrat)	<input type="text"/>	<input type="text"/>
Popoludňá	<input type="text"/>	<input type="text"/>
Nočná	<input type="text"/>	<input type="text"/>

Zmena	Pracovné dni	Vikendové dni	Sviatky
Ranná (prevrat)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Popoludňá	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nočná	<input type="text"/>	<input type="text"/>	<input type="text"/>

Zmena	Operátori	Kvalitári	Údržbári
Ranná (prevrat)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Popoludňá	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nočná	<input type="text"/>	<input type="text"/>	<input type="text"/>

Celkové náklady divízie:

Uložiť Uložiť a skončiť

CHAT: Lektor Lektor

Informácie o podniku Modelová situácia Aktuálne kolo: 1/1 Dĺžka kola: 05:22

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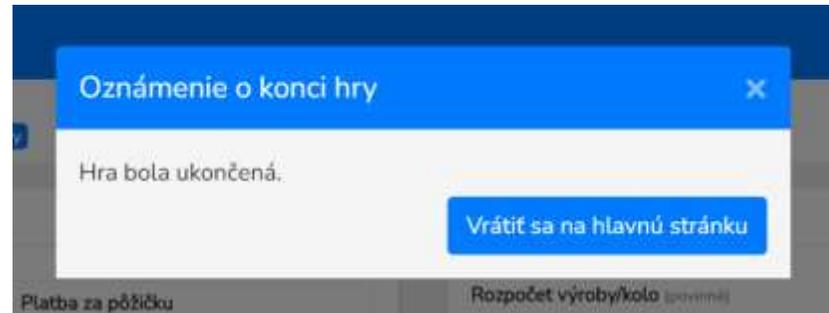
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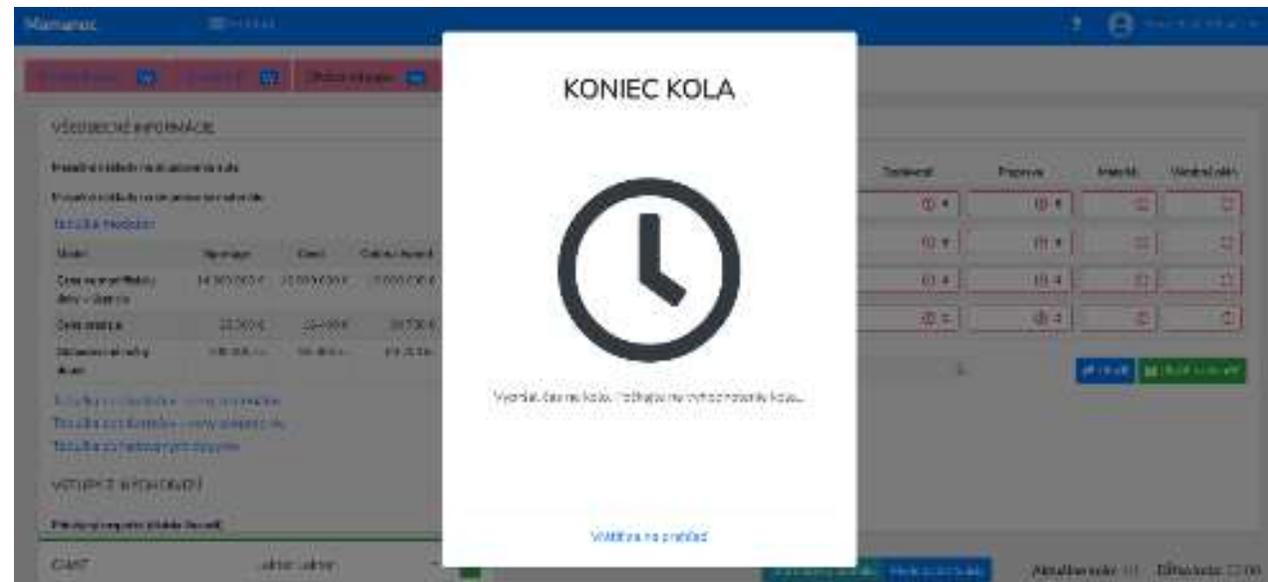
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### End of the game:

If the lecturer ends the game before the round ends, the player will be notified of this decision. The player can return to the main page after the game ends.



At the end of each round of the game, the player will be shown the following end-of-round notification.



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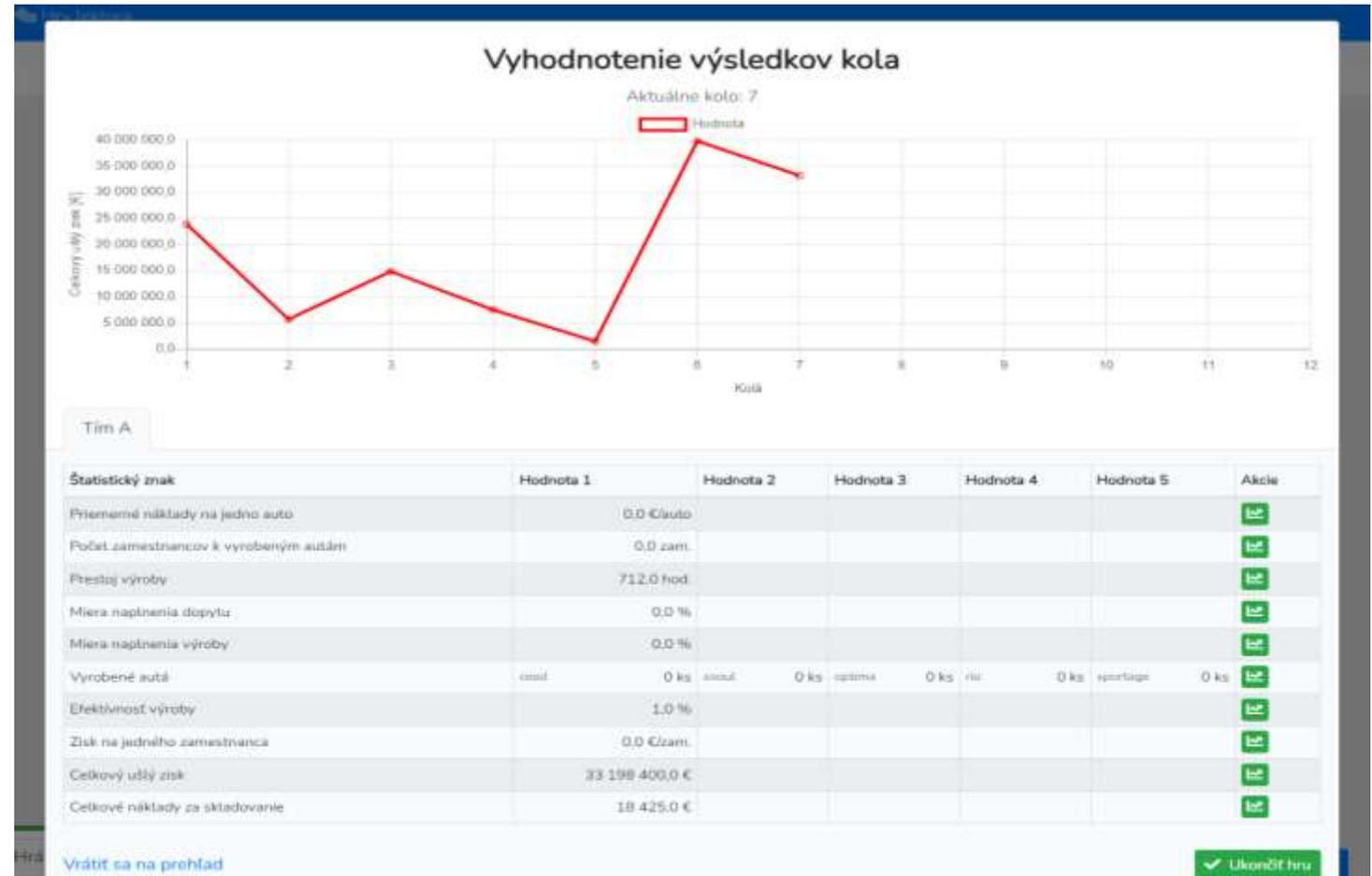
#### End of the game

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After the end-of-round notification is displayed, the player must wait a moment for the lecturer to post the game results. After subsequent confirmation from the lecturer, individual players can view the game results from each round.



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## **Conclusion:**

The manual is used to understand the game FRI MAGE. This manual explains the individual parts of the game for the positions of the lecturer as well as the player. If some parameters are incomprehensible in the template, the individual templates and explanations of their parameters are provided in the appendices.

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Vytvorenie novej hry

Šablona:   
Manažment automobilového priemyslu  
Vyberte šablónu...

Modelová situácia:

Nastavenie parametrov

Neboli načítané žiadne parametre.

Nastavenie tímov

Výber hráčov

Neboli načítaní žiadni používatelia.

Legenda:  Priradení  Online  Offline

Počet tímov: 0/0

**Template:** An auxiliary element that was created for the purpose of defining the specialization of the game.

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Vytvorenie novej hry

Šablóna: Manažment automobilového priemyslu

Modelová situácia: Vyberte modelovú situáciu...

Nastavenie parametrov

Vstupný rozpočet  
Rozsah: 200 000 000 - 500 000 000 (€)

Priemerná absencia  
Rozsah: 0 - 30 (%)

Prestávka (po 6 hod.)  
Rozsah: 10 - 60 (min)

Deň neprodukcie (priemerné mzdové náklady)  
Rozsah: 50 - 100 (%)

Náklady na nábor zamestnanca  
Rozsah: 10 - 2 000 (€)

Vstupné školenie zamestnanec  
Rozsah: 10 - 1 000 (€)

Príplatok za prácu cez víkend  
Rozsah: 20 - 150 (%)

Príplatok za prácu cez sviatok  
Rozsah: 20 - 300 (%)

**Model Situation:** A situation in which a company may find itself, and therefore we want to simulate it.

**Initial Budget:** The budget provided at the start of the game for initial planning.

**Average Absence:** The average level of employee absence from work.

**Break (after 6 hours):** A short interruption of work after six hours.

**Non-Production Day (Average wage cost):** A day without production any activity during which operational costs still apply.

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**Recruitment Costs:** Costs related to the hiring of a new employee. (hiring process).

**Employee Induction Training:** Initial briefing and information for the employee. Clear familiarization with occupational health and safety requirements based on the nature of the work to be performed, as well as training related to job performance.

**Weekend Work Allowance:** An increase in the hourly wage due to working on weekends.

**Holiday Work Allowance:** An increase in the hourly wage due to working on a public holiday.

Hodinový príplatok za poobednú prácu	<input type="text"/>
	Rozsah: 0 - 5 (€)
Hodinový príplatok za nočnú prácu	<input type="text"/>
	Rozsah: 1 - 10 (€)
Počet pracovných dní	<input type="text"/>
	Rozsah: 22 - 23 (ročne)
Počet víkendových dní	<input type="text"/>
	Rozsah: 0 - 10 (ročne)
Počet sviatkov	<input type="text"/>
	Rozsah: 0 - 3 (ročne)
Mesačný poplatok za skladovanie auta	<input type="text"/>
	Rozsah: 50 - 500 (€)
Mesačný poplatok za skladovanie materiálu	<input type="text"/>
	Rozsah: 20 - 250 (€)
Minimálny čas operácie	<input type="text"/>
	Rozsah: 20 - 90 (minúty)
Maximálna výrobná kapacita	<input type="text"/>
	Rozsah: 30 - 70 (ročne)
Dĺžka kola	<input type="text"/>
	Rozsah: 5 - 120 (mm)
Počet kôl	<input type="text"/>
	Rozsah: 1 - 12 (ročne)

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**Afternoon work bonus:** Extra pay for working during afternoon hours.

**Night shift bonus:** Extra pay for working through the night.

**Number of working days:** Days when the company conducts work processes (days designated for work).

**Number of weekend days:** Number of days worked during weekends in a month.

**Number of holidays:** Number of days worked during holidays in a month.

**Monthly fee for car storage:** A fee that will be paid every month for storing a car.

**Monthly fee for material storage:** A fee that will be paid every month for storing materials.

**Minimum operation time:** The minimum time it will take to complete one operation.

**Maximum production capacity:** Maximum number of units produced per hour.

**Round duration:** Time it takes to complete a single round.

**Number of rounds:** Selection of the number of rounds for one game.

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The screenshot displays the Mamanuc management interface. At the top, there is a navigation bar with the Mamanuc logo and a search icon. Below the navigation bar, there are tabs for different divisions: Divízia financií, Divízia HR, Divízia nákupu, and Divízia výroby. The main content area is divided into two panels. The left panel, titled 'VŠEOBECNÉ INFORMÁCIE', contains a table with two columns: 'Výška pôžičky' and 'Platba za pôžičku'. The table has five rows of data. Below the table, there is a 'Vstupný rozpočet' field with a value of 500 000 000,0 €. The right panel, titled 'ZADÁVANIE ROZHODNUTÍ', contains several input fields for budgeting: 'Rozpočet výroby/kolo', 'Rozpočet HR/kolo', 'Rozpočet nákupu/kolo', 'Odhad výnosov', and 'Výška pôžičky'. There is also a 'Celkové náklady divízie' field with a value of 0. At the bottom of the right panel, there are two buttons: 'Zverejniť' and 'Uložiť'. The bottom of the interface features a chat window with the text 'Lektor Lektor' and a status bar with the text 'Aktuálne kolo: 1/1' and 'Dĺžka kola: 39:43'.

Výška pôžičky	Platba za pôžičku
1 000 000,0	1 500 000,0
2 000 000,0	3 500 000,0
3 000 000,0	4 700 000,0
4 000 000,0	6 400 000,0
5 000 000,0	7 800 000,0

**Finance division:** Part of the company that manages the company's finances.

**HR division:** Sector responsible for managing human resources (recruitment, employee training, etc.).

**Purchasing division:** Sector that deals with production, production planning, and planning of required materials.

**Production division:** Part of the company structure responsible for producing products or services. Its tasks include managing the number and duration of shifts, workdays, and necessary staff.

**Loan amount:** Represents the sum of financial resources obtained from a company under repayment conditions.

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**Loan payment:** Represents the amount of money that needs to be paid for the loan (loan + interest).

**Input budget:** The budget set to meet the business's goals.

**Chat:** It is intended for communication between each other (between player and player or lecturer).

**Production budget/round:** The production budget is set for production per round.

**HR Budget/Round: HR Budget -** total funds for a given division per round.

**Purchasing budget/round:** The purchasing budget represents the total amount allocated for a business's purchases.

**Revenue estimate:** Revenue estimate – an approximate estimate of expected future sales.

**Loan amount:** Represents the sum of financial resources obtained from a given company under the condition of repayment.

**Total division costs:** Represent the amount required to achieve certain company objectives.

**Company information:** A summary of basic information about the given company.

**Model situation:** A brief description of the game's model situation to help players understand the context.

**Current round:** The round that is currently in progress out of the total number of rounds.

**Round length:** The length of one round in the game.

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The screenshot displays the Mamanuc software interface. At the top, there is a blue header with the logo 'Mamanuc' and a 'Prehľad' button. Below the header, there are four tabs: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The 'Divízia HR' tab is currently selected. The main content area is titled 'VŠEOBECNÉ INFORMÁCIE' and contains a table with various HR-related metrics. Below this, there is a section for 'VSTUPY Z INÝCH DIVÍZIÍ' with a budget input field and a table for employee distribution by shift and role.

VŠEOBECNÉ INFORMÁCIE	
Pracovné dni	20 dní
Hodinová mzda operátora	11.2 €/h
Hodinová mzda kvalitéra	12.43 €/h
Hodinová mzda údržbára	14.3 €/h
Príplatok za poobednú zmenu	2 €
Príplatok za nočnú zmenu	5 €
Príplatok za víkendový deň	100 %
Príplatok za sviatkový deň	100 %
Vstupný tréning zamestnanca	100 €
Cena za nábor	100 €/zam.
Priemerné náklady za fluktuáciu	1 €/tok
Neproduktívny deň (priemerné náklady)	50 %

VSTUPY Z INÝCH DIVÍZIÍ			
Pridelený rozpočet (divízia financií)	<input type="text" value="0"/>		
Tabuľka zamestnancov (divízia výroby)			
Zmena	Operátori	Kvalitári	Údržbári
Ranná	0	0	0
Poobedná	0	0	0
Nočná	0	0	0

CHAT

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**Working days:** The number of operational days per month.

**Production Operator hourly wage:** The wage paid to an operator per hour.

**Quality inspector hourly wage:** The wage paid to a quality inspector per hour.

**Maintenance worker hourly wage:** The wage paid to a maintenance worker per hour.

**Afternoon shift premium:** Extra pay added to the hourly wage for working the afternoon shift.

**Night shift premium:** Extra pay added to the hourly wage for working the night shift.

**Weekend pay premium:** Percentage bonus added to the hourly wage for weekend work.

**Holiday pay premium:** Percentage bonus added to the hourly wage for holiday work.

**Employee entry training:** The one-time expense to train a new employee.

**Hiring Cost:** The expense to recruit a single employee.

**Average Turnover Cost:** The expense of replacing departing employees.

**Non-Productive Day (Average Costs):** Costs expressed as a percentage for a non-working day.

**Inputs from Other Divisions:** Information provided from another division (Production Division).

**Allocated Budget (Finance Division):** Budget proposed for the HR division from the finance division.

**Workforce Schedule (Production division):** A table showing shift assignments and the number of employees allocated to each shift.

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ZADÁVANIE ROZHODNUTÍ

Operátor výroby	Zvolené požiadavky na zamestnanca: 0/5		
Operátor kvality	Zvolené požiadavky na zamestnanca: 0/5		
Udržbár	Zvolené požiadavky na zamestnanca: 0/5		

Odhadované náklady na nábor (povinné)

Odhadované náklady na mzdy (povinné)

Celkové náklady divízie

**Hiring Criteria:** Setting required qualifications for job applicants by role.

**Production Operator, Quality Inspector, Maintenance Technician:** Required staff positions in the company.

**Estimated Recruitment Costs:** Assumed financial costs for recruiting all employees.

**Estimated Wage Costs:** Assumed financial costs for wages of all employees in the company.

**Total Division Costs:** Required financial resources for the HR division.

**Selected Employee Requirements:** Selected requirements (from a certain number) that a job applicant must master.

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The screenshot shows the Mamanuc software interface. At the top, there is a blue header with the logo 'Mamanuc' and a 'Prehľad' button. Below the header, there are four tabs: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby', each with a 'vy' button. The main content area is titled 'VŠEOBECNÉ INFORMÁCIE'. It contains two input fields for monthly costs: 'Mesačné náklady na skladovanie auta' (100 €) and 'Mesačné náklady na skladovanie materiálu' (100 €). Below these is a table titled 'Tabuľka modelov' with columns for 'Model', 'Sportage', 'Ceed', 'Optima hybrid', 'Rio', and 'eSoul'. The table has three rows: 'Cena za modifikáciu linky + licencia', 'Cena predaja', and 'Odhadovaný ročný dopyt'. Below the table are three links: 'Tabuľka dodávateľov - ceny materiálov', 'Tabuľka dodávateľov - ceny prepravy', and 'Tabuľka odhadovaných dopytov'.

Model	Sportage	Ceed	Optima hybrid	Rio	eSoul
Cena za modifikáciu linky + licencia	14 000 000 €	12 000 000 €	19 000 000 €	10 000 000 €	26 000 000 €
Cena predaja	22 300 €	16 400 €	39 750 €	8 950 €	36 000 €
Odhadovaný ročný dopyt	108 000 ks	92 300 ks	64 200 ks	124 000 ks	21 000 ks

**Monthly Car Storage Costs:** Monthly financial costs for storing one car produced by the company.

**Monthly Material Storage Costs:** Monthly financial costs for storing all material that the company needs for production.

**Model Table:** A table of possible automobile models for production in the company.

**Model:** Automobile models that the company can manufacture.

**Production Line Modification + License Price:** The required amount for introducing a production line and the necessary license for it.

**Sale Price:** The amount the company receives for selling an individual model.

**Estimated Annual Demand:** Assumed demand for a given model in units per year.

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The screenshot shows the Mamanuc web application interface. At the top, there is a blue header with the logo 'Mamanuc' and a 'Prehľad' button. Below the header, there are four tabs: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The main content area is titled 'VŠEOBECNÉ INFORMÁCIE' and contains several sections. The first section shows 'Mesačné náklady na skladovanie auta' and 'Mesačné náklady na skladovanie materiálu', both set to 100 €. Below this, there are two links: 'Tabuľka modelov' and 'Tabuľka dodávateľov - ceny materiálov'. The 'Tabuľka dodávateľov - ceny materiálov' is highlighted and contains a table with the following data:

Dodávateľia	Cena s váhou					Zlava za každý ďalší model
	Sportage	Ceed	Optima hybrid	Rio	eSoul	
	▲ 1.06 t	▲ 0.93 t	▲ 1.14 t	▲ 0.79 t	▲ 1.2 t	
A	19 000,0 €	14 200,0 €	-	8 200,0 €	-	4,8 %
B	19 300,0 €	15 100,0 €	37 900,0 €	8 100,0 €	-	3,23 %
C	20 500,0 €	15 600,0 €	39 000,0 €	-	35 200,0 €	6,3 %
D	20 000,0 €	15 400,0 €	38 000,0 €	8 500,0 €	35 800,0 €	5,62 %

Below the table, there are two more links: 'Tabuľka dodávateľov - ceny prepreprav' and 'Tabuľka odhadovaných dopytov'.

**Supplier Table – Material Prices:** A table of various suppliers for the company with prices of materials for production.

**Supplier A** – The first supplier and their provided prices for material for a given vehicle model.

**Supplier B** – The second supplier and their provided prices for material for a given vehicle model.

**Supplier C** – The third supplier and their provided prices for material for a given vehicle model.

**Supplier D** – The fourth supplier and their provided prices for material for a given vehicle model.

**Set Weight:** The set weight of material for the vehicle that the supplier provides to the company.

**Discount for Each Additional Model:** The percentage price reduction applied per additional unit ordered.

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## Automotive industry

**Mamanuc** Prehľad

Divízia financií **Wy** Divízia HR **Wy** Divízia nákupu **Wy** Divízia výroby **Wy**

**VŠEOBECNÉ INFORMÁCIE**

Mesačné náklady na skladovanie auta

Mesačné náklady na skladovanie materiálu

[Tabuľka modelov](#)

[Tabuľka dodávateľov - ceny materiálov](#)

[Tabuľka dodávateľov - ceny prepravy](#)

Dodávateľia	Cena za dodávku	Cena za nákladné auto	Cena za kamion	Priemerná kapacita
A	0,76 €	1,81 €	3,5 €	9 583 ks
B	1,11 €	2,0 €	2,92 €	70 833 ks
C	0,55 €	1,85 €	2,11 €	7 833 ks
D	0,45 €	1,5 €	1,78 €	17 916 ks

[Tabuľka odhadovaných dopytov](#)

**Supplier Table – Transport Prices:** A table of various suppliers for the company with set prices for transport of manufactured products.

**Suppliers:** Specific suppliers that the company can choose as a carrier.

**Van Delivery Rate:** The per-shipment cost for material transport by van.

**Truck Freight Rate:** The per-shipment cost for material transport by truck.

**Semi-Truck Freight Rate:** The per-shipment cost for material transport by semi-trailer.

**Average Capacity:** The average size of material shipment from specific suppliers.

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The screenshot displays the Mamanuc web application interface. At the top, there is a blue header with the logo 'Mamanuc' and a 'Prehľad' button. Below the header, there are navigation tabs for 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The main content area is titled 'VŠEOBECNÉ INFORMÁCIE' and contains several input fields for monthly costs: 'Mesačné náklady na skladovanie auta' (100 €) and 'Mesačné náklady na skladovanie materiálu' (100 €). Below these are links for 'Tabuľka modelov', 'Tabuľka dodávateľov - ceny materiálov', 'Tabuľka dodávateľov - ceny preprávy', and 'Tabuľka odhadovaných dopytov'. The 'Tabuľka odhadovaných dopytov' link is highlighted with a blue box. Below the links is a table titled 'Odhadované dopyty za jednotlivé kolá' with columns for 'Kolo', 'Sportage', 'Ceed', 'Optima hybrid', 'Rio', and 'eSoul'. The table contains 12 rows of data. At the bottom, there is a section 'VSTUPY Z INÝCH DIVÍZIÍ' with a field for 'Pridelený rozpočet (divízia financií)' set to 0.

Kolo	Sportage	Ceed	Optima hybrid	Rio	eSoul
1	7 560	7 380	2 816	11 036	1 050
2	5 724	9 840	2 992	11 408	1 050
3	24 840	15 580	2 640	13 888	1 050
4	9 612	1 640	3 168	7 440	1 680
5	9 936	7 544	3 168	1 860	1 680
6	12 096	9 184	2 112	28 520	2 520
7	6 480	4 100	3 696	9 300	2 730
8	1 620	4 838	3 168	6 572	2 940
9	9 288	4 100	2 816	8 680	1 890
10	8 100	7 790	2 992	6 076	1 890
11	7 452	5 084	2 816	8 556	630
12	5 292	4 920	2 816	10 664	1 890

**Estimated Demand Table:** A table of assumed demand for individual models in individual rounds of the game (in units).

**Allocated Budget (Purchasing Division):** The designated financial budget for the purchasing division from the finance division.

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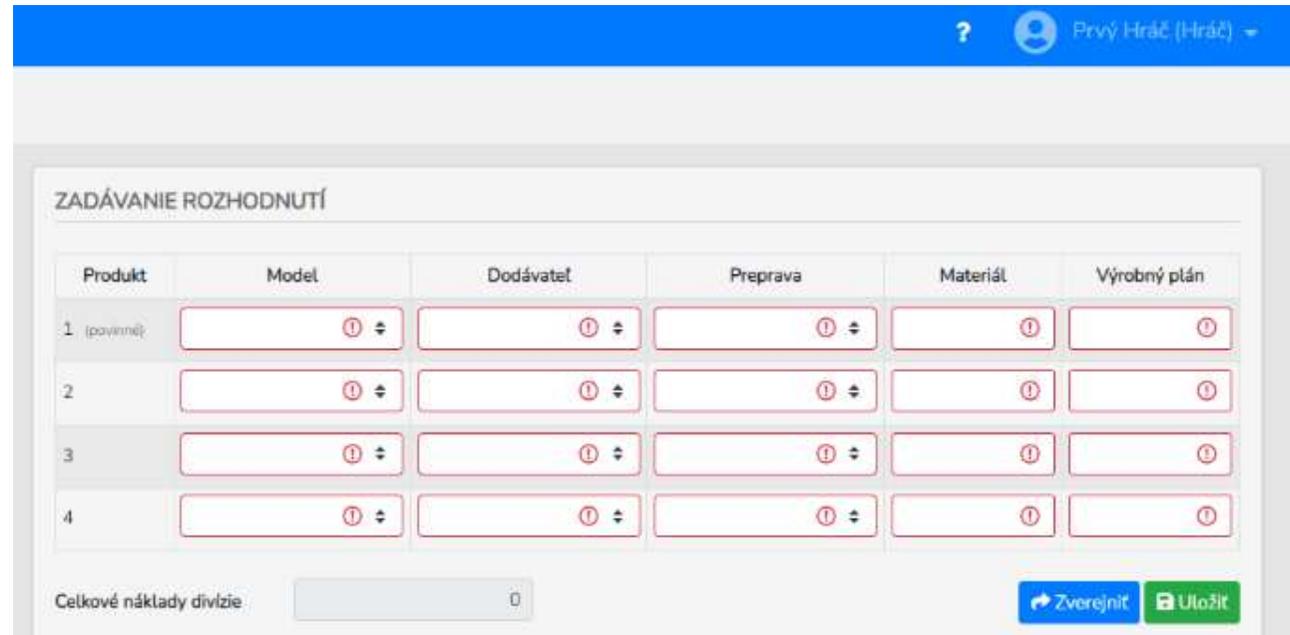
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Produkt	Model	Dodávateľ	Preprava	Materiál	Výrobný plán
1 (povinné)	<input type="text"/>				
2	<input type="text"/>				
3	<input type="text"/>				
4	<input type="text"/>				

Celkové náklady divízie:

[Zverejniť](#) [Uložiť](#)

**Decision Entry:** Assigning company decisions which models to decide to manufacture.

**Required:** At least one product must be selected for production.

**Model:** Selection of a certain model for production.

**Supplier:** Selection of a certain supplier for production.

**Shipping Method:** Choosing how materials are delivered.

**Material:** Assumed required material for production of an individual model in units.

**Production Plan:** Assumed production plan of a designated vehicle model in units.

**Total Division Costs:** The total sum of costs in the purchasing division.

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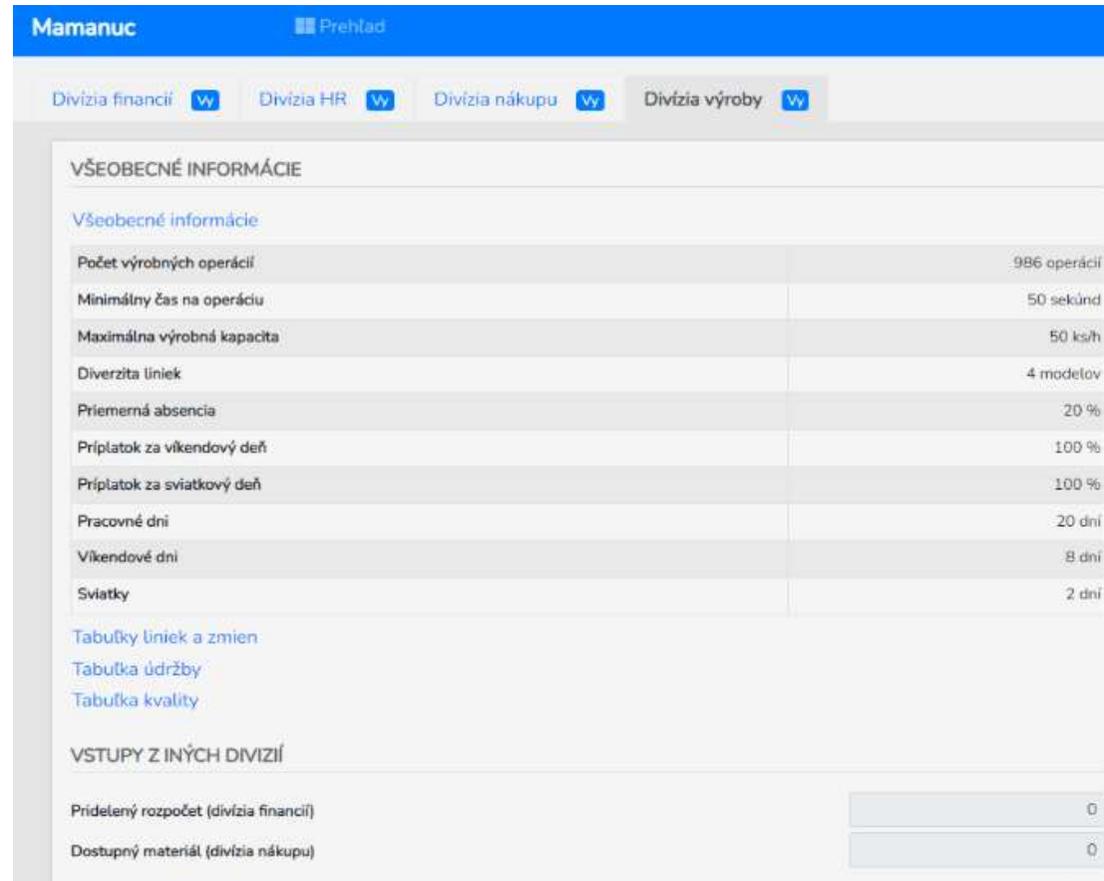
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The screenshot shows the 'Mamanuc' software interface. At the top, there is a blue header with the name 'Mamanuc' and a 'Prehľad' button. Below the header, there are four tabs: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The 'Divízia výroby' tab is selected. The main content area is titled 'VŠEOBECNÉ INFORMÁCIE' and contains a table of general information. Below the table, there are links for 'Tabuľky liniek a zmien', 'Tabuľka údržby', and 'Tabuľka kvality'. At the bottom, there is a section titled 'VSTUPY Z INÝCH DIVÍZIÍ' with two input fields for 'Pridelený rozpočet (divízia financií)' and 'Dostupný materiál (divízia nákupu)'. Both fields have a value of '0'.

VŠEOBECNÉ INFORMÁCIE	
Všeobecné informácie	
Počet výrobných operácií	986 operácií
Minimálny čas na operáciu	50 sekúnd
Maximálna výrobná kapacita	50 ks/h
Diverzita liniek	4 modelov
Priemerná absencia	20 %
Príplatok za víkendový deň	100 %
Príplatok za sviatkový deň	100 %
Pracovné dni	20 dní
Víkendové dni	8 dní
Sviatky	2 dni

[Tabuľky liniek a zmien](#)  
[Tabuľka údržby](#)  
[Tabuľka kvality](#)

VSTUPY Z INÝCH DIVÍZIÍ

Pridelený rozpočet (divízia financií)	0
Dostupný materiál (divízia nákupu)	0

**Total Production Steps:** The total number of operations in the technological process without interruption.

**Minimum Time per Operation:** The minimum time required to complete one operation in seconds.

**Maximum Production Capacity:** Represents the maximum production capacity in units per one hour worked.

**Line Diversity:** Determines the variety of the line by the number of models manufactured.

**Average Absence:** Represents the percentage of absence (non-attendance) of employees at work during the month.

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**Weekend Pay Premium:** Percentage bonus added to wages for weekend shifts.

**Holiday Pay Premium:** Percentage bonus added to wages for holiday shifts.

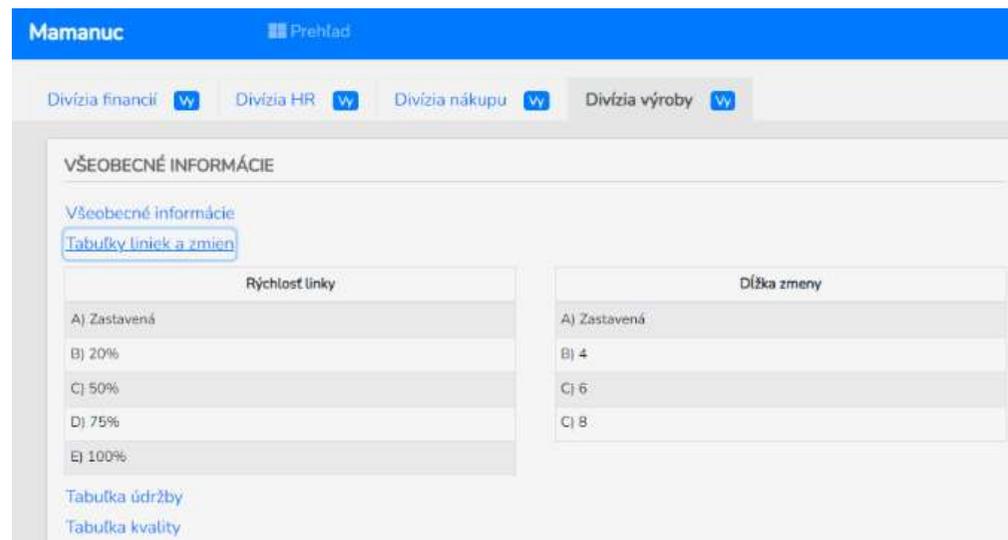
**Workdays:** Total operational days per month.

**Weekend Shifts:** Total weekend workdays scheduled.

**Holiday Shifts:** Total holiday workdays scheduled.

**Allocated Budget (Finance Division):** Established financial resources for the production section.

**Available Material (Purchasing Division):** Total quantity of material from the purchasing section for the production section.



**Line and Shift Tables:** Tables displaying options for setting line speeds and setting the duration of one shift.

**Line Speed:** Represents the percentage expression of the speed of the started line.

**Shift Duration:** The length of one shift in the company stated in hours.

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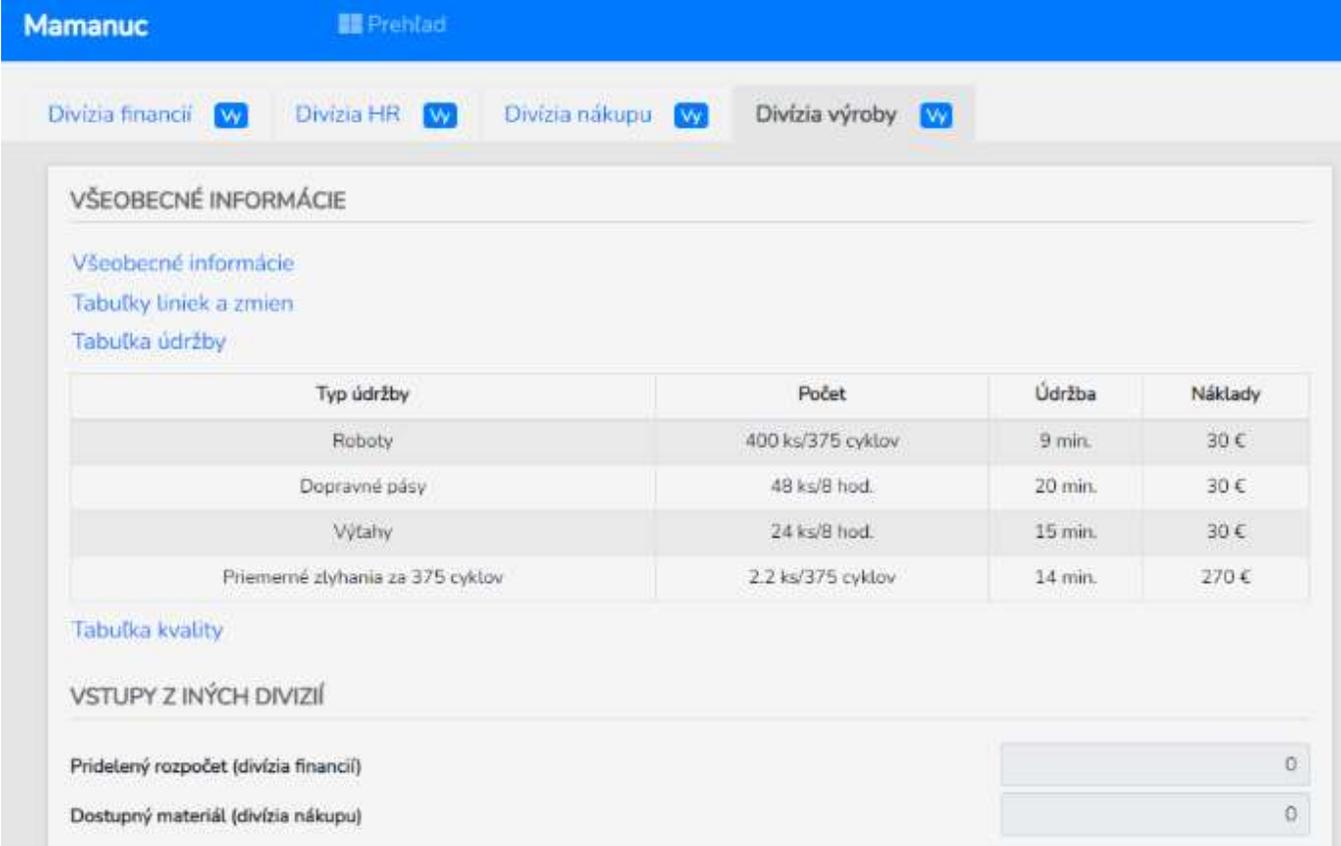
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Typ údržby	Počet	Údržba	Náklady
Roboty	400 ks/375 cyklov	9 min.	30 €
Dopravné pásy	48 ks/8 hod.	20 min.	30 €
Výtahy	24 ks/8 hod.	15 min.	30 €
Priemerné zlyhania za 375 cyklov	2.2 ks/375 cyklov	14 min.	270 €

Below the table, there is a section titled 'Tabuľka kvality' and another section titled 'VSTUPY Z INÝCH DIVÍZIÍ'. This section contains two input fields: 'Pridelený rozpočet (divízia financií)' and 'Dostupný materiál (divízia nákupu)', both with a value of 0.

**Maintenance Schedule:** A table displaying information about maintenance in the company.

**Maintenance Type:** Required kinds (types) of maintenance in the company.

**Count:** The set number of units after which maintenance of the given type is necessary.

**Maintenance:** Time designated for maintenance of individual types in minutes.

**Costs:** Required financial resources for individual maintenances.

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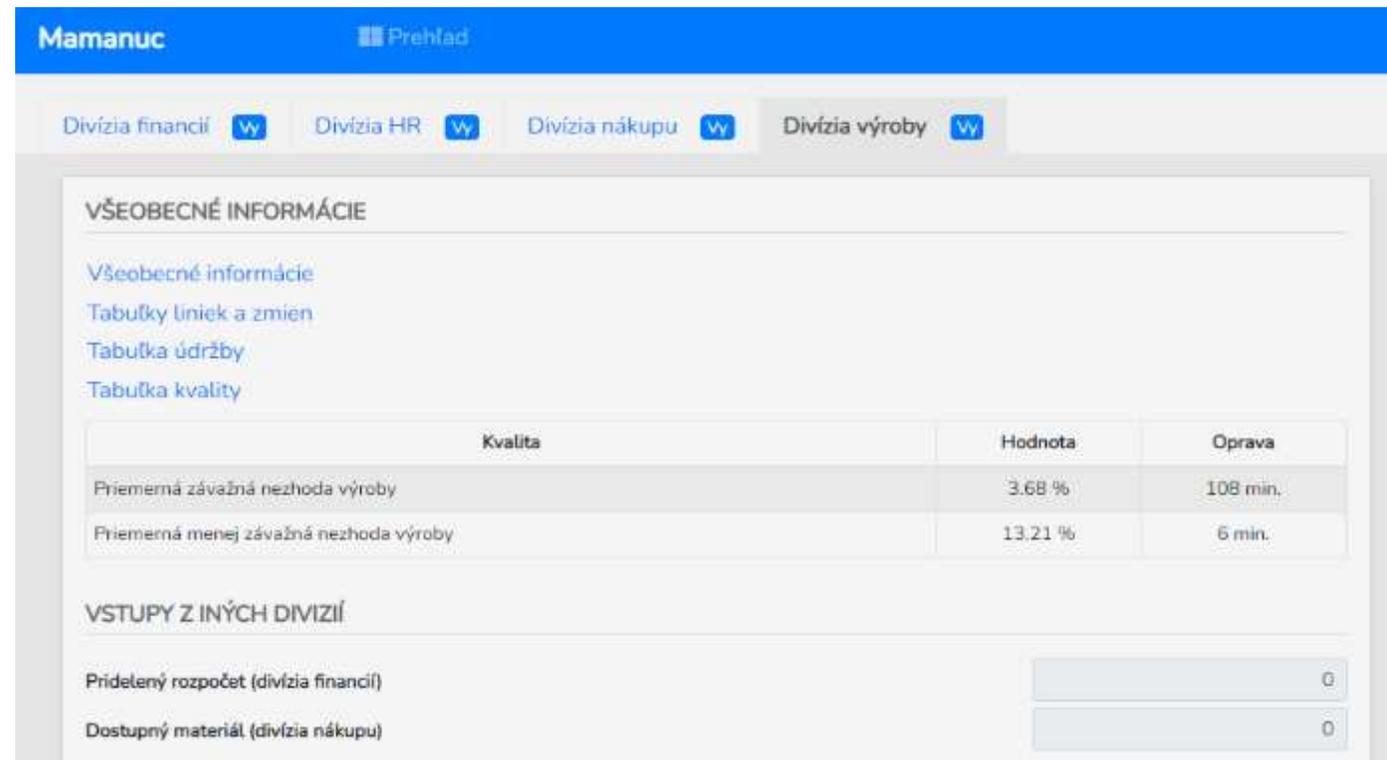
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The screenshot shows the Mamanuc software interface. At the top, there is a blue header with the logo 'Mamanuc' and a menu icon labeled 'Prehľad'. Below the header, there are four tabs: 'Divízia financií', 'Divízia HR', 'Divízia nákupu', and 'Divízia výroby'. The 'Divízia výroby' tab is selected. The main content area is titled 'VŠEOBECNÉ INFORMÁCIE' and contains several links: 'Všeobecné informácie', 'Tabuľky liniek a zmien', 'Tabuľka údržby', and 'Tabuľka kvality'. Below these links is a table with three columns: 'Kvalita', 'Hodnota', and 'Oprava'. The table contains two rows of data. Below the table, there is a section titled 'VSTUPY Z INÝCH DIVÍZIÍ' with two rows: 'Pridelený rozpočet (divízia financií)' and 'Dostupný materiál (divízia nákupu)', each with a corresponding input field showing the value '0'.

Kvalita	Hodnota	Oprava
Priemerná závažná nezhoda výroby	3.68 %	108 min.
Priemerná menej závažná nezhoda výroby	13.21 %	6 min.

VSTUPY Z INÝCH DIVÍZIÍ

Pridelený rozpočet (divízia financií)	0
Dostupný materiál (divízia nákupu)	0

**Quality Table:** A table displaying production quality in the company.

**Critical Defect Rate:** Represents the occurrence of a serious discrepancy in production.

**Minor Defect Rate:** Represents the occurrence of a less serious discrepancy in production.

**Value:** Percentage expression of occurrence of various discrepancies in production.

**Repair:** Total time (in minutes) required to remove a discrepancy in production.

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ZADÁVANIE ROZHODNUTÍ

Zmena	Rýchlosť linky	Dĺžka zmeny
Ranná (povinná)	<input type="text"/>	<input type="text"/>
Poobedná	<input type="text"/>	<input type="text"/>
Nočná	<input type="text"/>	<input type="text"/>

Zmena	Pracovné dni	Vikendové dni	Sviatky
Ranná (povinná)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Poobedná	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nočná	<input type="text"/>	<input type="text"/>	<input type="text"/>

Zmena	Operátori	Kvalitári	Údržbári
Ranná (povinná)	<input type="text"/>	<input type="text"/>	<input type="text"/>
Poobedná	<input type="text"/>	<input type="text"/>	<input type="text"/>
Nočná	<input type="text"/>	<input type="text"/>	<input type="text"/>

Celkové náklady divízie:

[Zverejniť](#) [Uložiť](#)

**Decision Entry:** Recording of decisions in the production section of the company.

**Shift:** Listed individual work shifts in the company (morning shift is mandatory in the company).

**Line Speed:** Selection from several options for line speed in individual work shifts.

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**Shift Length:** Selection of length of individual shifts in the company.

**Working Days:** Determination of the number of working days of individual shifts in the month.

**Weekend Days:** Determination of the number of working days over weekends of individual shifts in the month.

**Holidays:** Determination of the number of working days over holidays of individual shifts in the month.

**Operators:** Determination of the number of required operators in individual shifts in the month.

**Quality Inspectors:** Determination of the number of required quality inspectors in individual shifts in the month.

**Maintenance Workers:** Determination of the number of required maintenance workers in individual shifts in the month.