" ماذا بداخلنا ؟ "Application"

Umm Al-Qura University

Computer & Info. Systems College

Computer Science department

Project Team (Group 12)

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Advanced Programming Course

Instructor: Bushra Algotiml

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1- Project Title .

Application " **ماذا بداخلنا ؟** " .

2- Project Idea and Project Aims .

The child at the beginning of his school stage is full of curiosity and energy so the game will help him learn the names of internal body parts and Where are these organs located and simplified information in a fun way ,So Our application **targets** are children from 7 years old to 12 years old. The idea is educational game that introduces to the child to his internal body parts through the presence many of games and information within the application.

3- Project Functionalities.

Our application offers **three** games for the kid, plus the **scoreboard**.

Games are 1. Let's discover 2. Let's fix it 3. Let's remember.

Plus the scoreboard 4. The champions board.

1- " **Let's discover** " When you click on it will transfer the child to an educational game that allows the child to click on the internal organ in the human body, and after clicking on the internal organ it will move it to the interface of the clicked organ to show information about the organ.

2- " **Let's fix it** " an educational game asking the child to connect the internal organ of the body to the correct place. When the correct organ is connected to the correct place, the correct answering points for the child are calculated, and there is a timer that calculates the specified time.

3- " **Let's remember** " an educational game that asks the child to choose the name of the correct organ matching for the image and function, the correct answering points for the child are calculated, and there is a timer that calculates the specified time.

4-" **The champions board** " is a panel linked to the database that shows the results of the users in the games in application.

4- Project Design and Implementation

A. Graphical User Interface

The number of interfaces is **29** and it's divided as follows.

We added a icon to the top of the stage.

The first interface of the application contains animations and audio. It continues to appear for five seconds and then moves to the next interface where there is Start button.

ماذا بداخلنا ؟

ابدأ

This interface contains a start button. the child will hear a voice saying

"مرحبا يا صديقي اضغط على زر ابدأ حتى نبدأ رحلتنا"

If the user presses the start button, it will take him to the next interface where there is a login and the creation of a new account.

ماذا بداخلنا ؟

تسجيل الدخول

تسجيل جديد

This interface is used to create a new account or login It contains two buttons a login button and a new account creation button where the user clicks on the Create a new account button if he does not have a previous account in the application and wants to create a new account in the application and if he has a previous account in the application The user clicks to button login .
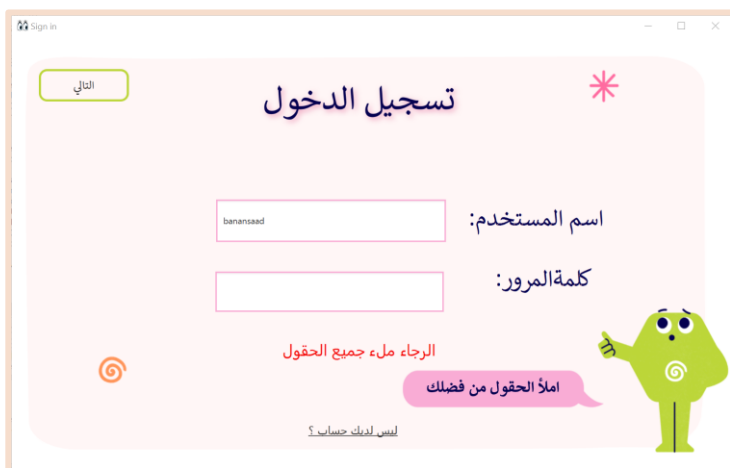
Screen 1 (top)

Sign in

التالي

تسجيل الدخول

اسم المستخدم:

كلمةالمرور:

املأ الحقول من فضلك

ليس لديك حساب ؟

Screen 2 (bottom left)

Sign in

التالي

تسجيل الدخول

اسم المستخدم: banansaad

كلمةالمرور:

الرجاء ملء جميع الحقول

املأ الحقول من فضلك

ليس لديك حساب ؟

Screen 3 (bottom right)

Sign in

التالي

تسجيل الدخول

اسم المستخدم: banansaad

كلمةالمرور: hh9876543215

اسم المستخدم أو كلمة المرور خاطئ

املأ الحقول من فضلك

ليس لديك حساب ؟

If the user clicks on the login button ,then this interface which contains text field and password filed will be displayed requires the user to enter the username in the first text field and enter the password in the second password field and also inside this interface there is button, Do not have an account ? button ,If the user clicks the Do you want to create a new account button he will be transferred to the new registration interface. If a user enters a username or password incorrectly, it will appear Under the two buttons an alert message will appear alerting the user that the user name or password is incorrect. If the user presses the Next button without filling in all the text fields, an alert message will appear asking him to fill in all the text fields .Within this interface, there is button called next, If the user wants to move to the next interface, he clicks the Next button. If the user clicks on the Next button, he will be logged in successfully and will be taken to the levels interface.

If the user clicks on the **New Register** button, this interface will be displayed which contains four text fields that require the user to enter the username in the first text field, enter the email in the second text field, enter the password in the third text field, and enter the age in the fourth text field. This interface also contains a radio button to select the gender . And also inside this interface there is Have an account ? button If the user clicks the Have an account ? button he will be transferred to the login interface ,if the user clicks on the Next button without filling in the four text fields, an alert message will appear asking the user to fill in the four text fields Username, email, enter password and age. Within this interface, there is button called next, If the user wants to move to the next interface, he clicks the Next button. If the user clicks the "Register" button, a new user account will be registered successfully .The user has to click on the Next button to be taken to the Levels interface.

**Important note: The email Checker & password Checker codes were taken from the internet and the source was mentioned in the code file.

The top interface shows a window titled "Levels" with buttons in Arabic:

تسجيل الخروج

أختر من القائمة

هيا لنكتشف

هيا لنصلح الأمر

هيا لنتذكر

لوحة الأبطال

من نحن ؟

The levels interface has six buttons.

The first button is " Let's discover " When you click on it will transfer the child to an educational game that allows the child to click on the internal organ in the human body, and after clicking on the internal organ it will move it to the interface of the clicked organ to show information about the organ.

The second button " Let's fix it " When you click on it an educational game will appear asking the child to connect the internal organ of the body to the correct place. When the correct organ is connected to the correct place, a sound will appear indicating that the answer is correct .There is a timer that calculates a specific period of time for the game and a counter that calculates the number of correct answers .

The third button " Let's remember " when clicking on it will take us to an educational game that asks the child to choose the name of the correct organ matching for the image and function. A sound will appear indicating that The answer is correct If the name of the correct organ matching to the image shown is chosen, a sound will appear indicating that the answer is wrong If the name of the wrong organ is chosen that does not match the image shown, there is a timer that calculates a specific time period for the game and a counter that calculates the number of correct answers.

The Fourth button " The champions board " when you click on it, it will ask the child to choose the game in which he wants to show his results. It is a board linked to the database that shows Usernames and their results in the games in application .

The Fifth button" sign out " is that when you click on it, it will sign out the user from the application.

The Sixth button" about us " if clicked, will take the user to an introductory interface about team works.
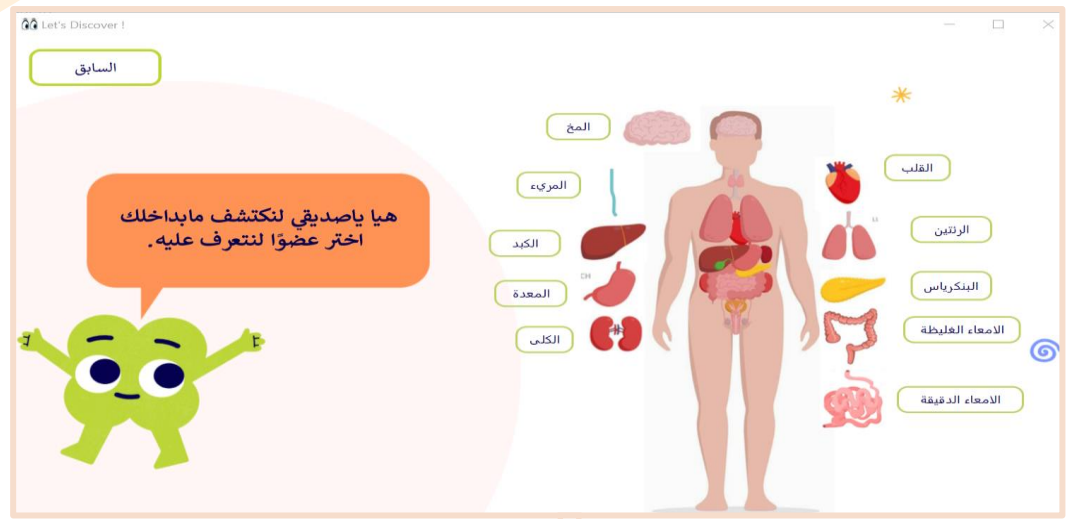
The interface Let's discover

If the user clicks on " Let's discover " button An interface will appear in which there is an educational game At the beginning of this interface the child will hear a voice saying

"هيا يا صديقي لنكتشف ما بداخلك اختر عضوا لنتعرف عليه "

This interface is educational game that allows the child to click on the internal organ in the human body, and after clicking on the internal organ it will move it to the interface of the clicked organ to show information about the organ. Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

If the user clicks on a organ " the heart " he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying

"مرحبا يا صديقي القلب عرفنا بنفسك "

And

"مرحبا بك، أنا القلب العضو الأساسي، حيث أقوم بضخ الدم إلى جميع أعضاء الجسم عن طريق الانقباض بشكل منتظم لضخ الدم و توزيعه في الجسم خلال الاوعية الدموية "

this interface will Show to the child information about the clicked organ.

Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

السابق

مرحبًا بك، أنا المخ الجزء الأكبر من الدماغ، انقسم إلى نصفين وهما النصف الأيمن والنصف الأيسر، أنظم أعمال الجسم وأهتم بالوظائف الإدراكية والحسية والعقلية، لسلامتي تناول السمك .

مرحبًا ياصديقي المخ، عرفنا بنفسك

If the user clicks on a organ " the brain " he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying
"مرحبا يا صديقي المخ عرفنا بنفسك "
And
" مرحبا بك أنا المخ الجزء الاكبر من الدماغ، انقسم الى نصفين وهما النصف الايمن والنصف الايسر، أنظم أعمال الجسم وأهتم بالوظائف الادراكية والحسية والعقلية لسالمتي تناول السمك"
this interface will Show to the child information about the clicked member.
Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

السابق

مرحبًا بك، أنا المريء انقل الطعام الممضوغ الذي تم مضغه في الفم والسوائل الى المعدة، لسلامتي تناول الشوفان

مرحبًا ياصديقي المريء، عرفنا بنفسك

If the user clicks on a organ " the esophagus" he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying
"مرحبا يا صديقي المرئ عرفنا بنفسك "
And
" مرحبا بك أنا المريء انقل الطعام الممضوغ الذي تم مضغه في الفم والسوائل إلى المعدة. لسلامتي تناول الشوفان "
this interface will Show to the child information about the clicked member.
Inside this interface there is a previous button, when

مرحبًا بك، نحن الكلى نعمل على إخراج نفايات الجسم الذائبة الناتجة من عملية الهضم، فنضبط وننظم محتويات الدم وكميات الماء والأملاح في الجسم, لسلامتنا تناول الملفوف.

مرحبًا ياصديقاي عرفانا بأنفسكم

If the user clicks on a organ " the kidneys" he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying

"مرحبا يا صديقاي عرفانا بأنفسكم "

And

" مرحبا بك نحن الكلى نعمل على إخراج نفايات الجسم الذائبة الناتجة من عملية الهضم، فنضبط وننظم محتويات الدم وكميات الماء والاملاح في الجسم .لسلامتنا تناول الملفوف"

this interface will Show to the child information about the clicked member.

Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

مرحبًا بك، أنا البنكرياس أشبه الكمثرى يتروح طولي مابين ٦-١٠ إنشات، أفرز العصارات الهاضمة وحمض المعدة وأنظم مستوى السكر في الدم، لسلامتي تناول الثوم.

مرحبًا ياصديقي البنكرياس،عرفنا بنفسك

If the user clicks on a organ " the pancreas" he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying

" مرحبا يا صديقي البنكرياس عرفنا بنفسك "

And

" مرحبا بك أنا البنكرياس أشبه الكمثرى يترواح طولي ما بين ٦-١٠ إنشات، أفرز العصارات الهاضمة وحمض المعدة وأنظم مستوى السكر في الدم. لسلامتي تناول الثوم"

this interface will Show to the child information about the clicked member.

Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

Large Intestine — □ ×

مرحبًا بك، أنا الأمعاء الغليظة اتخلص من فضلات الطعام عن طريق امتصاص الماء المتبقي من المواد الصلبة ثم امرر الفضلات الزائدة الى خارج الجسم,لسلامتي تناول البطاطس.

مرحبًا ياصديقتي الأمعاء الغليظة،عرفينا بنفسك

If the user clicks on a organ " the Large intestines" he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying

" مرحبا يا صديقتي الأمعاء الغليظة عرفينا بنفسك "

And

" مرحبا بك أنا الامعاء الغليظة اتخلص من فضلات الطعام عن طريق امتصاص الماء المتبقي من المواد الصلبة ثم امرر الفضلات الزائدة الى خارج الجسم لسلامتي تناول البطاطس "

this interface will Show to the child information about the clicked member.

Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

Small Intestine — □ ×

مرحبًا بك، أنا الأمعاء الدقيقة امتص المواد الغذائية التي ينقلها الدم للجسم بعد هضم الطعام,لسلامتي تناول الخضروات الورقية والبطاطس.

مرحبًا ياصديقتي الأمعاء الدقيقة،عرفينا بنفسك

If the user clicks on a organ " the Small intestine " he will be transferred to this interface. With the beginning of this interface, the child will hear a voice saying

" مرحبا يا صديقتي الأمعاء الدقيقة عرفينا بنفسك "

And

" مرحبا بك أنا الامعاء الدقيقة امتص المواد الغذائية التي ينقلها الدم للجسم بعد هضم الطعام. لسلامتي تناول الخضروات الورقية "

this interface will Show to the child information about the clicked member.

Inside this interface there is a previous button, when clicking on it will take the user to the levels interface.

```
If the user clicks on a organ " the lungs" he will be
transferred to this interface. With the beginning of this
interface, the child will hear a voice saying
```
**" مرحبا يا صديقتاي عرفانا بأنفسكم "**
```
And
```
" مرحبا بك نحن الرئتين نشكل عملية تبادل الغازات وتسمى التنفس، نجلب الهواء الجو ونمرر الاكسجين الى مجرى الدم ثم ينتقل الى بقية الجسم لسلامتي تناول البروكلي"
```
this interface will Show to the child information about
the clicked member.
Inside this interface there is a previous button, when
clicking on it will take the user to the levels interface.
```
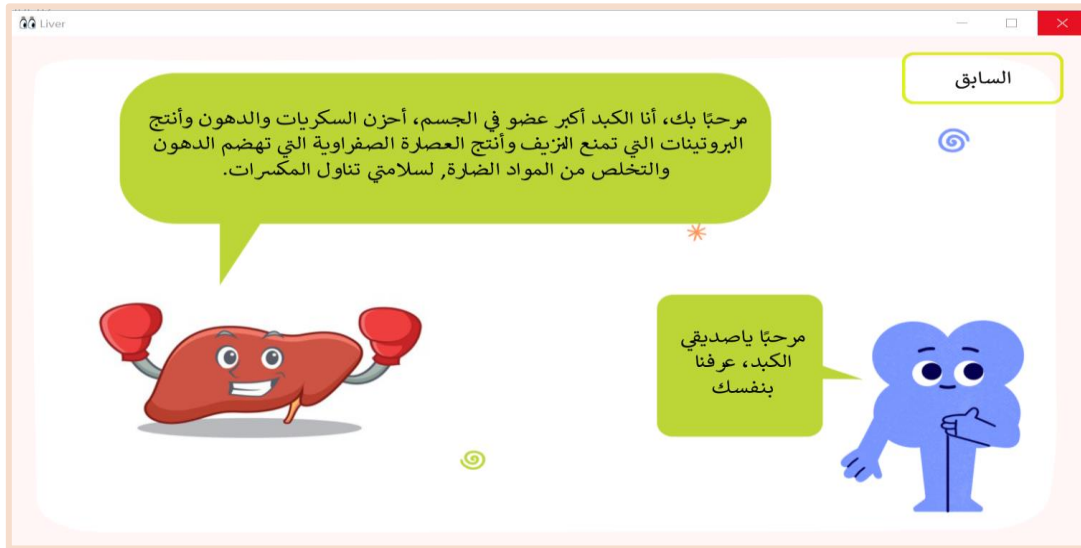


```
If the user clicks on a organ " the liver " he will be
transferred to this interface. With the beginning of this
interface, the child will hear a voice saying
```
" مرحبا يا صديقي الكبد عرفنا بنفسك "
```
And
```
" مرحبا بك أنا الكبد أكبر عضو في الجسم، أخزن السكريات والدهون وأنتج البروتينات التي تمنع النزيف وأنتج العصارة الصفراوية التي تهضم الدهون والتخلص من المواد الضارة لسلامتي تناول المكسرات "
```
this interface will Show to the child information about
the clicked member.
Inside this interface there is a previous button, when
clicking on it will take the user to the levels interface.
```

If the user clicks on a organ " the stomach" he will be
transferred to this interface. With the beginning of this
interface, the child will hear a voice saying
" مرحبا يا صديقتي المعدة عرفينا بنفسك "
And
" مرحبا بك أنا المعدة أشكل دور هام في عملية الهضم، أفرز انزيمات هضمية تساعد في عملية الهضم .
لسلامتي تناول الورقيات الخضراء والافوكادو "
this interface will Show to the child information about
the clicked member.
Inside this interface there is a previous button, when
clicking on it will take the user to the levels interface.
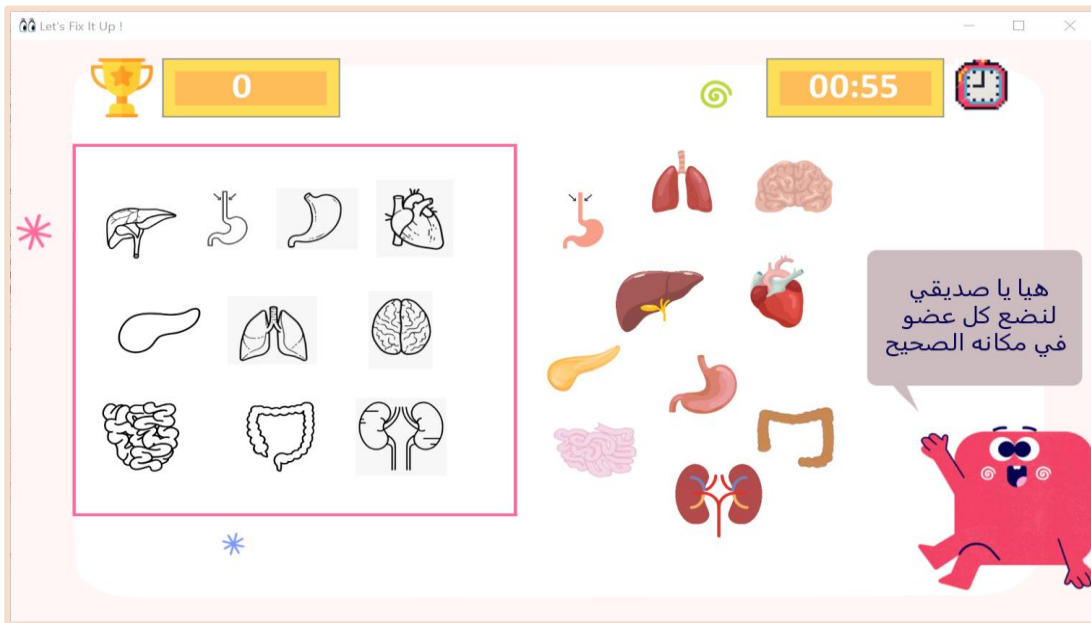
When user clicks on button " Let's fix it " an educational
game will appear asking the child to connect the internal
organ of the body to the correct place. When the correct
organ is connected to the correct place, a sound will
appear indicating that the answer is correct. There is a
timer that calculates a specific period of time for the
game and a counter that calculates the number of correct
answers. When the interface appears ,the child will hear a
voice saying
" هيا يا صديقي لنضع كل عضو في مكانه المناسب "

In the event that the user has connected all organs to the correct place before the specified time expires, this interface will appear. When the interface appears ,the child will hear a voice saying

" رائع لقد أنجزت اللعبة أحسنت يا بطل ! "
And clapping sound effects

In this interface, there are two button , button results and an exit button. If the user clicks on the results button, it will take it directly to The champions board. If the user clicks on the exit button, it will transfer it directly to the levels interface.

In the event that the specified time period has expired and the user has not connected all organs to the correct place, this interface will appear. When the interface appears ,the child will hear a voice saying

" اوه لا ! حاول مرة أخرى "
And loss sound effects

In this interface, there are two button , Return button and an exit button. A Return button in case the user clicks will transfer it directly to the game to play again If the user clicks on the exit button, it will transfer it directly to the levels interface.

🏆 0   ◎   00:55 ⏰

تخلص من فضلات الطعام	ترشيح المياه	نقل الطعام	هضم الطعام	إنتاج العصارة الصفراوية
▼	▼	▼	▼	▼

تنظيم مستوى السكر	نقل الأكسجين	إمتصاص المواد الغذائية	تنظم أعمال الجسم	ضخ الدم
▼	▼	▼	▼	▼

هيا يا صغيري لنختر معاً اسم العضو الصحيح وفق الصورة و الوظيفة
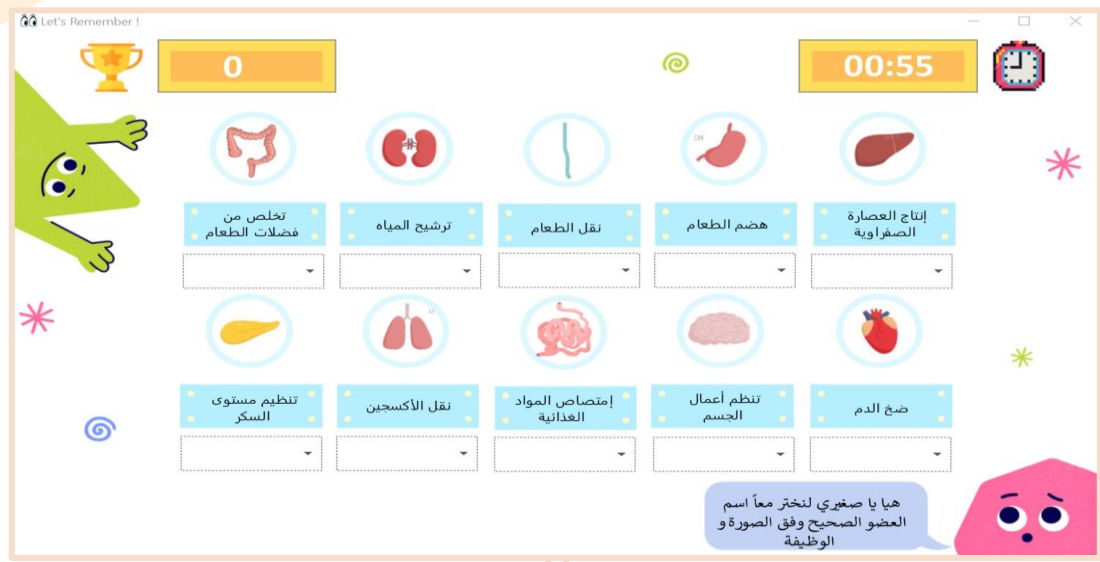
when clicking on " Let's remember " it will take us to an education game that asks the child to choose the name of the correct organ for the image and function in front of him. A sound will appear indicating that The answer is correct If the name of the correct organ has been chosen matching to the image shown and function , a sound will appear indicating that the answer is wrong If the name of the wrong organ has been chosen which does not match the image shown and function ,there is a timer that calculates a specific time period for the game and a counter that calculates the number of correct answers. When the interface appears ,the child will hear a voice saying

" هيا يا صغيري لنختر معا اسم العضو الصحيح وفق الصورة و الوظيفة "

رائع لقد أنجزت اللعبة أحسنت يا بطل !

خروج   النتائج

In the event that the user has chosen the correct organ name matching to the image and the function , for all organs before the specified time expires ,this interface will appear. When the interface appears ,the child will hear a voice saying

" رائع لقد أنجزت اللعبة أحسنت يا بطل ! "
And clapping sound effects

In this interface, there are two button , button results and an exit button. If the user clicks on the results button, it will take it directly to The champions board. If the user clicks on the exit button, it will transfer it directly to the levels interface.

In the event that the specified time period has expired and the user has not chosen the correct organ name matching to the image and the function, for all organs, this interface will appear. When the interface appears ,the child will hear a voice saying

" اوه لا ! حاول مرة أخرى "

And loss sound effects

In this interface, there are two button , Return button and an exit button. A Return button in case the user clicks will transfer it directly to the game to play again If the user clicks on the exit button, it will transfer it directly to the levels interface.

when user click on " The champions board", it will ask the user to choose the game in which he wants to show his result. It is a board linked to the database that shows the results of the users in the games in application , It consists of a combobox on the right of the interface, which contains the names of the games in the application, It also consists of two ListView ,The first ListView contains usernames The second ListView contains the points of users, Animations have also been added in the interface Inside this interface there is a previous button, when clicking on it will take the user to the levels interface .In the interface of the champions board, the names of the players and their scores will appear in the games they played. If the user presses the Ctrl button, the names of the players and their points will be saved in an external file.
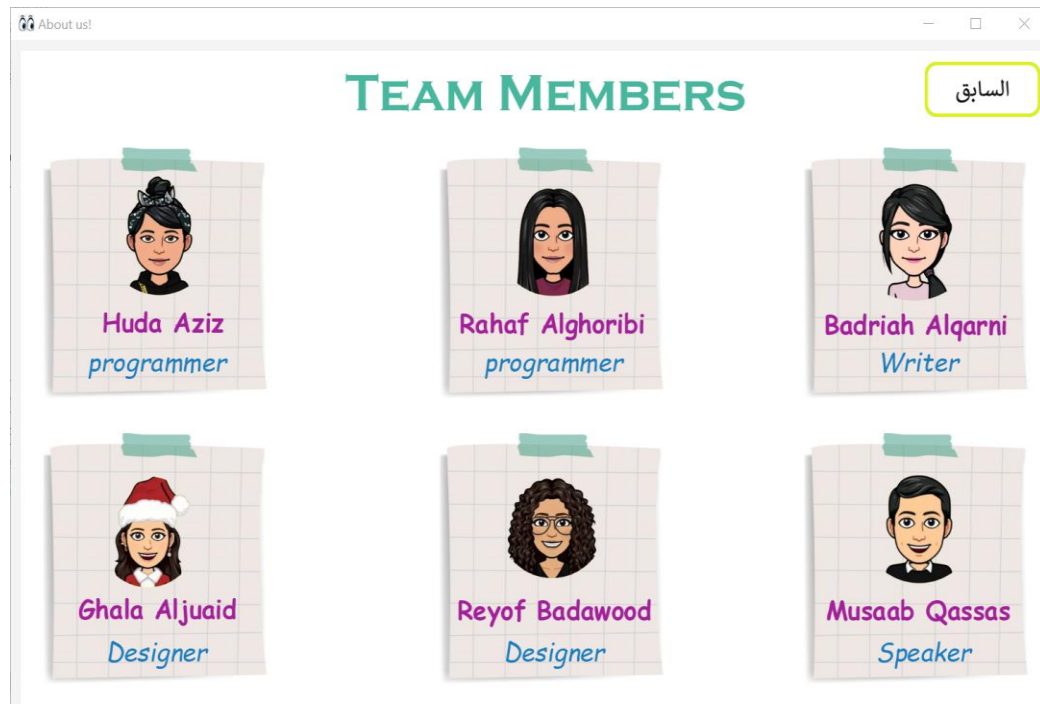
This interface is just an introductory interface that includes the names of the Team Works and their basic works.

4- Project Design and Implementation

B.Event-Driven Programming
How many events?

1- Action event   3- key event
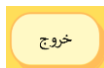
2- Mouse event   4- listener

5- DragDrop Event

**Important note: The Timer code has listener and was taken from the internet and the source are mention in the code file.
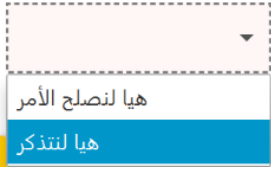
Type of event	User Action	Source object	event function
Action event	Click a button	Button" ابدأ " **ابدأ**	When you click on the start button, it will take you to an interface where there are two buttons, a sign in button and a sign up button
Action event	Click a button	Button "تسجيل الدخول " تسجيل الدخول	When you click on the sign in button, the user will be taken to the sign in interface
Action event	Click a button	Button "تسجيل جديد " تسجيل جديد	When you click on sign up button, the user will be transferred to a sign up interface
Action event	Click a button	Button "التالي " التالي	This button is found in most interfaces, and its function is that when the user clicks on it, it will transfer it to the next interface directly
Action event	Click a button	Button "السابق " السابق	This button is found in most interfaces, and its function is that when the user clicks on it, it will transfer it to the previous interface directly

Type of event	User Action	Source object	event function
Action event	Click a button	Button "تسجيل الخروج" تسجيل الخروج	In the interface of the levels there is a sign out button whose function is that when you click on it, it will sign out the user from the application
Action event	Click a button	Button"هيا لنكتشف" هيا لنكتشف	When a user clicks on this button, it will take him to the game interface ,Let's discover
Action event	Click a button	Button"هيا لنصلح الامر" هيا لنصلح الأمر	When a user clicks on this button, it will take him to the game interface , Let's fix it
Action event	Click a button	Button "هيا لنتذكر" هيا لنتذكر	When a user clicks on this button, it will take him to the game interface , Let's remember
Action event	Click a button	Button"لوحة الابطال" لوحة الأبطال	When a user clicks on this button, it will take him to interface ,The champions board

Type of event	User Action	Source object	event function
Action event	Click a button	Button"إعادة" إعادة	When the user clicks on the return button, the game will be return
Action event	Click a button	Button "خروج" خروج	When the user clicks on the exit button, the user will exit the game and will be taken to the levels interface
Action event	Click a button	Button "النتائج" النتائج	When the user clicks on the results button, it will take him to the interface of the champions board

Type of event	User Action	Source object	event function
Action event	Select a new item	ComboBox "box 1" إنتاج العصارة الصفراوية الكبد	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points.
Action event	Select a new item	ComboBox " box 2" هضم الطعام المعدة	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 3" نقل الطعام المريء	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 4" ترشيح المياه الكلى	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 5 " تخلص من فضلات الطعام الأمعاء الغليظة	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 6" ضخ الدم القلب	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 7" تنظم أعمال الجسم المخ	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 8 " إمتصاص المواد الغذائية الأمعاء الدقيقة	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 9" نقل الأكسجين الرئتين	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points
Action event	Select a new item	ComboBox " box 10" تنظيم مستوى السكر البنكرياس	When clicking on the ComboBox, a drop-down list will appear containing the names of the internal organs of the body. The user must choose the correct member name corresponding to the image in order to calculate the points

Type of event	User Action	Source object	event function
Action event	Click a button	Button"المخ " المخ	When the user clicks on the brain button, it will take him to the brain interface
Action event	Click a button	Button"المريء" المريء	When the user clicks on the esophageal button, it will move it to the esophageal interface
Action event	Click a button	Button "الكبد" الكبد	When the user clicks on the Liver button, it will take him to the Liver interface
Action event	Click a button	Button "المعدة " المعدة	When the user clicks on the stomach button, it will take him to the interface of the stomach
Action event	Click a button	Button "الكلى " الكلى	When the user clicks on the Kidney button, it will take him to the Kidney interface
Action event	Click a button	Button "القلب " القلب	When the user clicks on the heart button, it will take him to the heart interface
Action event	Click a button	Button "الرئتين " الرئتين	When the user clicks on the Lungs button, it will take him to the Lungs interface
Action event	Click a button	Button "البنكرياس " البنكرياس	When the user clicks on the pancreas button, it will take him to the pancreas interface
Action event	Click a button	Button"الأمعاء الدقيقة " الامعاء الدقيقة	When the user clicks on the Small Intestine button, it will take him to the Small Intestine interface
Action event	Click a button	Button"الأمعاء الغليظة " الامعاء الغليظة	When the user clicks on the large intestine button, it will take him to the interface of the large intestine

Type of event	User Action	Source object	event function
Action event	Select a new item	ComboBox" box " هيا لنصلح الأمر هيا لنتذكر	When the user clicks on the box, he will be presented with a drop-down list containing the names of the games. The user must choose the name of the game in which he wants to show his results.
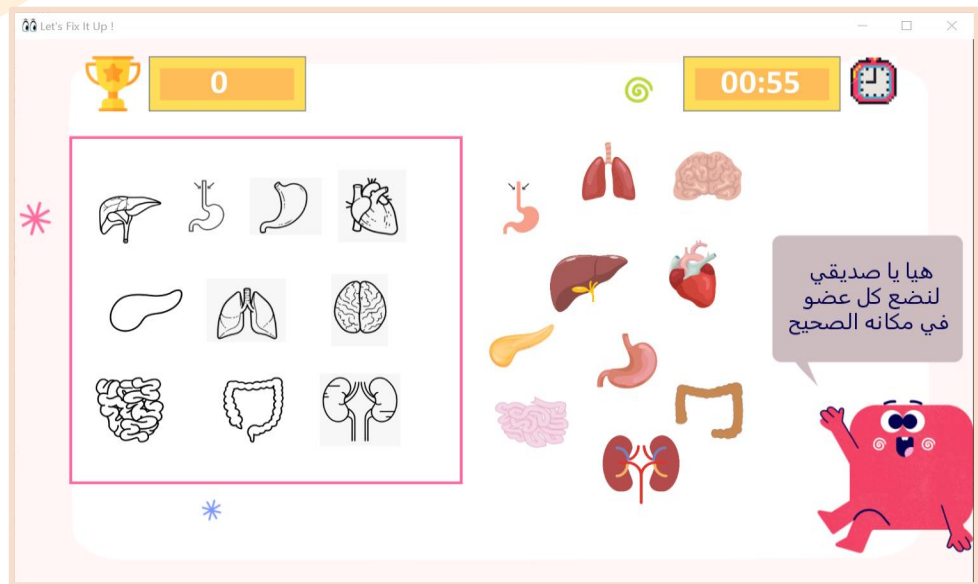
In the game Let's fix it we used
MouseEvent & DragEvent
Whereas Source object is ImageView Where the
user drags and drops the images into the correct
place

Type of event	User Action	Source object	event function
Key event	Pressed	Ctrl	In the interface of the champions board, the names of the players and their scores will appear in the games they played. If the user presses the Ctrl button, the names of the players and their points will be saved in an external file.

4- Project Design and Implementation

C. Java Database Programming

Explain the need of database in your application and how you utilized from each table you have created in your database.

In our application, we need the database to store the information of users in the process of creating a new account, logging in and dealing with this information, When the signup process, the application will record all the information in the user's table, when login process , the application will retrieve the user information that was previously recorded in the user's table, as the user who registered in the application when playing in one of the games, the application will calculating the points earned from this game and recording them in the bord's table.

How many tables? What are the columns?

In our application we have two tables :

1- User Table
* Column " UserName "= **id**
* Column " email "
* Column" password "
* Column" age "

2- board Table
* Column " User "= **id**
* Column " score "
* Column " scoreRem "

Explain how you connect your object model to your relational model?

In our application we have created two POJO classes they are
1-User class 2-board class and mapping annotations using java
persistence API (JPA) way and we create HibernateUtil class to
choose related a configuration object and specify hibernate.cfg.xml
file location.

Explain the relationship between your database and your GUI

*sign up interface

In this interface there are four text fields linked to the columns of the
user table where when the user records information in the four text
fields, user name, email, password, age. The application will directly
store it in the user table where each text field corresponds to a four
column and they are the user name Email, password, age. The insert to
the database is done through this interface.

*sign in interface

In this interface, when the user enters the user name and password, the
application will match the data entered with the data previously
registered in the user's table.

* champions board interface

In this interface, the application will display the names of the players
and their scores that have been stored in the board table. At the
beginning of this interface, the data will be retrieved from the
database, and the data will appear on the interface, which is the
player's name and score. If the user was not previously registered in
the board table in the database, we will insert the player's name and
score in the board table. But if the user is already registered in the
database in the board table, we will update his score.

4- Project Design and Implementation

C.Model-View Controller

Explain how you have implemented the MVC pattern?

Yes, we used the MVC pattern in our Application

We wrote the code in **three classes**

View (interfaces)	Model(POJO classes)	Controller(classes)
We used the Scene Builder tool to design the interfaces, so FXML files are View interfaces. **FXML files:** 1- Board.FXML 2 -Brain.FXML 3- Discover.FXML 4- EmailCode.FXML 5- Esophagus.FXML 6- Fix.FXML 7- Fix_lose.FXML 8- Fix_win.FXML 9-Forget_password.FXML 10- Heart.FXML 11- Home.FXML 12- Kidneys.FXML 14-LargeIntestine.FXML 15-Level .FXML 16- Liver. FXML 17-Load. FXML 18-Lungs. FXML 19- NewPassword. FXML 20- Pancreas. FXML 21-Remember. FXML 22-Remember_lose. FXML 23-Remember_win.FXML 24-SignIn. FXML 25-SignIn_Up. FXML 26- SignUp. FXML 27- SmallIntestine. FXML 28- Stomach. FXML 29- aboutus. FXML	1-User class 2-board class	1- BoardController 2 -BrainController 3- DiscoverController 4- EmailCodeController 5- EsophagusController 6- FixController 7- Fix_loseController 8- Fix_winController 9-Forget_passwordController 10- HeartController 11- HomeController 12- KidneysController 14-LargeIntestineController 15-LevelController 16- LiverController 17-LoadController 18-LungsController 19- NewPasswordController 20- PancreasController 21-RememberController 22-Remember_loseController 23-Remember_winController 24-SignInController 25-SignIn_UpController 26- SignUpController 27- SmallIntestineController 28- StomachController

Did you use any tool to design your application using this pattern?

Which tool?

We have used the Scene Builder tool in designing all application interfaces .
We have used Canva to design the characters and backgrounds.

4- Project Design and Implementation

E. Extra

Yes, we used the extra ,they are animation and sound

1- Animation

Animations have been added to add an aesthetic touch to the application.

**Important note: The animation codes were taken from the internet and the source was mentioned in the code file.

Animations have been added in the first interface that appears when the application is launched, they are circles that move in different directions.

Animations have also been added in the interface of The champions board, they are scattered stars that are getting bigger and smaller constantly.

1- The Sounds

The sounds have been added to make it clear to the child the text that appears on the interface and help increase his comprehension.

Important note: The sounds used in the application are **real voices recorded in the voice of a **child** .

**Important note: The sounds were recorded by the child, Musab Qassas.

**Important note: The sounds codes were taken from the internet and the source was mentioned in the code file.

The sounds are explained in detail in the section explaining the interfaces .

3- File I/O

In the interface of the champions board, the names of the players and their scores will appear in the games they played. If the user presses the **Ctrl** button, the names of the players and their points will be saved in an external file.

اضغط على زر control اذا أردت حفظ البيانات في ملف
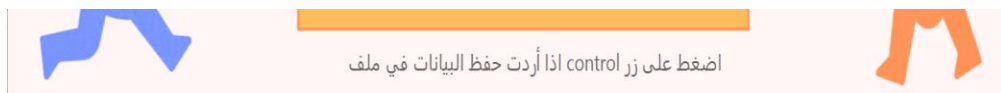
5- The distribution of the work

1- Huda Aziz Hassan (Leader)

- Keep track of all members' work .
- Discussion in ideas .
- Final idea .
- Working on prototype information and project name.
- Designing all scene builder interfaces.
- Adding UI controls into (level.fxml,heart.fxml,brain.fxml,esophagus.fxml,stomach.fxml ,kidnys.fxml,pancreas.fxml,large intestine.fxml,small intestine.fxml,lungs.fxml,liver.fxml,fix_win.fxml,fix_lose.fxml, remember.fxml,remember_win.fxml,remember_lose.fxml,board.fxml).
- Linking and gathering all project.
- Implementing (home,signIn_Up,level,discover,heart,brain,esophagus,stomach,kidnys,pancreas,large intestine, small intestine,lungs,liver,fix_win,fix_lose,remember,remember_win ,remember_lose) controllers.
- Adding audios to project .

2- Rahaf Alghoribi

- Discussion on ideas .
- Working on prototype information and project name .
- Record all voices .
- Adding UI controls into (home.fxml,signIn_Up.fxml,signIn.fxml,signUp.fxml,discover .fxml,fix.fxml).
- Implementing (signIn,signUp,fix,board) controllers
- Initial linking of some fxml files .
- Connecting and checking entire database.

3- Badriah Alqarni

- Discussion on ideas .
- Initial prototype .
- Working on prototype information and project name.
- Bring organs information.
- Edit (kidnys.fxml,pancreas.fxml,large intestine.fxml,small intestine.fxml,lungs.fxml,liver.fxml) information .
- Adding animations to project in load controller and board controller .
- Designing and Implementing (about us interface).
- Writing and designing entire report .

4- Ghala Aljuaid

- Discussion on ideas.
- Working on prototype information and project name .
- Final prototype .
- Designing (home,signIn_Up,signIn,level,discover,heart,brain,pancreas,lungs,liver)(signUp,esophagus,kidnys,stomach,large intestine,small intestine) interfaces using canva .
- Adding I/O file to project.

5- Reyof Badawood

- Discussion on ideas.
- Working on prototype information and project name.
- Designing (fix,fix_win,fix_lose,remember,remember_win,remember_lose,board)(signUp,esophagus,kidnys,stomach,large intestine,small intestine) interfaces using canva .

6- What we learnt .

We learned from this project apply most of the advanced programming skills that were studied in this Semester. We also learned how to employ these skills that were studied in building a real application. We also learned that working in a teamwork is fun and beneficial for all individuals. We gained the skill of teamwork within a team of Different groups and different creative abilities. Working within a team helps team members to solve the problems they face and also helps them exchange experiences and helps to enhance communication between team members that helps motivate team members. Yes, teamwork is useful in the programming project and in all projects because it provides the individual with many advantages Which was mentioned earlier. yes, we are very satisfied and happy because working on our application will help us to work on larger applications in the future. Yes, working within a collective team will help us exchange different experiences between team members and solve problems.

7- Project difficulties .

One of the difficulties we have had is that working in a collective group is fun, but difficult in terms of each individual's different responsibilities and time constraints, given that there are different responsibilities for each individual and the Compress the projects of the various courses studied in this semester .

8- Project Declaration .

✔️ We confirm that the work of this project was solely undertaken by ourselves and that no help was provided from other sources as those allowed. As well as we confirm that we completely aware of the violation consequences of the academic integrity.

Read and check the previous declaration.

Huda Aziz Hassan	438018422 (Leader)	✔
Rahaf Ibrahim Alghoribi	439004527	✔
Badriah saad Alqarni	439003912	✔
Ghala mamdouh Aljuaid	439000543	✔
Reyof Ahmed Badawood	439008806	✔