Bilkent University
Department of Computer Engineering

# CS 353: DATABASE SYSTEMS

*Group 3: Online Course Platform*

# Final Report

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Project Proposal

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# I. Description of the System

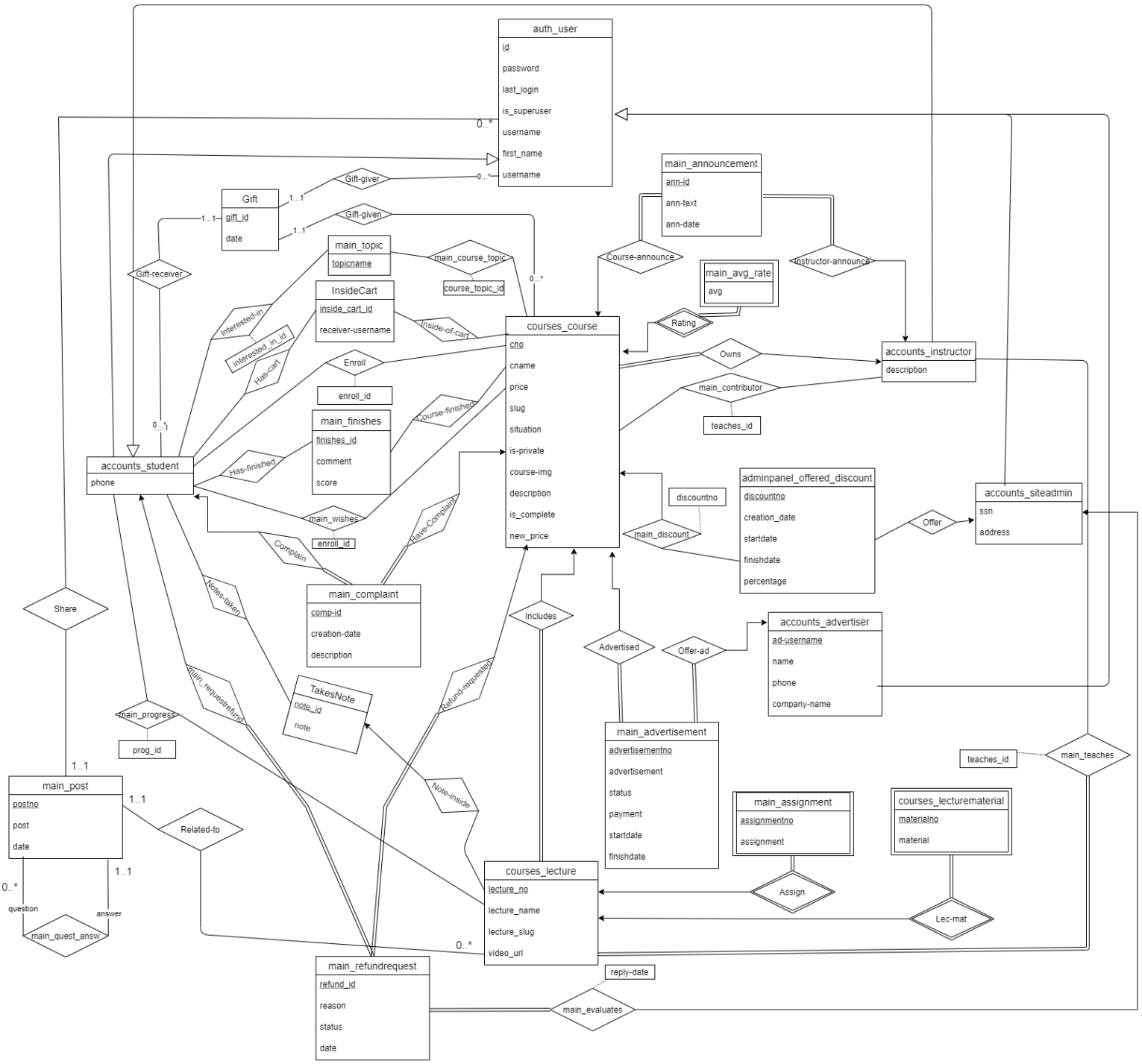
We created an online course platform database that people can share their knowledge in whereas they can learn from others. This knowledge transmission is based on videos of courses while assignments and lecture materials can be added by the owner of courses or contributors to improve learning experience. Also, necessary announcements can be added to courses by contributors. Furthermore, both questions and answers can be posted on lectures by both instructors and students. Necessary notes related to lectures can be taken privately by both students and instructors.

Beside these attributes, students can have a wishlist for their liked courses and they can store the courses in a shopping cart without disappearing. They can reach courses in specific topics and they can see the courses that are related to topics, they are interested in, on the main page. Besides buying a course and enrolling in a course, users can gift courses to other users too.

After finishing the course, students can rate courses, comment on them and get their certificates. Whereas, whenever they want, they can create refund requests for the courses. These refund requests are evaluated by the website admins. Beside this task, admins can create instances of our website as accounts, new admins, courses and lectures. Also, they can initiate discount intervals for each course and these discounts can be accepted by the course owners.

Moreover, our website allows advertisements for the courses. An advertiser can offer advertisements and these will be shown in the course page if the course owner accepts the offer.

# II. Final ER Diagram



## III. Final List of Tables

### auth_user

**Relational Model:** auth_user (id, password, last_login, is_superuser, username, first_name, last_name, email, is_active, date_joined, user_type)
**Candidate Key:** username, email
**Primary Key:**id

### accounts_student

**Relational Model:** Student (user_ptr_id, phone)
**Candidate Key:** user_ptr_id
**Primary Key:** user_ptr_id
**Foreign Key:** user_ptr_id referencing auth_user (id)

### accounts_instructor

**Relational Model:** accounts_instructor(student_ptr_id, description)
**Candidate Key:** student_ptr_id
**Primary Key:** student_ptr_id
**Foreign Key:** student_ptr_id referencing accounts_student (user_ptr_id)

### accounts_siteadmin

**Relational Model:** accounts_siteadmin(user_ptr_id, ssn, address)
**Candidate Key:** user_ptr_id, ssn
**Primary Key:** user_ptr_id
**Foreign Key:**
user_ptr_id referencing auth_user (id)

### accounts_advertiser

**Relational Model:** Advertiser (user_ptr_id, name, company_name, phone)
**Candidate Key:** user_ptr_id
**Primary Key:** user_ptr_id
Foreign Key: user_ptr_id referencing auth_user (id)

### adminpanel_offered_discount

**Relational Model:** adminpanel_offered_discount (discount_id, creation_date, percentage, start_date, end_date, admin_username_id)
**Candidate Key:** discount_id
**Primary Key:** discount_id
**Foreign Key:** admin_username_id referencing accounts_siteadmin (user_ptr_id)

### courses_course

**Relational Model:** courses_course (cno, cname, price, slug, is_private, course_img, description, is_complete, new_price, owner_id )
**Candidate Key:** cno, slug
**Primary Key:** cno
**Secondary Index:** slug
**Foreign Key:** owner_id referencing accounts_instructor (student_ptr_id)

### courses_lecture

**Relational Model:** courses_lecture (lecture_no, lecture_name, lecture_slug, video_url, cno_id)
**Candidate Key:** lecture_no, lecture_slug
**Primary Key:** lecture_no
**Foreign Key:** cno_id referencing courses_course (cno)

### courses_lecturematerial

**Relational Model:** courses_lecturematerial (materialno, material, lecture_no_id)
**Candidate Key:** materialno
**Primary Key:** materialno
**Foreign Key:** lecture_no_id referencing courses_lecture (lecture_no)

### main_advertisement

**Relational Model:** main_advertisement (advertisementno, advertisement, status, payment, startdate, finishdate, ad_username_id, cno_id)
**Candidate Key:** advertisementno
**Primary Key:** advertisementno
**Foreign Key: (**cno_id) referencing courses_course (cno),
(ad_username_id) referencing accounts_advertiser (user_ptr_id)

### main_advertisement

**Relational Model:** main_announcement (ann_id, ann_date, ann_text, cno_id, i_user_id)
**Candidate Key:** ann_id
**Primary Key:** ann_id
**Foreign Key:** (i_user_id) referencing accounts_instructor (student_ptr_id),
(cno_id) referencing courses_course (cno)

### main_assignment

**Relational Model:** main_assignment (assignmentno, assignment, lecture_no_id)
**Candidate Key:** assignmentno
**Primary Key:** assignmentno
**Foreign Key:** (lecture_no_id) referencing courses_lecture (lecture_no)

### main_avg_rate

**Relational Model:** main_avg_rate (cno_id, avg)
**Candidate Key:** cno_id
**Primary Key:** cno_id
**Foreign Key: (**cno_id) referencing courses_course (cno)

### main_complaint

**Relational Model:** main_complaint (creation_date, comp_id, description, course_id, s_user_id)
**Candidate Key:** comp_id
**Primary Key:** comp_id
**Foreign Key:** s_user_i referencing accounts_student (user_ptr_id)
course_id referencing courses_course (cno)

### main_contributor

**Relational Model:** main_contributor (cont_id, cno_id, user_id)
**Candidate Key:** cont_id
**Primary Key:** cont_id
**Foreign Key:** user_id referencing accounts_instructor (student_ptr_id)
cno_id referencing courses_course (cno)

### main_course_topic

**Relational Model:** main_course_topic (course_topic_id, cno_id, topicname_id)
**Candidate Key:** course_topic_id
**Primary Key:** course_topic_id
**Foreign Key:** topicname_id referencing main_topic (topicname)
cno_id referencing courses_course (cno)

### main_discount

**Relational Model:** main_discount (discountno, cno_id, offerno_id)
**Candidate Key:**discountno
**Primary Key:** discountno
**Foreign Key:** topicname_id referencing main_topic (topicname)
cno_id referencing courses_course (cno)

### main_enroll

**Relational Model:** main_enroll (enroll_id, cno_id, user_id)
**Candidate Key:** enroll_id
**Primary Key:** enroll_id
**Foreign Key:** user_id referencing accounts_student (user_ptr_id)
cno_id referencing courses_course (cno)

## main_evaluates

**Relational Model:** main_evaluates (refund_id_id, reply_date, admin_username_id)
**Candidate Key:** refund_id_id
**Primary Key:** refund_id_id
**Foreign Key:** admin_username_id referencing accounts_siteadmin (user_ptr_id),
refund_id_id referencing main_refundrequest (refund_id)

## main_finishes

**Relational Model:** main_finishes (finishes_id, comment, score, cno_id, user_id)
**Candidate Key:** finishes_id
**Primary Key:** finishes_id
**Foreign Key:** user_id referencing accounts_student (user_ptr_id),
cno_id referencing courses_course (cno)

## main_gift

**Relational Model:** main_gift (gift_id, date, course_id, receiver_id, sender_id)
**Candidate Key:** gift_id
**Primary Key:** gift_id
**Foreign Key:** sender_id referencing auth_user (id)
course_id referencing courses_course (cno)
receiver_id referencing accounts_student (user_ptr_id)

## main_inside_cart

**Relational model:** main_inside_cart (inside_cart_id, cno_id, receiver_username_id, username_id)
**Candidate key:** inside_cart_id
**Primary key:** inside_cart_id
**Foreign key:** username_id referencing auth_user(id)
cno_id referencing courses_course(cno)
receiver_username_id referencing accounts_student(user_ptr_id)

## main_interested_in

**Relational model:** main_interested_in (interested_in_id, s_username_id, topic_id)
**Candidate key:** interested_in_id
**Primary key:** interested_in_id
**Foreign key:** topic_id referencing main_topic(topicname)
s_username_id referencing accounts_student(user_ptr_id)

## main_post

**Relational model:** main_post (postno, post, date, lecture_no_id, username_id)
**Candidate key:** postno
**Primary key:** postno
**Foreign key:** username_id referencing auth_user(id)
lecture_no_id referencing courses_lecture(lecture_no)

### main_progress

**Relational model:** main_progress (prog_id, lecture_no_id, s_username_id)
**Candidate key:** prog_id
**Primary key:** prog_id
**Foreign key:** s_username_id referencing accounts_student(user_ptr_id),
lecture_no_id referencing courses_lecture(lecture_no)

### main_quest_answ

**Relational model:** main_quest_answ (answer_no_id, question_no_id)
**Candidate key:** answer_no_id
**Primary key:** answer_no_id
**Foreign key:** question_no_id referencing main_post(postno),
answer_no_id referencing main_post(postno)

### main_refundrequest

**Relational model:** main_refundrequest (refund_id, reason, status, date, cno_id, s_username_id)
**Candidate key:** refund_id,
**Primary key:** refund_id,
**Foreign key:** s_username_id referencing accounts_student(user_ptr_id),
cno_id referencing courses_course(cno)

### main_takes_note

**Relational model:** main_takes_note (note_id, note, lecture_no_id, s_username_id)
**Candidate key:** note_id,
**Primary key:** note_id,
**Foreign key:** s_username_id referencing accounts_student(user_ptr_id),
lecture_no_id referencing courses_lecture(lecture_no)

### main_teaches

**Relational model:** main_teaches (teach_id, lecture_no_id, user_id)
**Candidate key:** teach_id,
**Primary key:** teach_id,
**Foreign key:** user_id referencing accounts_instructor(student_ptr_id),
lecture_no_id referencing courses_lecture(lecture_no)

### main_topic

**Relational model:** main_topic (topicname)
**Candidate key:** topicname
**Primary key:** topicname

### main_wishes

**Relational model:** main_wishes (wishes_id, cno_id, user_id)
**Candidate key:** wishes_id
**Primary key:** wishes_id
**Foreign key:** user_id referencing auth_user(id),
cno_id referencing courses_course(cno)

## IV. Implementation Details

In this project, Django, which is a high-level Python Web framework, was chosen as a development technology. To connect our MySQL database, we provide the necessary information in settings.py such as engine, database name, username, password, host, etc. Django provides two ways of performing raw SQL queries. In this project, both ways were used. Firstly, in order to use the database connection, a cursor object was used. The object Django.db.connection represents the default database connection, and a cursor object was obtained by using connection.cursor(). In order to execute SQL queries, cursor.execute( sql_query, [parameters]) was called. Secondly, the raw() manager method was used to perform raw SQL queries which returns model instances. This method takes a raw SQL query, executes it, and returns a Django.db.models.query.RawQuerySet instance. When a change is needed in SQL tables, the SQL console provided by Django was used.

Django framework stores the currently logged in user's "request" to access the website properties within a compact User object, and allows access to the information on user requesting the website through this property only. So, while we still created the table auth_user ourselves with adjusting it as we needed, properties like 'is_staff' or 'is_active', although never used explicitly by our team, were still supposed to be present and we simply put default values in place of their values. Then, we created our users: admin, instructor, student, and advertiser based on Django's user. The URL paths were specified under the urls.py files with corresponding views. The views were connected with HTML files under the views.py files. Forms, which were defined under forms.py files, were used when user input is needed.

The GUI was prepared in a way that prevents non-logical situations as much as possible. For example, if an instructor is the course owner, s/he does not see the "Add To Cart" button. Likewise, if a student has already purchased the course, s/he does not see the button as well. Furthermore, we limit/change some properties according to the user types by modifying GUI. For example, we have used a base.html file that holds the navigator bar at the top of the page. The buttons on the bar change according to the user type. If the user is an instructor, then there are additional buttons on the navigator bar such as Advertisement Offers and Enrolled Courses.

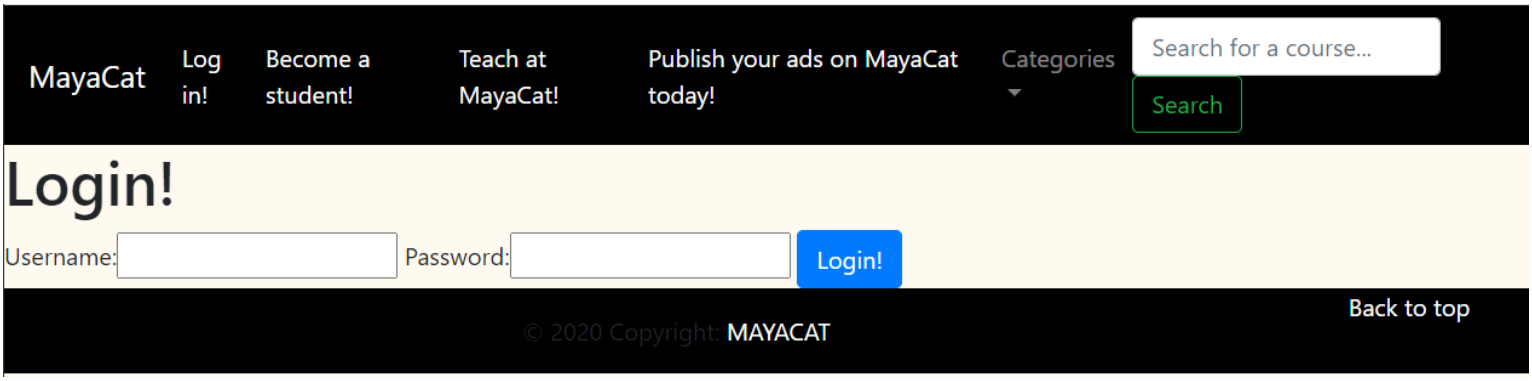
## Problems and Solutions

1. Adding images into the database and showing it through html was hard for us. We first tried to save the image statically and show it using the <img> component of html however it did not work. Therefore, we searched for other ways of doing this and found a way to embed the image into the web-page. We have used <iframe> component of html and written a google drive url of the image into iframe as a source. By using this, we were able to show course images and advertisement materials.
2. When we started implementation, we had only the main directory that includes urls, forms and views. However, at some point, we could not manage the project in this way since the views increased too much. Then we separated our project into sub-folders with respect to their topic such as accounts, courses, search etc. This helped us to control the whole project in an easier way.
3. One issue we had was to check for every situation for when a data row needed to be removed, updated, or inserted in accordance with another situation given. For some of these, we needed additional information, like how we could not simply add data to main_evaluates from main_refundrequest because we also needed the admin's id - but for others, using triggers solved our issue immensely, condensing our code and eliminating many confusions. One such situation was to delete the specific row from main_discount when a row from adminpanel_discountoffer gets removed.

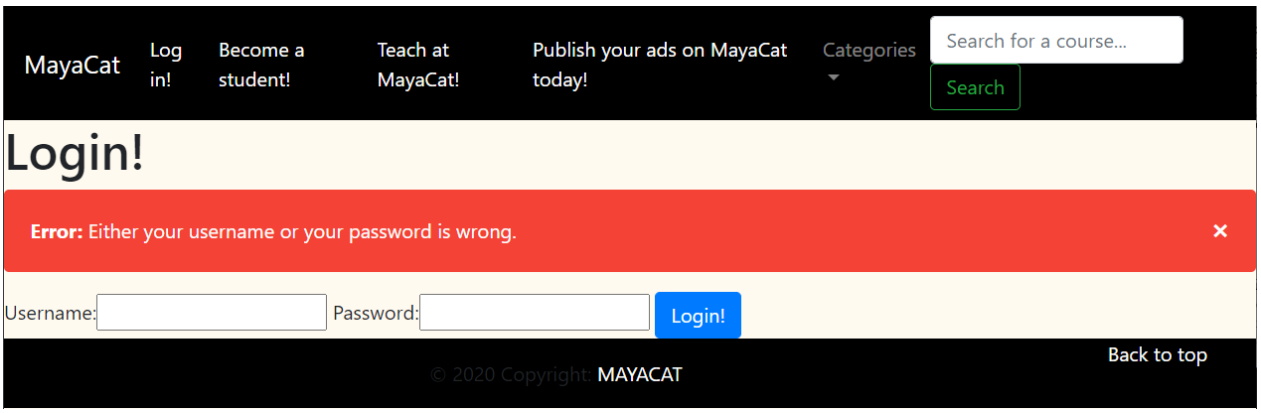
# V. User Manual

## Common features

- **Log-in:** In the log-in page, you will be faced with 2 areas. In order to login, you must enter your username and password. We will cover your entry for the password part to secure your privacy. If you do not have an account yet, you can click on the "Become a student" button on both the top and bottom of the page.

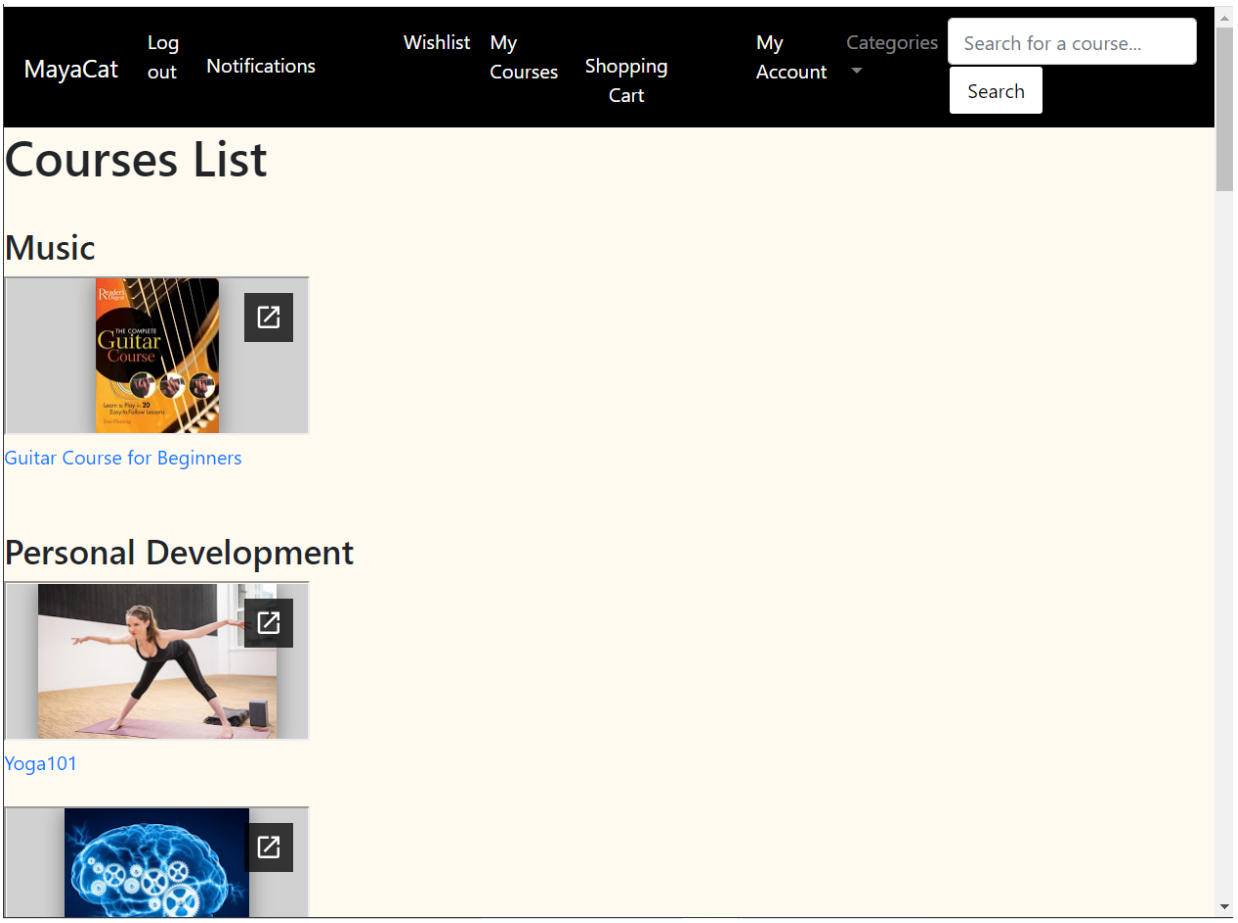



If you enter a username that does not exist, you will be directed to registration page after clicking on the "Log-in!" button.




If you enter your username and password correctly, you will be directed to the main page where you can see the existing courses.

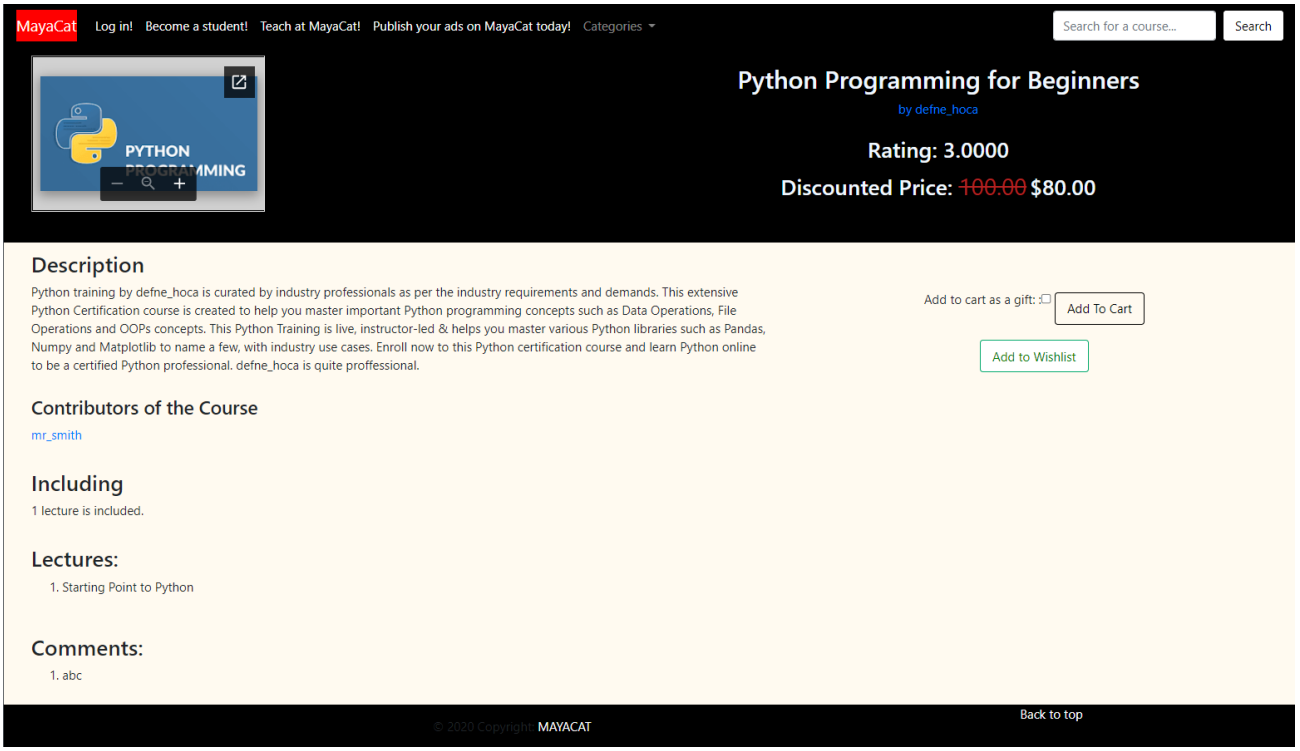
- **See courses on the main page:** Scroll down by the main page, we offer many courses under many topics. Find one that you liked and if you want to know the course better, the only thing you have to do is click on the name of the course! You can always go back to the main page by simply clicking on the "MayaCat" button on the far left of the top menu. Keep in mind that you cannot view private courses on the main page, even if you have enrolled or the owner of the course. Only the public courses are displayed on the main page.



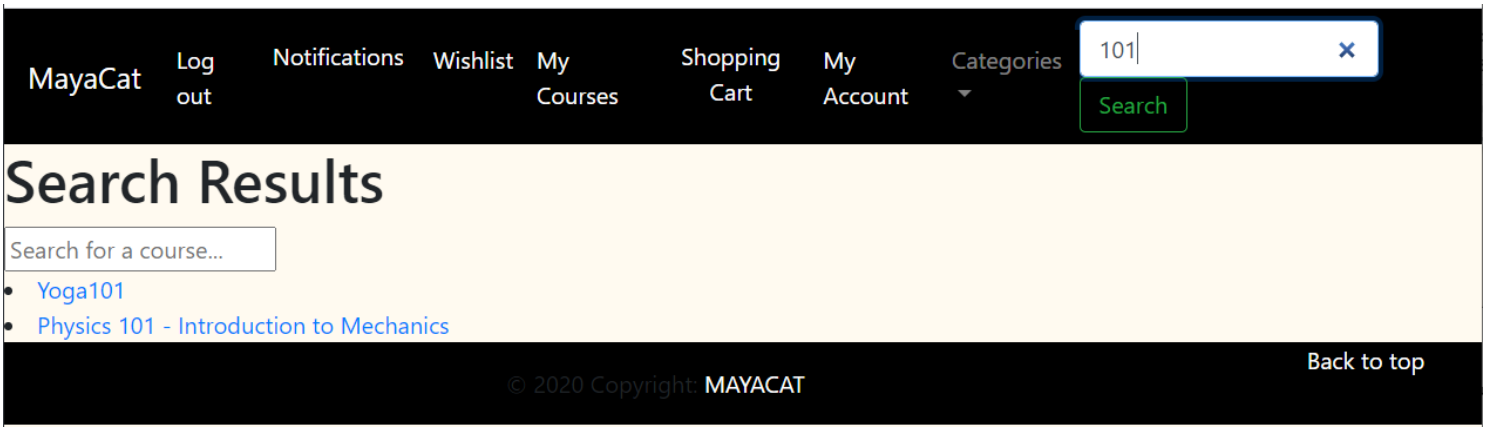
- **See a course in detail:** In the course page, you can find details about the course. You will be presented with the name, the owner, the rating, and the image of the course. By clicking on the name of the owner, you can visit their profile page. The regular and discounted (if any) price can be seen next.

  At the left column, the description and the inclusion of the course can be seen. Then, the lectures (if any) and comments (if any) of the course are presented.

  The rest of the page changes according to the user type you are using. For further information, please see the related page under the user type you are using.




- **The search:** Search button is located on the utmost right side of the upper navigation bar. To perform a search, you need to type what you will search for in the field with the placeholder "Search for a course…" and then either press Enter key or click on the 'Search' button either next to or below (depending on the size of your screen, as we will show another example of in the below screenshot) the search input field. The search input accepts searches of a maximum of 50 characters. The search result here returns results based on the course names. Below, one can see the output screen of a search:

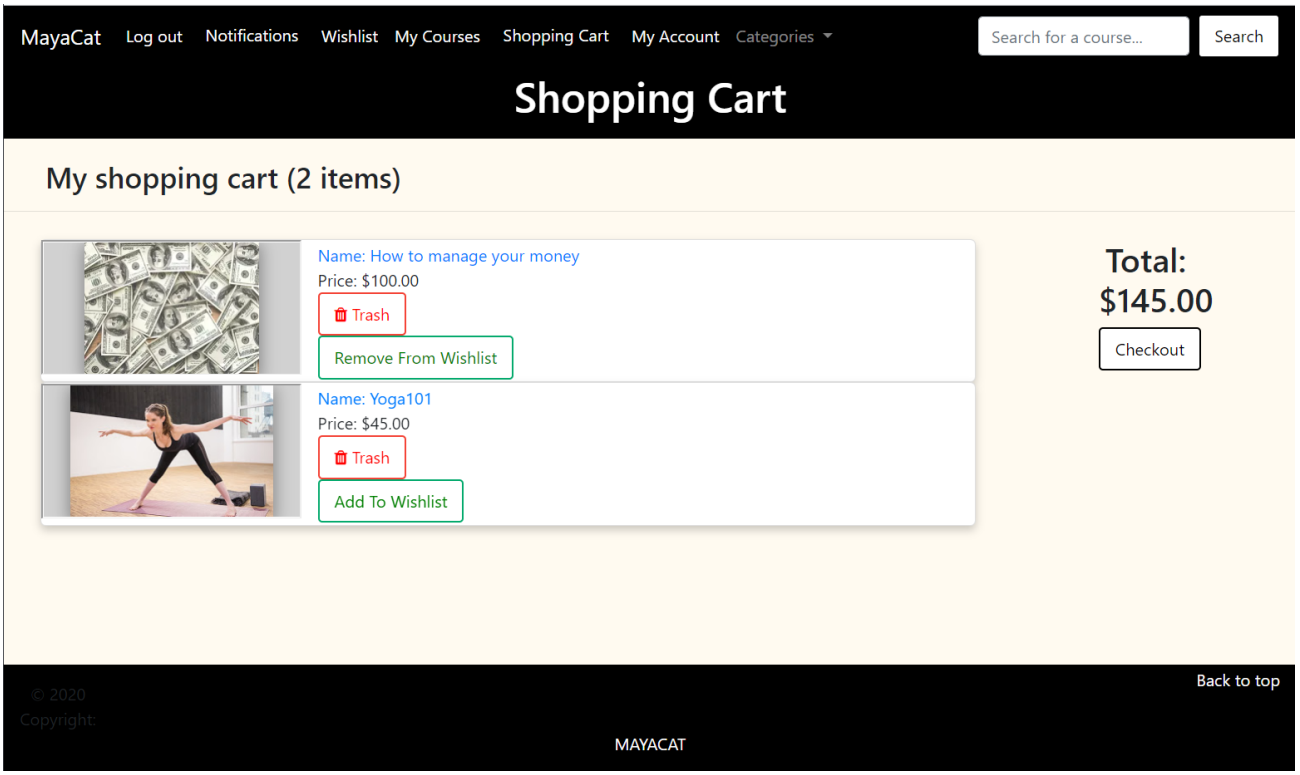



The searched value was "101" as it can also be seen in the URL above right next to the "?q=" identifier. The result screen returns the results according to course names found, and these results are clickable links which return to their respective course pages. The new screen also returns with a new search bar that functions with the same functionality as the search bar seen above in the navigation panel, and the resulting page is entitled "Search Results" to make it easier for a user to adhere the meaning of the resulting page. In the screenshot above, which we included for users to see other views, the search button is to the right of the search bar as differing from a smaller screen.

- **Shopping Cart:** Your shopping cart page is divided into two columns: On the left you can see the courses you have added to your shopping cart and on the right, the total amount of you cart is displayed along with a "Checkout" button which will lead you to the checkout page.

  The items are listed according to the time when you add them into your cart. The earliest addition to your cart will be presented on the top. The photo, name, and the price of each item is displayed. You can click on the name of the course to go to its course page where you can learn more about the course.

  If you do not want to buy the course yet, you can simply click on the red "Trash" button next to the course's image and it will delete the item from your cart.



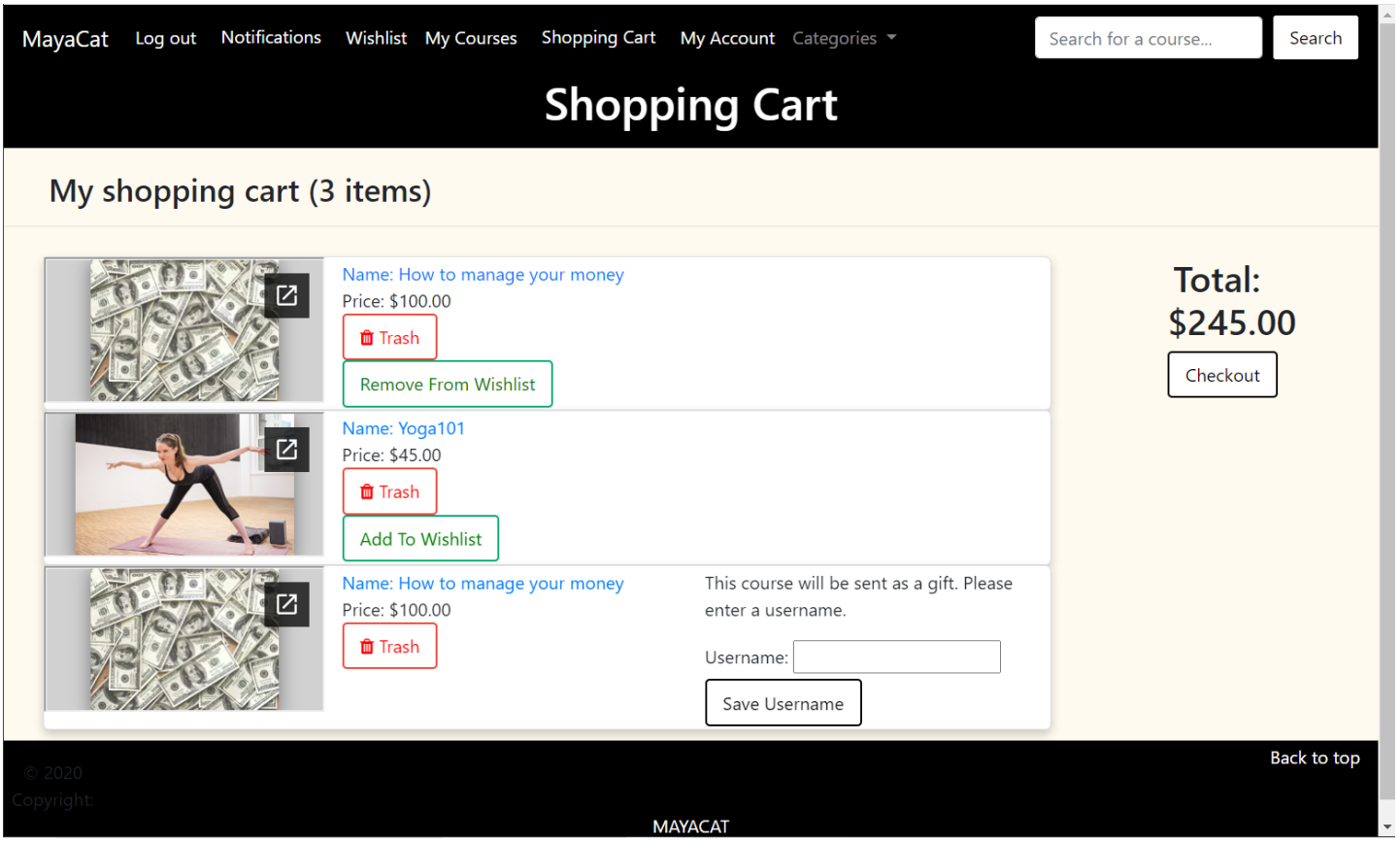

The items on your cart can be either a gift or a regular item.

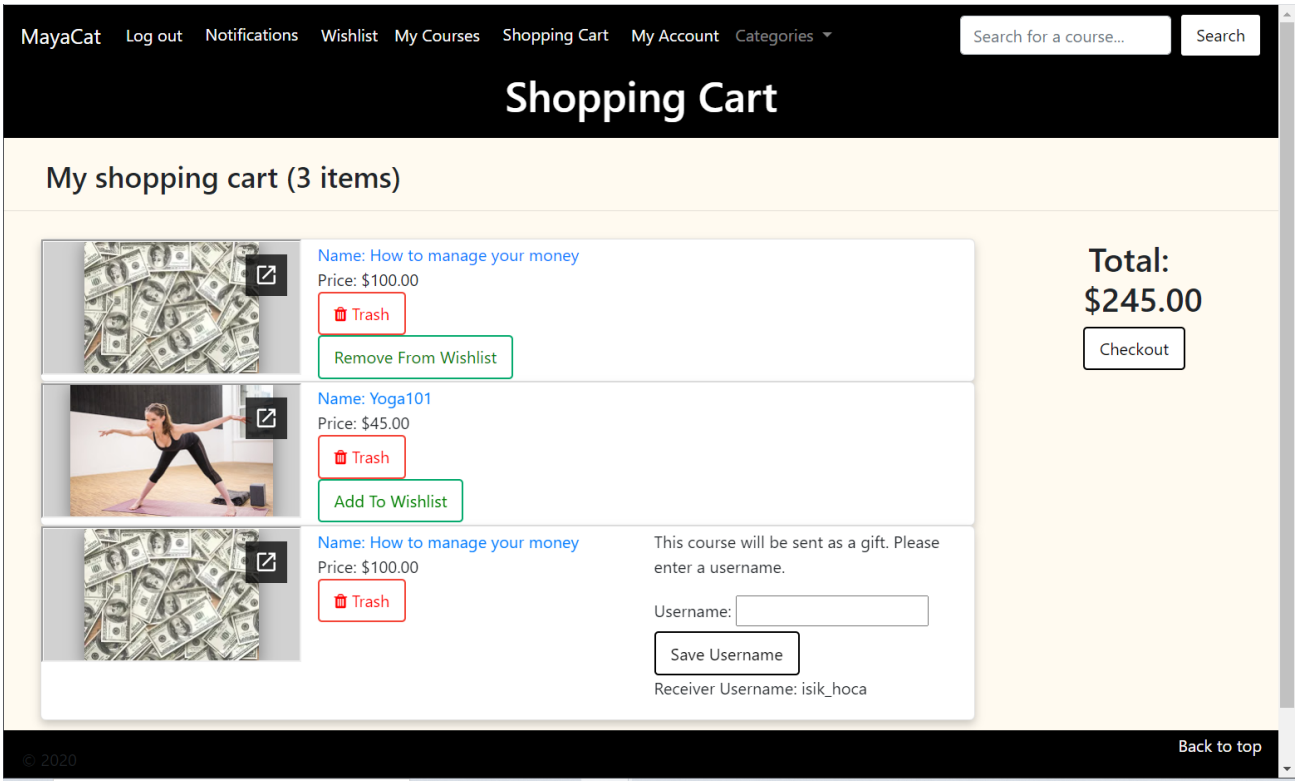
- If you added the course on your cart to buy for yourself and the course is not in your Wishlist already, then you can also see the green "Add To Wishlist" button below the "Trash" button. The "Add to Wishlist" button will automatically add the course to your Wishlist and the button will be renewed as "Remove From Wishlist". You can read the pointer below to learn about the function of this button.

- If you added the course on your cart to buy for yourself and the course is in your Wishlist already, then you can also see the green "Remove From Wishlist" button below the "Trash" button. The "Remove From Wishlist" button will automatically remove the course from your Wishlist and the button will be renewed as "Add To Wishlist". You can read the pointer above to learn about the function of this button.

- If you added the course as a gift, then you will be presented with an information text, a text field, a button in addition to the image, name, price of the course and the "Trash" button. As the informative text tells you, you should enter the username of the receiver to the text field and click on the "Save Username" button below it to set the username as the receiver of the course. If the process is successful; then, you will see the receiver of gift set as the username you have entered below the button. The process will not be successful if you enter, your username (you cannot send a gift to yourself), invalid username (non-existing username), username of the owner of the course (you cannot send the course to its owner), username of one of the contributors of the course (you cannot send the

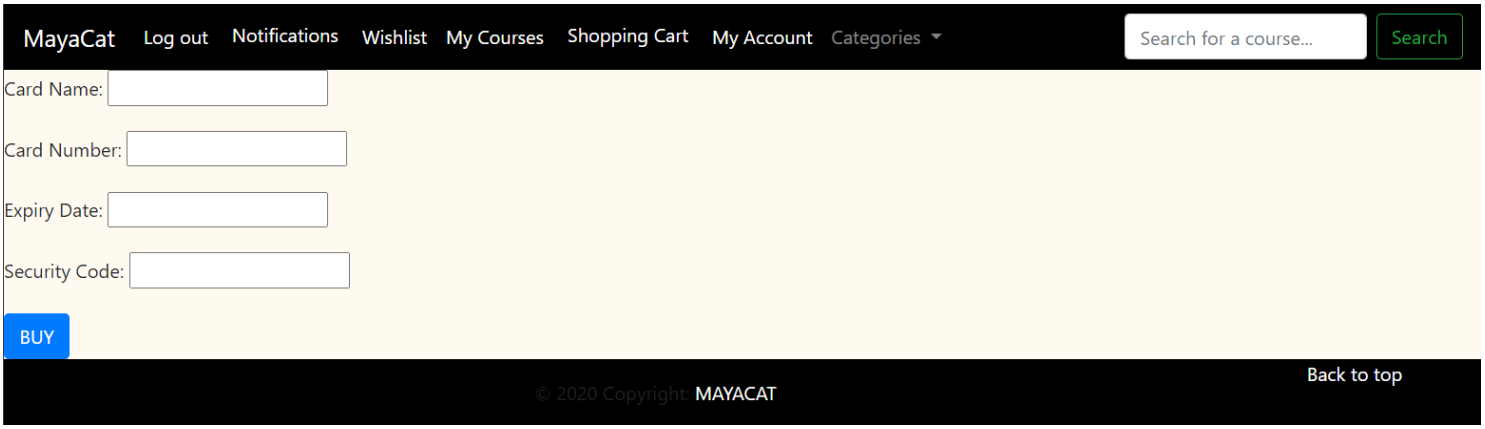
course to its contributor), username of a user who already has the course. If the process is not successful after you have clicked on the “Save Username”, at the top of the page, you will be presented an error message related to the problem it occurred and the receiver username will not be set as the username you have entered.

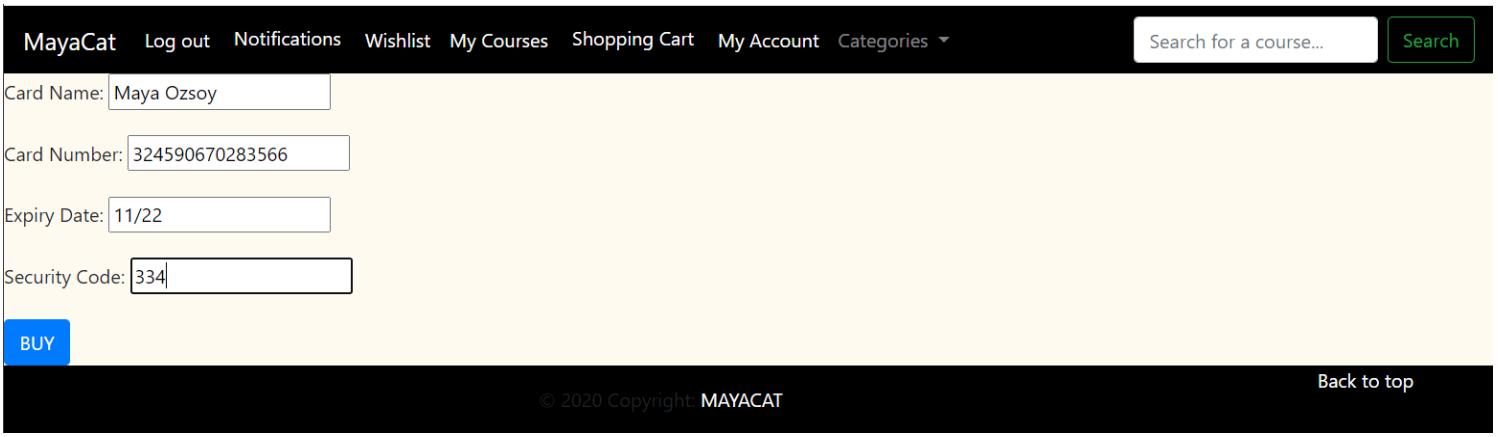




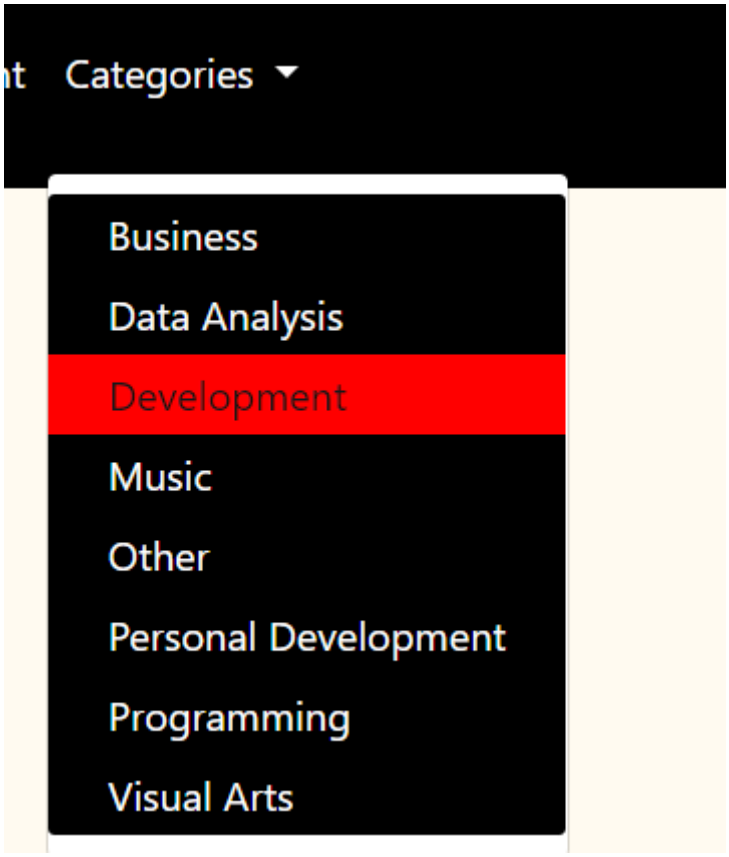

You can see the total amount of all the courses on your cart at the right column, followed by the "Checkout" button. "Checkout" button will lead you to the Checkout page.

- **Checkout:** The checkout page presents you four text fields you should enter: Card name, Card Number, Expiry Date, and Security Code. After you have entered the information required to these fields, you can complete the purchasing process by clicking on the "Buy" button below. If the process is successful, the "Buy" button will take you back to your Shopping Cart which will be empty. If any of these fields are left blank, you will not be able to buy the course and the "Buy" button will warn you to fill the field that you have left blank.

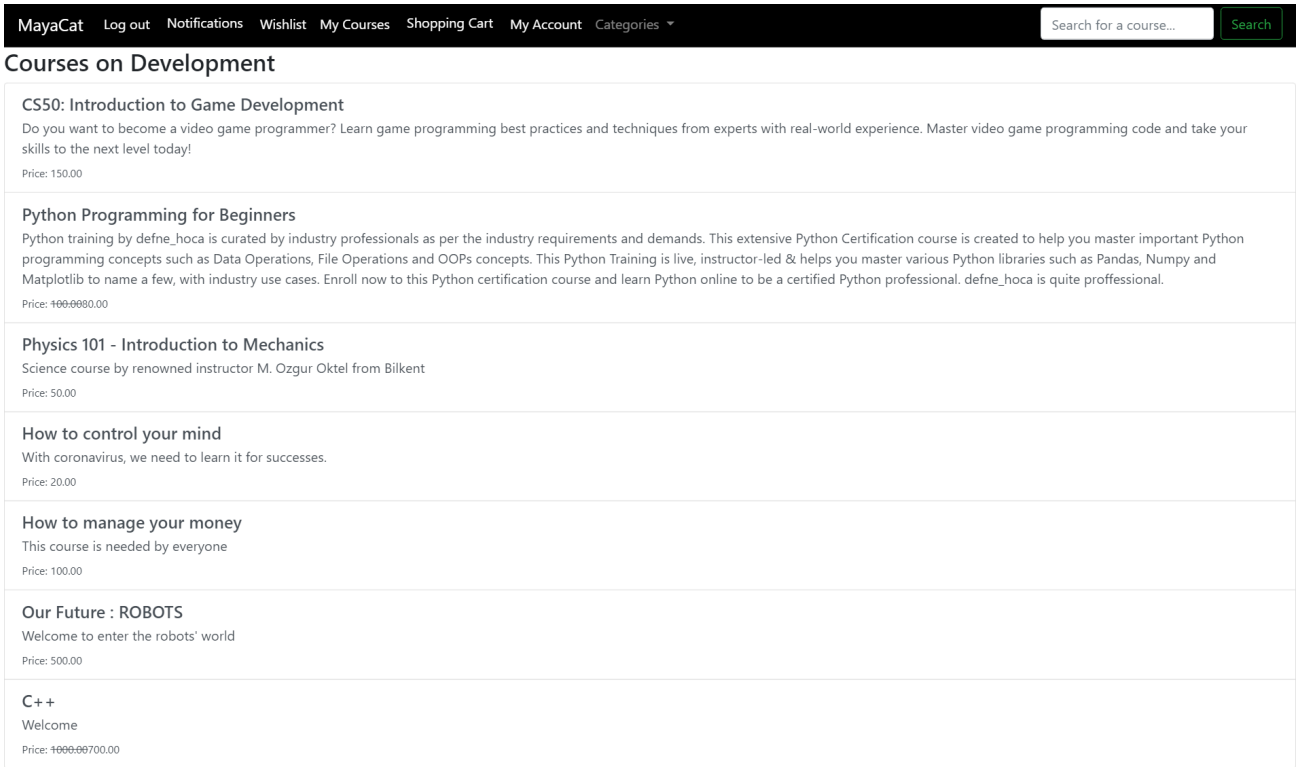





- **Categories:** In the dropdown option named "Categories" in the upper navigation bar, topics for courses are listed. By selecting one of these options, the user will be directed to a page listing only courses that are registered as on topic, and they will be given information on these courses as well.




To see a list of courses in this category, you click on "Categories" first and then select one of these options.




Here is how the page looks like when a category is selected. The names of the courses, their descriptions, and their prices (along with their discounted prices if any discount is applied to them, signified by the strikethrough (~~strikethrough~~) for the old price right next to the discounted prices. Each of these panels are clickable, and direct to the main page of the respective course.

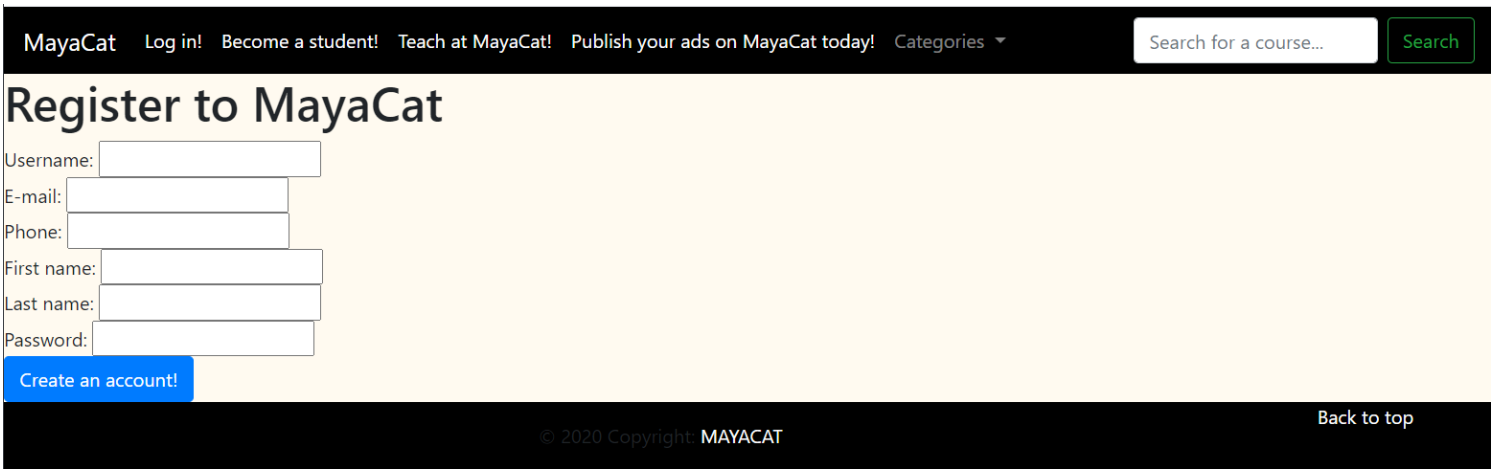
## How will you use MayaCat?

### I am a student:

- **Create an account:** You can start by creating your account. Select “Become a student” button at the top of the page and go to the register page.

  In order to create your own account, you must find a unique username for yourself. Do not worry, if the username you entered is not unique, the system will warn you. A warning message will be displayed on your screen, stating the issue, and a button for you to go back to the register page. In the register page, you must continue by entering your email, phone number, and setting a password for your account. We will cover your entry for the password part to secure your privacy.

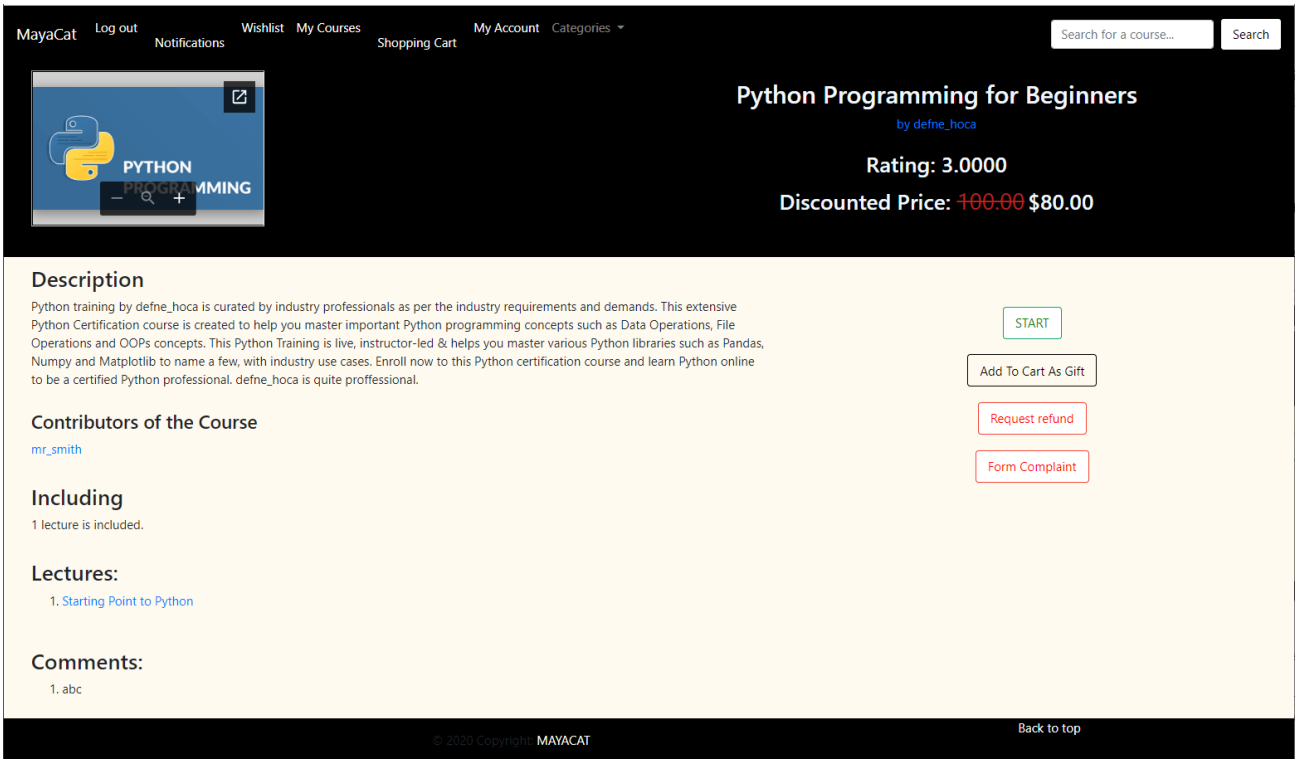
  By clicking on “Create an account!” button at the end of your registration page, you can create your own account in MayaCat with an e-mail, a phone number, password, and a unique username. After you click the button and register, you will be directed to the login page.



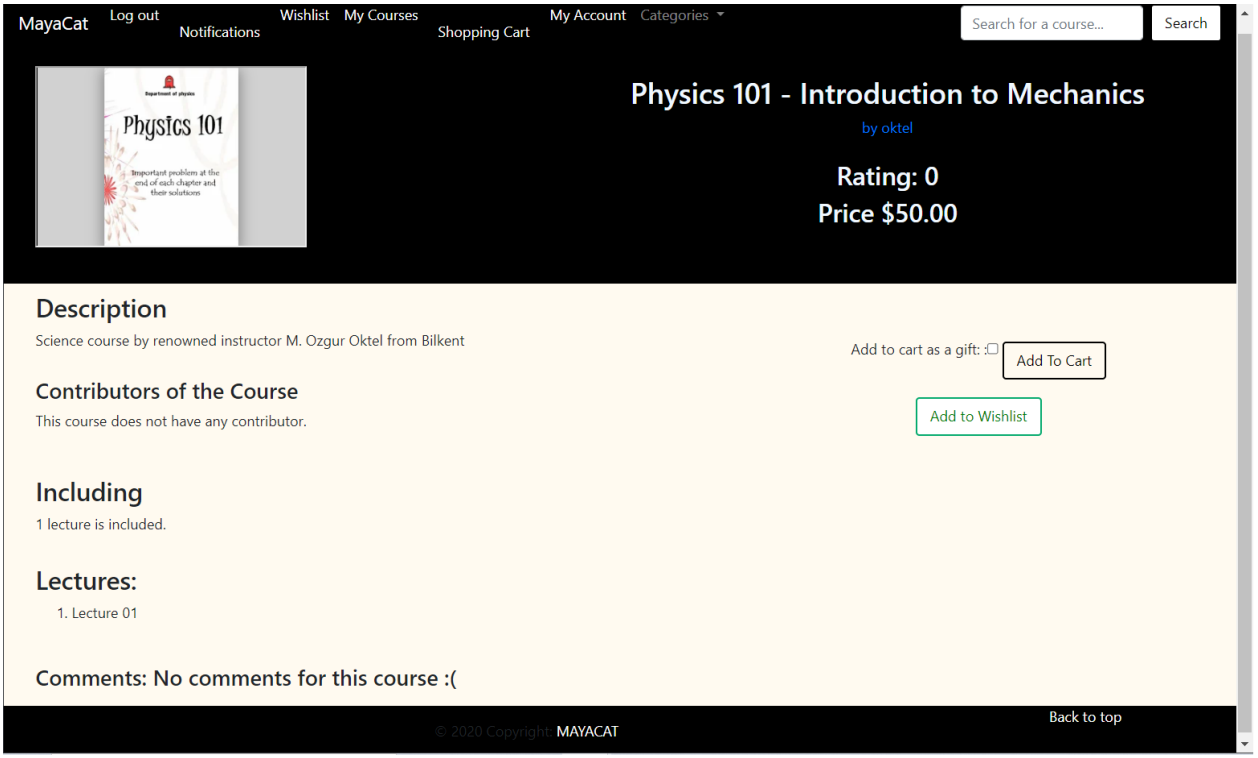

- **See a course in detail:** In the course page, you can find details about the course. You will be presented with the name, the owner, the rating, and the image of the course. By clicking on the name of the owner, you can visit their profile page. The regular and discounted (if any) price can be seen next.

  At the left column, the description and the including of the course can be seen. Then, the **lectures** (if any) and **comments** (if any) of the course are presented.

  - If you have already bought the course, you can click on the names of the lectures to see that lecture's page.

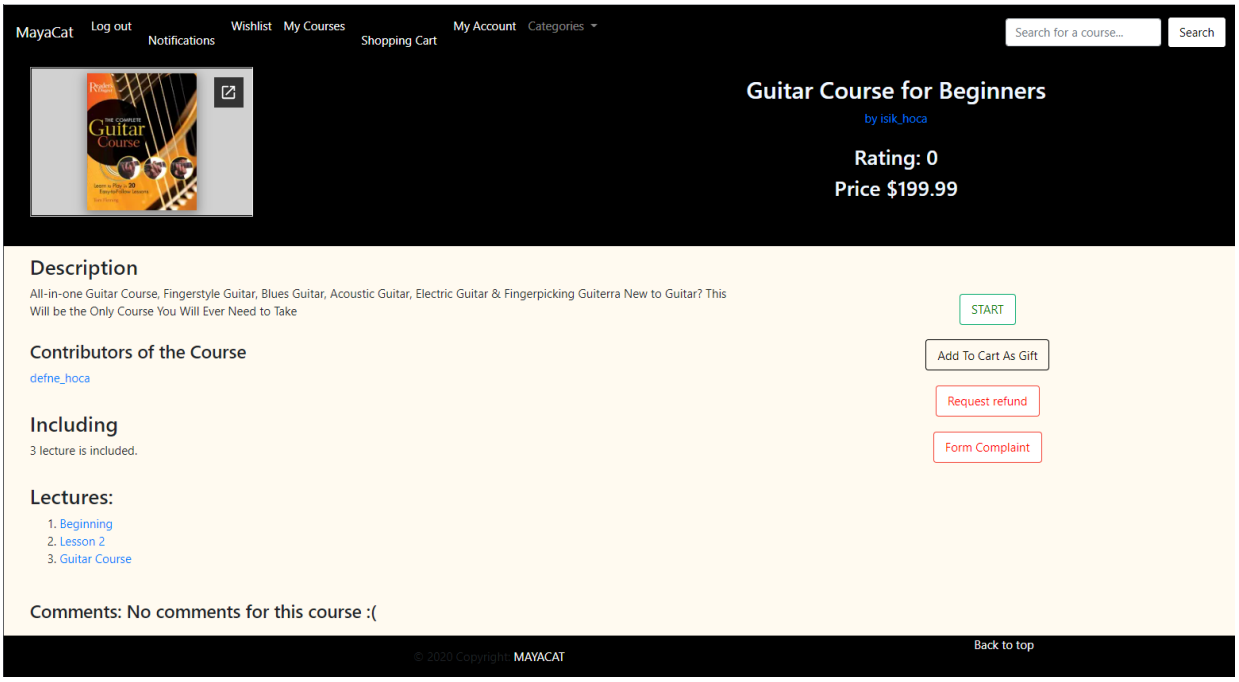


- If you did not buy the course yet, you will only be presented with the names of the lectures.

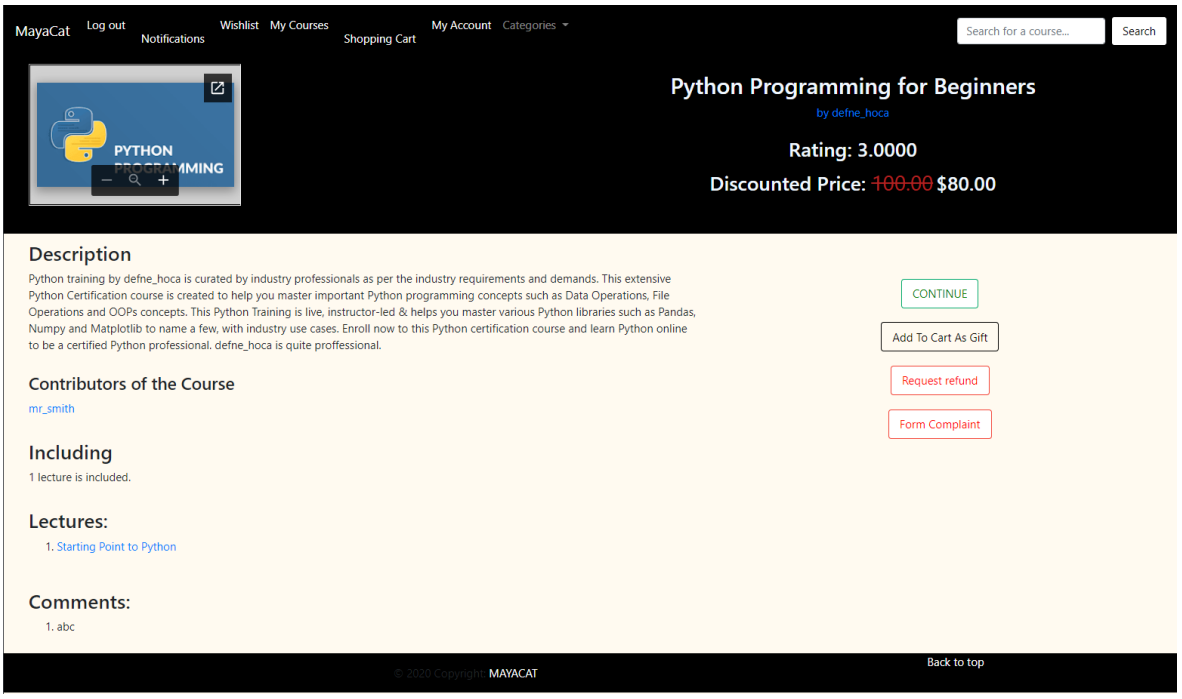



If you have already bought the course, you will see a button related to **continuing to the course lectures** at the right column.

- If you did not start the course yet, you will see the "START" button after the rating of the course. By clicking on it, you will go to the first lecture of the course and start your journey.



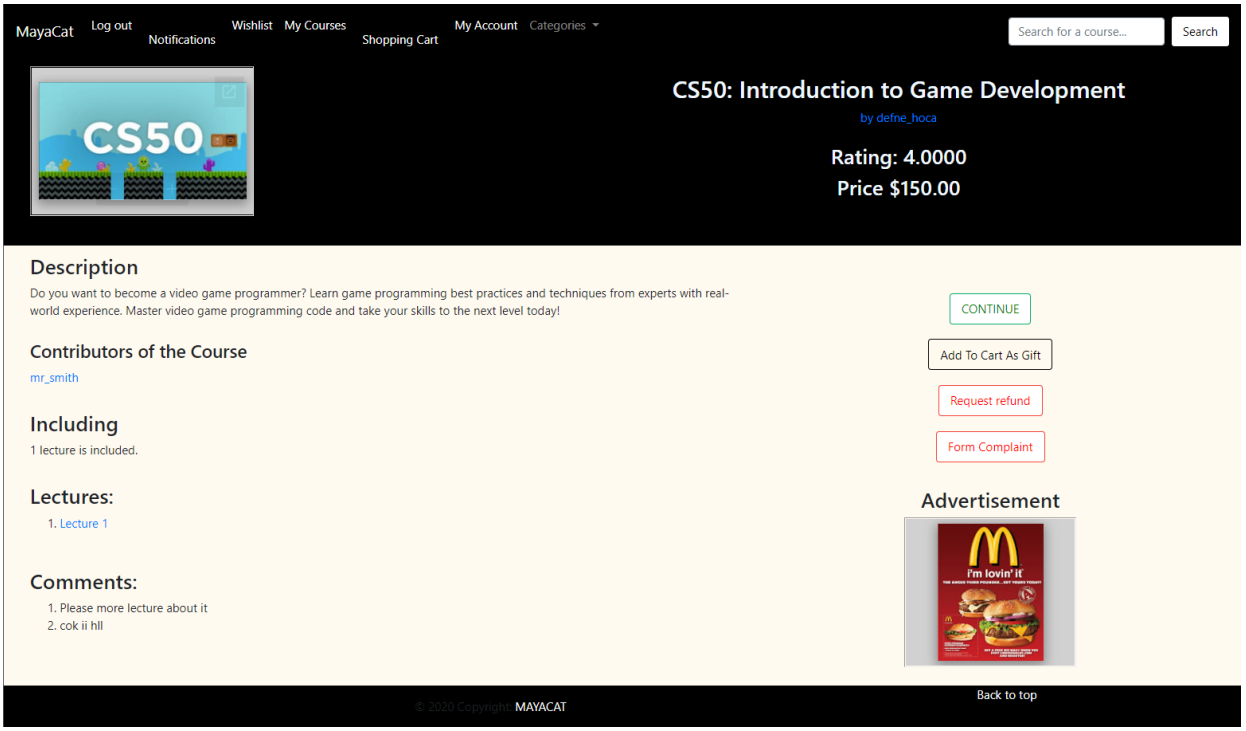

- If you started the course and have not finished the course yet, you will see the "CONTINUE" button after the rating of the course. By clicking on it, you will go to the next lecture (the one after the lectures that you recently watched) of the course and continue your journey.



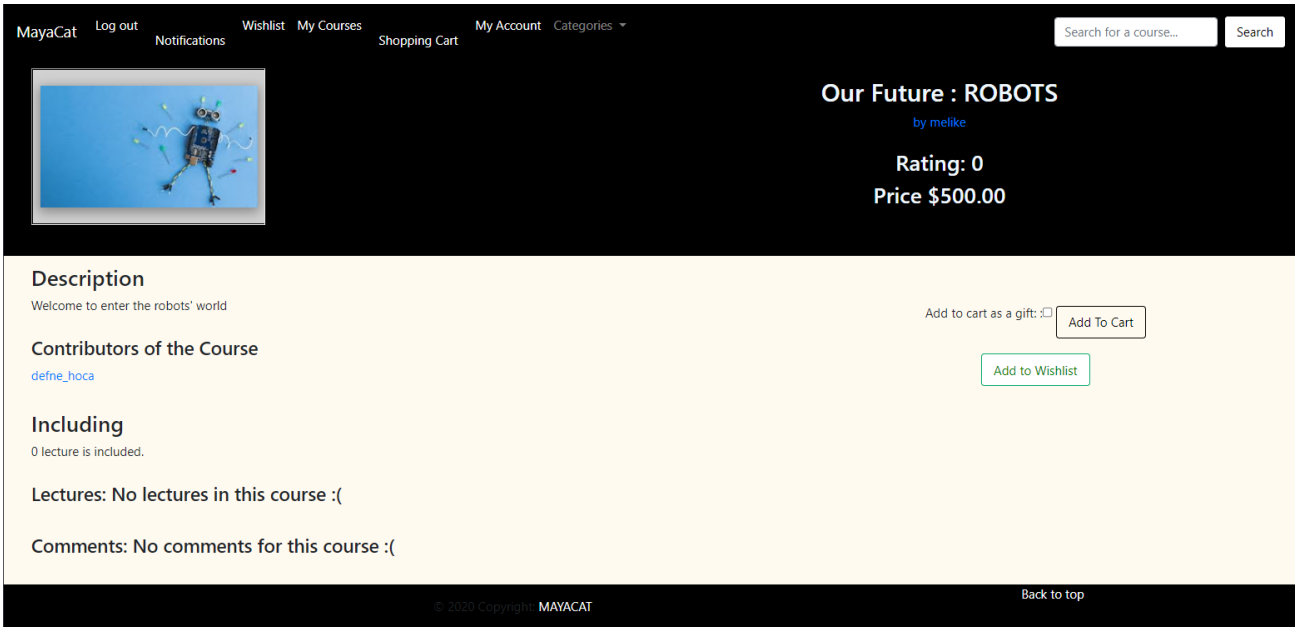

You will see a button related to **buying the course** in the right column.

- If you have already bought the course, you will be presented with the "Add To Cart As Gift" button, disabling you to buy the same course again. So, you do not

worry about checking whether you bought the course before. However, you can still gift the course to someone by clicking on the button. The button will take you to your shopping cart and you can view the course, added to your cart as a gift.

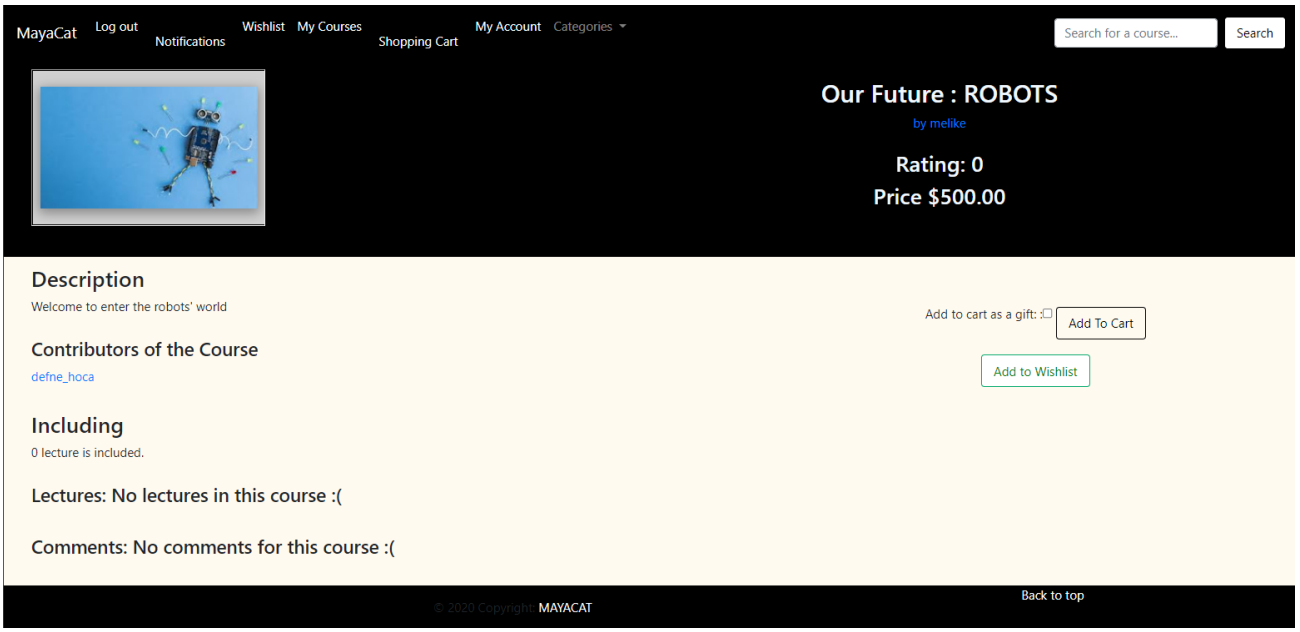



- If you did not buy the course yet, you will be presented with the "Add to Cart" button. By clicking on "Add to Cart", you can add the course, which you are viewing the details, to your shopping cart. Or firstly you can check the check button next to the "Add to Cart" button, saying "Add to cart as a gift" and then click on the "Add to Cart" button, adding the course you are viewing to your cart as a gift. The button will take you to your shopping cart and you can view the course regularly or if you checked the check button, as a gift.

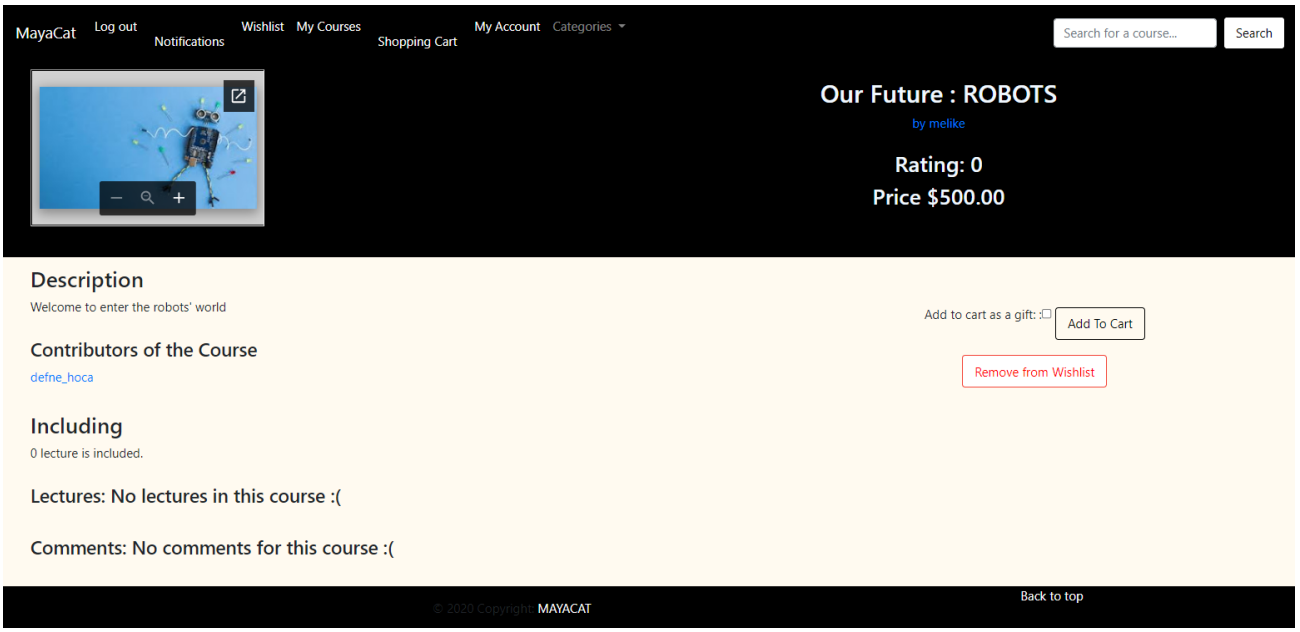



Then, you will see a button related to adding the course to your **Wishlist**.

- If you are not sure to buy the course yet; then, you can simply click on the "Add to Wishlist" button, adding the course to your Wishlist. The button will take you to your Wishlist where you can view the course as added to your Wishlist.

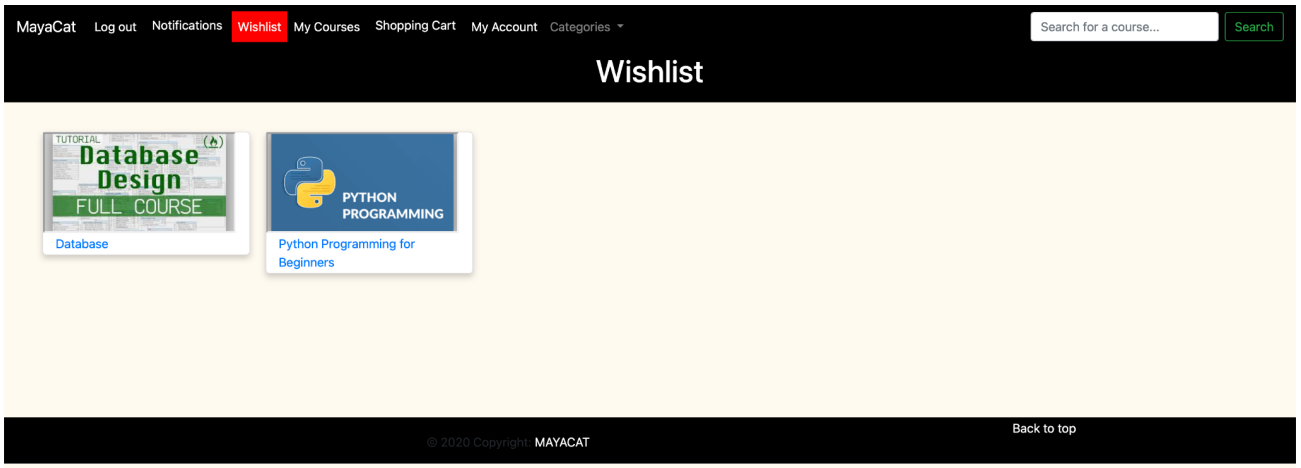



- If you have already added the course to your Wishlist; then, "Remove from Wishlist" button will be available for you. The button will take you to your Wishlist where you can view the course as removed from your Wishlist.



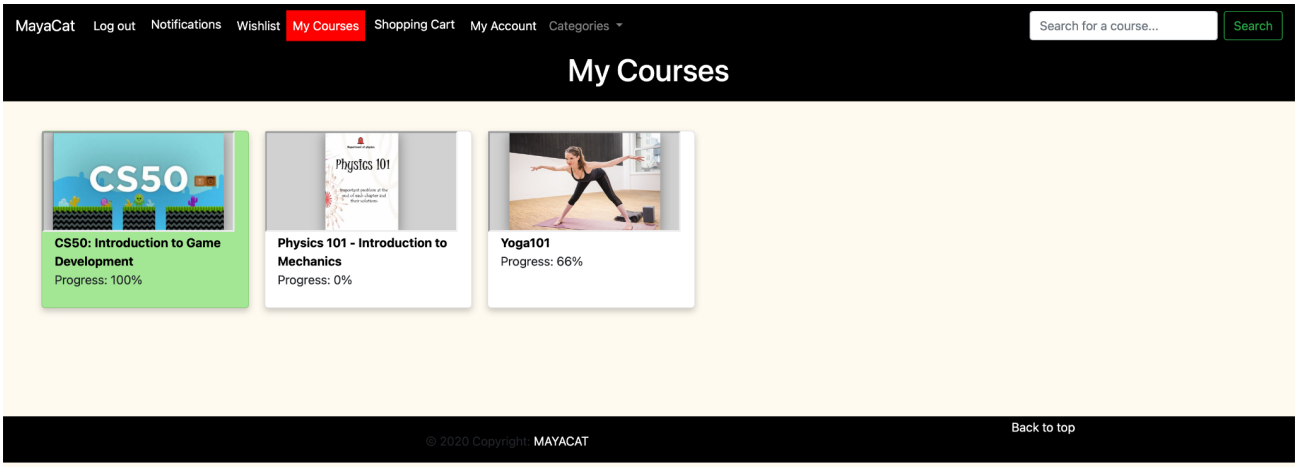

- **See wishlist**

  The courses added to the wishlist are visible with the "Wishlist" button on the top of the website. They can go to the course page by clicking on the names of the course.




- **See my courses**

  In the student view, enrolled courses are listed with the "My Courses" button. Here, progress of the student is added to the below of the courses and colored with green if the course is finished by the student. Also, they can go to the course page by clicking on the names of the course.

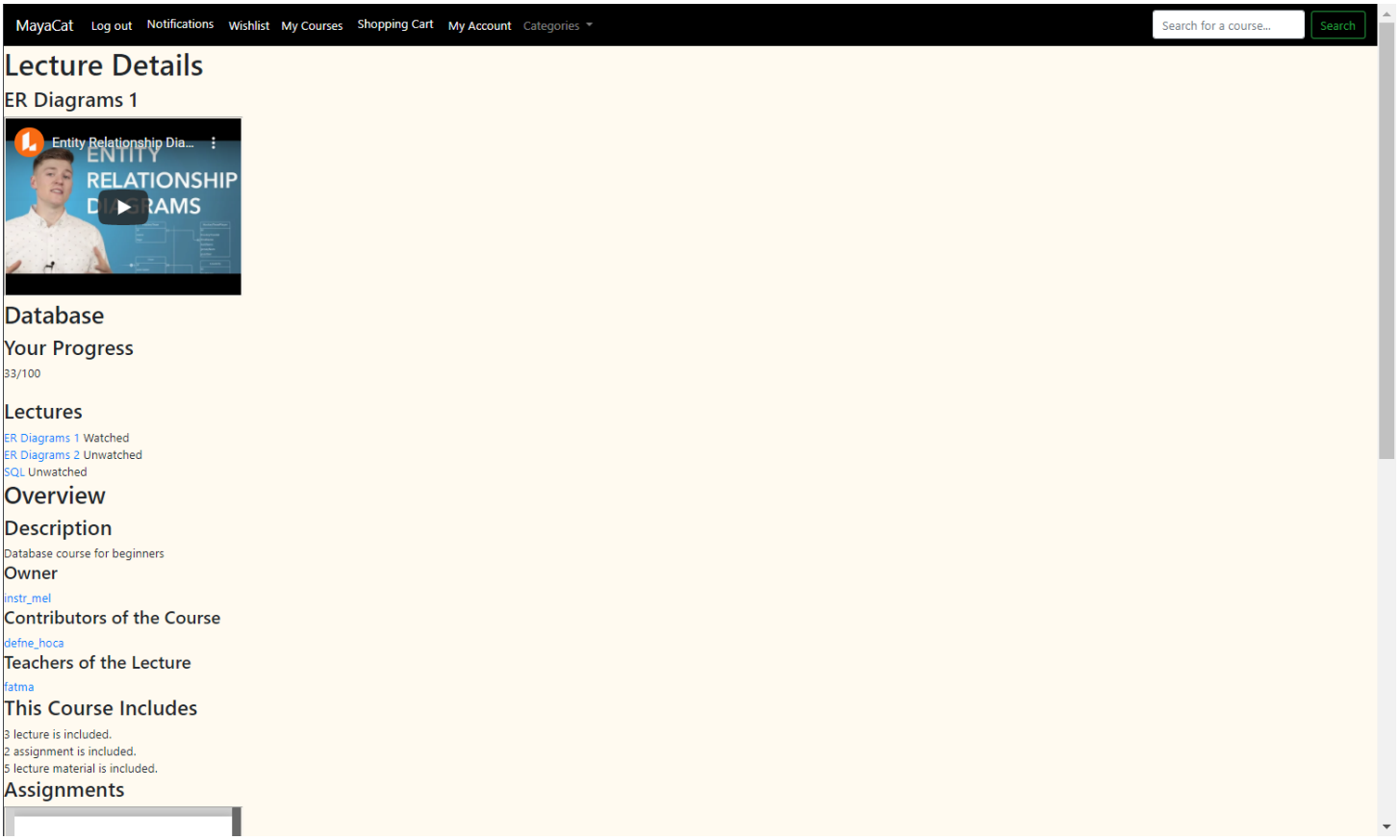



- **See a lecture in detail:** In the lecture page, firstly, the "**Lecture**" section will be presented to you. you will see the name of the lecture, the lecture video, the name of the course that the lecture belongs, and your progress. The progress section will inform you about how much of the course you have completed. You will be presented with the percentage of the ratio of the lectures you have watched compared to the overall lectures in the course.

  The lecture list of the course can be seen below the progress section. You can click on the name of the lecture to be directed to the page of that lecture. Next to the name of the course, you will be presented with the status of the completion of that lecture as "Watched" or "Unwatched". You can track the courses you have completed by looking at the list and continue to the next lecture which is the first lecture that is tagged as "Unwatched".

  The next section is titled as "**Overview**". This section aims to give you general information about the course whose lectures you are currently viewing. The subsections of Overview are "Description" which gives the brief description of the course, "Owner" who is the instructor owns the course, "Contributors of the Course" who are the instructors made contribution on the course such as adding lectures, assignments, announcements and materials, and "Teachers of the Lecture" who appeared on the lecture video.

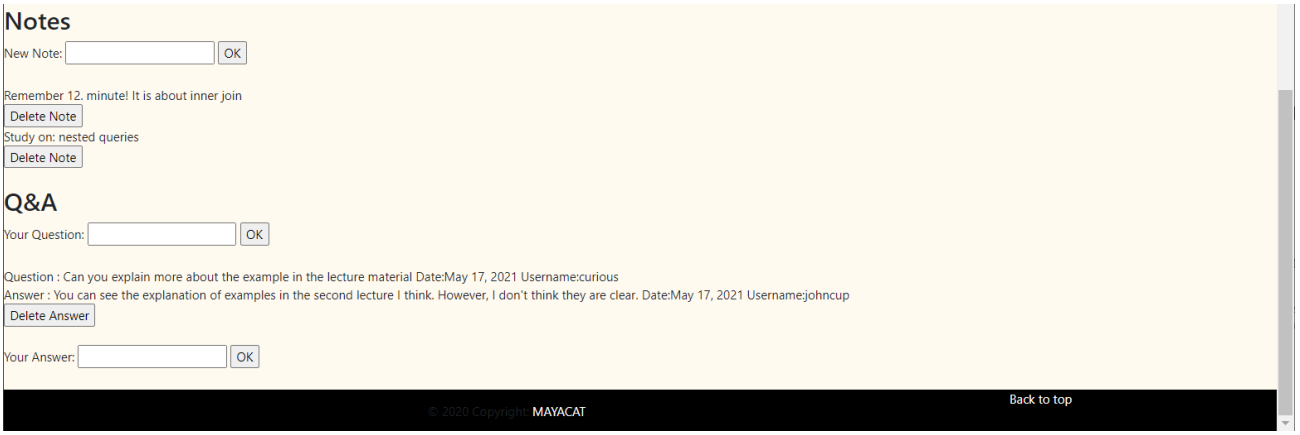
  The Overview is followed by the section "**This Course Includes**" which includes the number of "Assignments" and "Lecture Materials". Then, you can view the lecture material and assignments by clicking on the top right of the viewed image.




The "**Announcements**" section shows announcements published by the owner and contributors whose content related to the course. These announcements are not specifically for lectures but they are for the course.

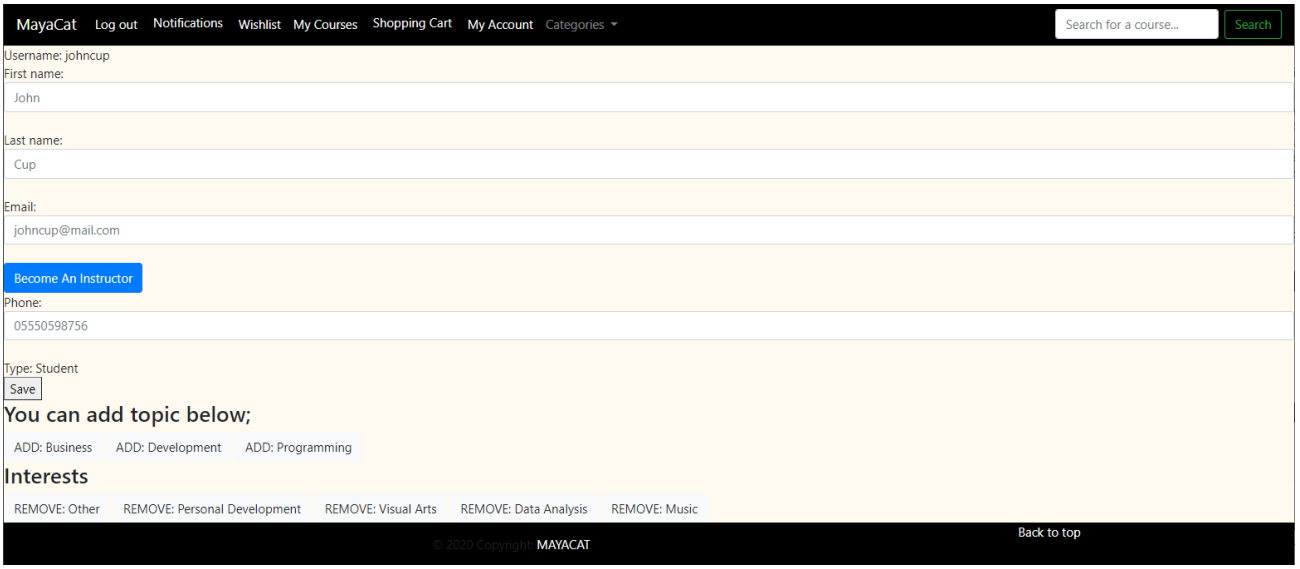
The "**Notes**" section stores private notes of users for lectures. These private notes are saved within a lecture so that neither another user can see these notes nor the owner of the notes can access these notes from other lectures. These notes can be deleted by the owners.

The "**Q&A**" section includes questions and answers of both students and instructors. In here, both of these posts can be deletable by the owner and if a question is deleted, its answers also will be deleted from the database.




- If you have already registered MayaCat as a student and you also wish to be an instructor, you do not have to create another account! We cover it for you. On the top menu bar, between “Shopping Cart” and “Categories”, you will see a button named “My Account”.

  Here, you can see your username, name, last name, email, phone number, user type, your interested topics and you can update these information, add and remove your interested topics and become an instructor.




The "Become An Instructor" button will automatically make you an instructor also. You can continue to use the students features of MayaCat as well as instructor features. The button will also disappear when you click on it, the "type" information on your account page will be updated to "Instructor" from "Student", and the "Your Instructor Description" will appear to you to fill. You can fill your description anytime you want and after you fill the text field, do not forget to click on the "save" button underneath it to save the changes you have made. Congratulations, you are also an instructor now!

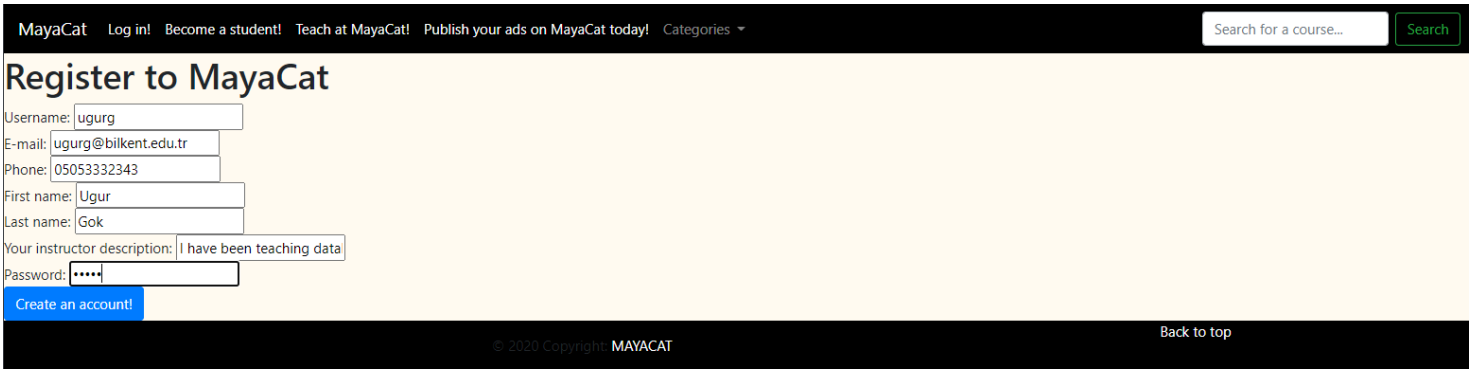
## I am an instructor:

- **Create an account:** You can start by creating your account.

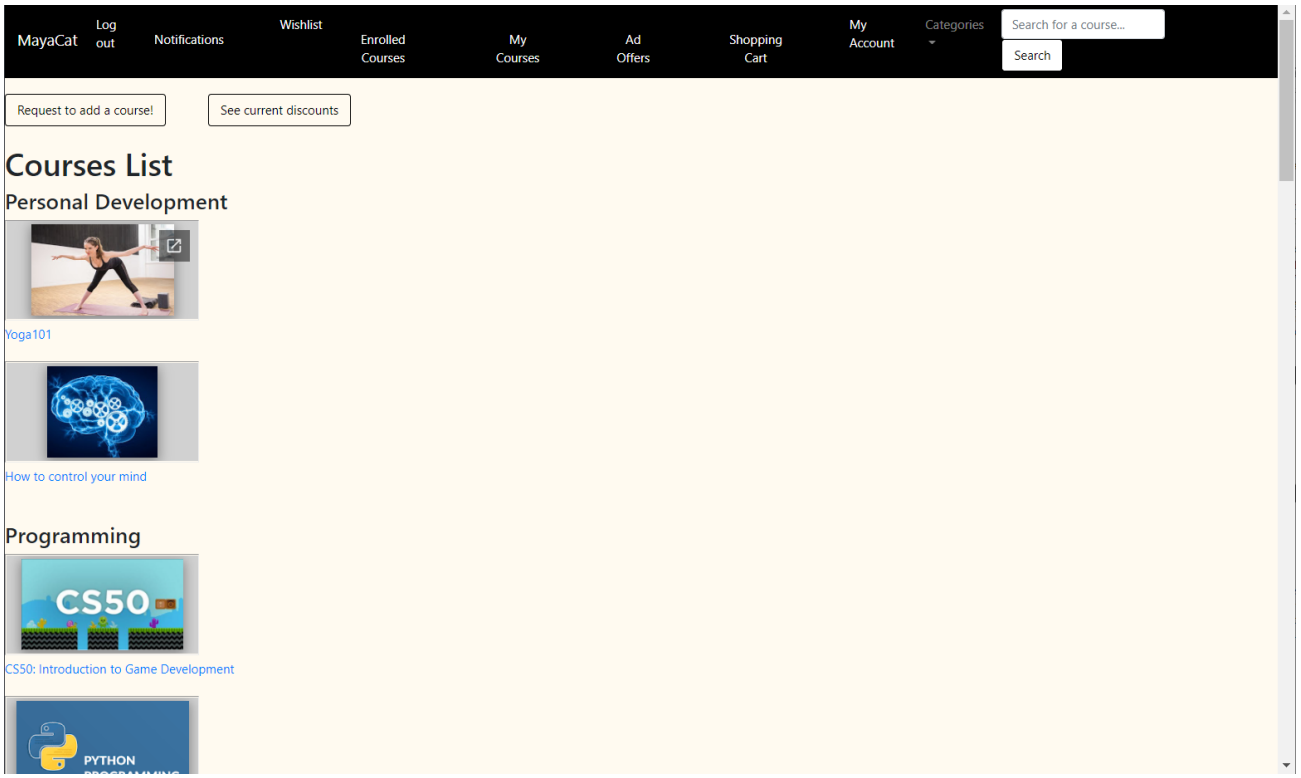
    - **If you are not registered MayaCat** yet, select "Teach At MayaCat!" button at the top of the page and go to the register page.

    In order to create your own account, you must find a unique username for yourself. Do not worry, if the username you entered is not unique, the system will warn you. A warning message will be displayed on your screen, stating the issue. In the register page, you must continue by entering your email, phone number, first name, last name, your instructor description (your biography), and set a password for your account. We will cover your entry for the password part to secure your privacy.

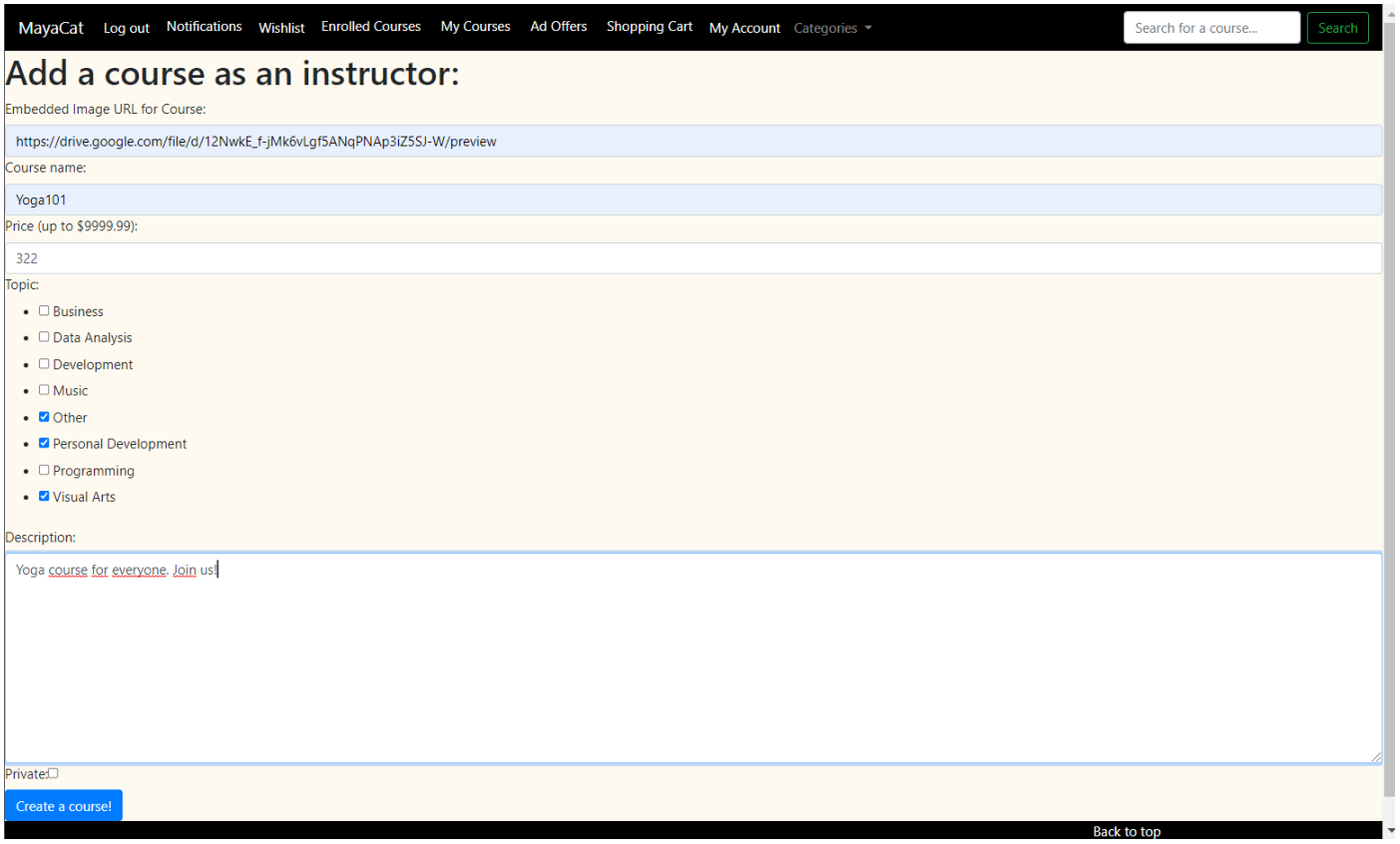
    By clicking on "Create an account!" button at the end of your registration page, you can create your own account in MayaCat with an e-mail, a phone number, password, and a unique username. After you click the button and register, you will be directed to the login page.




- In the main page of the instructor, two buttons are different from the other users. "**Request to add a course!**" and "**See current discounts**" buttons. The first one directs to the create new course and the second one directs to the discount offers from the admins.

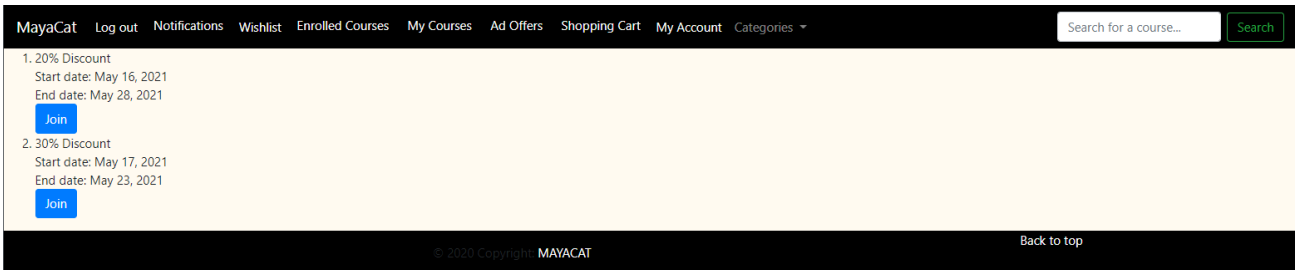


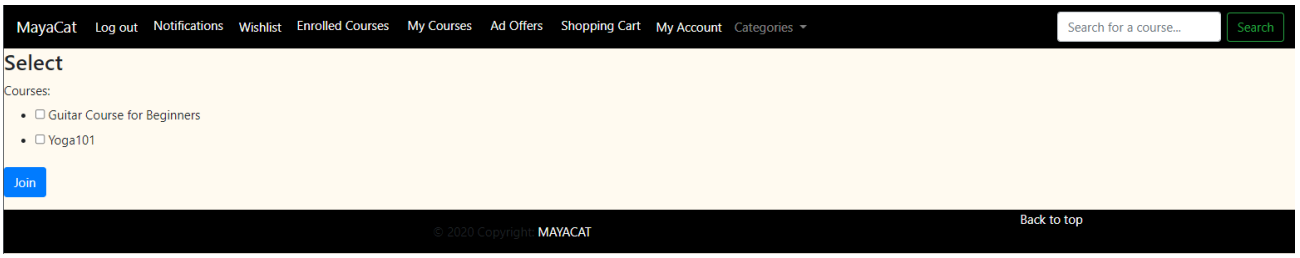

  - **Create New Course**: This button will take you to the course addition page. Here, an image link from the Google Drive will be added to the embedded image URL for the course part and the name of the course will be entered. Related topics for the course can be chosen from the possible topics and description will be added. Also, there is a private option in the creation of the course. If the private check button is checked, the course will be private and only be accessible by its URL. You can send this URL to students whom you wish to enroll in the course. When a student opens the course page of a private course by entering its URL, s/he is automatically enrolled in the course. Then with the "Create a course!" button, the course will be added.



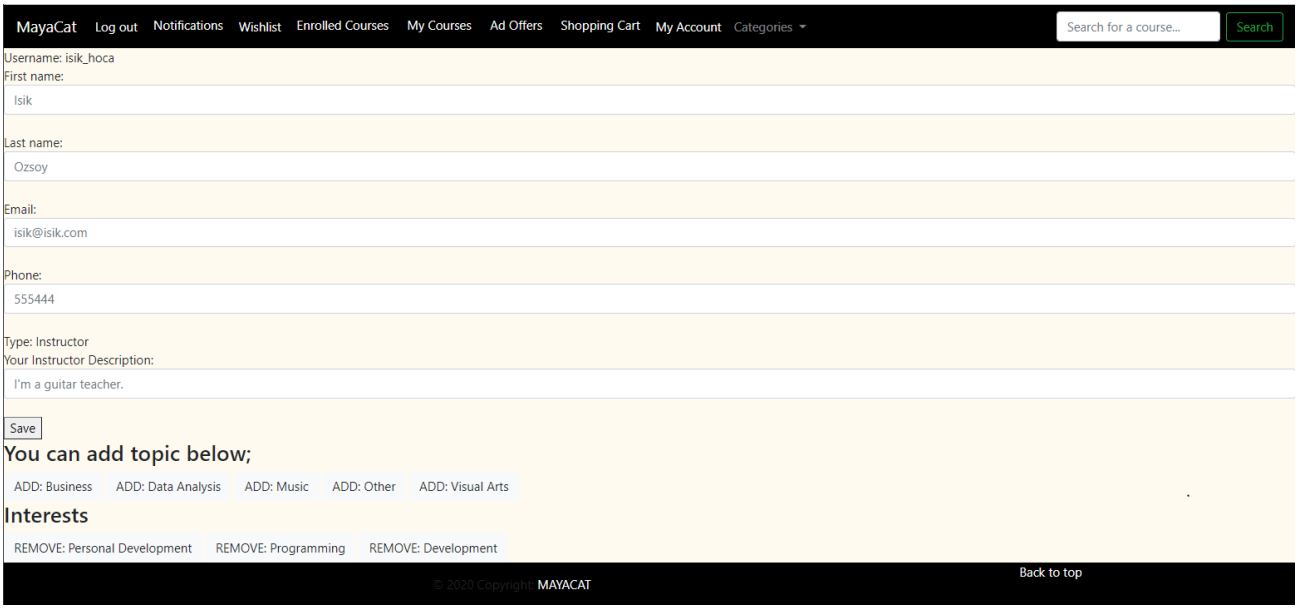

- See Current Discounts

  Here, offered discounts from the admin are seen by the owner of the courses. Just the possible discounts seen in this page, but with the "Join" button instructor can see the possible courses that discount can be applied. Then they will choose the courses that they want this discount and with the last "Join" button, discounts will be applied to the courses during the discount interval.



oWith clicking the My Account button on the top of the page you can see your username, name, last name, email, phone, description and interested topics. These information can be updated with the “Save” button and new interested topics can be added and previous ones can be deleted.

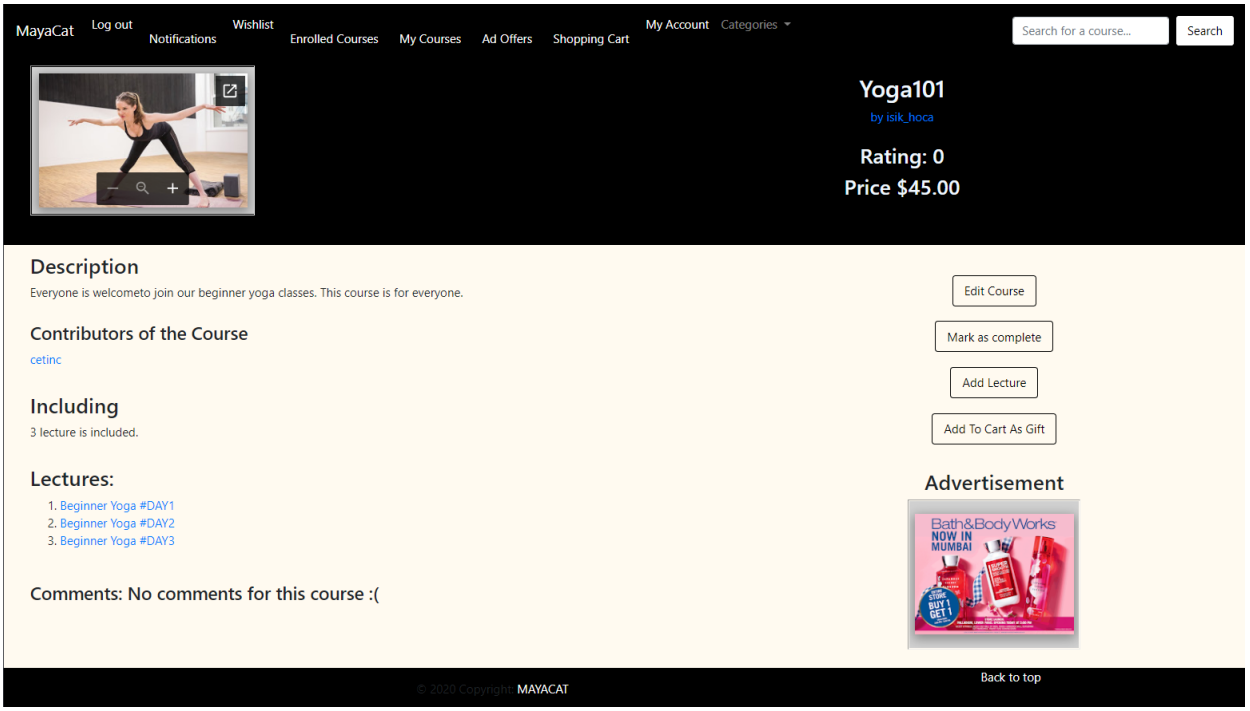



**See a course in detail:** At the left column, the description and the including of the course can be seen. Then, the lectures (if any) and comments (if any) of the course are presented.

o If you are neither the owner not the contributor of the course, see the related part under the student title.

o If you are the contributor of the course, you can click on the names of the lectures to see that lecture’s page. At the right column, you will be presented with the “Add To Cart As Gift” button, disabling you to buy the course you are contributing. So, you do not worry about accidentally buying the course you already have the access. However, you can still gift the course to someone by clicking on the button. The button will take you to your shopping cart and you can view the course, added to your cart as a gift.

o If you are the owner of the course, you can click on the names of the lectures to see that lecture’s page. At the right column, you will be presented with several buttons.

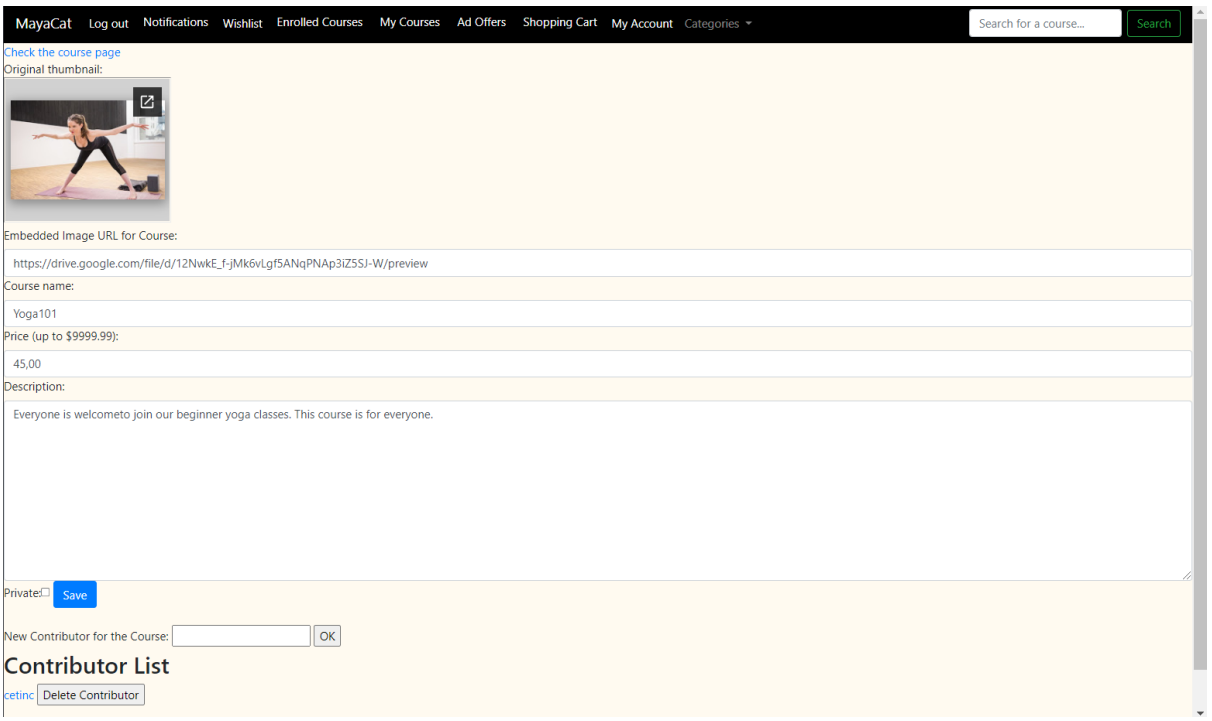



Firstly, "**Edit Course**" will be seen. The button will take you to the course edit page where you can change the embedded image URL for course, course name, price (up to $9999.99), description by writing the new value into the text field. Also, the private attribute of the course can be changed into the private by checking the check button or undo the action by removing the check from the check button. If you click on the "Save" button at the end of all these options, the changed values will be saved. If you want to view the current course page of the course, you can click on the text at the top of the page, saying "Check the course page".

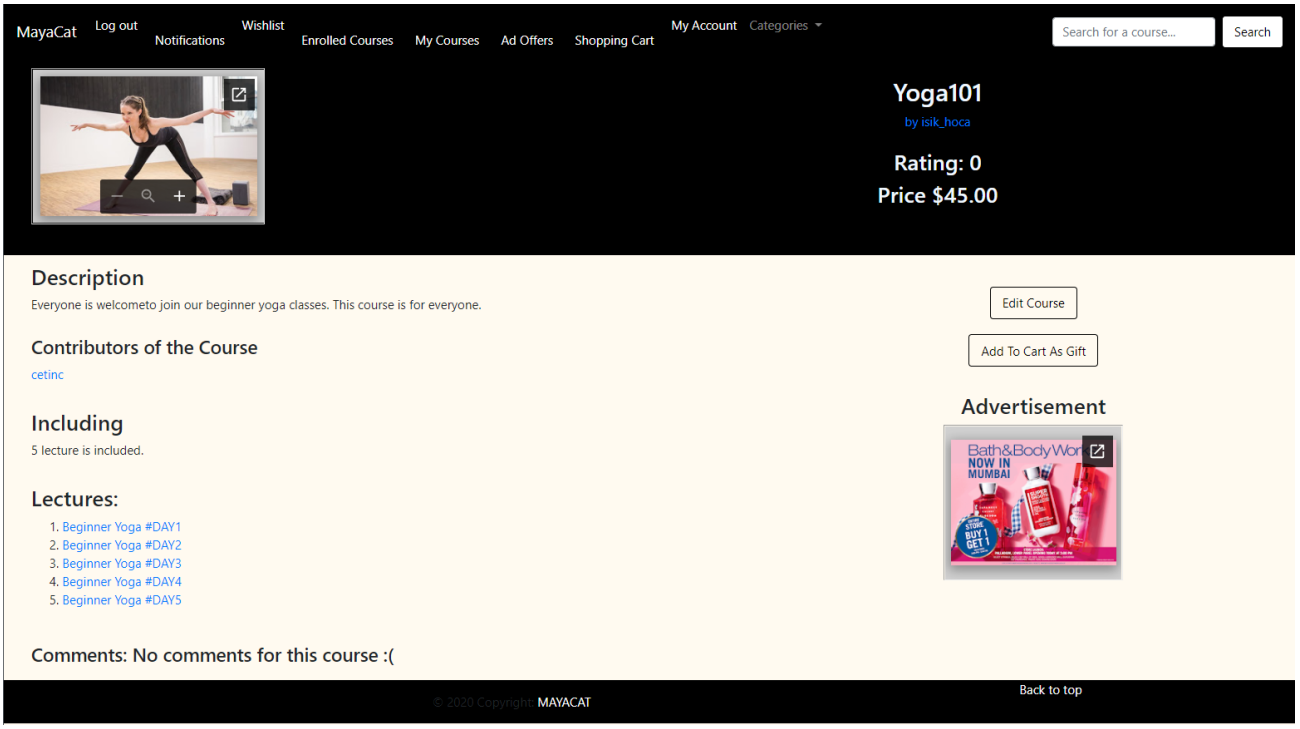
You can add a new contributor for your course by entering their username to the text field and clicking on the "OK" button next to it. After a successful addition, you can see the new contributor at the "Contributor List" below the addition section, with all other contributors of the course. The addition process will be unsuccessful,

- If you enter a username who is already a contributor of the course. When the page is reloaded after you click on the "Ok" button, you will see in the "Contributors List" that the user is not added twice.
- If you enter a username which does not exist. The page will be reloaded after you clicked on the "OK" button and an error message stating the issue will be displayed at the top of the page. As you can see from the "Contributors List", the non-existing user will not be added to the contributors.
- If you enter a username whose user type is not an instructor (student, advertiser, or admin). The page will be reloaded after you clicked on the "OK" button and an error message stating the issue will be displayed at the top of the page. As you can see from the "Contributors List", the non-existing user will not be added to the contributors.

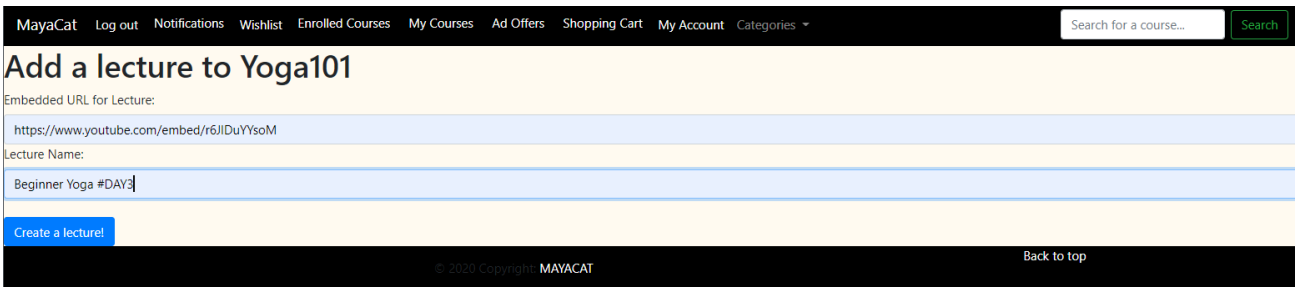
The “**Contributors List**” will display all the added contributors of the course along with the option of the “Delete Contributor” button next to their username. You can click on the username of the contributor to view their account page. If you click on the “Delete Contributor” button, the contributor next to it will be deleted from the contributors of the course and “Contributors List” will be updated according to it.

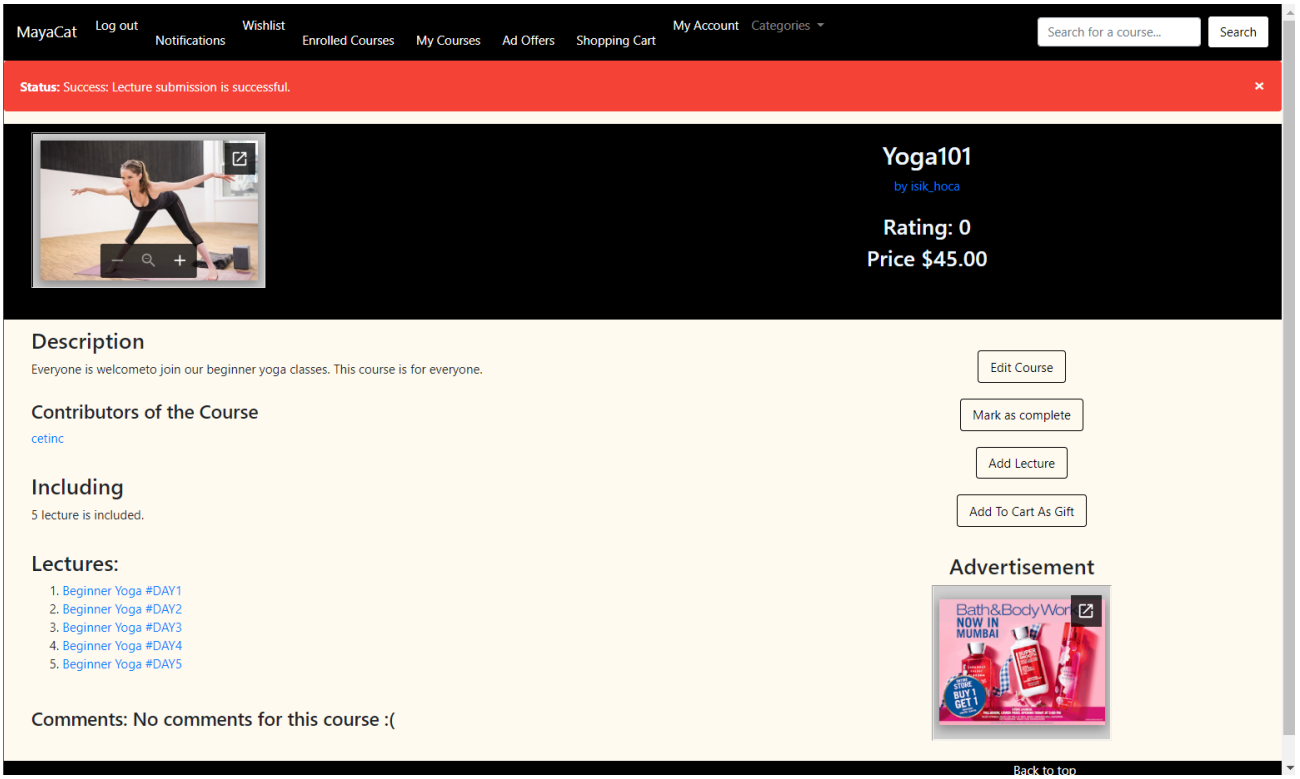



If your course is not marked as completed yet, you will see the “**Mark as Complete**” and “**Add Lecture**” buttons. The “mark as complete” button will mark the course as completed which enables the owner and contributors to add any more lectures; since the course is completed. Also, the reloaded course page after clicking on “Mark as Complete” button will not lack of “Add Lecture” button but also the “Mark as complete” button itself; since, the course cannot be marked as complete twice or the action of marking as complete cannot be reversed. Thus, the reloaded page will not include those 2 buttons.

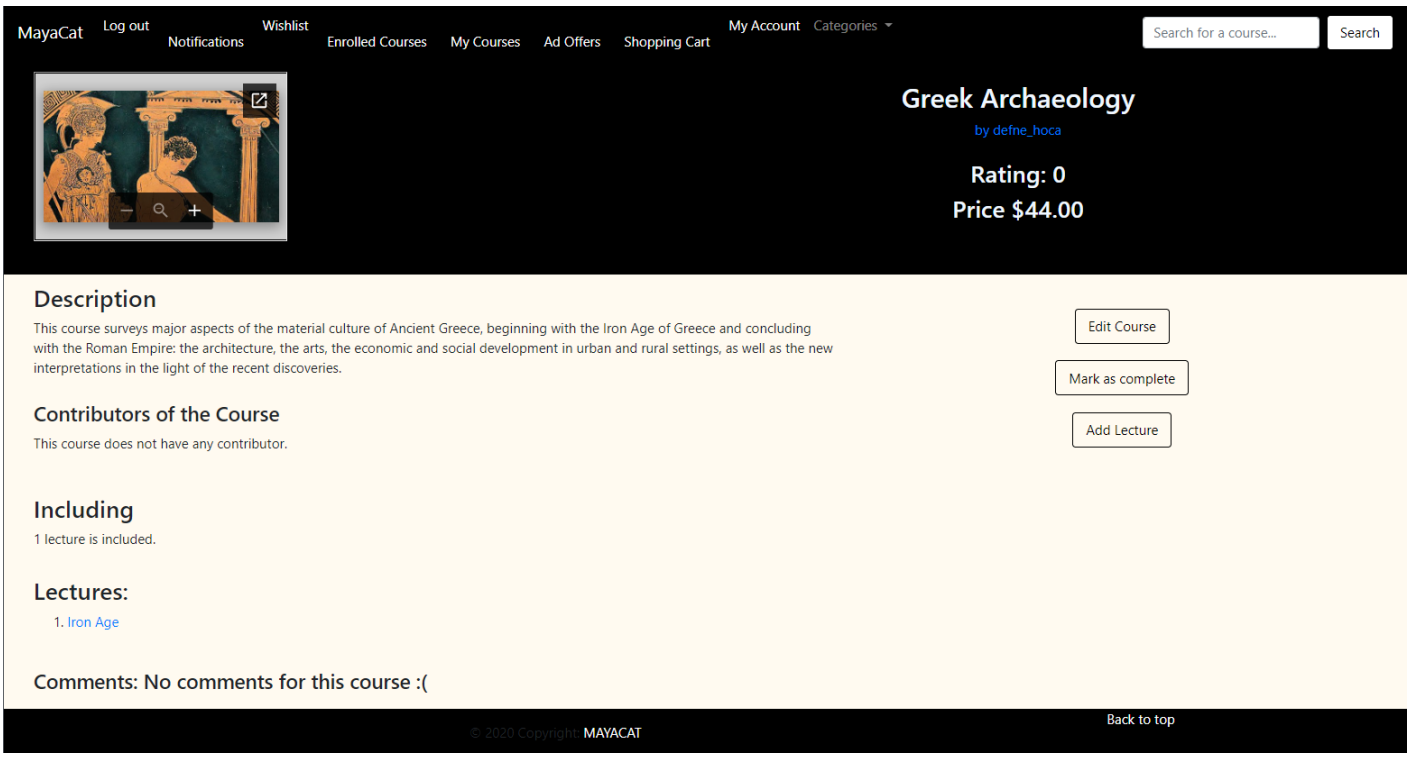



The "**Add Lecture**" button will direct you to the lecture addition page where you will enter an embedded URL for lecture and the lecture name. After completing these text fields, the "Create a Lecture!" the button will take you to the course page again with a status update at the top of the page, saying that the lecture has been added successfully to the course. You can view the new added lecture at the left column of the course page.






Lastly, if your course is not private, the “Add To Cart As Gift” button will be seen, disabling you to buy the course you are contributing. So, you do not worry about accidentally buying the course you already have the access. However, you can still gift the course to someone by clicking on the button. The button will take you to your shopping cart and you can view the course, added to your cart as a gift. The private courses do not have this button because they cannot be gifted or purchased but only accessed via their URLs. In the lower right corner of the course page, advertisements for the course can be seen.




- **See a lecture in detail:** In the lecture page, firstly, the "**Lecture**" section will be presented to you. you will see the name of the lecture, the lecture video. It is continued with the edit lecture section. This section includes adding new assignments and lecture materials sections and adding teachers. These three sections are only visible to the owner and the contributors of the course when the course is not completed. After the course is completed these buttons will be invisible for all of the users.

  "Add new assignment" and "Add new lecture material buttons" are displayed and these buttons open the url forms. These buttons are only visible for the owner and contributors of the course and both of them can add these things. Also, "Close both options" button is for closing the opened furl forms.

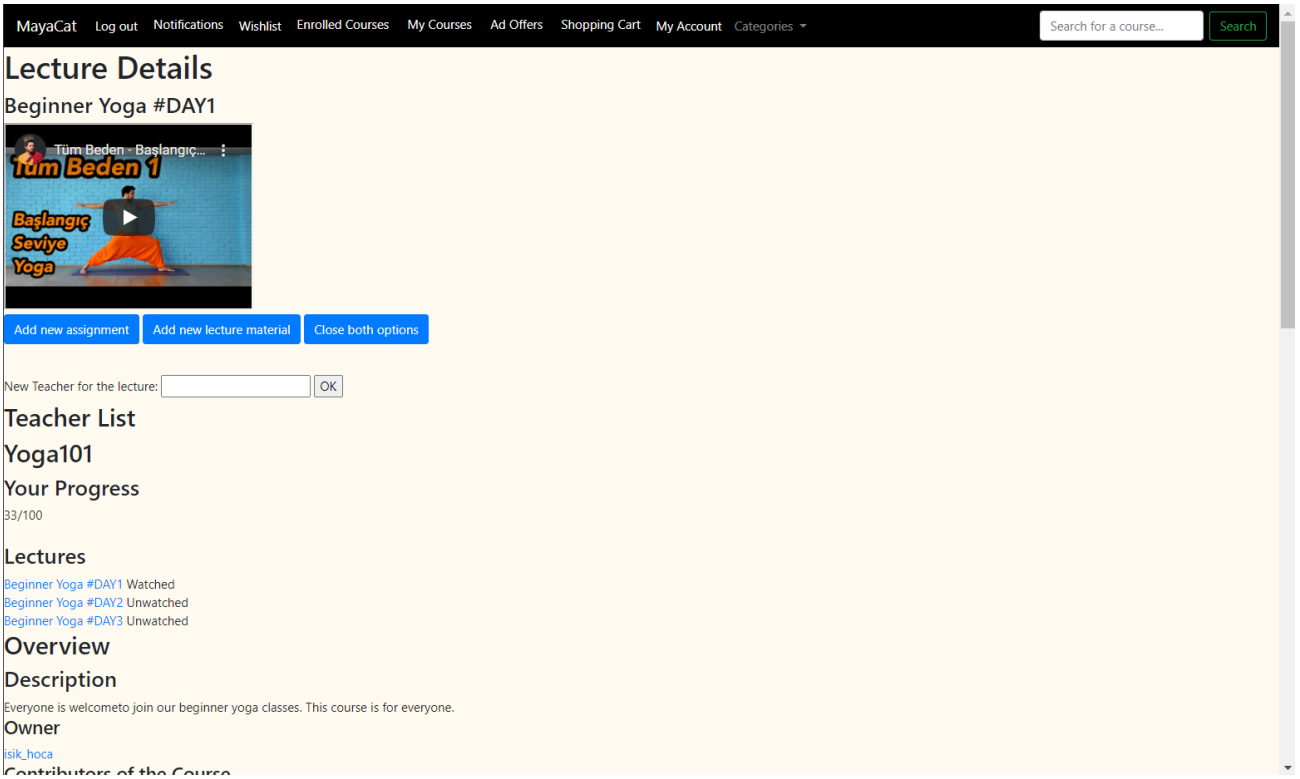
  Then, the "Add Teacher" section is visible for the owner and contributors. They can add the teacher of the lecture with this form and they can delete teachers with the button next to the name of the teacher.

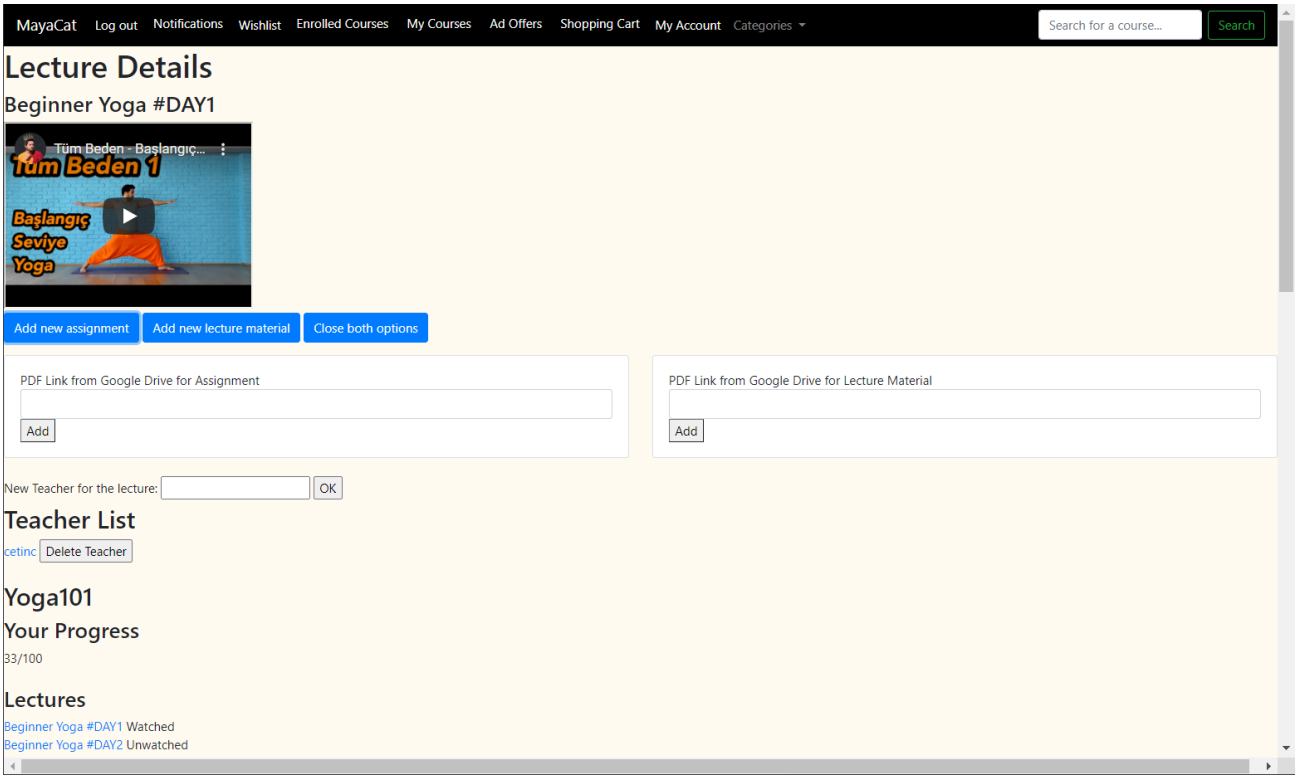
  After that sections are similar to the students' view, the name of the course that the lecture belongs, and the progress.

  The progress section will inform you about how much of the course you have completed. You will be presented with the percentage of the ratio of the lectures you have watched compared to the overall lectures in the course.

  The lecture list of the course can be seen below the progress section. You can click on the name of the lecture to be directed to the page of that lecture. Next to the name of the course,

you will be presented with the status of the completion of that lecture as “Watched” or “Unwatched”. You can track the courses you have completed by looking at the list and continue to the next lecture which is the first lecture that is tagged as “Unwatched”.



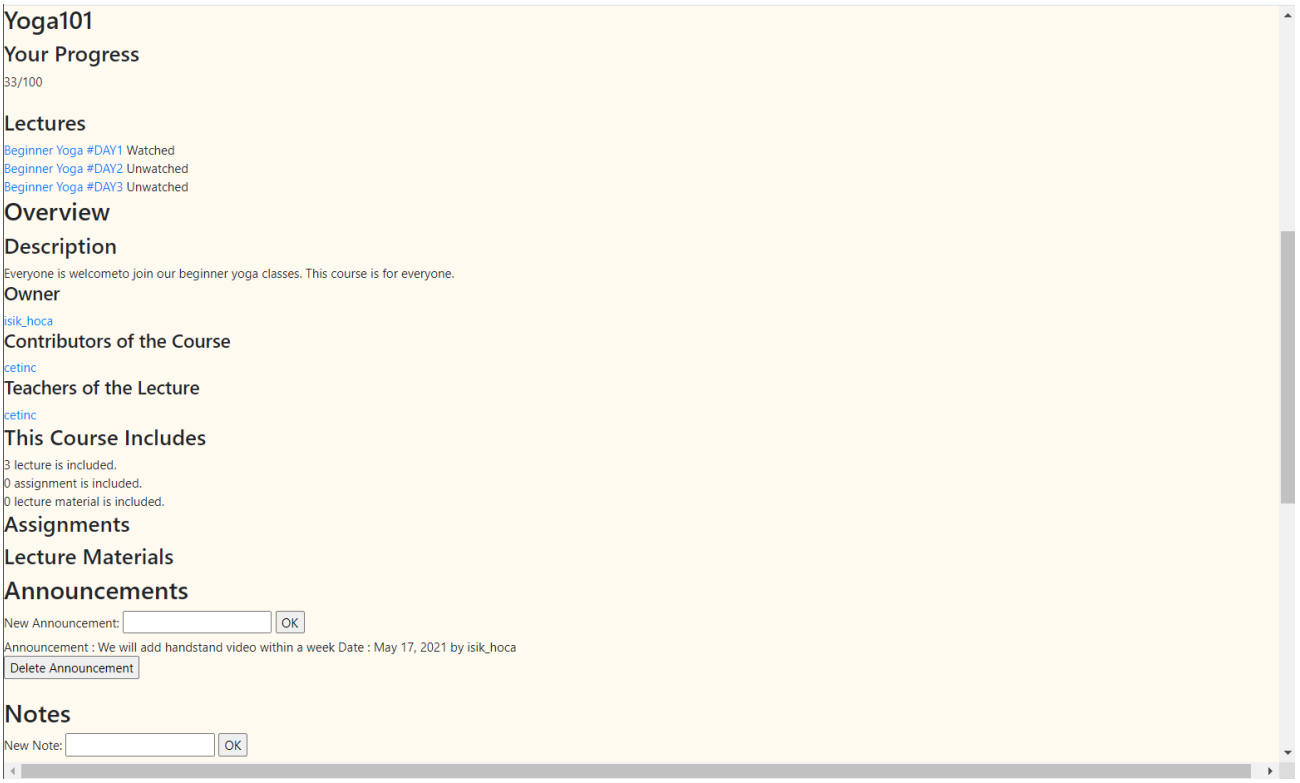
The next section is titled as "**Overview**". This section aims to give you general information about the course whose lectures you are currently viewing. The subsections of Overview are "Description" which gives the brief description of the course, "Owner" who is the instructor owns the course, "Contributors of the Course" who are the instructors made contribution on the course such as adding lectures, assignments, announcements and materials, and "Teachers of the Lecture" who appeared on the lecture video.

The Overview is followed by the section "**This Course Includes**" which includes the number of "Assignments" and "Lecture Materials". Then, you can view the lecture material and assignments by clicking on the top right of the viewed image. Also, the owner and contributors can delete both assignments and lecture materials on here.

The "**Announcements**" section shows announcements published by the owner and contributors whose content related to the course. These announcements are not specifically for lectures but they are for the course. Also, the owner and contributors can add new announcements here while they can delete their announcements too.

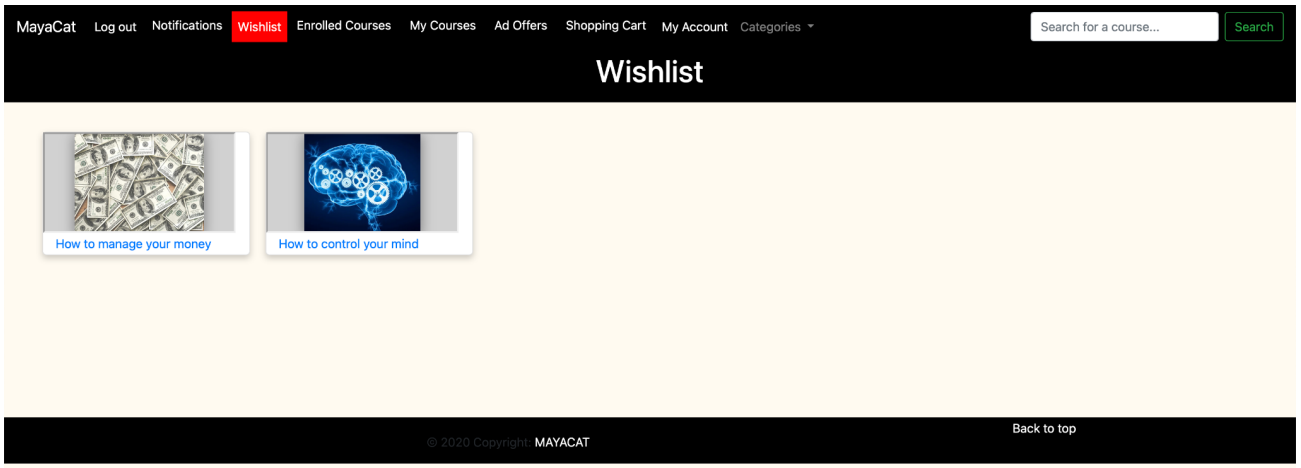
The "**Notes**" section stores private notes of users for lectures. These private notes are saved within a lecture so that neither another user can see these notes nor the owner of the notes can access these notes from other lectures. These notes can be deleted by the owners.

The "**Q&A**" section includes questions and answers of both students and instructors. In here, both of these posts can be deletable by the owner and if a question is deleted, its answers also will be deleted from the database.



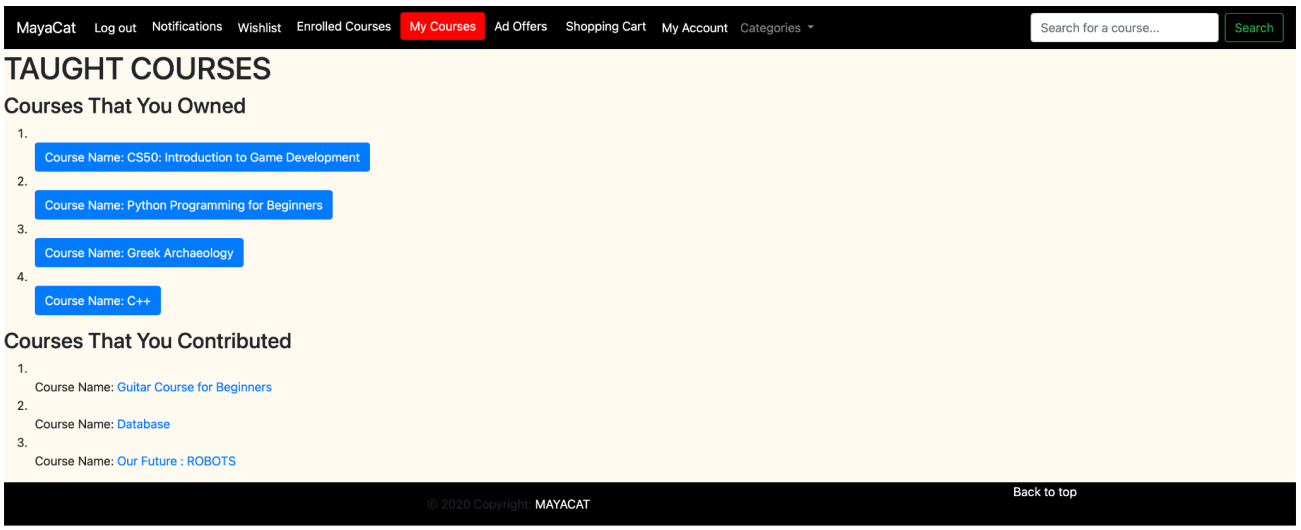
- **See wishlist**

  The courses added to the wishlist are visible with the "Wishlist" button on the top of the website. This is similar to the student view, they can go to the course page by clicking on the names of the course.



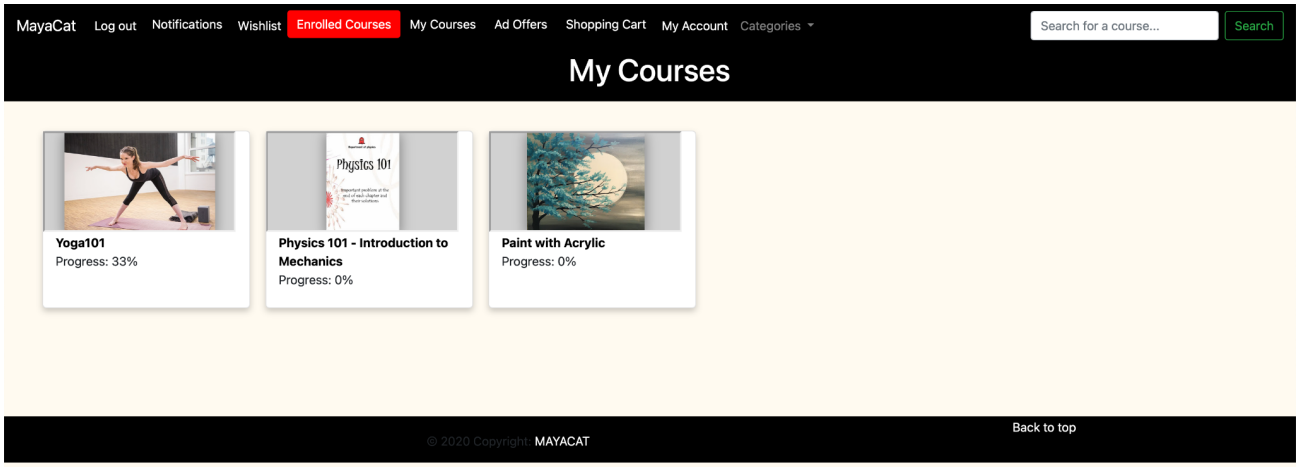

- **See my courses**

  Different from the students, with "My Courses", instructors can see their owned and contributed courses. They can click on the names and access to the edit pages of the courses.




- **See enrolled courses**

  In the instructor view, enrolled courses are listed with the "Enrolled Courses" button. Here, progress of the instructor is added to the below of the courses and colored with green if the course is finished by them.




- **Ad Offers:** You can access the advertisement offers that have been offered to your courses by clicking on the "Ad Offers" at the top menu bar, between the "My Courses" and the "Shopping Cart".

  At the Ad Offers page, you will be presented with the list of offers along with their information such as the course they have been offered for, the price, the start date, the end date, and the advertiser's username.

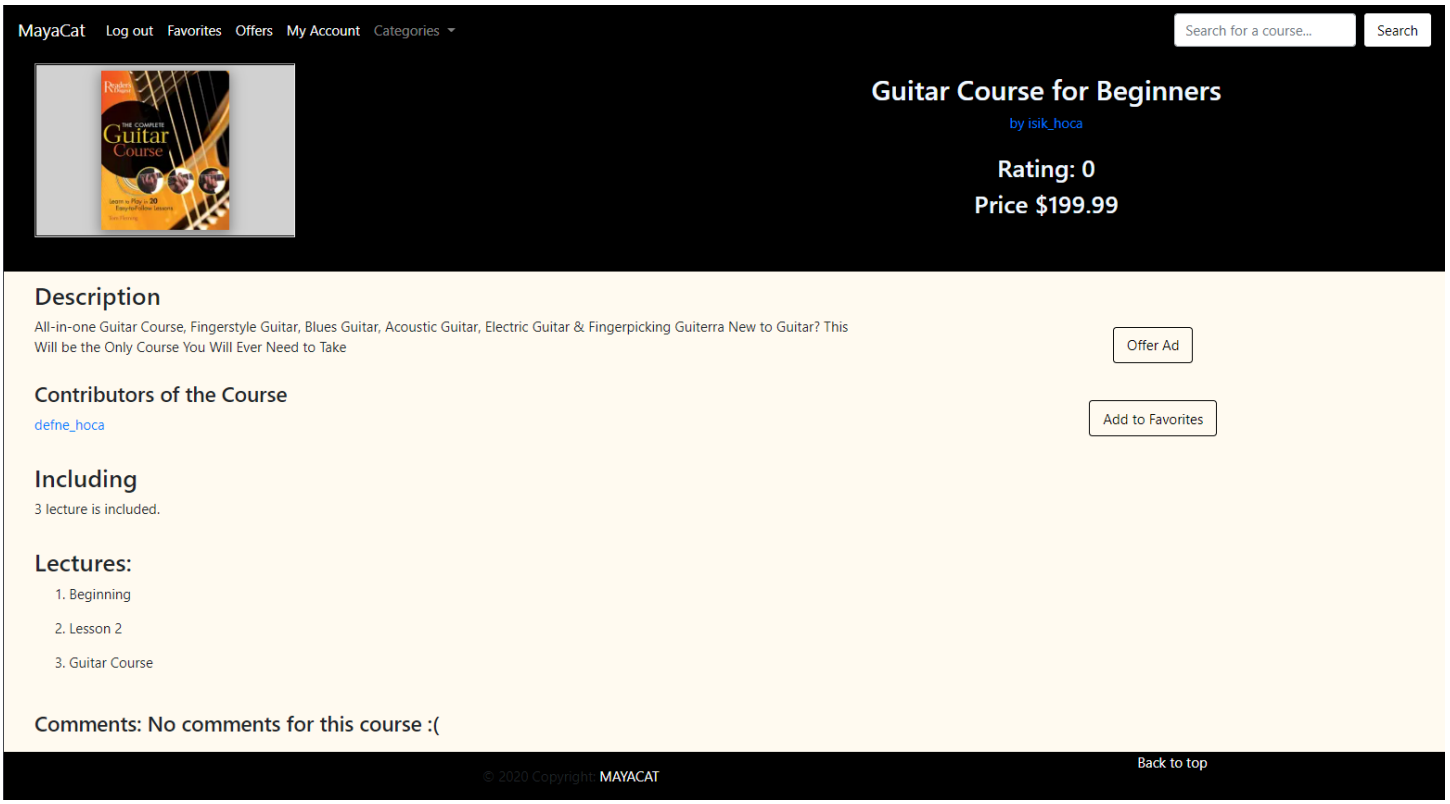
  If the start date of the advertisement has already passed, automatically it is accepted as refused.

If there is still time until the start date of the advertisement and you have not decided on a decision yet, you will be presented with two buttons: “Accept “and “Refuse”.

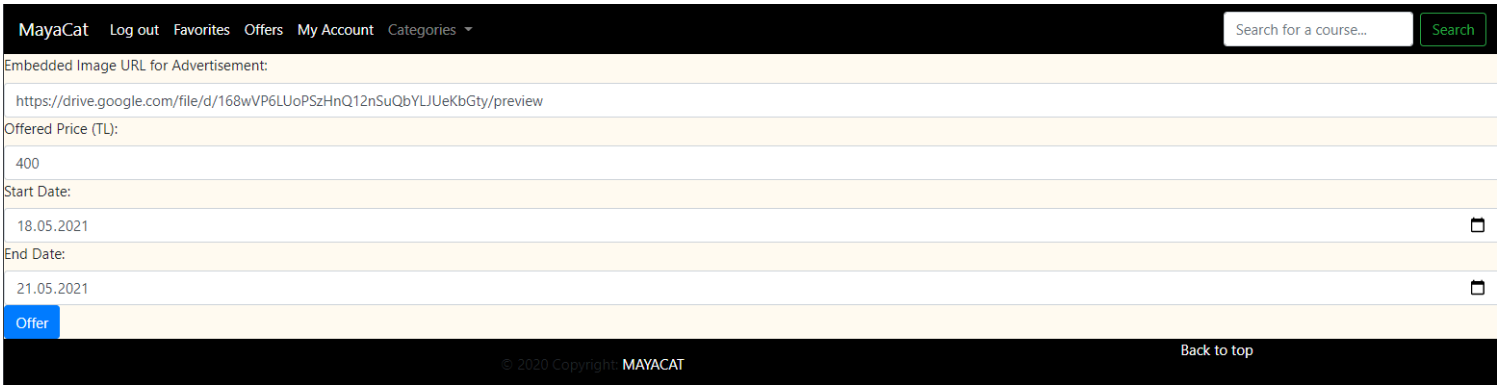
- By clicking on the “**Accept**” button, you will accept the advertisement and automatically refuse the other advertisements on the same course whose dates coincide with the accepted advertisement. The status of the advertisement offer will be updated as “Accepted”. The “Accept” and “Refuse” buttons will disappear.
- By clicking on the “**Refused**” button, you will refuse the advertisement and the status of the advertisement offer will be updated as “Refused”. The “Accept” and “Refuse” buttons will disappear.

## I am an advertiser:

- **Course detailed view for advertiser:** If a user is an advertiser, the general information about the course is visible in this page such as course image, owner and contributor names, rating, price, lectures etc. In addition to those, an advertiser can see two buttons which are “Offer Ad” and “Add To Favorites”. “Add To Favorites” button is logically the same as the “Add To Wishlist” button in instructor and student. After adding the course into the favorites, the advertiser will be able to see the course in the favorites page. By clicking on the “Offer Ad” button, the advertiser will be able to offer an advertisement to the course. An advertiser can offer an advertisement to the same course many times.




- **Offer advertisement page for advertiser:** In this page, an advertiser specifies the image that will be used as an advertisement by entering a URL, offered price, start date and end date. All fields must be filled, otherwise, the advertiser cannot click on the “Offer” button at the bottom of the page.

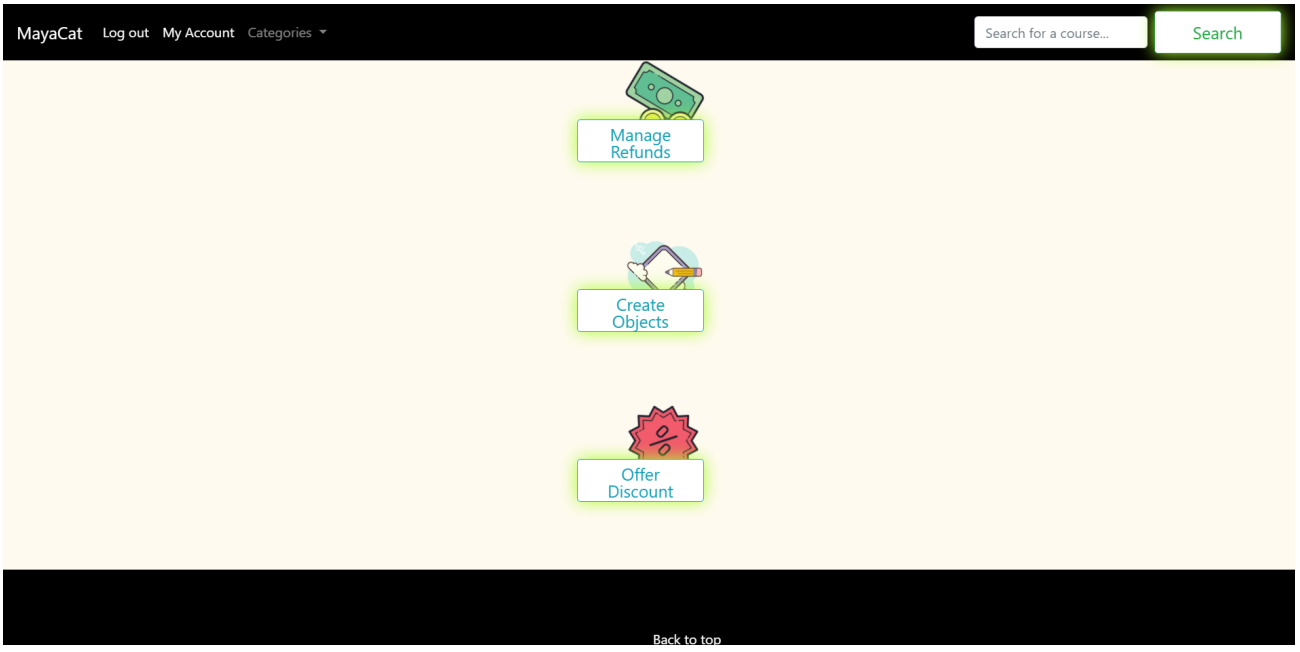



- **Offers page for advertiser:** In the offers page, an advertiser can see all the advertisements that s/he offered. The offers that are accepted by the course owners are colored with green. The offers that are refused are colored with red and the offers which are not responded to are colored with yellow. Additionally, an advertiser can see the details about his/her offers such as start date, end date, offered price and status.

- **My account page for advertiser:** In this pag the personal information about the advertiser is visible such as first name, last name, username, email, phone and company name. The advertiser is able to change that information by filling the fields and clicking on the “Save” button.

## I am an admin:

- **Access to a page specifically for admins:** If you are an admin, you log in as a typical user of the site by using the usual log in option - however, once you log in, the page you are redirected to looks like the screenshot below:



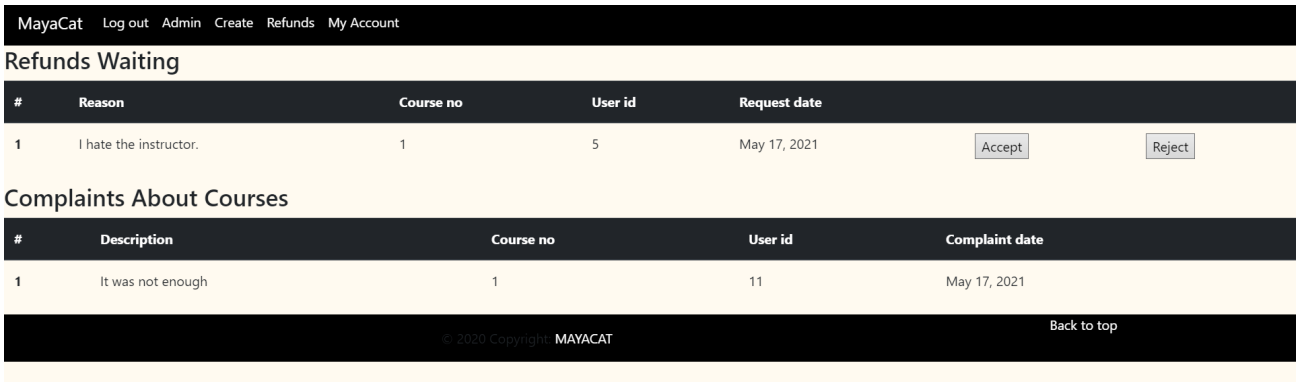

This is a special page that only lists additional features that are available to the admins. Once you hover over each button, the icons for the buttons will float as it can be seen below:

The “Manage Refunds” button will direct you to the “Refunds and Complaints” page, clicking on “Create Objects” will direct you to a page for creating objects within the database, and clicking on “Offer Discount” will show a pop-up screen from which for which the functionalities will be explained in detail in this part of the manual.
Clicking on “My Account” at the upper navigation bar will direct you to a page where you can see your account information, and change and save modifications on your account. A screenshot of this screen is given below.

- **Change your account information:**

In this page, the username is not changeable and neither is it clickable, password is also not available for change in this page. First name, last name, SSN, and address are available informations on this page, and they could be subject to change if you want to. Your user type, which is Admin, can also be seen here above the field for SSN with the caption “Type: Admin”. In the upper navigation bar, clicking on “Admin” button will redirect you to the page designed for admins, while clicking on “Refund” button will redirect you to the “Refunds and Complaints” page and clicking on “Create” will direct you to a page for creating objects within the database for which the functionalities will be explained in detail in this part of the manual.

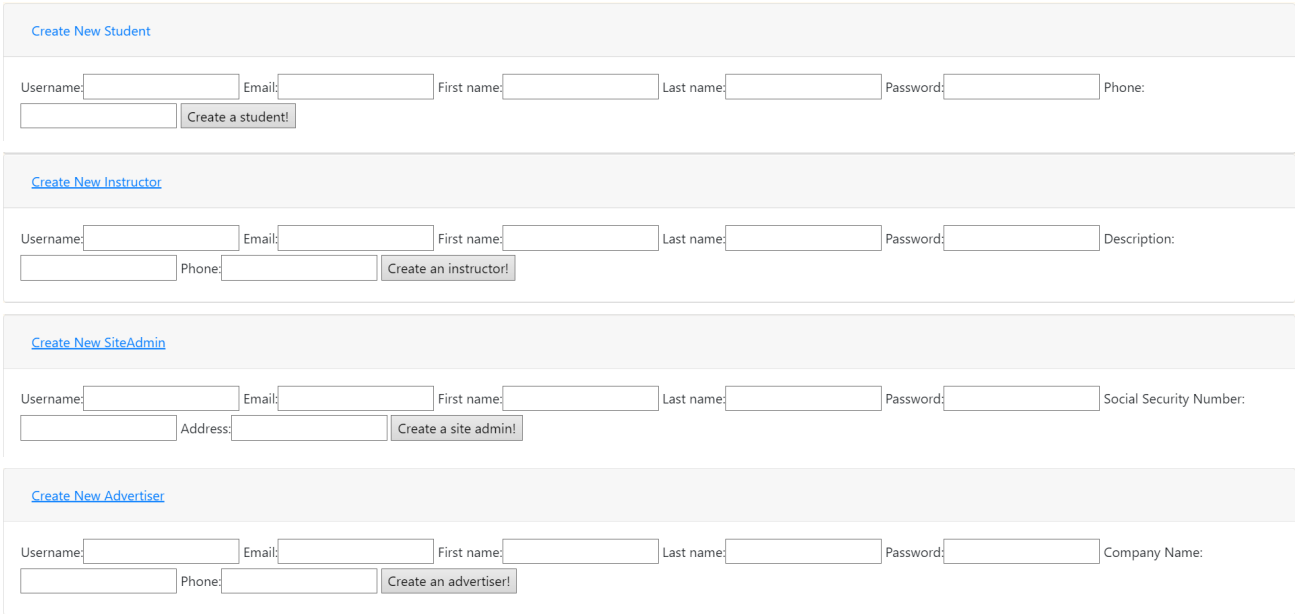
- **See and accept or reject refund requests and see complaints:**




Clicking on the “Refund” options described above will direct you to this page. From this page, you can see the refund requests as well as the complaints people made about each course as listed with the user id’s and course no’s, along with their creation dates (“Request date” for refund requests, and “Complaint date” for course complaints). By clicking on “Accept” on the table for refund requests, you accept the refund to be made and by clicking on the “Reject” option, you will reject it. By doing either one of these, you remove that request from the list and once you return to the same page they will not be visible to be “accepted” or “rejected” again.

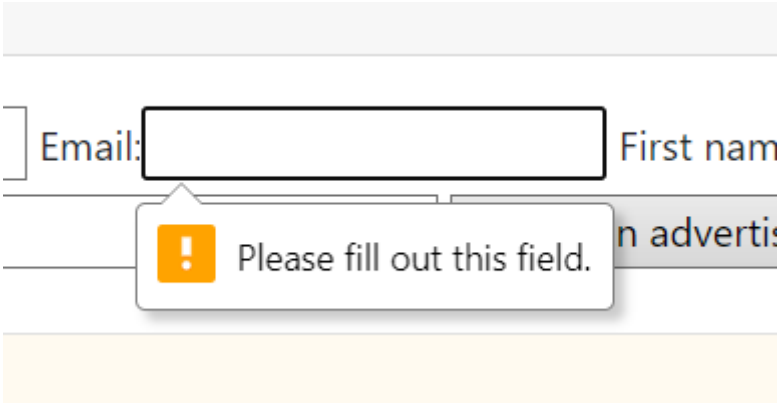
- **Create new users and new courses & lectures:**

Clicking on the "Create Objects" button from the main admin page or clicking on the "Create" button on the upper navigation bar will direct you to this page. From this page, you will create new users or courses and lectures from scratch by accessing features that are not available to other users, such as selecting a specific owner for a course or selecting a specific course for one lecture. Each option is closed within an accordion-like shape, as when one option is opened by clicking on their respective buttons, the other options are closed within the page. Our main purpose for this page was to make tests easier for users with admin access for updates and developments in the website, and to see bug reports clearer by using an interface instead of possibly disturbing the database with wrong/unaccaptable values.
For demonstration, each of these options are described below. As each of the creations done within the "Accounts" title have similar form formats, they will be described in conjunction in this section.

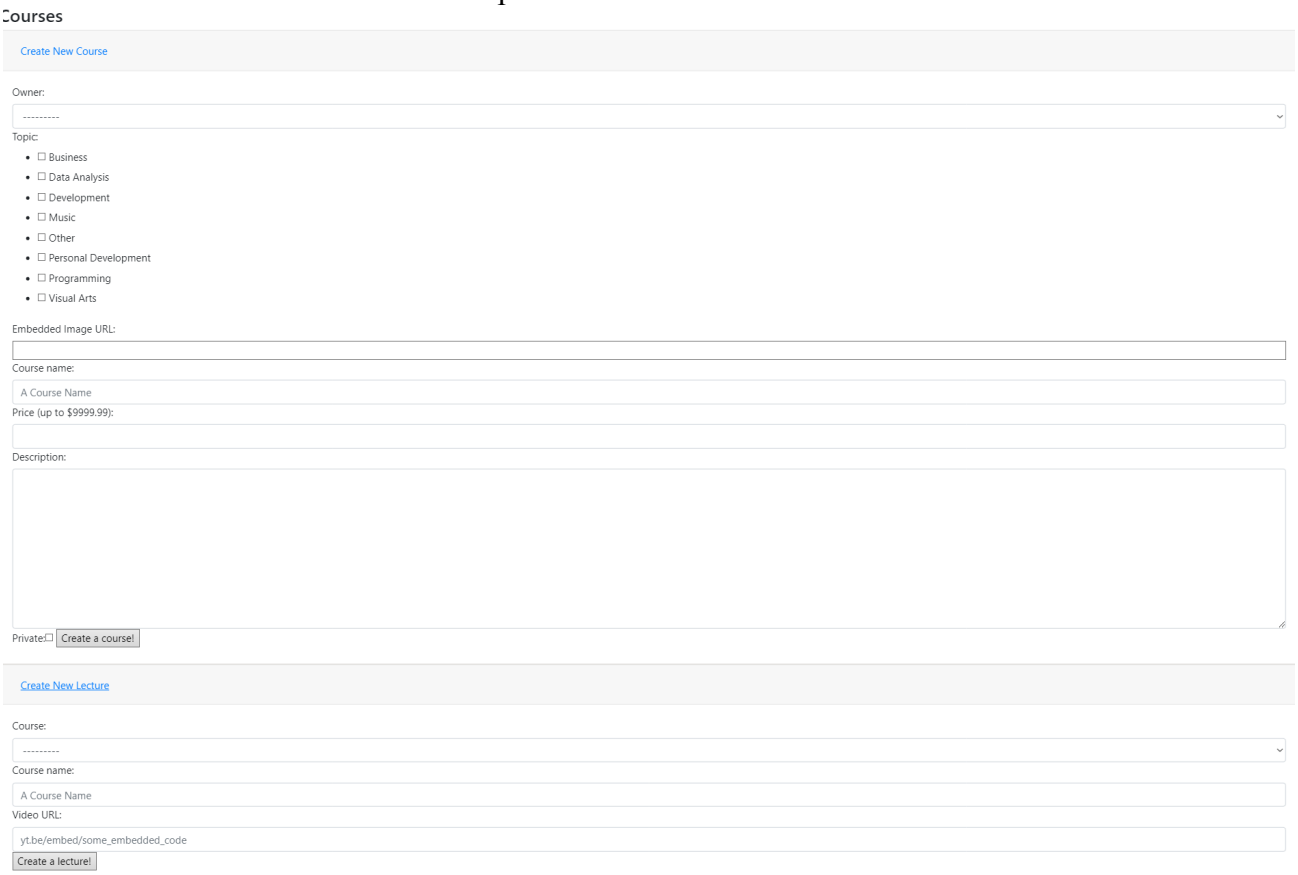



Each of these bar fields seen above are required fields for the respective user type to create. Since each user type needs to have the basic elements of "username", "email", "first name", "last name", and "password", those fields have the same structure of accepting inputs from Latin characters. Passwords are not visible in this page, as once they are inputted they will

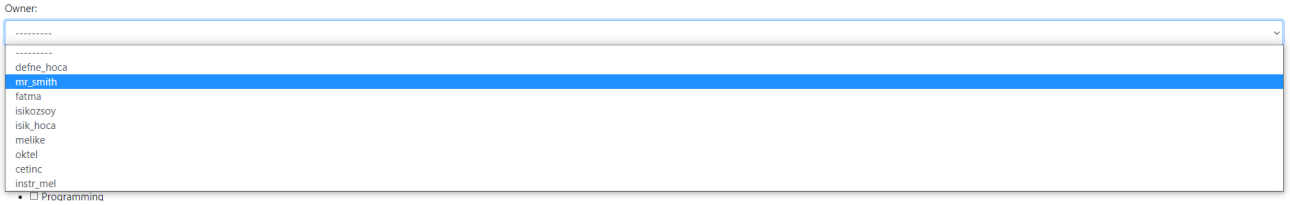
appear as replacing each character with • symbol (such as “password” replaced with ••••••••). Additionally, student requires a phone number to be registered, instructor requires a phone number and a description to be registered, site admins require SSN and address to be registered, and finally advertisers require company name and phone number to be registered. To create each of these users, you click on the button that describes your create option from the accordion-like shaped buttons, type each of the required fields, and click on the Create buttons right next to each form. If your form values are invalid, an error message will appear as so:



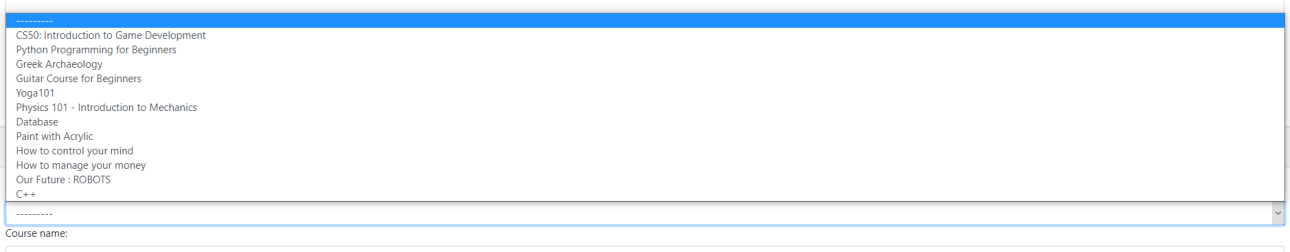

As an admin, you are the only one allowed to register another Site Admin, so you are expected to use this option responsibly. Ideally, we would want the decision to add another admin to the website to be as final as possible.



Above, you can see the Create New Course and Create New Lecture forms which appear when their "Create" buttons are clicked. Again, each of these fields, except for the option to select "Private" in creating a new course, is required.



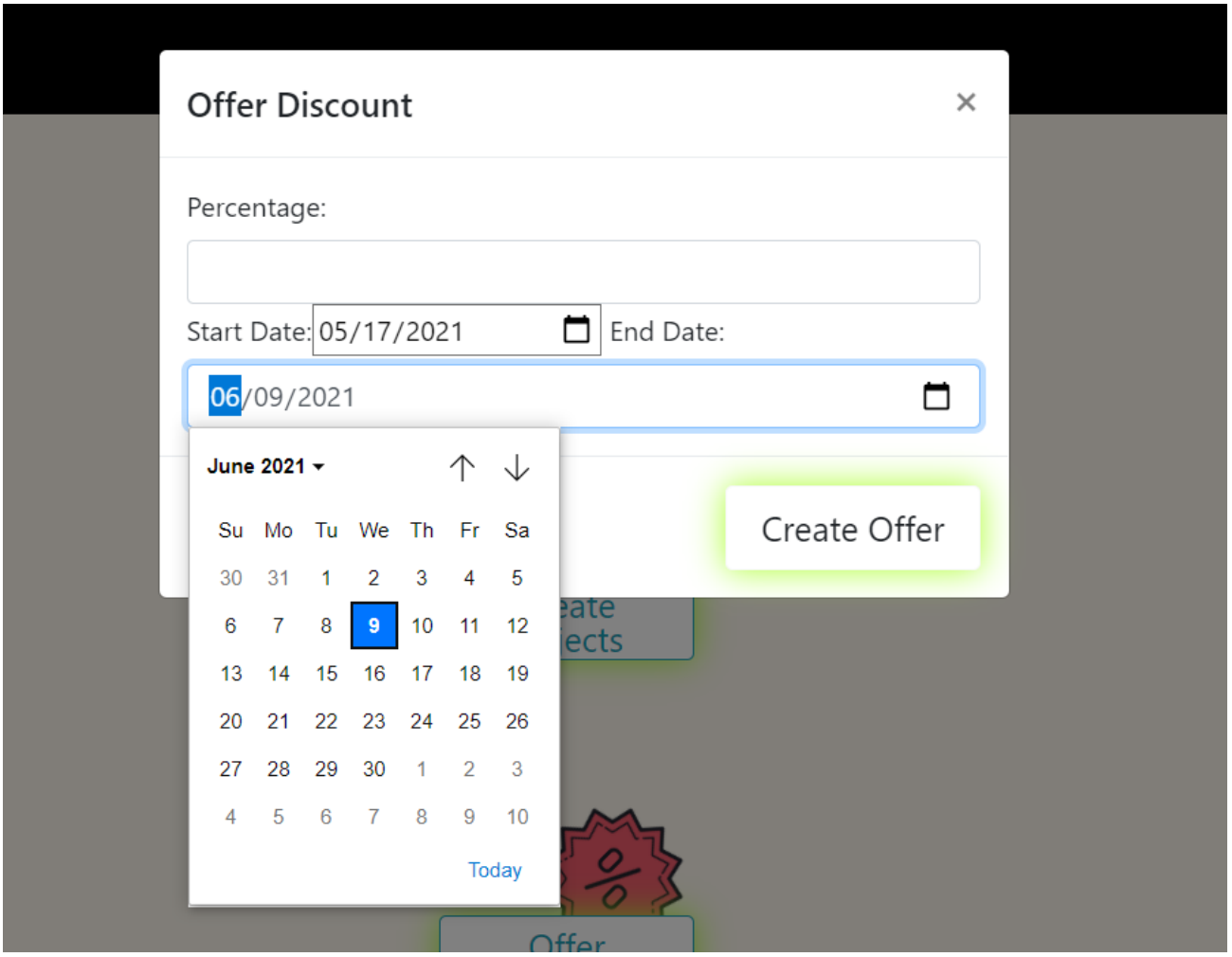

When the dropdown for "Owner" is selected, a list of current instructor-type users in the website will appear for you to choose amongst, or you can create an entirely new instructor to perform your tests. The topics for the course are selected by checking at least one option from the topic list. From then on, you fill out a field for Embedded Image URL which will be used for your course thumbnail, enter a course name, a price that is up to $9999.99, and a description for the course. You can also additionally make the course private instead of public, which will make it so that it is only accessible through a link.
In the lecture creation option, the dropdown menu for Course will display a list of current courses saved in the database. From this field, you are required to select one course.




After selecting a course, you need to type a name for the lecture, and then provide an embedded video URL for your lecture video.
Clicking on their respective Create buttons for each of these options will create what object's Create button was selected.

- **Offer discounts:**

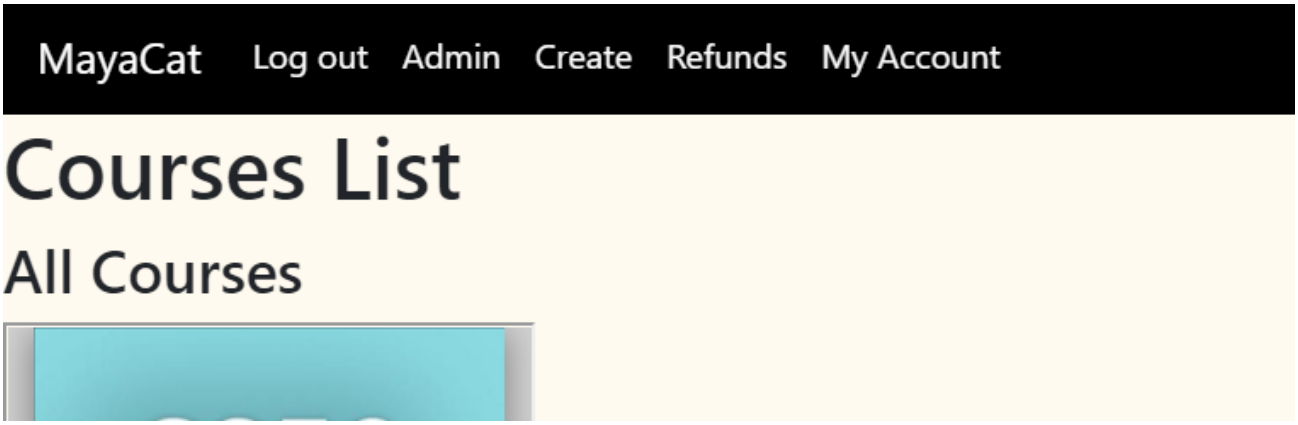
Clicking on the "Offer Discount" option that is only available through the main admin page (from the first screenshot of this section) will open a popup window for offering a discount option for instructors to join in. As an admin, you are the only one who is allowed to offer discounts.




From this pop-up, you will select a percentage (an integer from 1 to 100) from the Percentage field in the pop-up option, and then select a start and end date for the discount. Selecting dates is available through an interface of date selection. Start date selects today as its default value.

- **Access to what a normal student will access:**

  Clicking on the clickable link MayaCat at top right will make it so that the admin is redirected to the main page, which looks the same as the page the other users see, and from thereon they can access what other users can access, such as seeing the details of courses and lectures from this page. One main difference is the addition of "Admin", "Refund", and "Create" buttons. The "Admin" button as seen next to the "Log out" option in the screenshot below.




The results of clicking each of these options in the navigation bar, as well as the main page for students, were explained in their respective divisions.

## VI. WEBSITE

The reports (Project Proposal, Design Report and Final report) related to our project can be found in the following link.

https://ivorymask.github.io/