

PHASE - IV

OOP Project documentation

Group 12

Yaswanth (AM.EN.U4CSE19229)

Pavan (AM.EN.U4CSE19214)

Shravanth (AM.EN.U4CSE19250)

Sumanth (AM.EN.U4CSE19259)

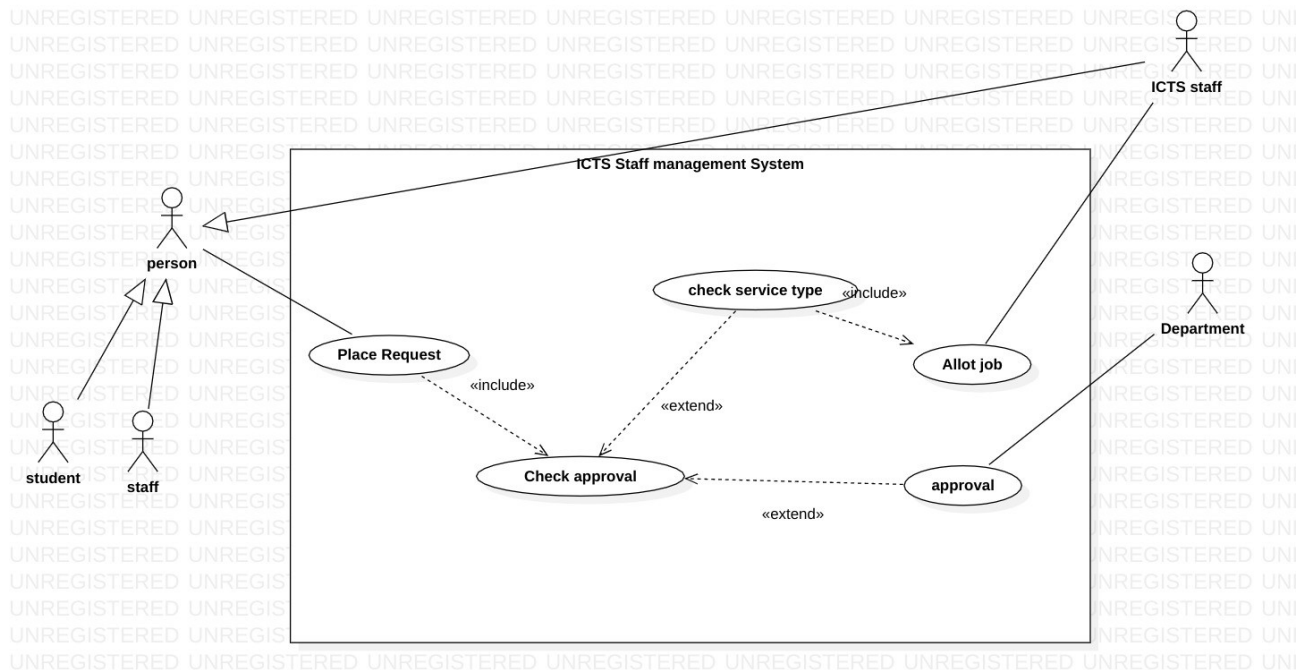
ABSTRACT

ICTS Staff management System

ICTS department provides various type of hardware, software, network, multimedia services to the people of our college. It has various service staff for this purpose. Each person (student or staff) can place the request for the service such as installation of a particular software, keyboard repair, network not available etc. after approval from the HoD of the respective department. However certain people do not require the approval. Based on the type of service requested, the ICTS staff is allotted the job. The personal details of the requester as well as the ICTS staff is maintained such as id, name, phone no. and department to know which person requested the service and who addressed the issue. A person can place one or more requests at a time.

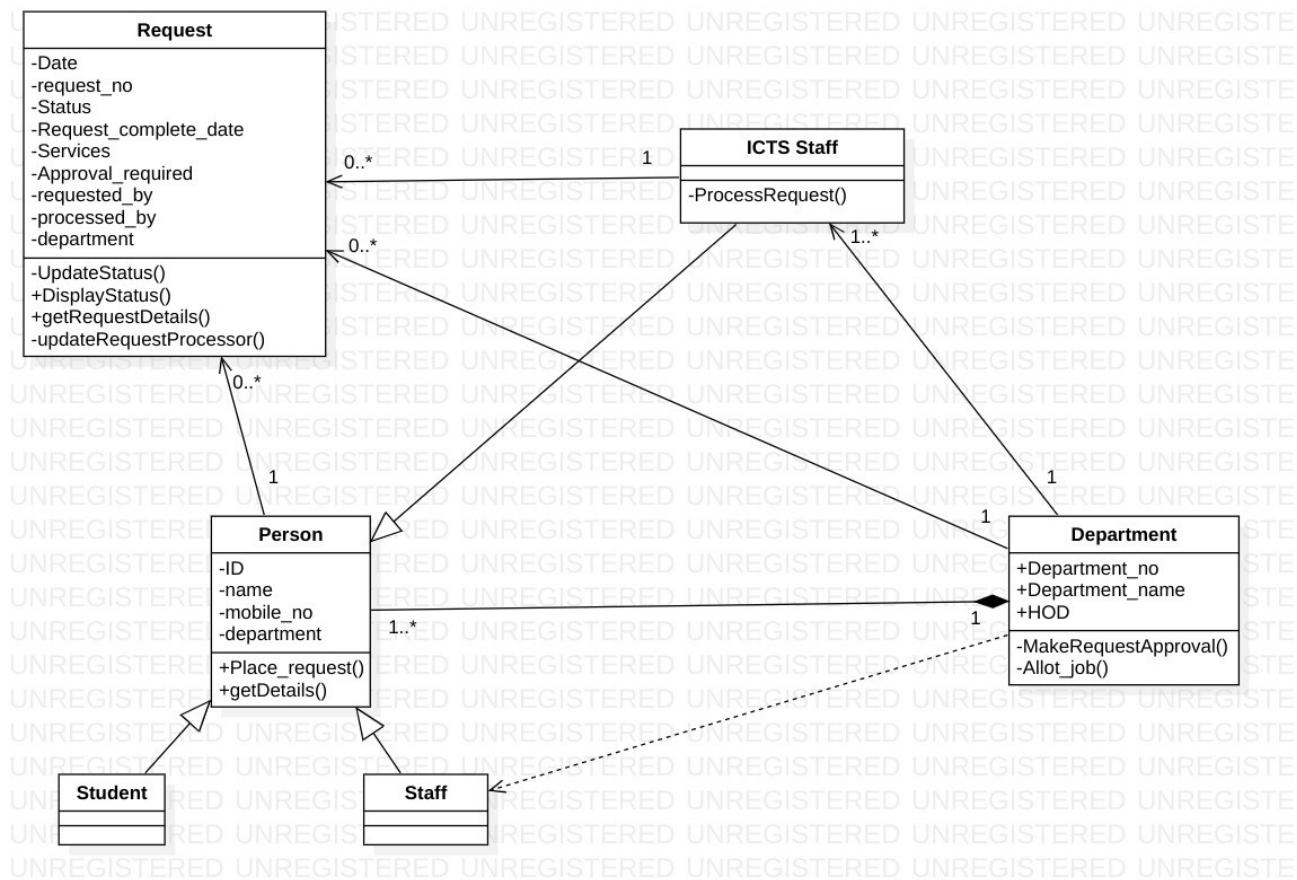


Use case diagram



First of all, a person (belongs to Amrita University) places a request and based on who placed the request we have to determine whether approval is required or not. If it is the staff who placed the request then approval is not required but for a normal person, approval is required. If approval is required the request will be handed over to the department HOD who will either approve or deny the request. If the request is approved then the job will be allotted to ICTS staff based on the requesting department and the availability of the staff. When the request is allotted to an ICTS staff then it will be handed over to the respective staff and he/she will start processing the request. After the completion of processing, the request will move to completed status where the person who placed the request will be informed. If approval is not required (staff placed the request) then the request will be allotted to any ICTS staff on spot and goes to processing state.

Class diagram



The relation between persons is a composition because without a department a person cannot exist and the department is a collection of persons (students and staff).

Students, Staff, ICTS are children of the person class as they inherit many properties from person class like place request, ID, department, mobile number which all we are supposed to maintain. UpdateStatus() method in the request can be accessed by department and ICTS staff when they are approving, processing, denying a request. GetRequestDetails() can be accessed by any person who is interested. When MakeRequest() method invokes the AllotJob() method which invokes the updateRequestProcessor() in the request class and allots the request to ICTS staff. ProcessRequest() is invoked by ICTS staff when they completed the processing of a request. When a request is placed by staff then directly allotJob() method is invoked. The relation between Department class and staff class is dependent as many functionalities of the department is done by HOD who is a staff and department class uses staff class in methods and attributes.

Object Oriented features in our project

Inheritance – The entire project class implements the ActionListener interface and implements the actionPerformed method which determines the functionality of our project. A Person can be a staff, student, HOD who maintains the department, ICTS staff who processes the requests so we made use of inheritance by extending person class into staff, student, ICTSStaff classes, and each of them will be having different functionalities and also common properties which are inherited from person class.

Polymorphism – We used polymorphism in many ways for our project. There is a JButton “goBackToHomePage” which will be present on every page except the home page but its position will be different for every page based on the requirement of the user. The login method we used is there in the ICTS login page as well as the HOD login page, but the functionality will be different for both. many JButton’s we used is the same but the functionality is entirely determined at runtime. Almost every page is entirely contained in a single JFrame for our project but the visibility is determined at runtime based on the requirement of the user.

We tried to use encapsulation but it was not possible as one method of a class is needed to be used by other classes and also outside the class

We used an array of JButton’s, JScrollPane’s, JTextFields, person class, department class, and many classes. We also used the vector of request class as the number of requests will not be constant and each time a new request is created it will be added to the vector. We used try-catch numerous times while executing the queries and updates on the database as it throws SQLException.

User manuel

Starting page

Stages :

WA – waiting for approval

when a request is placed by a student then the request will move to this stage.

AD – access denied

when a request is denied by the HOD then the request will move to this stage.

P – Processing

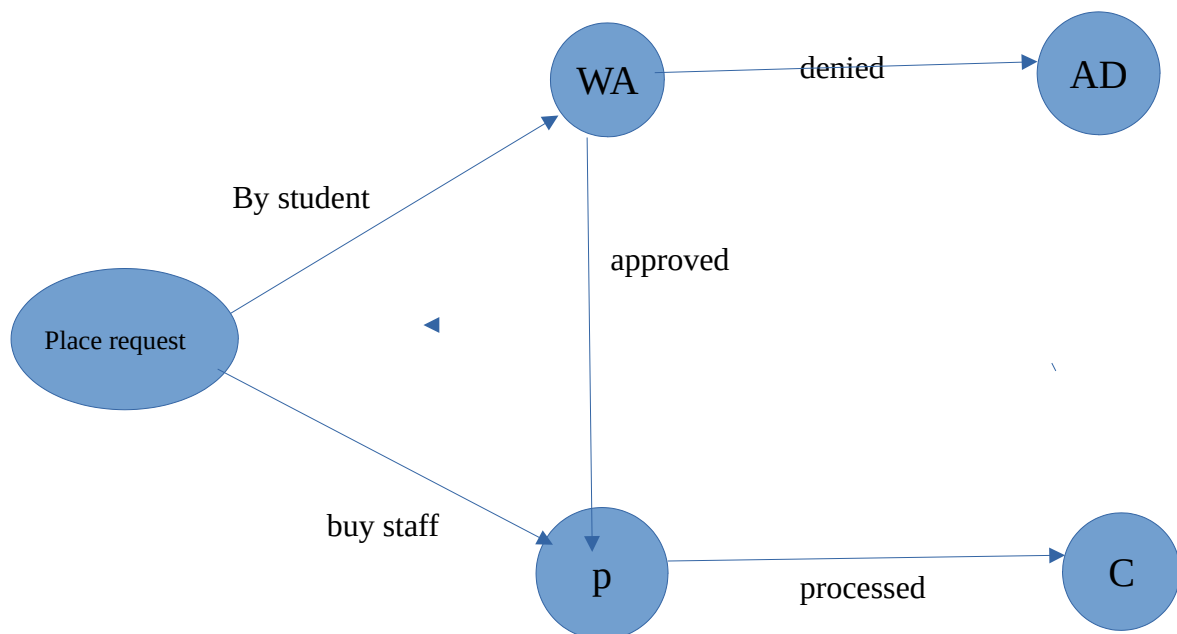
A request will move to this stage when

1. A request is placed by a staff/ICTS staff.
2. A request is approved by HOD.

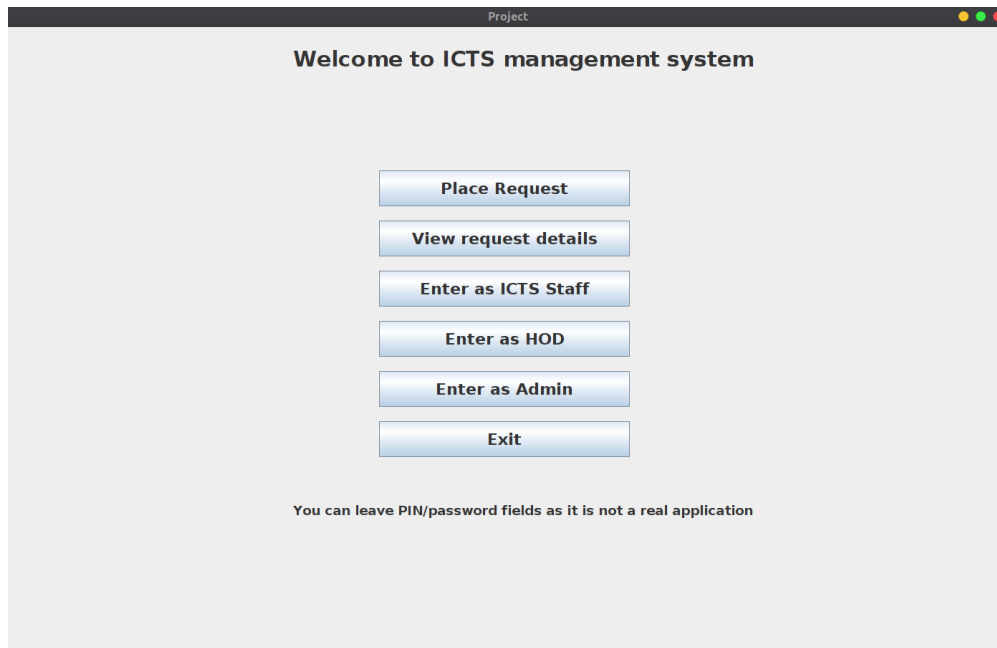
in this stage request will be automatically(by algorithm) allotted to ICTS staff.

C – completed

A request moves to completed stage when processing is completed by ICTS staff.



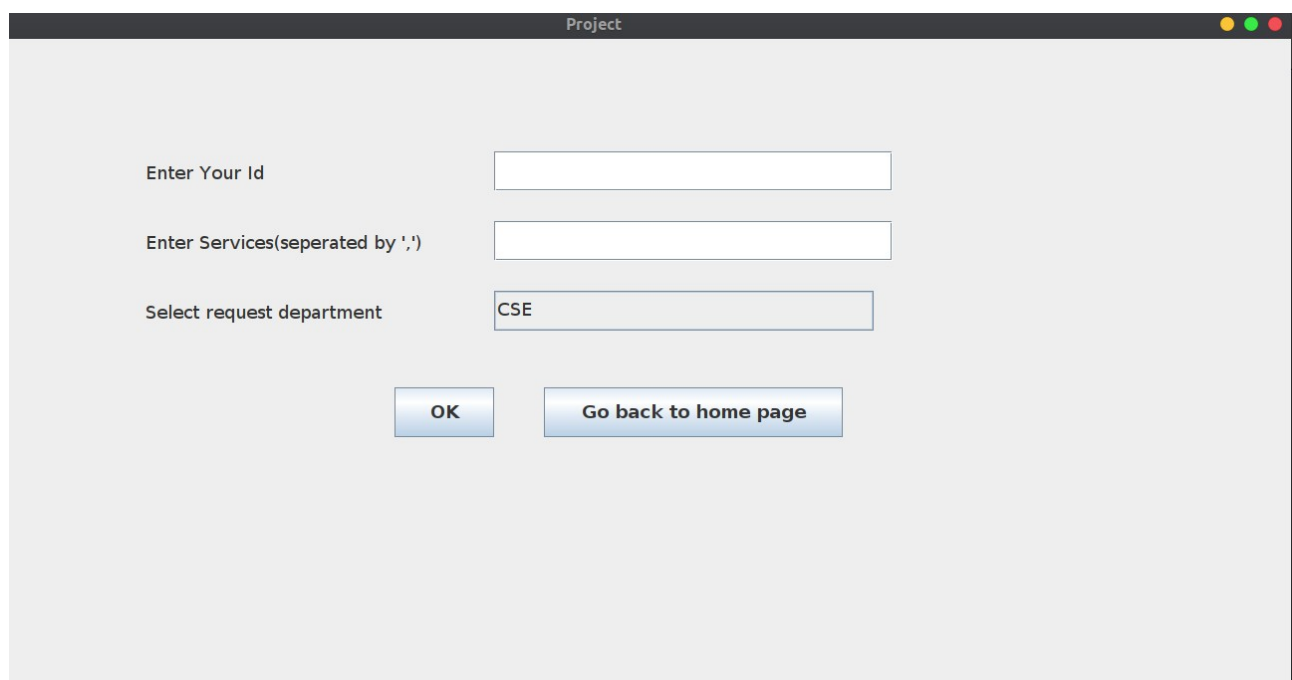
Home page



A screenshot of a web application window titled "Project". The window has a light gray background and a dark gray title bar with standard window control buttons (yellow, green, red). The main content area displays the text "Welcome to ICTS management system" at the top. Below this, there is a vertical stack of six blue buttons with white text: "Place Request", "View request details", "Enter as ICTS Staff", "Enter as HOD", "Enter as Admin", and "Exit". At the bottom of the window, a small line of text reads: "You can leave PIN/password fields as it is not a real application".

To place request

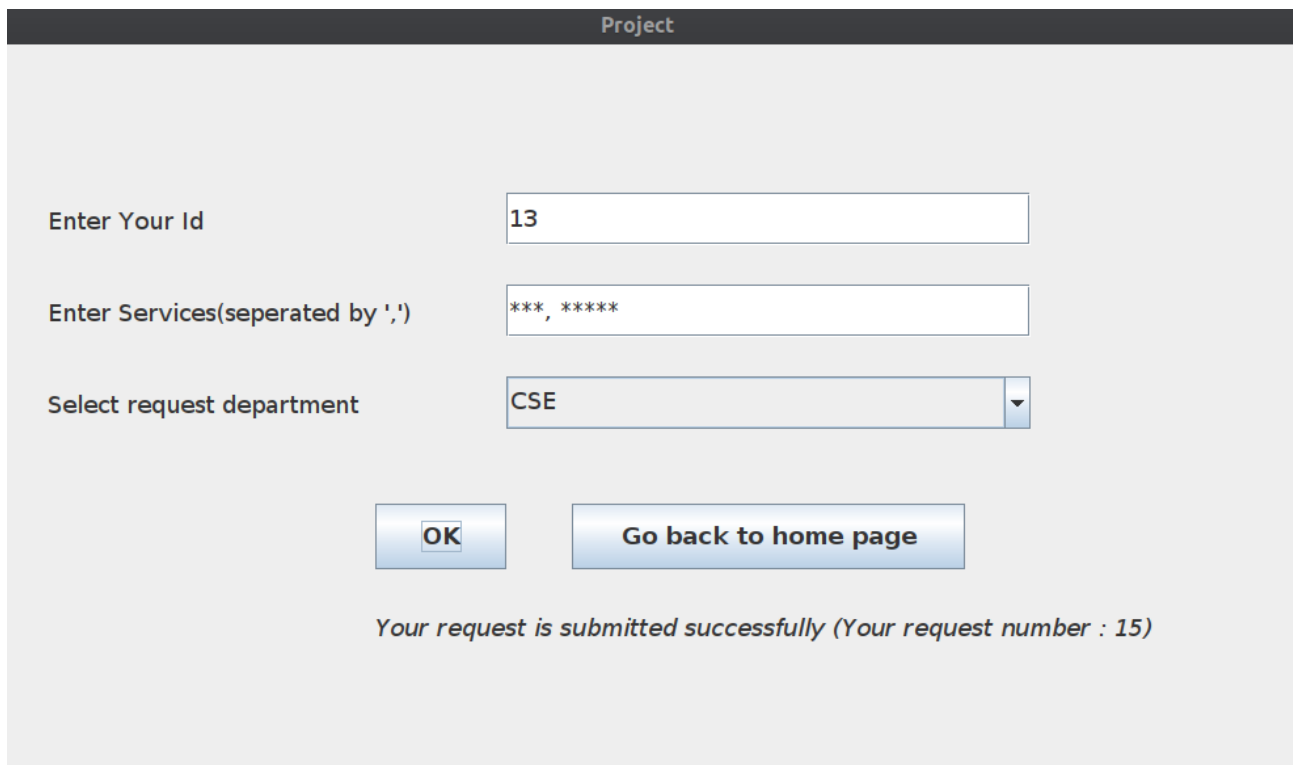
To place request, click on the place request button on the intro page then you will be directed to request placing page. In the request placing page there will be input fields for id and services.



A screenshot of a web application window titled "Project". The window has a light gray background and a dark gray title bar with standard window control buttons (yellow, green, red). The main content area contains three input fields with labels to their left: "Enter Your Id" followed by a text input field, "Enter Services(seperated by ','))" followed by a text input field, and "Select request department" followed by a dropdown menu showing "CSE". Below these fields, there are two blue buttons with white text: "OK" and "Go back to home page".

User should enter their id and services that are separated by ',' and select the department that request belongs to.

After entering valid id and services if your request is placed, a request number will be generated. Request number should be noted by the user in order to know details about the request. If the request id belongs to staff then request will directly move to processing stage else it will move to approval stage.



The screenshot shows a web form titled "Project" with a dark header. The form has three input fields: "Enter Your Id" with the value "13", "Enter Services(seperated by ',')" with the value "***, *****", and "Select request department" with a dropdown menu showing "CSE". Below the fields are two buttons: "OK" and "Go back to home page". At the bottom, a message states: "Your request is submitted successfully (Your request number : 15)".

Project	
Enter Your Id	13
Enter Services(seperated by ',')	***, *****
Select request department	CSE
<div>OK Go back to home page</div>	
Your request is submitted successfully (Your request number : 15)	

To view Request details

In order to view the request details user can click on the button "view request details" which will direct application to request details page. In the request details page there is a single input field "Enter request number", In this field user is allowed to enter the request number that is given when request is placed. If the request does not exist then it will give a error message "Id you provided does not match our database ". If request exists then the request details will be displayed.

Enter request number :

[Get Details](#) [Go back to home page](#)

Requester id :	12
Requester name :	peter b
Status :	WA
mobile number(s) of requester :	4476317596
Department :	CSE
Date :	2020-12-01
Service(s) :	****, ****

Requester id : id of user who placed that request

Requester name : name of user that id belongs to

Status : status of the request

Date : date on which request is placed(automatically generated)

Department : department that request belongs to

Service(s) : services that are along with request

Requestee id (visible if allotted) : id of ICTS staff who is processing this request

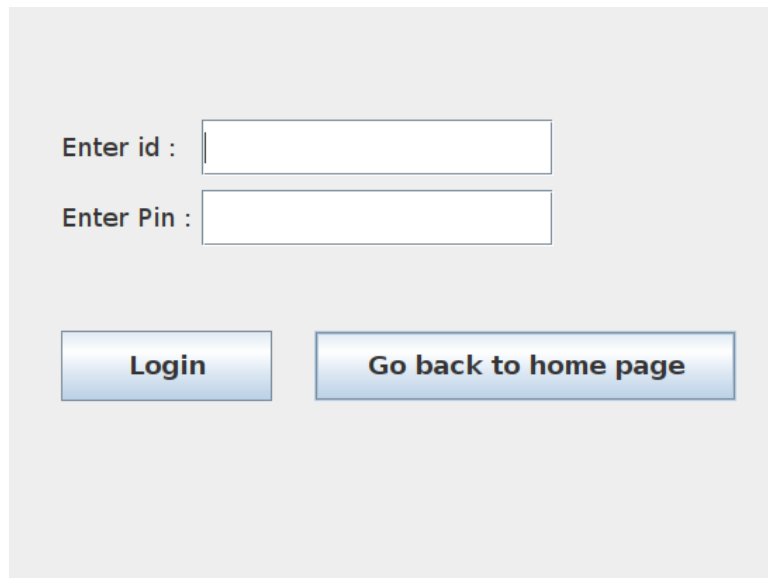
Requestee name : name of ICTS staff

mobile no(s) of requestee and requester : respective mobile no(s) fetched from database

Completed Date (visible if completed) : completed date for the request (automatically generated)

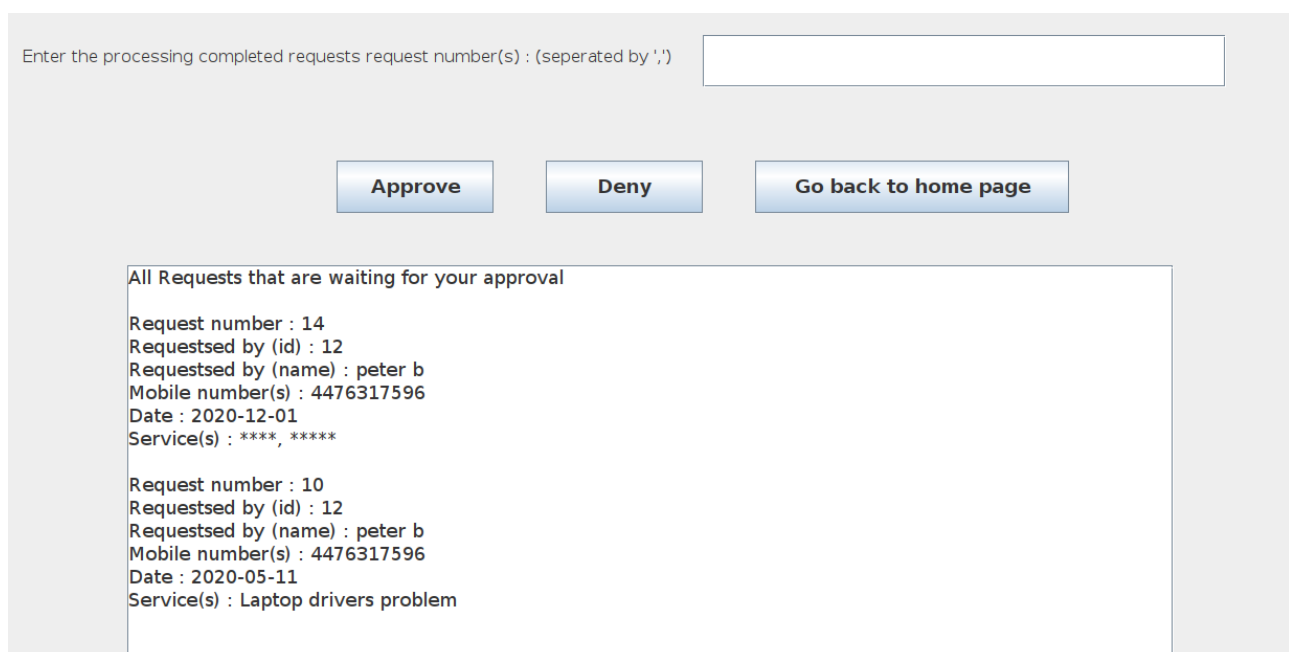
Approval (For HOD's)

Approval page can only be accessed by HOD's. When a request is placed by a student it will move to department HOD for approval. HOD has to enter id and pin in order to access the approval page..



A login form for HOD approval. It features two input fields: 'Enter id :' and 'Enter Pin :'. Below these fields are two buttons: 'Login' and 'Go back to home page'.

If the id and pin matches then the user will be directed to approval page where approval of requests made.



The approval page interface includes a text input field at the top for 'Enter the processing completed requests request number(s) : (seperated by ',')'. Below this are three buttons: 'Approve', 'Deny', and 'Go back to home page'. A large box contains a list of requests waiting for approval.

Enter the processing completed requests request number(s) : (seperated by ',')

Approve Deny Go back to home page

All Requests that are waiting for your approval

Request number : 14
Requestsd by (id) : 12
Requestsd by (name) : peter b
Mobile number(s) : 4476317596
Date : 2020-12-01
Service(s) : ****, *****

Request number : 10
Requestsd by (id) : 12
Requestsd by (name) : peter b
Mobile number(s) : 4476317596
Date : 2020-05-11
Service(s) : Laptop drivers problem

If user want to approve/deny requests then he/she can enter the request number(s) that belong to requests that are seperated by ‘,’ (If multiple). If the entered requests are valid and belongs to department of the user then they will be approved/denied by clickin on approve/deny buttons.

Processing(For ICTS Staff)

Enter the processing completed requests request number(s) : (seperated by ',')

OK Go back to home page

All Requests that are being processed by you

Request number : 3
Requestsd by (id) : 12
Requestsd by (name) : peter b
Mobile number(s) : 4476317596
Date : 2020-04-13
Service(s) : LAN connection

Request number : 7
Requestsd by (id) : 31
Requestsd by (name) : christopher h
Mobile number(s) : 6247939283, 9178915492
Date : 2020-05-12
Service(s) : Laptop hanging on pressure

After login, user will be directed to processing page where requests moves from ‘P’ state to ‘C’ state. If a request is processed then user can enter the request number(s) in the field provided(seperated by ‘,’ if there are multiple) and click ‘OK’. If the entered request number(s) are valid then the request(s) status will be moved to completed.

“Go back to home page” button - this button is present in every page except home page. When user clicks on it, the application will be directed to home page.

Admin page – on entering the correct password, user will be directed to admin page where entire database is visible.

Exit - By clicking on it the application will be closed.