Step 5

CLIENT-SERVER PATTERN

- RAWAN ALHARBI
- MEAAD ALMUTLAQ
- LENA NAWAR

criteria used to select an approach

CLIENT – SERVER PATTERN

- THE CENTRALIZED NETWORK HAS COMPLETE LEVERAGE TO CONTROL THE PROCESSES AND ACTIVITIES.
- ALL DEVICES IN THE NETWORK CAN BE CONTROLLED CENTRALLY.
- USERS HAVE THE AUTHORITY TO ACCESS ANY FILE, RESIDING IN THE CENTRAL STORAGE, AT ANY TIME.
- IT PROVIDES A GOOD USER INTERFACE, EASY FILE FINDING PROCEDURE, AND MANAGEMENT SYSTEM FOR ORGANIZING FILES
- EASY SHARING OF RESOURCES ACROSS VARIOUS PLATFORMS IS POSSIBLE.

Another Pattern We can use them

LAYERED ARCHITECTURE

- COST OVERHEADS ARE FAIRLY LOW.

SCALABILITY IS DIFFICULT BECAUSE THE STRUCTURE OF THE FRAMEWORK DOES NOT ALLOW FOR GROWTH.

2 TIER ARCHITECTURE

- IT IS EASY TO MAINTAIN,THE MODIFICATION IS VERY EASY, COMMUNICATION IS VERY FAST.

- PERFORMANCE DEGRADES WHEN NUMBER OF USERS INCREASE.
- IT IS VERY COST EFFECTIVE.

Another Pattern We can use them

PEER-TO-PEER (P2P)
CONCURRENT EXECUTION, SIMPLICITY
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PERFORMANCE – MAY FORCE A LOWEST COMMON DENOMINATOR ON DATA TRANSMISSION

EVENT-BUS PATTERN
USAGE IN ANDROID DEVELOPMENT ,NOTIFICATION SERVICES

INCONSISTENT BEHAVIOUR: UPDATE TO THE SAME EVENT AND DUPLICATION OF AN EVENT MAKES THE SYSTEM MORE CHALLENGING TO HANDLE, MAKING THE SYSTEM COMPLEX.

Apply in Pattern

:Female taxi drivers

A USER SHOULD BE ABLE TO COMMUNICATE WITH THE SUPPORT SERVICE IN THE SYSTEM WHEN ANY PROBLEMS (GENERAL, TECHNICAL) OCCUR

–THE CLIENT IS IN CONTACT WITH THE CUSTOMER SERVICE (SERVER) VIA THE INTERNET AND WRITES THE PROBLEM AND IT IS STORED IN THE DATABASE AND THE CUSTOMER SERVICE REPLY TO THE CLIENT AND ALL OF IT WILL STORED IN SERVER DATABASE

A USER SHALL BE UPLOAD HER PERSONAL DOCUMENTS (NATIONAL ID, VALID DRIVER'S LICENSE, ETC.) IN ORDER • TO BE ABLE TO REGISTER AS A DRIVER IN THE SYSTEM

–THE CLIENT UPLOADS HIS PERSONAL DATA THROUGH (THE INTERNET) AND IT IS STORED IN THE DATABASE SERVER UNTIL HE IS REGISTERED ON THE SITE AS A DRIVER

Apply in Pattern

.A USER SHALL BE ABLE TO CHANGE THE STATUS OF AVAILABILITY (AVAILABLE, BUSY, UNAVAILABLE)

– WHEN THE CLIENT CHANGES ITS AVAILABILITY, THE NEW AVAILABILITY IS STORED IN THE DATABASE SERVER AND PRESENTED TO THE PASSENGERS THROUGH THE PRESENTATION SERVER (AND ALL THESE SERVERS ARE CONNECTED OVER THE INTERNET)

A USER SHOULD BE APPLIED TO EDIT HER ACCOUNT (CHANGE PERSONAL INFORMATION, CHANGE PASSWORD , CHANGE BANK INFORMATION)

–THE CLIENT MUST BE ABLE TO MODIFY HIS PERSONAL INFORMATION AND IT IS STORED SUCCESSFULLY THROUGH THE DATABASE SERVER AND IS SHOWN AFTER MODIFICATION THROUGH THE PRESENTATION SERVER

Apply in Pattern

A USER SHOULD BE CAN ADD OR REMOVE THEMSELVES FROM THE SYSTEM AT ANY TIME

-THE CLIENT MUST BE ABLE TO REMOVE HIMSELF FROM THE SYSTEM BY HAVING THE SYSTEM REMOVE HIS INFORMATION FROM THE DATABASE SERVER

A USER SHALL BE ABLE VIEW NEARBY PASSENGER REQUEST WITH HER CURRENT GEOLOCATION

THE CLIENT DISPLAYS THE REQUEST AND THE GEOGRAPHICAL LOCATION OF THE CUSTOMER VIA THE INTERNET THROUGH THE DATA BASE SERVER, AND THE RESPONSE IS PRESENTED TO HIM THROUGH THE PRESENTATION SERVER

Apply in Pattern

A USER SHALL BE ABLE TO SELECT TO SERVE AN REQUEST OR REJECT THE REQUEST

THE CLIENT IS ABLE TO REJECT AND ACCEPT THE REQUEST, AND THE CLIENT'S RESPONSE IS STORED IN THE DATABASE

.A USER SHALL BE ABLE TO END AND START THE TRIP

THE CLIENT IS ABLE TO REQUEST THE END OR START OF THE TRIP, SO THAT HE SENDS THE REQUEST TO THE DATABASE, AND THEN IT IS DISPLAYED IN THE PRESENTATION SERVER.

Apply in Pattern

.A USER SHOULD BE ABLE TO SEE ALL HIS PAST RIDE HISTORY

WHEN THE CLIENT WANTS TO SEE THE HISTORY OF HIS PREVIOUS TRIPS, THEN HE SENDS A REQUEST TO RETRIEVE THAT DATA FROM THE DATABASE SERVER , AND WHEN THE REQUEST IS ACCEPTED, IT IS DISPLAYED THROUGH THE PRESENTATION SERVER

. A USER SHALL BE ABLE TO SHARE THE EXPECTED TIME OF ARRIVAL WITH PASSENGER

THE SYSTEM CALCULATES THE TIME TAKEN FOR THE ARRIVAL OF THE FLIGHT AND STORES IT IN THE DATABASE AND DISPLAYS IT THROUGH THE PRESENTATION SERVER TO THE CLIENT

Apply in Pattern

ADMIN SHALL BE ABLE TO LOGIN TO HER ACCOUNT BY USERNAME AND PASSWORD

WTHE ADMIN WILL ENTER SERNAME AND PASSWORD THEN STORE IN DATABASE, THE SERVER GO TO DATABASE THEN IT WILL VERIFY THE DATA TO OPEN THE ENTRANCE GATE

ADMIN SHALL BE ABLE TO LOGOUT FROM HER ACCOUNT

TTHE CLIENT (ADMIN) WILL BE ABLE TO LOG OUT, THE SERVER WILL SAVE THE DATA SYNCHRONOUSLY

Apply in Pattern

SYSTEM SHALL BE ABLE TO UPDATE THE TRANSPORT FEE (BY ADMIN)

THE CLIENT (ADMIN) RECEIVE UPDATES ARE ONLINE ,SERVER WILL UPDATE THE TRANSPORT FEE THROUGH (THE INTERNET)

SYSTEM SHALL BE ABLE TO VIEW COMPLAINTS FROM THE PASSENGERS

THE SYSTEM STORES THE COMPLAINTS IN THE DATABASE, IF THE CLIENT (ADMIN) REQUESTS THE COMPLAINTS, THE SERVER WILL DISPLAY THE COMPLAINTS

Apply in Pattern

SYSTEM SHALL BE ABLE TO CREATES A QUESTIONNAIRE FOR THE PASSENGER TO EVALUATE THE DRIVER

THE CLIENT(ADMIN) WILL CREATE AN EVALUATION QUESTIONNAIRE FOR THE PASSENGER, THE SERVER WILL CALL THE QUESTIONNAIRE FROM THE DATABASE AND THE CHANGES ARE SAVED EVERY TIME

SYSTEM SHALL BE ABLE TO DISTRIBUTE OF REQUESTS TO TO THE NEAREST DRIVER

WHEN THE CLIENT REQUESTS A RIDE, THE SERVER WILL SEARCH FOR THE NEAREST AVAILABLE DRIVER (ONLINE)

Apply in Pattern

THE SYSTEM SHOULD BE ABLE TO FOLLOW THE FLIGHT PATH AND CHOOSE THE BEST AND CLOSEST PATH

WHEN THE CLIENT IS ON A RIDE, THE SERVER WILL SEARCH FOR THE CLOSEST ROUTE IN MAPS (ONLINE)

SSYSTEM SHALL BE ABLE WILL VERIFY THE DRIVER'S LICENSE AND VEHICLE SPECIFICATIONS BEFORE APPOINTING THE DRIVER

THE SERVER WILL VERIFY THE DRIVER'S DATA (DRIVER'S LICENSE, CAR SPECIFICATIONS) IN THE DATABASES, AND THEN SHOW THE CUSTOMER HIS DATA

Apply in pattern

PASSENGER

A user shall be able to login to her account by phone number and Verification code

-THE USER LOGS IN THROUGH THE PHONE NUMBER AND VERIFICATION CODE THROUGH
THE SYSTEM AND THE SYSTEM SENDS A SIGNAL TO THE SERVER AND THE SERVER TRANSFERS THE INFORMATION TO THE CLIENT

A user should be able to edit her profile

THE USER MODIFIES THE DATA, SUCH AS CHANGING THE EMAIL ADDRESS AND LANGUAGE, AND A MESSAGE IS SENT TO THE
SERVER, AND THE SERVER UPDATES THE DATA,
STORES IT IN THE DATABASE, AND SENDS IT TO
THE CLIENT.

A user should be able to logout from her

account

The user logs out of the account in case he wants to log in with another account, the system sends a message to the server and then saves it, solves it, stores it and sends it to the client

A user shall be able to request a driver to her current location

THE USER REQUESTS A DRIVER THROUGH THE SITE. THE SYSTEM SENDS A MESSAGE TO THE SERVER, AND THE SERVER SAVES, SOLVES, STORES AND SENDS IT TO THE CLIENT
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A user shall be able to select the car type of the driver

THE USER REQUESTS A DRIVER THROUGH THE SITE. THE SYSTEM SENDS A MESSAGE TO THE SERVER, AND THE SERVER SAVES, SOLVES, STORES AND SENDS IT TO THE CLIENT
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A USER SHALL BE ABLE TO SELECT THE CAR TYPE

THE USER CHOOSES THE TYPE OF CAR SUCH AS A FAMILY CAR OR A SMALL CAR. THE SYSTEM SENDS A MESSAGE TO THE SERVER TO SAVE AND WORK THE PROCESS SENT AND SEND IT TO THE CLIENT

A USER SHALL BE ABLE TO SELECT THE DESTINATION	THE USER SELECTS THE DESTINATION THROUGH THE SYSTEM AND A SIGNAL IS SENT TO THE SERVER THAT SAVES, STORES AND RESOLVES IT AND THEN SENDS IT TO THE CLIENT —
A USER SHOULD BE ABLE TO SEE THE FEE AMOUNT	THE USER IS ABLE TO SEE THE AMOUNT OF FEES THROUGH THE SYSTEM. A SIGNAL WILL BE SENT TO THE SERVER TO DISPLAY AND THEN SEND TO THE CLIENT

A USER SHOULD BE ABLE TO PAY

THE USER CHOOSES THE PAYMENT METHOD FROM THE SYSTEM. THE SYSTEM WILL SEND IT TO THE SERVER TO DISPLAY THE AVAILABLE PAYMENT METHODS AND THEN SEND IT TO THECLIENT

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A USER SHOULD BE ABLE TO RATE THE DRIVER

THE SYSTEM SENDS TO THE SERVER IN ORDER TO DISPLAY THE LIST OF THE QUESTIONNAIRE TO THE USER, AND THEN THE SERVER PRESENTS IT TO THE CLIENT

Apply in Pattern

USER'S SHOULD BE LOG-IN INFORMATION SHALL BE VERIFIED WITHIN 2 SECONDS (SPEED)

THE CLIENT (ADMIN) WILL ENTER USERNAME AND PASSWORD ,THE SERVER IT VERIFIES THE DATA THROUGH THE DATABASE AND THEN OPENS THE MAIN PAGE WITHIN TWO SECONDS

THE SYSTEM SHOULD ESTIMATE THE TIME OF ARRIVING OF THE DRIVER WITH AN ACCURACY ABOVE 80%. (PORTABILITY)

WHEN THE CLIENT REQUESTS THE TRIP, THE SERVER WILL MEASURE THE DRIVER'S ARRIVAL TIME THROUGH THE SITE, WITH AN ACCURACY OF UP TO 80%

Security requirements

THE SYSTEM MUST PROVIDE A HIGH LEVEL OF SECURITY AND INTEGRITY FOR THE DATA IT MAINTAINS. ONLY APPROVED CORPORATE PERSONNEL SHOULD BE ABLE TO ACCESS THE SYSTEM'S SECURED PAGE FOR THE FIRM, AND ONLY USERS WITH ACTIVE LOGIN CREDENTIALS SHOULD BE ABLE TO VIEW THE USER'S PAGE.

Reliability requirements

SPECIFIES THE LIKELIHOOD THAT THE SYSTEM OR ITS COMPONENT WILL OPERATE WITHOUT FAILURE FOR A SPECIFIED PERIOD OF TIME UNDER PREDEFINED CONDITIONS. THIS LIKELIHOOD IS TRADITIONALLY GIVEN IN PERCENTAGES.

The system must perform without failure in 95 percent of use cases during a month.

Portability requirements

THE USER SEARCHES FOR THE APPLICATION ON
VARIOUS IOS - ANDROID DEVICES AND THEN
DOWNLOADS IT. A SIGNAL WILL BE SENT TO THE
SERVER TO START ITS WORK AND THEN
DOWNLOAD IT TO THE CLIENT

Maintainability requirement

IN THE EVENT OF A FAILURE IN THE USER'S SYSTEM, THE SERVER RESTORES THE SYSTEM WITHIN 5 MINUTES AND SENDS IT TO THE CLIENT