

Software Requirements Specification (SRS) Doc

Location Based Advertising

Team no. 24:

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Brief problem statement

We have to create a platform on which users can advertise their product based on location. User will buy slots based on time and location for his advertisement and upload advertisement . On server side , a sequence of advertisements will be created for display at a particular time , location and bundle of devices. Device will ping its location to the server and corresponding advertisements will be displayed. *The advertisements will be beamed on the screens with GPS module attached (For e.g. Android TV, Tab), fitted inside the vehicles (for e.g. RTC buses).*

System requirements

- OSM API
- MVC framework (Django)

Users profile

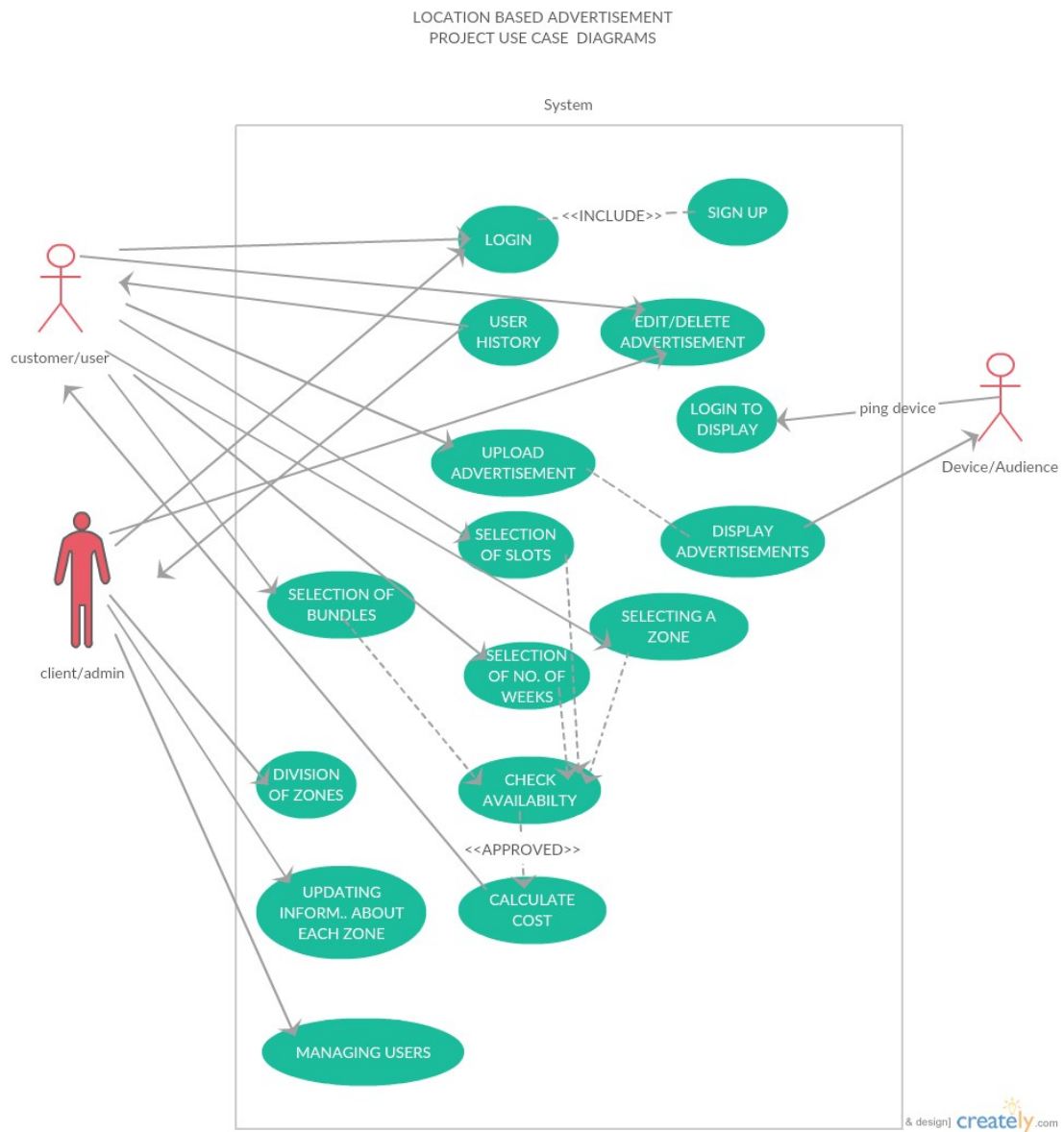
- Administrator: Well acquainted with the use of computer.
- Local business owner: Not expected to know much about computers. Should atleast know how to open a website.

Feature requirements (described using use cases)

| No. | User Case Name | Description | Release |
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| 1. | Division of region into zones | Overall area where advertisements can be displayed will be divided into square zones and user will be identified on the basis of the zone he is located in. | R1 |
| 2. | Updating information about each zone | Number of bundles,slots available,price etc. will be updated by the administrator. | R2 |
| 3. 3. | Selecting a zone | User will select the business point. The required zones that map with the target area will be selected automatically. | R1 |
| 4. | Selection of bundles | User will select Number of bundles he wants to advertise his product on. | R2 |
| 5. | Selection of slots | User will select number of slots he wants for his advertisement . One slot will be of 30 s. If his advertisement is of 45s (for eg.) then he has to buy two slots. | R1 |
| 6. | Selection of number of weeks | User will select the time period ,in terms of number of weeks , for which he wants to advertise. Week will be on | R2 |

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| | | Monday-sunday basis. | |
| 7. | Check Availability and Confirm | Checking if the number of slots,bundles and time period for which user is demanding is available or not for the selected zone. | R2 |
| 8. | Calculate Cost & confirmation | Calculating amount he has to pay for his selection, confirm and update record. | R2 |
| 9. | Upload Advertisement | User will upload his advertisement He will also enter the exact duration of his advertisement. | R1 |
| 10. | Login | Anyone using the web application has to login .System will check if the user is administrator or user. | R1 |
| 11. | Login to display | Device first needs to login at the time of initialization of device (one time step) . Latter the advertisements will be displayed on the device based on its pinged location. | R1 |
| 12. | Display Advertisements | Advertisements corresponding to the location of the device which has pinged and time , will start playing. | R1 |
| 13. | User History | When user is logged in , he can check his previous activities. | R2 |
| 14. | Managing Users | Administrator can regulate users .He will have the power to add or delete them or any content uploaded by them. | R2 |

Use case diagram



DETAILED USE CASES

- **Division of Zones**

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| Use case number: | 1 |
| Use case name: | Division of zones |
| Overview: | Overall area where advertisements will be done have to be divided into square zones . The areas where the users advertisement will be displayed will be decided based on the zones that map with the target zone - square centered at the users business point and having side length 5km . Each zone have to demarcated and assigned a number. |
| Type: | Primary |
| Actors: | It is for one -time use for the initialization of the product. |
| Preconditions : | Database structure have been decided. |
| Main flow : | <ol style="list-style-type: none">I. Demarcation of the rectangular area that contains all the possible area where the we will have to ever advertise.II. Gets its endpoints (their longitude and latitude) .III. Divide the above rectangle into squares each of side 1Km ,assign each square a number and store its end points corresponding to it in a database. |
| Post-condition: | The zones have been initialized . |
| Cross-reference: | None |

- **Update Information about each zone**

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| Use case number: | 2 |
| Use case name: | Update information about each zone |
| Overview: | Give the administrator to update/change the number of bundles,price per zone . It enables the admin to exercise more control and increase his business profit . |
| Type: | Secondary |
| Actors: | Administrator |
| Preconditions : | <ul style="list-style-type: none">• Division of zones |

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| | <ul style="list-style-type: none"> The administrator have been authorized . |
| Main flow : | <ol style="list-style-type: none"> The administrator the chooses the zone . He is the asked for the updated values. The changes are made in the database. |
| Alternate Flow : | 3) If unable to make changes to the database , display error and the values remain as the original one . |
| Post-condition: | <ul style="list-style-type: none"> The values have been updated. The new values will be used for calculation of prices,booking of bundles from the week after the changes have been made. |
| Cross-reference: | Division of zones |

● Selecting a zone

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| Use case number: | 3 |
| Use case name: | Selecting a zone |
| Overview: | User will select its business point . The zone that overlap with target area will be selected automatically. |
| Type: | Essential |
| Actors: | user |
| Precondition: | Login and uploaded advertisement |
| Main flow : | <ol style="list-style-type: none"> 1.user select the business point and the required zones are selected automatically , 2. According the zone cost will be decided. 3.Followed by selection of slots and bundles. |
| Post-condition: | true |
| Cross-reference: | Validate login |

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- **Selecting bundles**

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| Use case number: | 4 |
| Use case name: | Selecting bundles |
| Overview: | User will select Number of bundles he wants to advertise his product on. |
| Type: | Essential |
| Actors: | User |
| Precondition: | Login and upload advertisement. |
| Main flow : | 1.user select the number of bundles 2.number of bundles for each zone is pre-decided. 3. cost may vary for bundles in different zone |
| Alternate flow: | If that much bundle is not available then customer has to reduce number of bundles. |
| Alternate flow: | Total cost also depends on the number of bundles. |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **Selecting a slot**

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| Use case number: | 5 |
| Use case name: | Selecting a slot |
| Overview: | User will select number of slots he wants for his advertisement . One slot will be of 30 s. If his advertisement is of 45s (for eg.) then he has to buy two |

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| | slots |
| Type: | Essential |
| Actors: | user |
| Precondition: | Login and upload advertisement |
| Main flow : | 1.user select the number of slots. 2. according to the number of slots final cost will be decided. |
| Alternate flow: | If that much slot is not available then customer has to reduce the number of slots. |
| Alternate flow: | Timing for each slot is fix so if customer advertisement increase the time of one slot then he has buy two or more slots depending upon the time of each slot and advertisement time. |
| Alternate flow: | The customer can't increase or decrease the number of slots after submitting the advertisement for display. |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **Selecting of number of weeks**

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| Use case number: | 6 |
| Use case name: | Selecting of number of weeks |
| Overview: | User will select the time period ,in terms of number of weeks , for which he wants to advertise. Week will be on Monday to Sunday basis. |
| Type: | Essential |
| Actors: | user |
| Precondition: | Login and upload advertisement |
| Main flow : | 1.user will select the number of weeks |

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| | 2. according to the number of weeks cost will be decided. |
| Alternate flow: | 1.Each week starts on Monday and will end on Sunday. |
| Alternate flow: | User can't edit number of weeks after submission and same advertisement will be shown for that number of weeks |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **Check Availability**

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| Use case number: | 7 |
| Use case name: | Check availability |
| Overview: | When the user tries to book slots with a given number of bundles and for a given week , check if the same are available for each zone that lies into the target zone . |
| Type: | Secondary |
| Actors: | User |
| Preconditions : | <ul style="list-style-type: none"> • Division of zones • Update information about each zone • Selection of bundle • Selection of slot • Selection of week • Selection of zone |
| Main flow : | <ol style="list-style-type: none"> For each zone in the selected zone calculate the number of bundle(may be decimal) that will be allotted to the user for this zone . Check availability. If the required parameters are available go ahead and ask for confirmation and then book . |
| Alternate Flow : | 3) If for some zone the required parameters are not available , calculate the available parameters for the rest of the zones and |

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| | show the user the actual parameters he could be given against the required one and bill the user accordingly. |
| Post-condition: | <ul style="list-style-type: none"> Ask for confirmation and then go ahead with booking . |
| Cross-reference: | Calculation of cost and booking . |

- Calculate Cost and confirmation**

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| Use case number: | 8 |
| Use case name | Calculate Cost and confirmation |
| Overview: | Based on the zones selected and those available of them calculate the cost the user will be billed of,ask for confirmation and update record. |
| Type: | Secondary |
| Actors: | End User |
| Preconditions : | <ul style="list-style-type: none"> Check availability |
| Main flow : | <ol style="list-style-type: none"> I. Based on the chosen and those available of them calculate the cost the user will be billed of . II. Ask for confirmation . III. Redirect him to the payment portal and wait for confirmation. IV. Once confirmed update the database . |
| Alternate Flow : | 3) If the payment turns unsuccessful redirect him back to booking page . |
| Post-condition: | <ul style="list-style-type: none"> The slot with set number of bundles and time-period have been booked . |
| Cross-reference: | Check Availability , Databases |

- Upload advertisements**

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| Use case number: | 9 |
| Use case name: | Upload advertisements |

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| Overview: | <ul style="list-style-type: none"> • User will upload his advertisement • He will also enter the exact duration of his advertisement. |
| Type: | Essential |
| Actors: | user |
| Precondition: | User has logged in |
| Main flow : | User will upload the advertisement along with the time of the advertisement. |
| Alternate flow: | If the time of the advertisement exceeds the time decided for one slot then either user has to increase the number of slots as the Time for each slot is fix or else the advertisement will automatically cut. |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **login**

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| Use case number: | 10 |
| Use case name: | login |
| Overview: | Anyone using the web application has to login. System will check if the user is administrator or user. |
| Type: | Essential |
| Actors: | User/administrator |
| Precondition: | Sign up |
| Main flow : | <ol style="list-style-type: none"> 1. user will login with email-id and password' 2. system will check if that id already exist and if not then it will ask for correct id and password. |

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| | 3. system will detect if it's a user or admin and accordingly power will be given. |
| Alternate flow: | If the login is not validate then the message will be prompt. |
| Alternate flow: | If that id is not found then the user will be asked to to do sign up first. |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **Login to display**

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| Use case number: | 11 |
| Use case name: | Login to display |
| Overview: | Device first needs to login at the time of initialization of device (one time step) . Latter the advertisements will be displayed on the device based on its pinged location. |
| Actors: | Device/end-user |
| Precondition: | Sign up |
| Main flow : | I. .To initialize device , its required to login once. II. In the subsequent time ,no re login will be required unless the device is being initialized again. |
| Alternate flow: | If not validate ask to re-enter the id and password again |
| Alternate flow: | If that id is not found then the user will be asked to to do sign up first. |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **Display advertisements**

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| Use case number: | 12 |
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| Use case name: | Display Advertisement |
| Overview: | Advertisements corresponding to the location of the device which has pinged and time will start playing. |
| Actors: | user |
| Precondition: | Log in |
| Main flow : | 1.user will first log-in 2.device location will be pinged to the server and accordingly advertisement will be shown. 3. each device has unique id. |
| Alternate flow: | If the id and password is not validate then msg will be displayed. |
| Post-condition: | true |
| Cross-reference: | Validate login |

- **Managing User**

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| Use case number: | 15 |
| Use case name: | Managing User |
| Overview: | Administrator can regulate users. He will have the power to add or delete them or any content uploaded by them. |
| Actors: | Administrator |
| Precondition: | Administrator has to log In |
| Main flow : | 1. Administrator can add and delete the advertisement uploaded by the user. 2. can see user info and has excess to all the functionalities which the user has |
| Post-condition: | true |

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| Cross-reference: | Validate login |