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 -  10.3 [NFR-175] Accessibility
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- ▼  11 [NFR-183] Hidden features
 -  11.1 [NFR-184] Popularity of movies
 - ▼  11.2 [NFR-185] Intervention in the recommendations
 -  11.2.1 [NFR-186] Promoting
 -  11.2.2 [NFR-190] Presenting unpopular movies
 -  11.2.3 [NFR-202] Same country recommendation

TestTrack | Requirement Documents

Recommendation System Movies

Number: 8

Status: Draft, not assigned,

| | | |
|--------|--|-------------------------|
| BR-218 | 1 Maintain users accounts. Registration | Importance: Must |
|--------|--|-------------------------|

Description:

Site must maintain users accounts and provide the registration for them. Site must have "Admins" - special status users, capable for modifying site's data.

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|--------|-------------------------|-------------------------|
| FR-181 | 1.1 Create Users | Importance: Must |
|--------|-------------------------|-------------------------|

Description:

Our site must contain User class. Requirements:

-Name

-Surname

-Date Of Birth

-Country

-Login

- Password
- email
- Personal list of reviews on movies
- "Watch later" list

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|--------|-----------------------------|------------------------|
| FR-189 | 1.1.1 Friends system | Importance: May |
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Description:

User may add another user to friend list to watch on his reviews and movies' ratings later.

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| FR-196 | 1.1.2 Must password change | Importance: Must |
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Description:

Users must be able to change their passwords

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| FR-197 | 1.1.3 May change info | Importance: May |
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Description:

Users may be able to change personal info, such as: Name, Surname, Date of birth, country, email.

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| NFR-200 | 1.1.4 Hidden Preferences | Importance: May |
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Description:

Each user may have hidden parameter with preferences among different genres. This parameter can be negative or positive (from -5 to +5). Each good review should increase hidden preference to related genre, and vice versa.

Also user may have hidden parameter with preferences to specific film director. This parameter cannot be negative, it can not decrease. This parameter increases with each positive (7-10) rating of related film-director's movie

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| FR-219 | 1.2 Create Admins | Importance: Must |
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Description:

Admins - special status users. Admin accounts can be created by other admins, or by direct operating with database.

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|--------|---|-------------------------|
| BR-220 | 2 Maintain movies and related material | Importance: Must |
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Description:

Site must keep movies info, and film directors and actors data.

FR-179 2.1 Create Movies

Importance: Must

Description:

Our system must contain MOVIE class, which will have:

- Title - name of the movie
- Genre - genre of the movie
- Year - year of the release of the movies
- Actors - each movie must indicate which actors have taken part in it. Real name of actors should be matched with names of the corresponding movie characters. Presented movie's actors should be sorted from left to right on the page by importance of movie character (main characters on the left, secondary characters on the right)
- Film director - director of the movie
- Country - country of origin
- Description - short movie description
- RatingImdb - retranslated rating of movie from imdb
- RatingUser - rating that user sets for himself

FR-188 2.1.1 Users may write review

Importance: May

Description:

Users may write their full review (with text, not "grade" only) to be showed for other users

FR-182 2.2 Create Actors

Importance: Must

Description:

Our site must contain Actor class.

- Name
- Surname
- Date of birth
- (not necessary) Date of Birth
- Country
- List of movies (s)he took part in

FR-187 2.3 Create Film directors

Importance: Must

Description:

We must have 'Film director' class.

- Name

- Surname
- Date of birth
- Date of death.
- Filmed movies

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| BR-206 | 3 Admins impact | Importance: Must |
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Description:

Admins must be able to fully operate with the system

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| FR-207 | 3.1 Add new movies | Importance: Must |
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Description:

Admins and site personnel must be able to add new movies together with whole movie info

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| FR-208 | 3.2 Delete users | Importance: Must |
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Description:

Admins must be able to delete users' accounts

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| FR-209 | 3.3 Change data | Importance: Must |
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Description:

Admins must be able to change movies and users data on the website

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| FR-210 | 3.4 Block users | Importance: Should |
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Description:

Admins should be able block users accounts for specific amount of time (in case of inappropriate behavior)

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| BR-221 | 4 Integration with other systems | Importance: Must |
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Description:

Our site must be integrated with other systems: with online streaming cinemas, with social medias and with messangers.

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| FR-169 | 4.1 With show-steaming services | Importance: Must |
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Description:

Our system must be able to integrate with Netflix, Hulu and HBO, having the ability to redirect user right to the streaming service by pressing a button under movie description.

FR-170 4.2 With social media Importance: May

Description:

Our system may be integrated with social medias, giving opportunity to logging to website by Google, Twitter and Facebook accounts and giving possibility to share user's reviews/rates/compilations of movies in this medias

FR-171 4.3 With messengers Importance: May

Description:

Users may send his reviews and links to the movies to his friends as private message in such messengers: Viber, Telegram, WhatsUp

BR-177 5 Site must recommend users movies Importance: Must

Description:

Site must recommend users movies which users will like (criteria: percentage of adding movie to "watch later" after recommendation should be >10%)

FR-192 5.1 TOP500 Importance: Must

Description:

Users must be able to look at the TOP500 imdb movies

FR-193 5.2 Rate and "Watch later" Importance: Must

Description:

Users must be able to rate a movie and put in in "watch later" list

FR-194 5.3 Recommendation Importance: Must

Description:

Users must get recommendation list by pressing button "recommend me smth".

FR-195 5.3.1 System response on low amount of ratings Importance: May

Description:

If user gave small amount of ratings, system may ask him to rate more movies and show random results of imdb TOP500 as current recommendation list.

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|--------|---|-------------------------|
| FR-198 | 5.3.2 Main principle of recommendation | Importance: Must |
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Description:

Recommendation should compare similar ratings between current user's rating list and other's users. Each difference in grades will be added to final coefficient between current user and other one. System must recommend good-rated movie (rating from 7-10) of the user with smallest coefficient of rating difference with current user.

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| NFR-201 | 5.3.3 Hidden preferences | Importance: May |
|---------|---------------------------------|------------------------|

Description:

If they are implemented, recommendation system may use user's hidden preferences such as "How much user different genres" and "How much user like movies of specific film director"

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| FR-199 | 5.4 Search by actors and film directors | Importance: Must |
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Description:

User must be able to search movies by clicking on actors or film directors

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| FR-203 | 5.5 "Also like" feature (mini-recommendation) | Importance: Should |
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Description:

Each movie should have "also like" line below description, that will consists out of good rated movies (8-10 grade) by users who rated current movie as excellent (9-10 grade).

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| FR-204 | 5.6 Main page website | Importance: Should |
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Description:

On the main page of website there should be:

"Current movies" category - movies that are shown in cinemas in this moment. Upon clicking, movies will be shown sorted by rating or by popularity (by user's choice, if this function will be implemented)

"Current TV-Shows" category - new TV-Shows, that can be sorted by rating, popularity and filtered by different TV-streaming services.

"Trailers" category - trailers of announced, but unreleased yet movies.

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| FR-205 | 5.7 News | Importance: May |
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Description:

Website may have news about cinema industry in special tab

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| BR-213 | 6 Send feedback for director | Importance: Must |
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Description:

Site must send some feedback about results of it's work to the director

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| FR-214 | 6.1 Generate reports each month | Importance: Should |
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Description:

Once per month, system should generate report about:

- 1) Amount of unique users per month.
- 2) Average amount of unique users per each day.
- 3) Average time users spend on the website.

And send this report to director's email.

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| FR-215 | 6.2 Users online | Importance: Must |
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Description:

Users with special status (admin accounts) must be able to see:

- number of current users online
- number of total amount of all movies and shows in the database
- number of total amount of users ratings

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| FR-216 | 6.3 Changes per day | Importance: May |
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Description:

Users with admin status may to see:

- Unique users logging per day (per last 24 hours)
- Amount of new ratings per day (per last 24 hours)

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| BR-159 | 7 Advertisements | Importance: Should |
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Description:

System should be able to show advertisements

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| FR-222 | 7.1 Promote movies | Importance: Should |
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Description:

We should implement possibility to advertise movies: put banners with movies in the website, put 1 advertised movie inside of recommendation list (keeping appropriate "content-based" side to general recommendations, like genres)

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| FR-223 | 7.2 Promote events | Importance: May |
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Description:

Our website may promote movie-related events in banners and in "News" tab.

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| BR-211 | 8 Withstand many users | Importance: Must |
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Description:

Site must be able to withstand a lot of users at once

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| NFR-212 | 8.1 Server's minimum users requirement | Importance: Must |
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Description:

Web-domain and server need to be able to withstand at least 10000 users at once

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| BR-163 | 9 Problem and proposition contact | Importance: Must |
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Description:

System need to contact info, for getting problems and propositions feedback

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| FR-224 | 9.1 Contact info tab | Importance: Must |
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Description:

Site must have special tab with contact info.

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| NFR-172 | 10 The basic principle of the site | Importance: Must |
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Description:

Site must correspond specific rules:

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| NFR-173 | 10.1 Platform | Importance: Must |
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Description:

Site must be accessible on the web, with using web browser. Application must supports such versions of

browsers:

Chrome: 50 version or later

Edge: 14 version or later

Firefox: 52 version or later

Internet Explorer: 10 version or later

Opera: 37 version or later

Safari: 9.0 version or later

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| NFR-174 | 10.2 Backup | Importance: Must |
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Description:

System must make backup of all data each 24 hours.

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| NFR-175 | 10.3 Accessibility | Importance: Must |
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Description:

Site must be accessible everyday, 24/7.

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| NFR-176 | 10.4 Response | Importance: |
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Description:

Site should response on users' requests (such as: open link to the film, open a profile, rate movie, add movie to favorite, add movie to "watch later", get general top-500 movies recommendation) no longer than 4 seconds.

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| NFR-183 | 11 Hidden features | Importance: Should |
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Description:

Hidden features we can implement

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| NFR-184 | 11.1 Popularity of movies | Importance: May |
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Description:

Movies may have hidden parameter of popularity based on amount of imdb users rated it.

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| NFR-185 | 11.2 Intervention in the recommendations | Importance: Should |
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Description:

We should make small intervention(changes) in way our recommendation system works

NFR-186 **11.2.1 Promoting**

Importance: Should

Description:

One place for the movie among recommendation list should be reserved for movie we are advertising - with accordance of general tendency of creating of the recommendation list (promoted movie can not have another genre than movies represented in recommendation list)

NFR-190 **11.2.2 Presenting unpopular movies**

Importance: May

Description:

System may put several unpopular movies of the same genre during recommendation list.

NFR-202 **11.2.3 Same country recommendation**

Importance: Should

Description:

System should include movies of the same country as user's during making recommendation list.

| Test Case ID# | Test Case Description |
|---------------|--|
| TC#001 | Verify if it's possible to register and if new user account adds into database. Check if users can login into system |
| TC#002 | Check if it's prohibited to register with incorrect data (too short password, name and surname with inappropriate symbols) |
| TC#003 | Verify if users can add other users to friends, if users can accept or decline friendship proposition |
| TC#004 | Verify if users can change their passwords (with changing password in database.) |
| TC#005 | Verify if users can change side information: name, surname, email, country of birth. |
| TC#006 | Verify that users cannot change their information more often than once per 24 hours. |
| TC#007 | Verify if we can create admins accounts by directly operating with database |
| TC#008 | Verify if admin users can create other admin user accounts |
| TC#009 | Verify if Movies objects work correctly: create several movies examples by operating with database |
| TC#010 | Verify if users can write text reviews for movies |
| TC#011 | Verify if users can see other users text reviews |
| TC#012 | Verify if Actors objects work correctly: create several actors examples by operating with database, connect them to related movies |
| TC#013 | Verify if users can go to some movie related to actor from actor tab and vice versa |
| TC#014 | Verify if Film Directors objects work correctly: create several actors examples by operating with database, connect them to related movies |
| TC#015 | Verify if users can go to some movie related to firm director from his(her) tab and vice versa |

| | |
|--------|---|
| TC#016 | Check if admins can create new movies tabs |
| TC#017 | Check if admins can delete users. Such users cannot login into our system anymore |
| TC#018 | Try to change each piece of information of several movies by admin account. Change each piece of information of test user account. |
| TC#019 | Check if admins can block users for certain amount of time by blocking test user account. Check if it's impossible to login with this user account until the end of lock. |
| TC#020 | Check if blocked users see the reason of blocking and end date of lock. |
| TC#021 | Verify if links to streaming services are present on movies. |
| TC#022 | Check if users correctly can go to each linked streaming sites. |
| TC#023 | Check if users can register on website by alternative social media ways. Each logging session will be done from social media logging window, but information about such accounts (username, email, name, surname) also should be contained in database in separate table. |
| TC#024 | Check if users can share their ratings and reviews on such social media website |
| TC#025 | Check if users can send their reviews and ratings as messages on specified messengers |
| TC#026 | Check if TOP-500 tab is visible. Try to watch such tab from user account and add movie into "watch later" from it |
| TC#027 | Check if TOP-500 tab updates according to changes in imdb TOP-500 |
| TC#028 | Verify if it's possible to rate movie or to add it in "watch later" list as user. Try to change rate and change status from "watch later" to some rating. |
| TC#029 | Create a lot of users accounts. Rate movies with different pattern. Take some of these accounts and make them test accounts. Remove some their previous high ratings and verify that system recommends at least 35% of previously rated movies again. |

| | |
|--------|---|
| TC#030 | Several members of developing crew should create their own accounts with their own opinions and ratings. They need to check if recommendation system recommend them something they may like |
| TC#031 | Verify that if user has lower than 20 ratings, (s)he will be informed about that with proposition to rate more movies |
| TC#032 | Verify that user's recommendation list will consist out of TOP-500 movies |
| TC#033 | Verify that user can move to movie by clicking on it from actor or film director tab |
| TC#034 | Verify that movies have "movies like this" feature generated in "Content-based" approach |
| TC#035 | Verify that users can go to each existing site's tab |
| TC#036 | Verify that "current movies" and "current shows" are refreshed every week (with new movie releases) |
| TC#037 | Verify that news tab works appropriately. Verify that admin accounts can create new news to be shown. |
| TC#038 | Verify that reports are generated and sent to director's email |
| TC#039 | Check if "Users online" and amount of movies info show correct number |
| TC#040 | Check if "unique users per day" and "new ratings per day" show correct number |
| TC#041 | Verify that banners redirect users to promoting material correctly. |
| TC#042 | Check that promoted movies are shown in the recommendations correctly |
| TC#043 | Verify that events displaying and redirecting to events' websites work correctly |

| REQUIREMENTS TRACEABILITY MATRIX | | | | | |
|---|---|--------------------------------------|------------------------------|----------|--------------------|
| project name: System for movie rating and recommendations | | | | | |
| Business requirement document (BRD) | | Functional requirements document FSD | | | Test case document |
| Business requirement ID# | Business use case | Functional requirement ID# | Funct. Use Case | Priority | Test Case ID# |
| BR-218 | 1 Maintain users accounts. Registration | FR-181 | 1.1 Create Users | High | TC#001 TC#002 |
| | | FR-189 | 1.1.1 Friends system | Low | TC#003 |
| | | FR-196 | 1.1.2 Must password change | High | TC#004 TC#006 |
| | | FR-197 | 1.1.3 May change info | Low | TC#005 TC#006 |
| | | FR-219 | 1.2 Create Admins | High | TC#007 TC#008 |
| BR-220 | 2 Maintain movies and related material | FR-179 | 2.1 Create Movies | High | TC#009 |
| | | FR-188 | 2.1.1 Users may write review | Low | TC#010 TC#011 |
| | | FR-182 | 2.2 Create Actors | Medium | TC#012 TC#013 |
| | | FR-187 | 2.3 Create Film directors | Medium | TC#014 TC#015 |
| BR-206 | 3 Admins impact | FR-207 | 3.1 Add new movies | High | TC#016 |
| | | FR-208 | 3.2 Delete users | High | TC#017 |

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|---------------|---|--------|---|--------|------------------|
| | | FR-209 | 3.3 Change data | High | TC#018 |
| | | FR-210 | 3.4 Block users | Low | TC#019 TC#020 |
| BR-221 | 4 Integration with other systems | FR-169 | 4.1 With show-steaming services | High | TC#021 TC#022 |
| | | FR-170 | 4.2 With social media | Medium | TC#023 TC#024 |
| | | FR-171 | 4.3 With messengers | Low | TC#025 |
| BR-177 | 5 Site must recommend users movies | FR-192 | 5.1 TOP500 | High | TC#026 TC#027 |
| | | FR-193 | 5.2 Rate and "Watch later" | High | TC#028 |
| | | FR-194 | 5.3 Recommendation | High | TC#029 TC#030 |
| | | FR-195 | 5.3.1 System response on low amount of ratings | Medium | TC#031 TC#032 |
| | | FR-199 | 5.4 Search by actors and film directors | High | TC#033 |
| | | FR-203 | 5.5 "Also like" feature (mini-recommendation) | Medium | TC#034 |
| | | FR-204 | 5.6 Main page website | High | TC#035 TC#036 |
| | | FR-205 | 5.7 News | Low | TC#037 |
| BR-213 | 6 Send feedback for director | FR-214 | 6.1 Generate reports each month | Medium | TC#038 |
| | | FR-215 | 6.2 Users online | Low | TC#039 |

| | | | | | |
|---------------|-------------------------|--------|----------------------------|--------|------------------|
| | | FR-216 | 6.3 Changes per day | Low | TC#040 |
| BR-159 | 7 Advertisements | FR-222 | 7.1 Promote movies | Medium | TC#041 TC#042 |
| | | FR-223 | 7.2 Promote events | Low | TC#043 |