HCI PROJECT – STAGE 2

Movie Database

Theme – Does the budget effect the overall IMDB Score?

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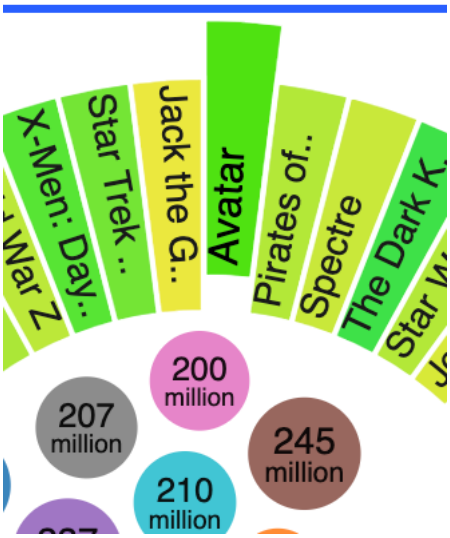
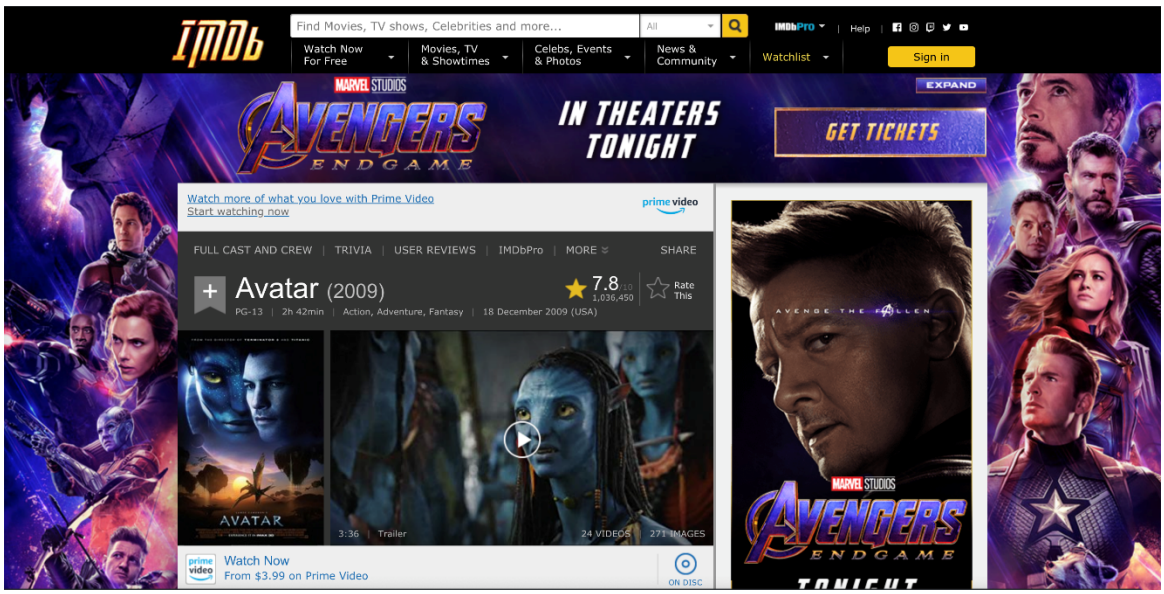
PROJECT – STAGE 2

In the implementation phase of our project, we have selected the second design and made few improvements and advancements to the same. We have made the design even more interactive not just by highlighting the relations alone. We have added the links to all the movies visualized on the chart and double clicking them redirects the user to the IMDB page.

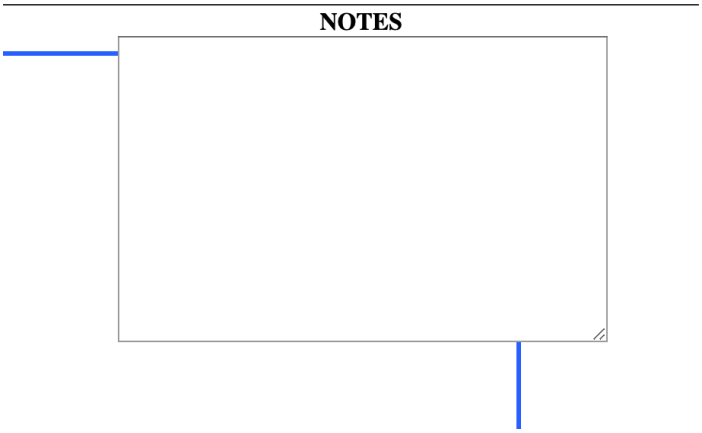


From the above figure, the user double clicks on the avatar movie which got zoomed in and this redirects the user to the movie's IMDB page.

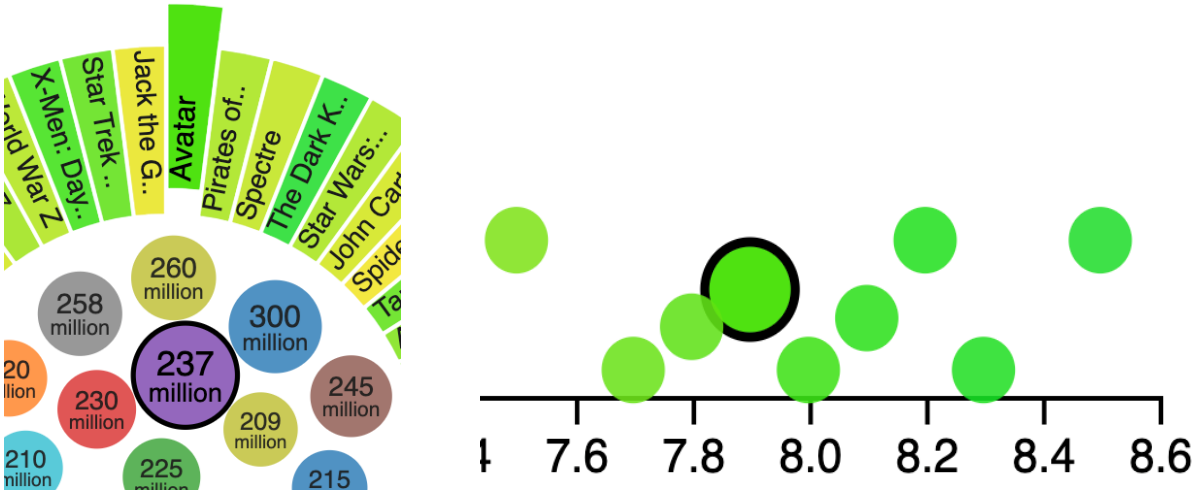


So, the user gets to know about the complete information regarding the movie. All he needs to do is to double click on the movie name.

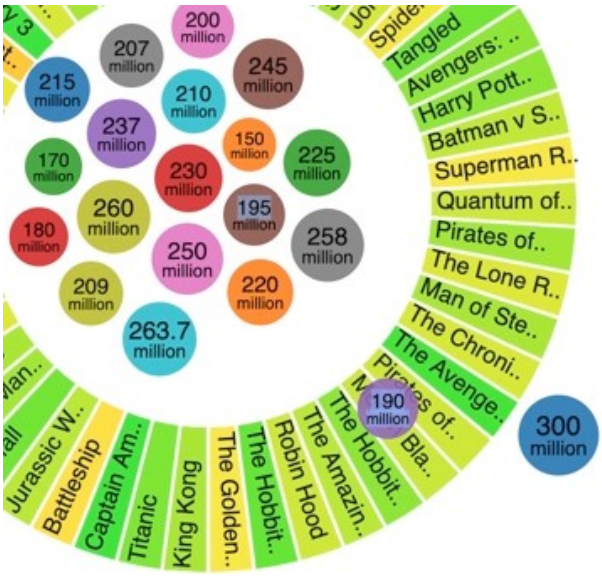
The other feature added to the design apart from visualizing is the addition of the notepad. So, the user can write down notes about anything on the top right corner of the page. This helps the user in a way such that he doesn't need to memorize everything, or he can write down the list of movies he wanted to watch. The data typed in the notes will not be erased if the page is reloaded.



When it comes to the most important aspect of the design which is the visualization technique, we have added the zoom in technique for visualizing the attributes. For example, If we select a movie budget, the corresponding movie name and the IMDB score gets zoomed simultaneously based on the relations (one – one, one – many or many - many).



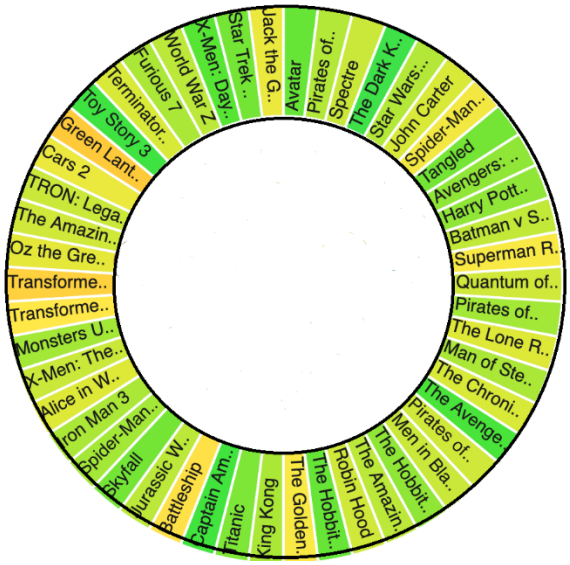
We have also added the bubble drag function where the user could play with the bubbles from the circle packing visualization technique. This functionality lets the user to drag the bubbles anywhere on the screen up to some extent.



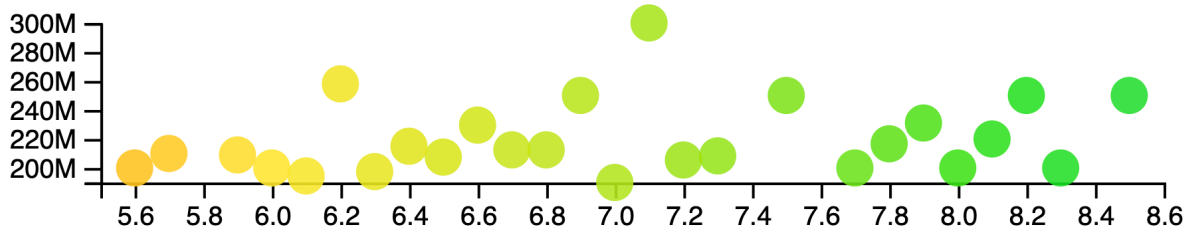
In our final design, we have included three visualizations.

Circle packing: In this visualization technique, the budget value is taken into consideration and the value of the budget depends on the radius of the circle. The greater the budget, the greater the radius of the circle.

Sunburst: This visualization technique is named as the "Sunburst" which is similar to the tree-map, except the fact that it uses a radial layout. The center is the root node of the tree, with leaves on the circumference. The area of every arc is taken into consideration.

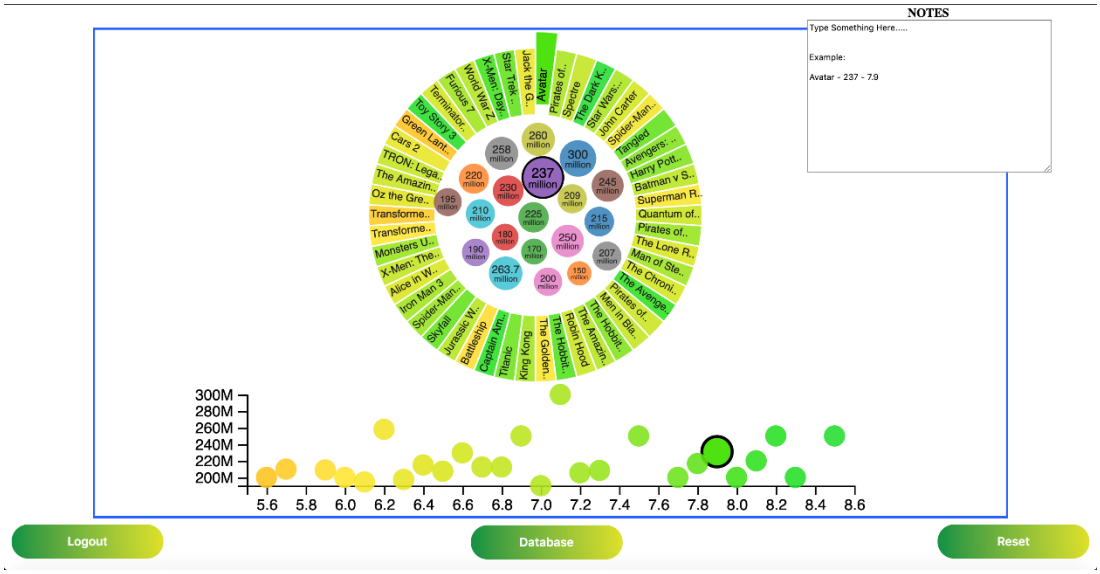


Scatter-plot: This visualization is named as "Scatter-plot". This visualization technique is similar to a bar graph. But, in this technique, the IMDB score is taken along X axis and the budget attribute is taken along the Y – axis.

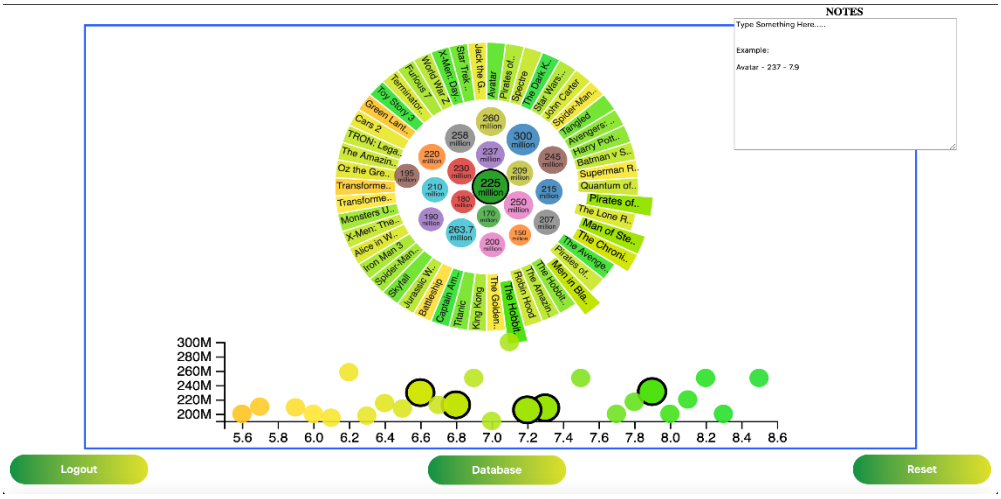


The different types of relations shown in our design are:

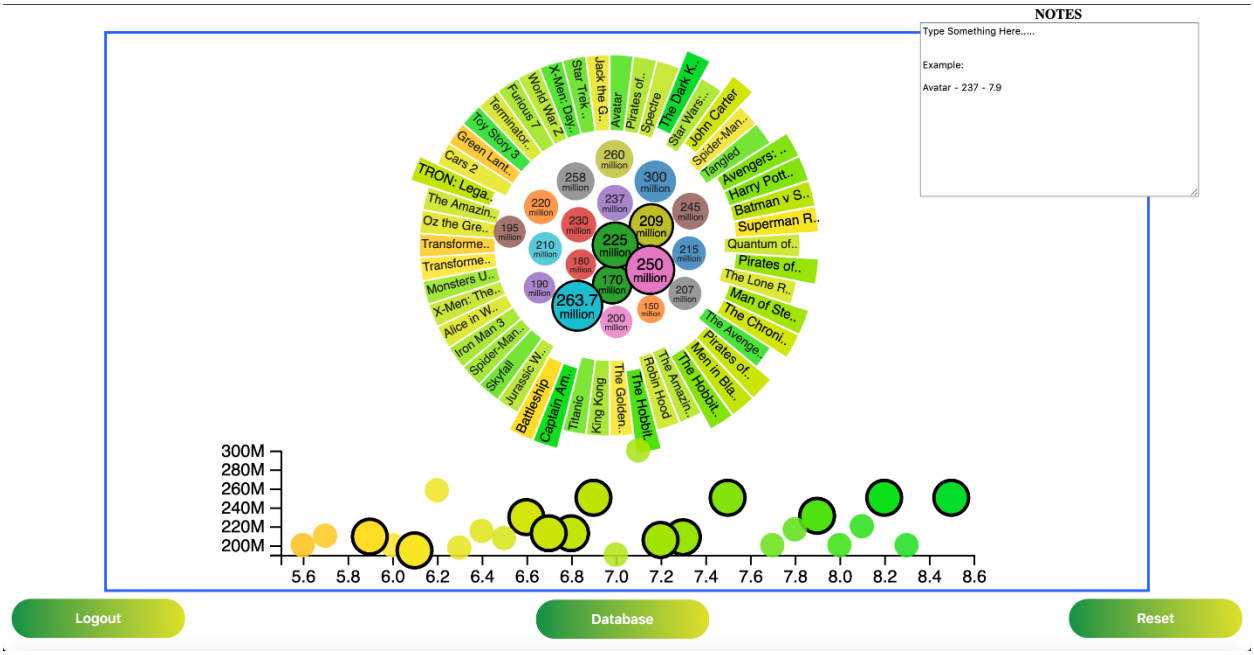
i**) One to one**: In this relation, the budget value is selected by the user initially from the circle packing visualization and the corresponding movie name from the Sunburst visualization and the budget from the scatter plot for that particular movie gets zoomed in or visualized. So, one attribute from each visualization gets selected which makes it a one to one relation.



ii) **One to many**: In this relation, the budget value is selected initially from the circle packing visualization and the corresponding movie name gets selected from the Sunburst visualization. For instance, two movies can have the same budget value and those movies get selected in the sunburst visualization and their IMDB score and budget along the X and Y axis in the scatter plot visualization gets zoomed which makes it a one to many relation.



iii) **Many to many**: Selection of multiple budget values in the circle packing visualization leads to selection of several movie titles in the sunburst visualization which in turn gives their IMDB score and budget in the scatter-plot visualization technique. So, this multiple selection makes it a many to many relation.



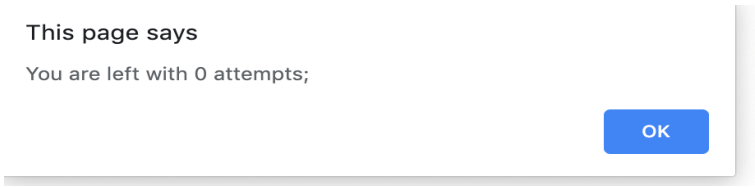
So, in the final design, the user can interact with the three visualization techniques. The user gets to note down in case he forgets anything. We have used three visualization techniques and we have taken the attributes as budget value, movie name and IMDB score.

When the user selects the budget value in the circle packing visualization technique, the movie name with that budget range gets selected and in the scatter plot, the IMDB rating of that movie is shown.

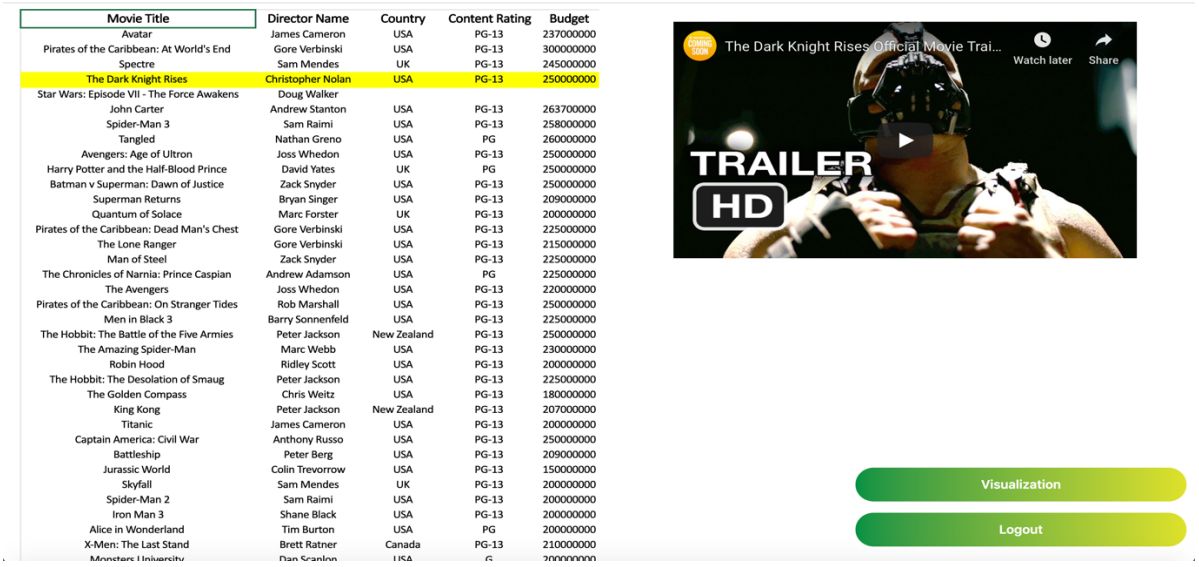
We have even extended the functionality of the project by creating a login page initially. So, when the user enters the username and password, the page gets redirected to the movie database. The user can then select the "visualization" button. Clicking that button leads to the design page. The Username and the Password for the login page is given bellow.

- **USERNAME**: hci
- **PASSWORD:** project

We the user enters the wrong password the system will throw up saying you have entered the wrong password and the user gets 3 changes to enter the wrong password after which the user will not be able to type in the Username and Password.

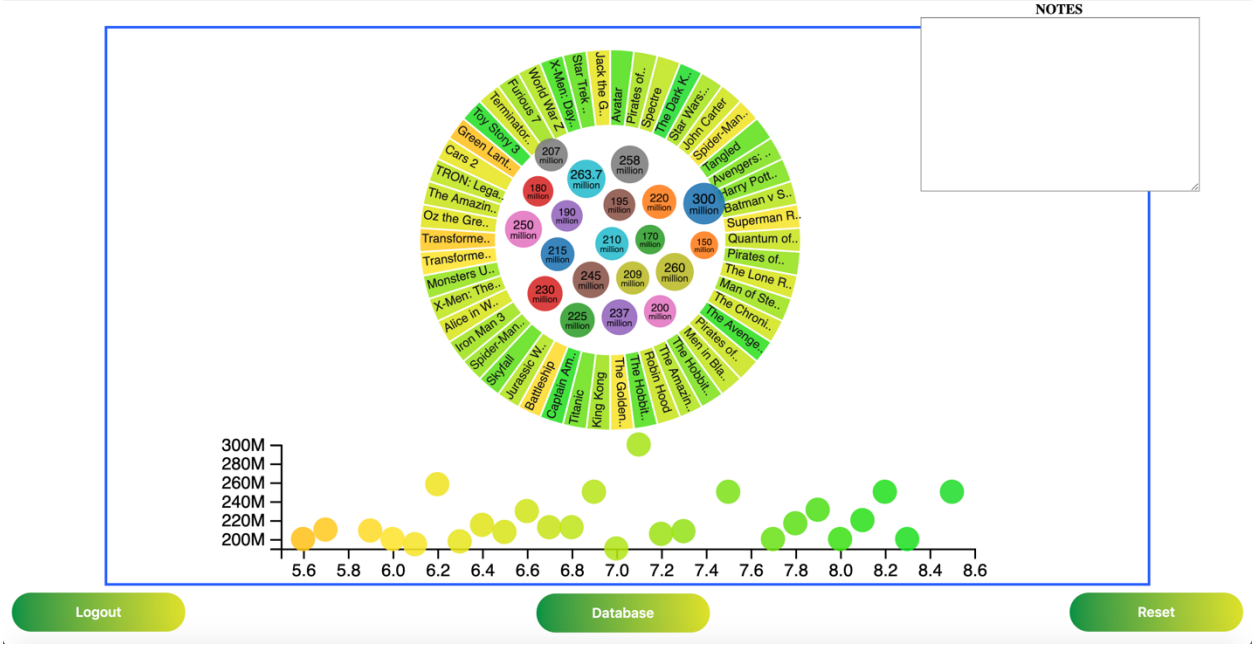


After the authentication, the user gets redirected to the following page where he gets to see the movie database. In the database the highest rated movie is The Dark Knight Rises by Christopher Nolan and its trailer is displayed on to the right.

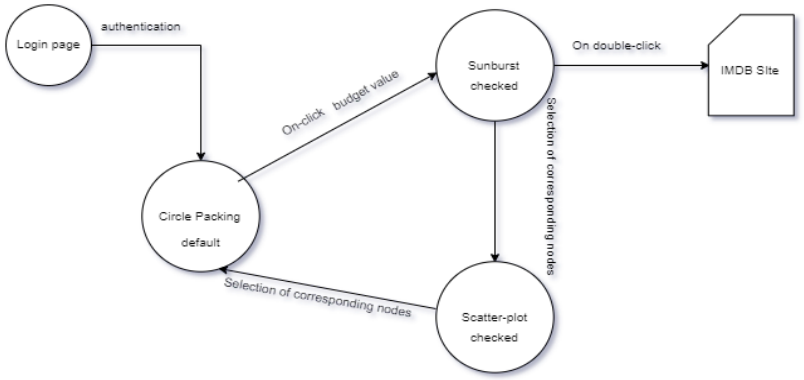


Movie Title	Director Name	Country	Content Rating	Budget
Avatar	James Cameron	USA	PG-13	237000000
Pirates of the Caribbean: At World's End	Gore Verbinski	USA	PG-13	300000000
Spectre	Sam Mendes	UK	PG-13	245000000
The Dark Knight Rises	Christopher Nolan	USA	PG-13	250000000
Star Wars: Episode VII - The Force Awakens	Doug Walker			
John Carter	Andrew Stanton	USA	PG-13	263700000
Spider-Man 3	Sam Raimi	USA	PG-13	258000000
Tangled	Nathan Greno	USA	PG	260000000
Avengers: Age of Ultron	Joss Whedon	USA	PG-13	250000000
Harry Potter and the Half-Blood Prince	David Yates	UK	PG	250000000
Batman v Superman: Dawn of Justice	Zack Snyder	USA	PG-13	250000000
Superman Returns	Bryan Singer	USA	PG-13	209000000
Quantum of Solace	Marc Forster	UK	PG-13	200000000
Pirates of the Caribbean: Dead Man's Chest	Gore Verbinski	USA	PG-13	225000000
The Lone Ranger	Gore Verbinski	USA	PG-13	215000000
Man of Steel	Zack Snyder	USA	PG-13	225000000
The Chronicles of Narnia: Prince Caspian	Andrew Adamson	USA	PG	225000000
The Avengers	Joss Whedon	USA	PG-13	220000000
Pirates of the Caribbean: On Stranger Tides	Rob Marshall	USA	PG-13	250000000
Men in Black 3	Barry Sonnenfeld	USA	PG-13	225000000
The Hobbit: The Battle of the Five Armies	Peter Jackson	New Zealand	PG-13	250000000
The Amazing Spider-Man	Marc Webb	USA	PG-13	230000000
Robin Hood	Ridley Scott	USA	PG-13	200000000
The Hobbit: The Desolation of Smaug	Peter Jackson	USA	PG-13	225000000
The Golden Compass	Chris Weitz	USA	PG-13	180000000
King Kong	Peter Jackson	New Zealand	PG-13	207000000
Titanic	James Cameron	USA	PG-13	200000000
Captain America: Civil War	Anthony Russo	USA	PG-13	250000000
Battleship	Peter Berg	USA	PG-13	209000000
Jurassic World	Colin Trevorrow	USA	PG-13	150000000
Skyfall	Sam Mendes	UK	PG-13	200000000
Spider-Man 2	Sam Raimi	USA	PG-13	200000000
Iron Man 3	Shane Black	USA	PG-13	200000000
Alice in Wonderland	Tim Burton	USA	PG	200000000
X-Men: The Last Stand	Brett Ratner	Canada	PG-13	210000000
Monsters University	Dan Scanlon	USA	G	200000000

When the user clicks on “visualization”, the page gets redirected to the three visualization techniques. If the user clicks on “logout”, the page goes back to the login page again.



The figure below gives the information about the **state diagram** which relates to the overall design.

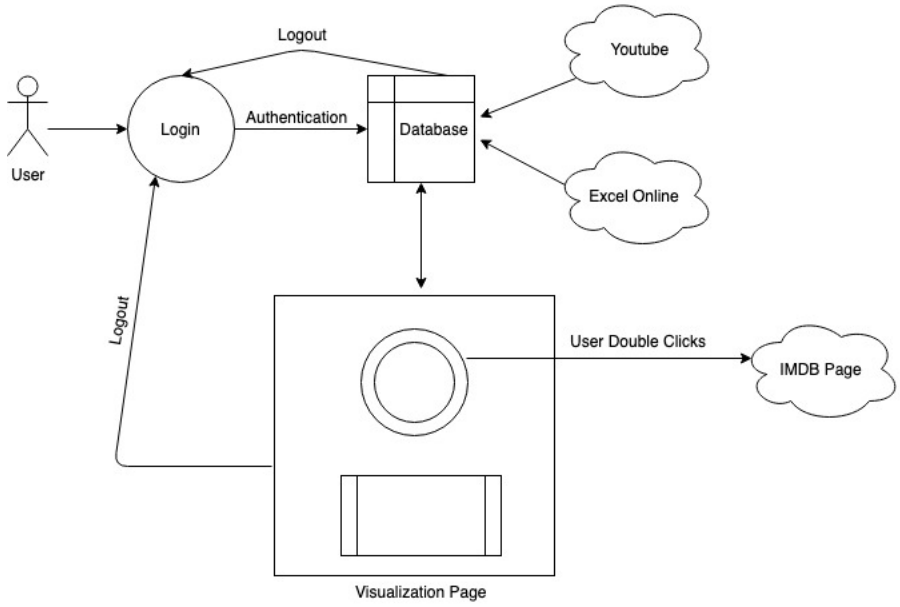


From the above state diagram, the user needs to enter the credentials first and if the credentials are correct, the user gets redirected to the excel page where he could see the list of the movies. Then

the user can get to the design page where there are three visualizations. So, double clicking on the movie displayed on the sunburst visualization leads it to the IMDB page.

In the state diagram, the initial state is the circle packing visualization and selecting the budget value reflects on the remaining states which are sunburst and scatter-plot.

A Detailed overview of the system is given below:



Deploying and running the code:

- Open the Login.html page using Google Chrome browser.
- Enter the Username and Password to view the database.

  Username: hci

  Password: project.

- After the Username and Password is entered, it will lead you to the database page from which the visualization page can be accessed.

References used for this Project:

For the Bubble Effect:

- https://www.d3-graph-gallery.com/graph/circularpacking_drag.html
- http://jsfiddle.net/49L6uj7s/

For the Authentication page

- https://www.formget.com/javascript-login-form/

Other external links used:

- Circle/Pie - https://bl.ocks.org/d3indepth/25efacedfc463eead5e77fb336a90caa
- Dot/Circle - https://bl.ocks.org/netzwerg/7908ec2045f27f95e65a9d517a9c3140