Information Visualization
CHECKPOINT III: Visualization Sketch

G08-A

1. Visual Encoding

- Course Unemployment % – Encoded as **position** in vertical axis
- University Unemployment % - Encoded as **circle area**
- Area Unemployment [total] – Encoded as **area in "Sunburst"**
- Year – Encoded as **position** in horizontal axis
- Course/University Name – Encoded as **colours "hue"** and **position**
- Entry Grade – Encoded as **position** in horizontal axis
- Course Area - Encoded as colour **intensity**

2. Idiom and Tasks/Question
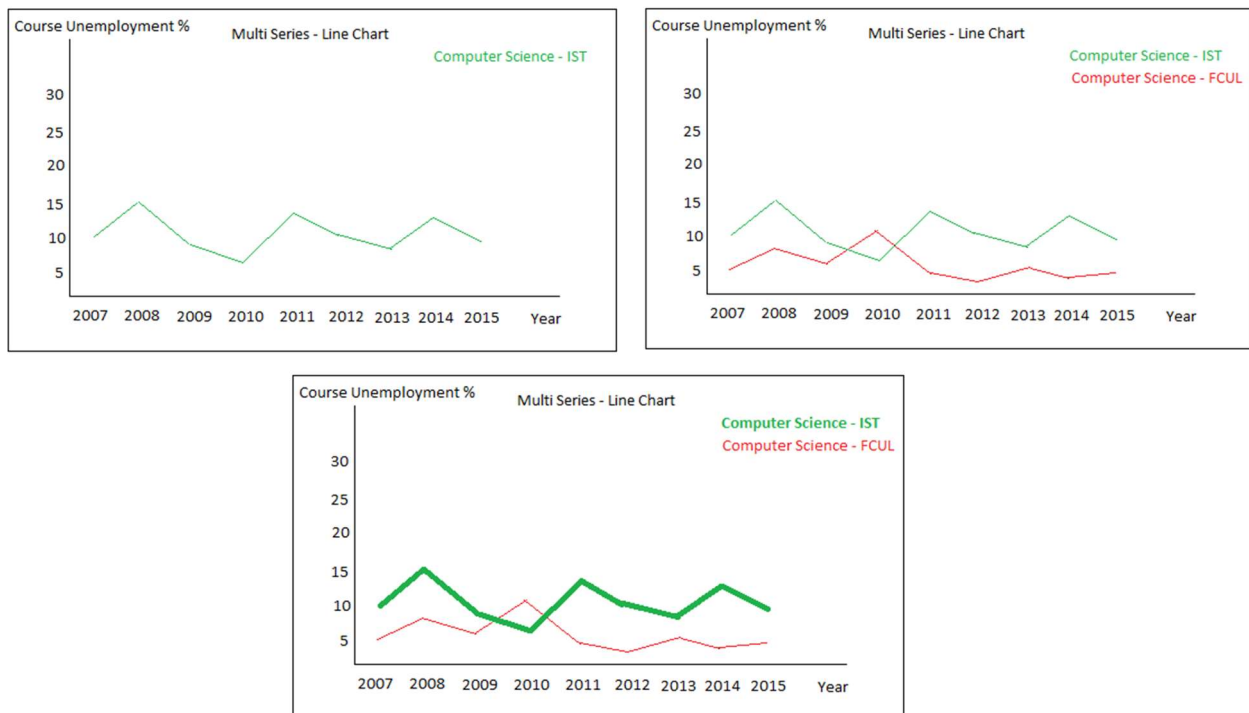
2.1. Task 1 and 2

Image 1 – (Top Left) Line chart presenting unemployment of one course. (Top Right) Due to interaction we can add more courses to the line chart and compare them. (Bottom) It's possible to select a course line and highlight the course in the other views ex: Highlight the course dot in the next presented idiom (Image 2 – Bottom).

- **Task 1**: Query->Compare - Compare the unemployment (%) of different courses (regardless of course conclusion year of the graduates). **(Image 1 - Top Right)**

- **Task 2**: Analyze->Consume->Present – Present the information about unemployment (%) from a specific course graduates across time. **(Image 1 - Top Left)**

- **Question**: Does Computer Science graduates in IST have more unemployment, in 2015, than Computer Science in FCUL? And in 2007? **(Task 1) (Image 1 - Top Right)**

- **Question**: Is Computer Science in IST having less unemployed graduates in last year's? **(Task 2)**

- **Question**: What was the year which had less unemployed people from Computer Science in IST? **(Task 2)** (Image 1 - Top Left)
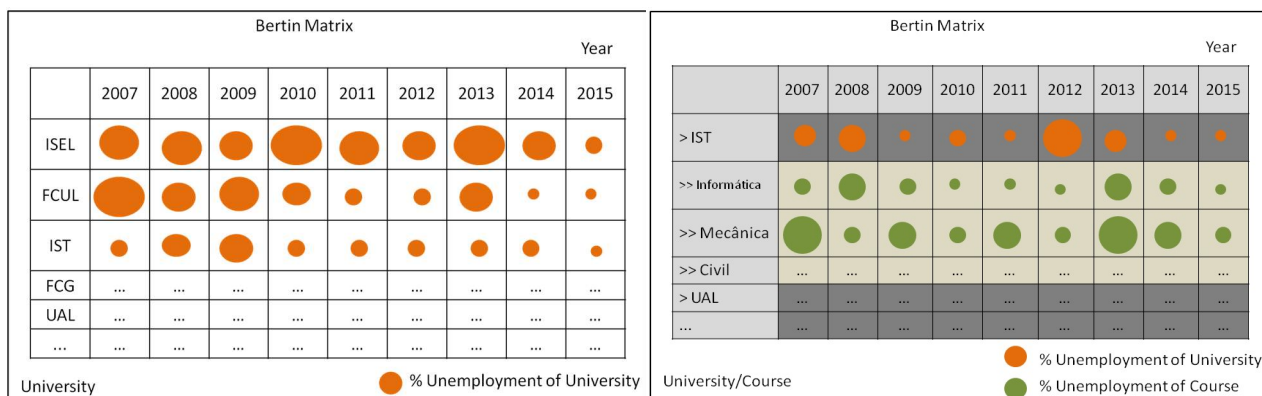
2.2. Task 3

Image 2 – (Left) Universities unemployment ordered in descending order. (Right) New Opportunity: When clicked on a university the data will be drill down to see the universities courses unemployment across the years.

New Opportunity: Sort the universities in ascending and descending order to give user both perspectives of the data.

New Opportunity 2: It will be possible to choose a particular university to see in the top of the matrix using interactivity, and the selection of a course **(Image 1 – Bottom)** will put that course university in the top and highlighted.

New Opportunity 3: We don't have in our tasks nothing related to the university unemployment trends but we this approach we can see that in the matrix.

New Opportunity 4: Catch outlier's years in unemployment of a university.

- **Task 3:** Query->Identify – Identify the university with more unemployment (%). **(Image 2 - Left)**

- **Question:** What is the university with more unemployment? **(Task 3)** **(Image 2 - Left)**

Note: The matrix will not contain all the universities because they are more than 200, the bottom universities in matrix will have smaller lines and will fade. But it will be possible to scroll, reorder and select a particular one as stated above. It will possible to have "tooltips" to each circle and see more details about the data that originated that one ex: Total unemployed and total graduates.
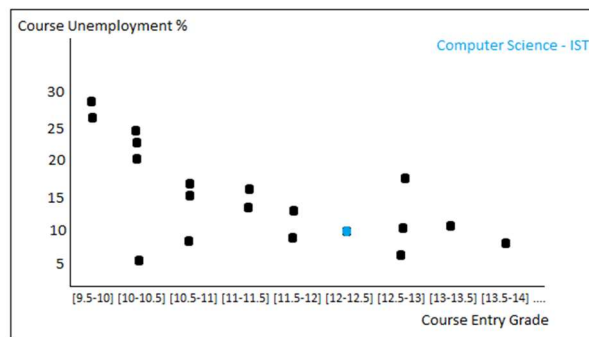
2.3. Task 4
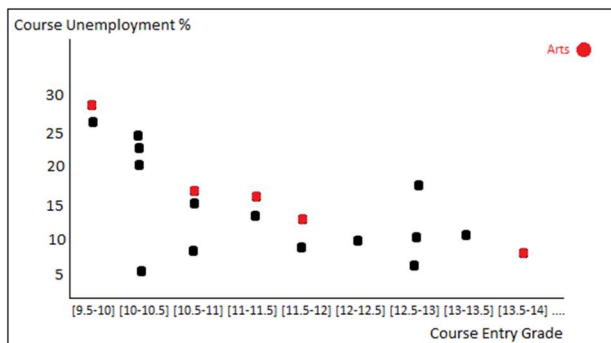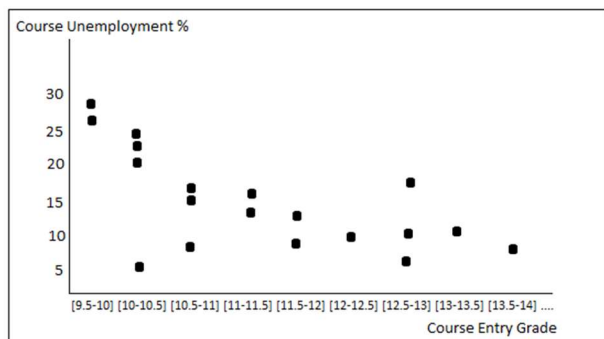
Image 3 – (Top Right) Scatter plot highlighting the course from a specific area due to interaction in area's idiom. (Bottom) Scatter plot highlighting a specific course (due to interaction) selected in course's line chart.

Task 4: Consume->Present – Relation between minimum entry grade and unemployment (%). **(Image 3 - Top Left)**

- **Question**: Where the unemployment will be higher? In a course with 14 minimum entry grade or one with 17? (Task 4) **(Image 3 - Top Left)**

New Opportunity: Catch outlier's courses to see if there is a specific course in an area with higher unemployment that has a very low unemployment. This is easy because the course's area unemployment view will be "connected" with this one.

New Opportunity 2: Catch the unemployment/entry grade correlation for courses from the same area. This is possible due to possibility of select an area in courses area view and highlight here (Image 2 – Top Right).

Note: Each dot represents a course.
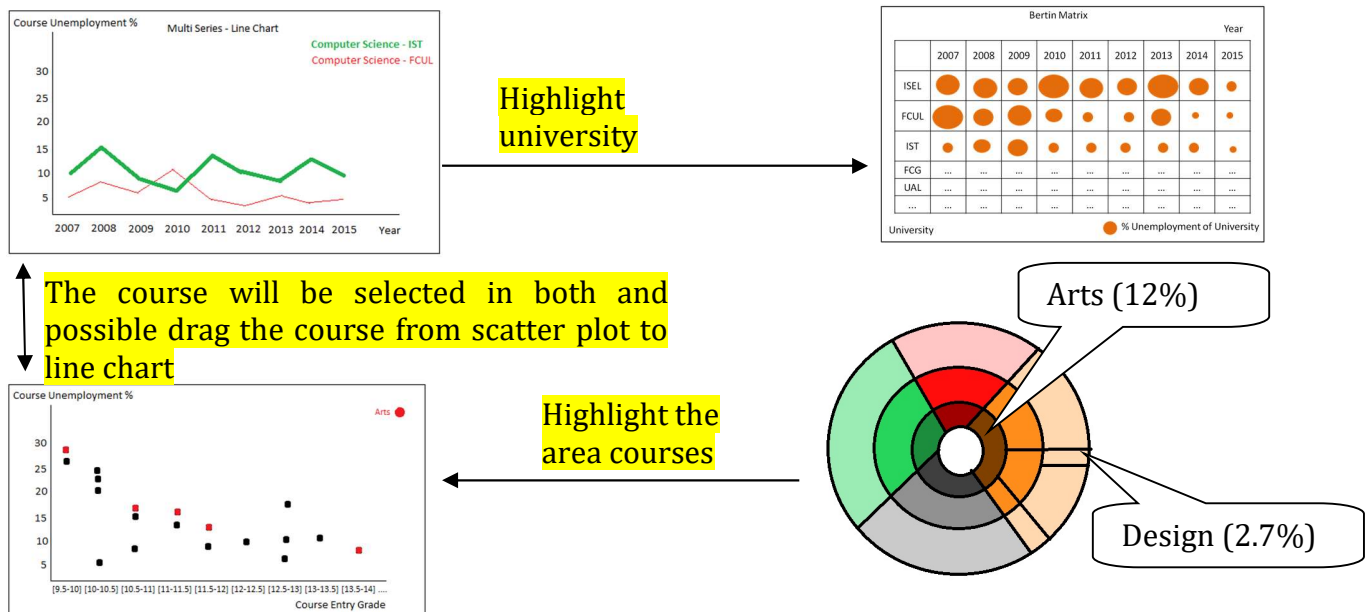
2.4. Task 5 and Dashboard

Image 4 – Dashboard including interactions. (Bottom right) Unemployment by graduation area. Sunburst areas are based on total number of unemployed people. On "mouse over", it will display the name and the unemployment %. On "click", it will zoom that region

-Task 5: Query->Summarize – Summarize the employment/unemployment by graduation areas **(Image 4 - Bottom Right)**

- **Question:** What is the graduation area with less/more unemployment? **(Task 5) (Image 4 - Bottom Right)**