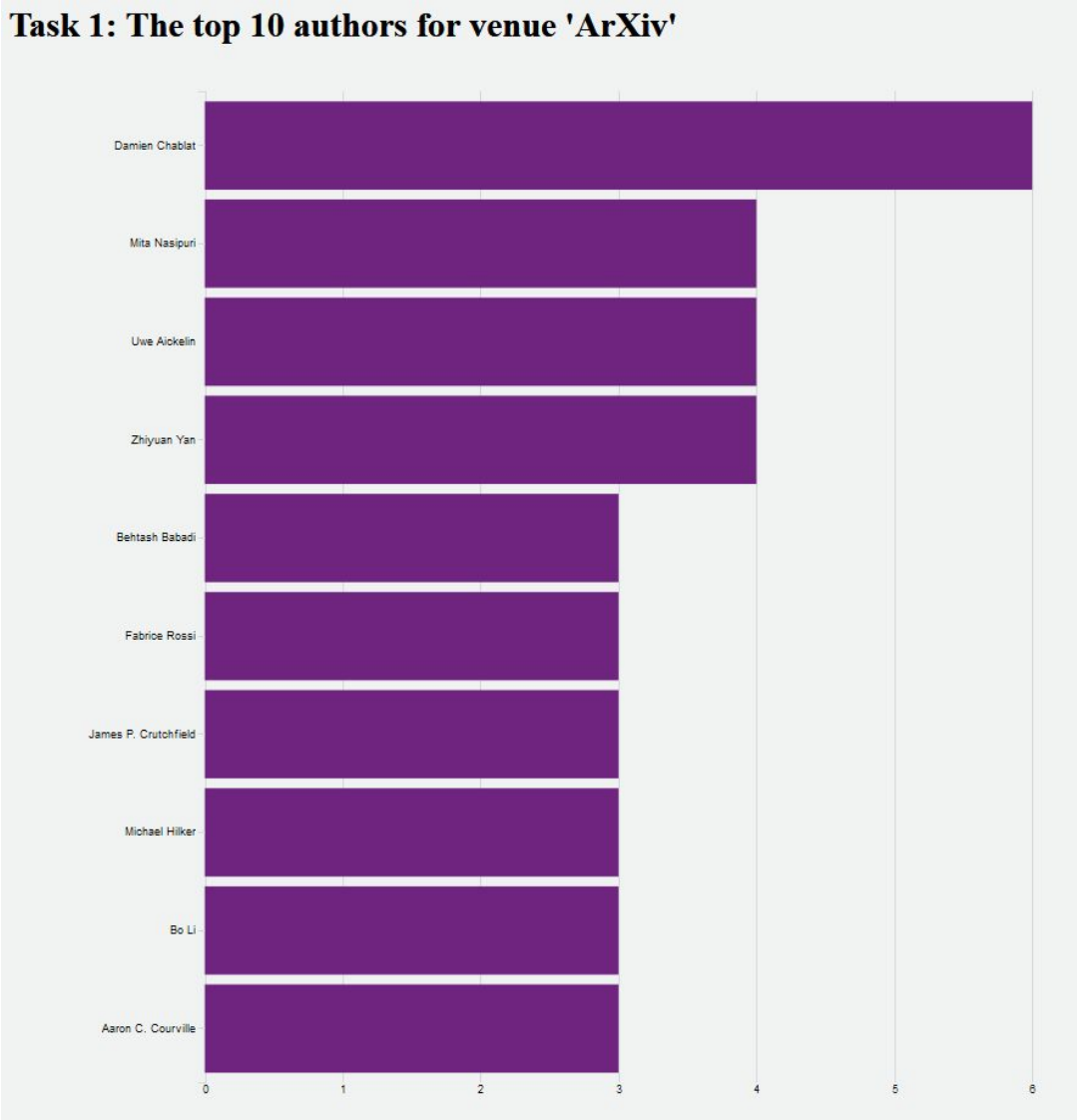
Assignment 4: CIR (Vlz)

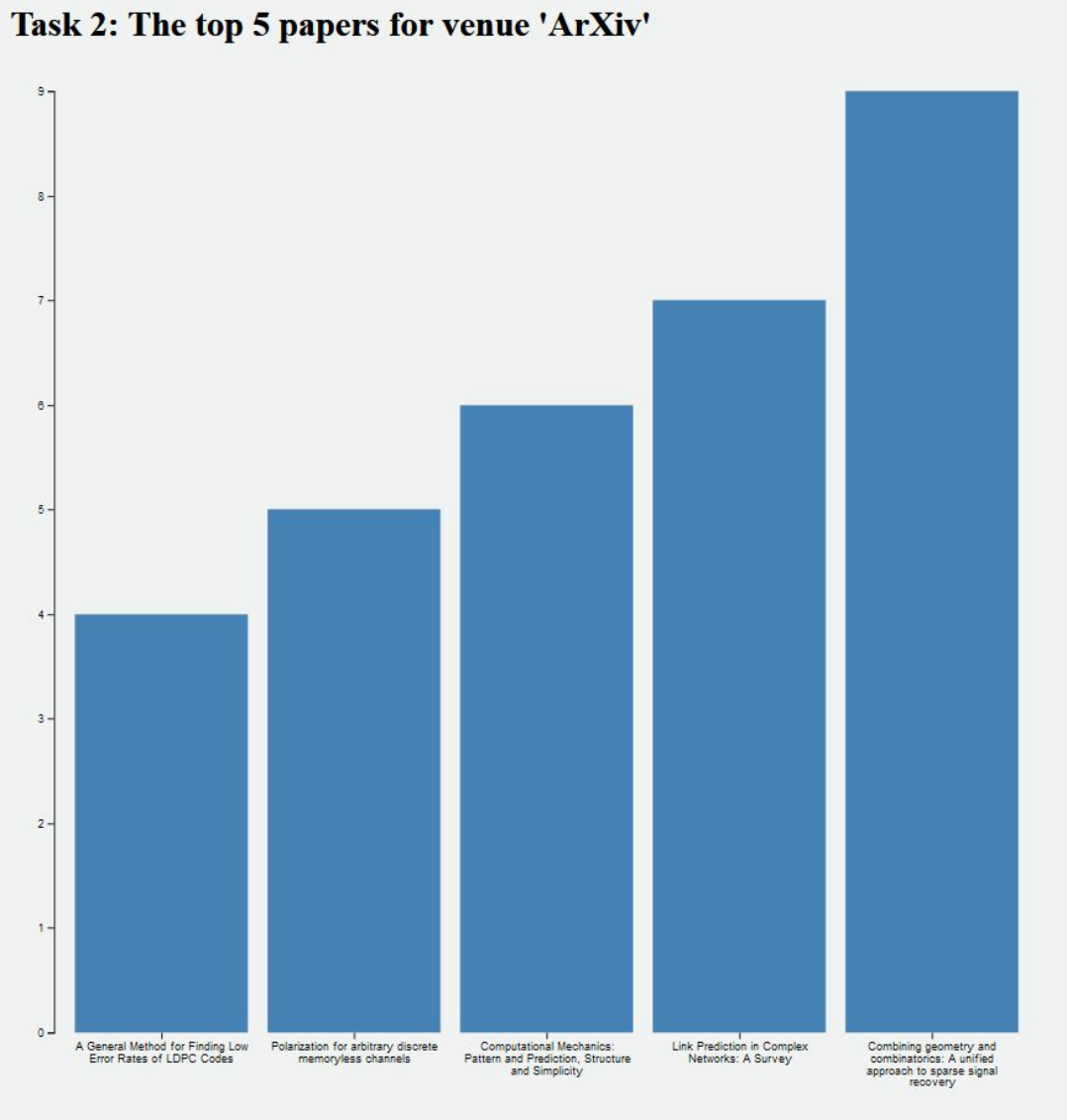
Student Name:	Tan Xue Si	Jong Xue Min Shermine Ruth
Matriculation Number:	A0121597B	A0138474X

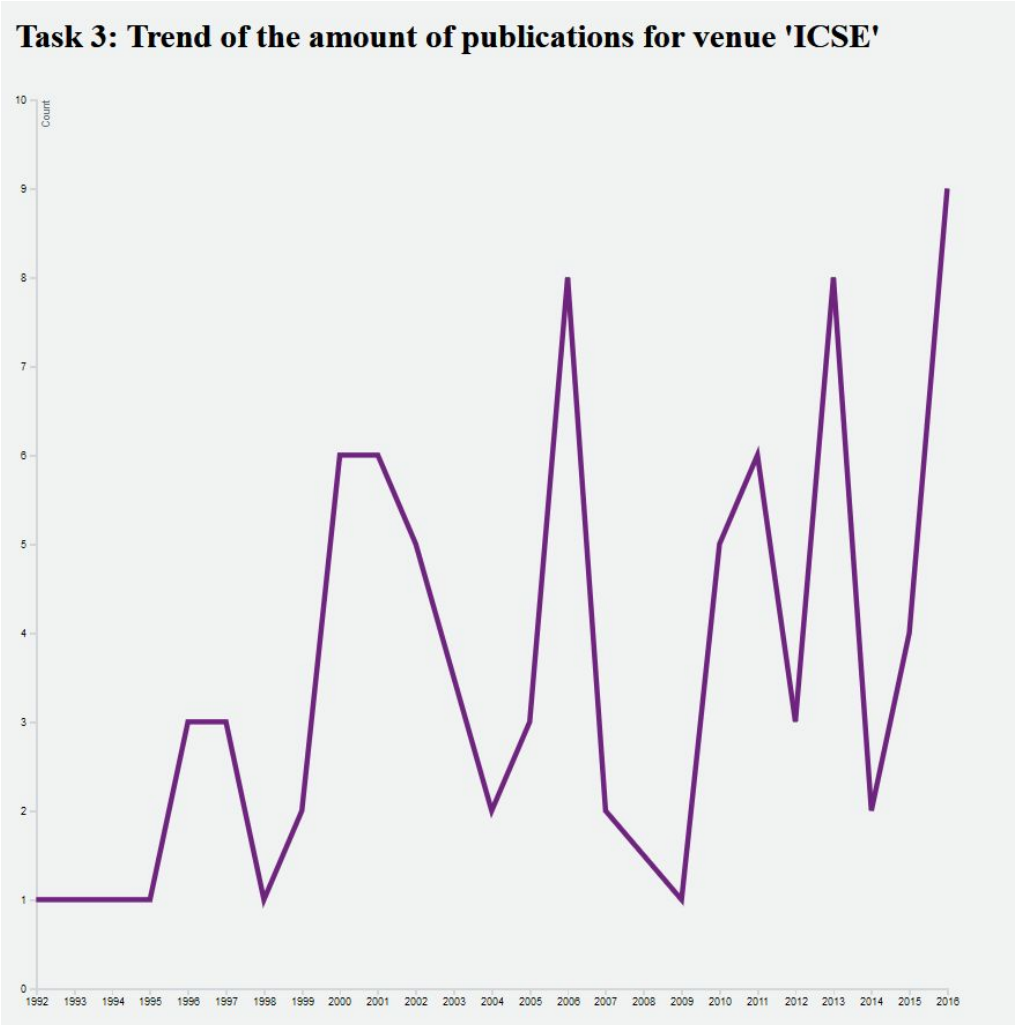
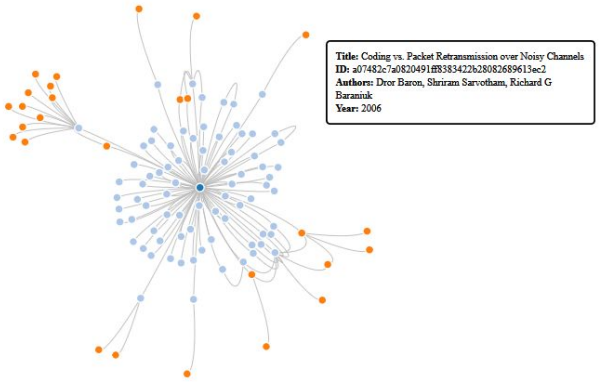
1. Introduction

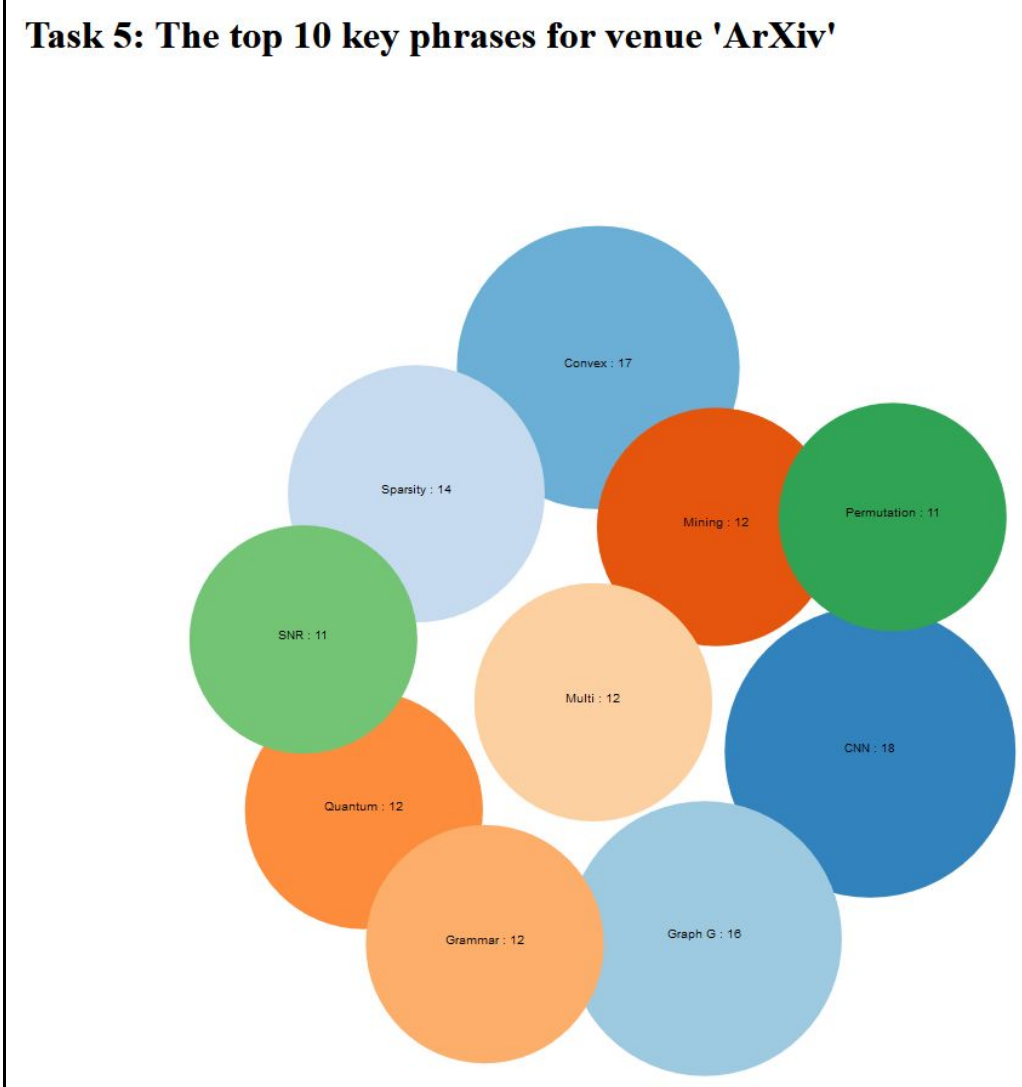
This assignment is to create an API and simple web application to showcase visualizations using data from parsing the required dataset. This project was done in Java, with the aid of a visualization tool, named ‘d3.js’ and a micro framework for web application named ‘Spark’. Shermine was in charge of the API endpoints and data manipulation while Xue Si worked on the templates and visualizations.

2. Visualizations - Purpose & Method

Task	**Visualization**
1	Vertical Bar 

2	Horizontal Bar 

3	Line Chart 
4	Layout Graph **Task 4: Citation web for paper with title 'Low-density parity check codes over GF(q)'** 

5	Bubble Chart 

This visualization is done in two phases:

1. *Preprocessing*

- We first retrieve the papers in the venue ‘ArXiv’.
- For each paper in the set, we process and count the key phrases of all the papers in the set by storing them into a Map of phrase to count.
- Then we filter the top 10 key phrases by using a priority queue and return the results as a JSON array of pairs of phrase to count.

2. *Layout*

- We retrieve the results from preprocessing via a GET call and using d3’s json method
- A new force simulation is created and immediately stopped since it would auto run and no nodes have been added yet.
- Forces are added into the force simulation to keep the nodes centered in the viewport.
- The nodes are retrieved from the preprocessing results and added as circles into the main svg element, with the text on it anchored in the center.
- The simulation is then started.