TBD

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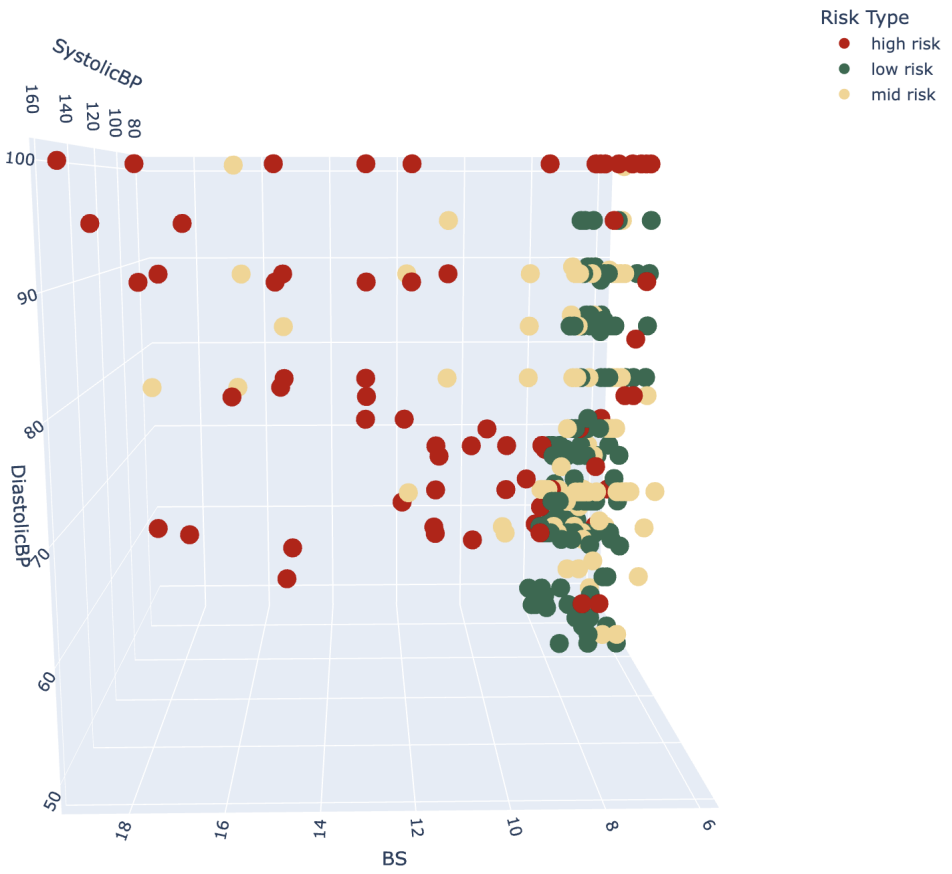

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1 Question 1 (10 Marks)

Given a query that a user submits to an IR system and the top N documents that are returned as relevant by the system, devise an approach (high-level algorithmic steps will suffice)

to suggest query terms to add to the query. Typically, we wish to give a large range of suggestions to the users capturing potential intended query needs, i.e., high diversity of terms that may capture the intended query context/content.

Ziel: query expanden können - which makes the querey better the terms should be relevant (able to expand the query in a meaningful way - find the correct topic), diverse (cover different topics)

we should design a heuristic allowing that

Ansatz: clusters, there are papers on that

1. query with q_n terms, for the whole vocuabulary we get the most similar terms (maybe 1000 t_n) 2. cluster the t_n terms into k clusters - then we get the most central term from every cluster

no terms that were in the query

how to get the most describtive terms for the query

when - runtime vs offline

there are multiple expansion methods out here: like sysnonm, related term, contextual,

recall vs precision tradeoff what we trying to solve and how we are acutal doing it

depending what a system we are designing (incooperate user data, e.g. Galway, Ireland, Europe)

user can give a temperature - to select the cluster

2 Section TBD.

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Appendix A

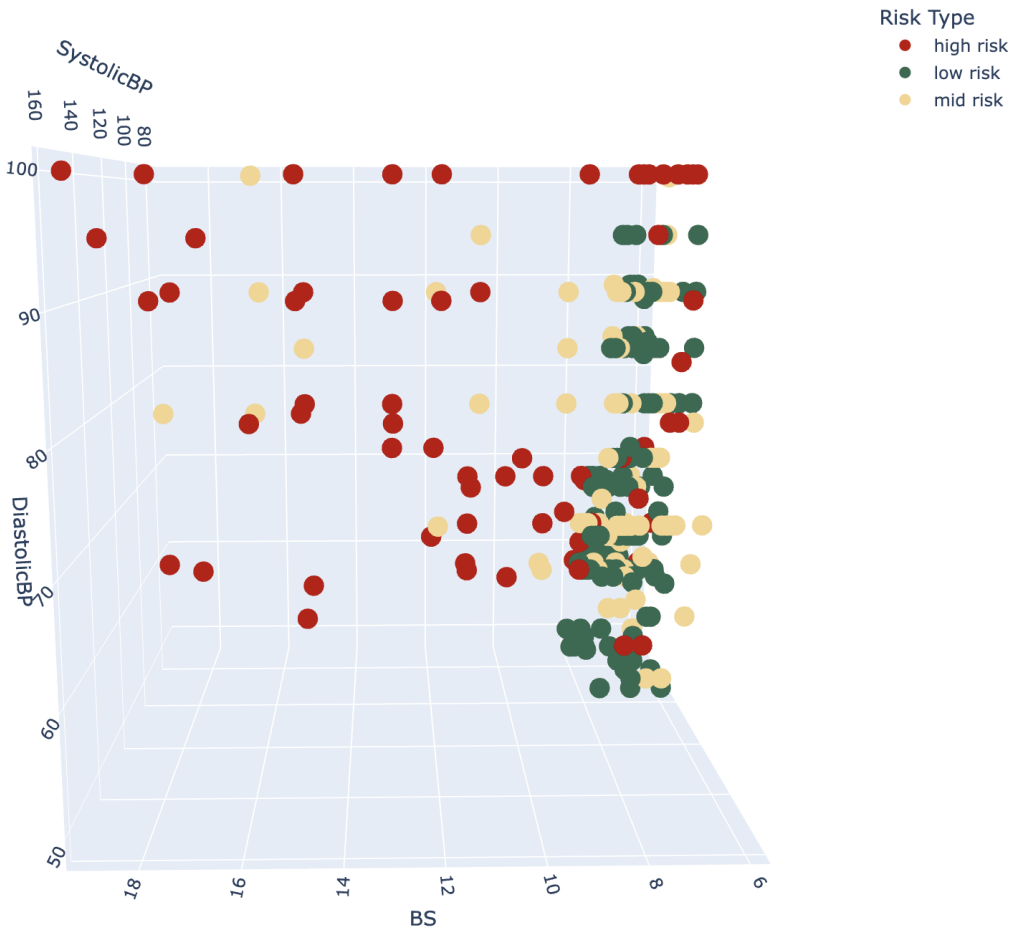

Figure 1: The actual caption

Appendix B

	Low Risk	**Mid Risk**	**High Risk**
Total Number of Entries	404	336	272
Percentage	40%	33%	27%

Table 1: Class Distribution within the Dataset

	Decision Tree			**KNN**		
	Precision	Recall	F1-Score	Precision	Recall	F1-Score
Low Risk	0.90	0.75	0.82	0.67	0.81	0.74
Mid Risk	0.76	0.84	0.80	0.74	0.51	0.60
High Risk	0.84	0.89	0.87	0.77	0.86	0.81
Weighted	0.83	0.83	0.83	0.72	0.72	0.72

Table 2: Numerical Results