



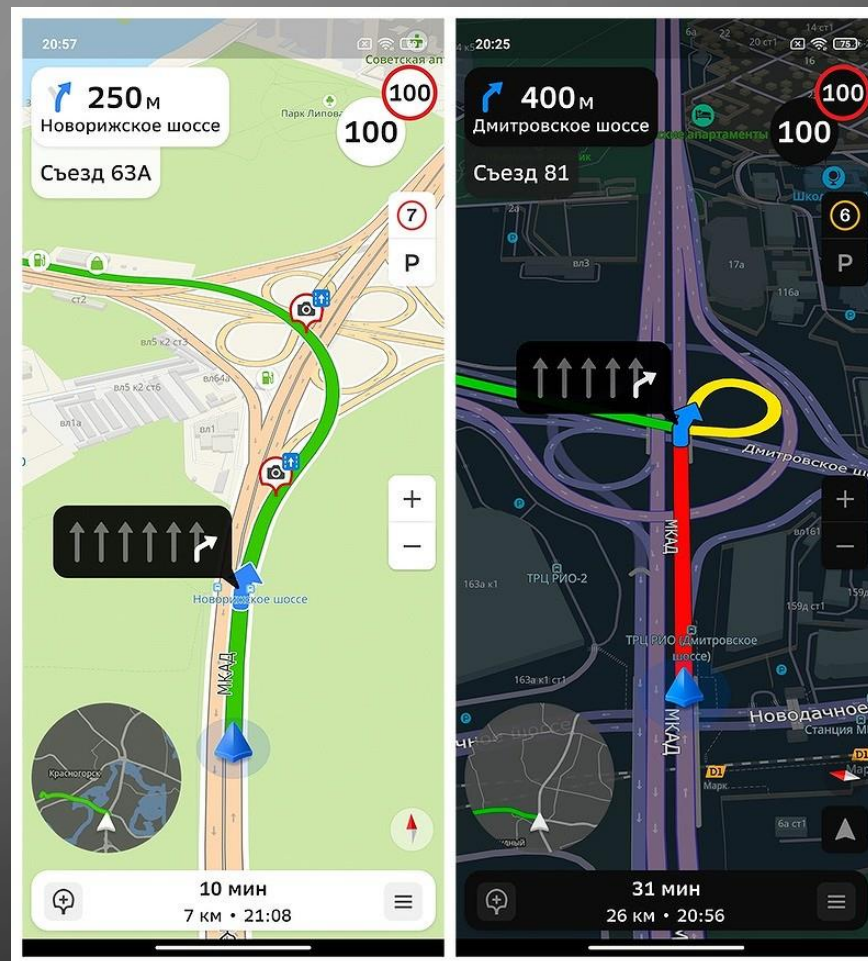
# R-ДЕРЕВЬЯ

ВЫПОЛНИЛ ПИКАЛОВ АЛЕКСЕЙ

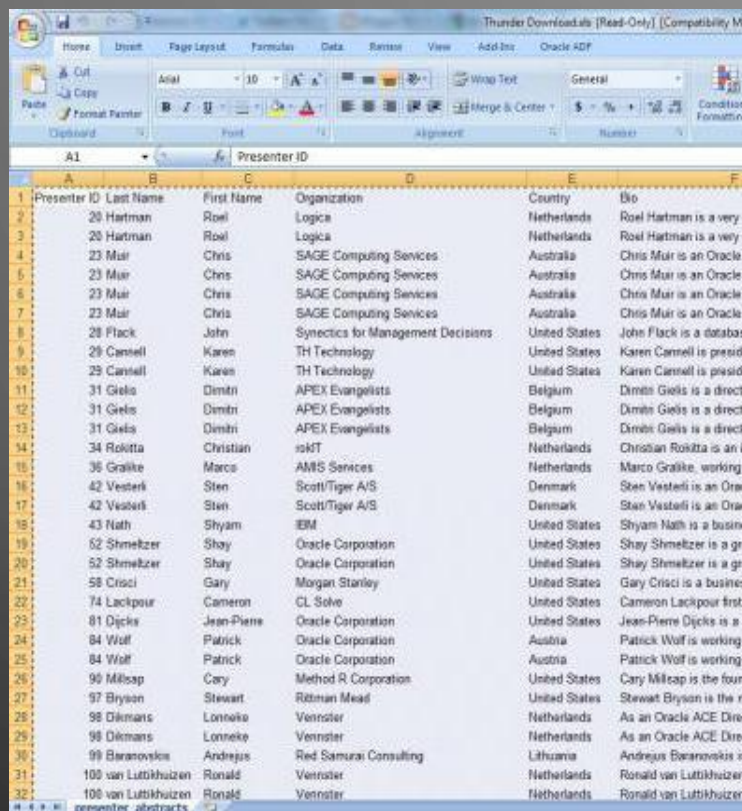
ГРУППА Б9121-09.03.03 ПИКД

# ЗАДАЧА

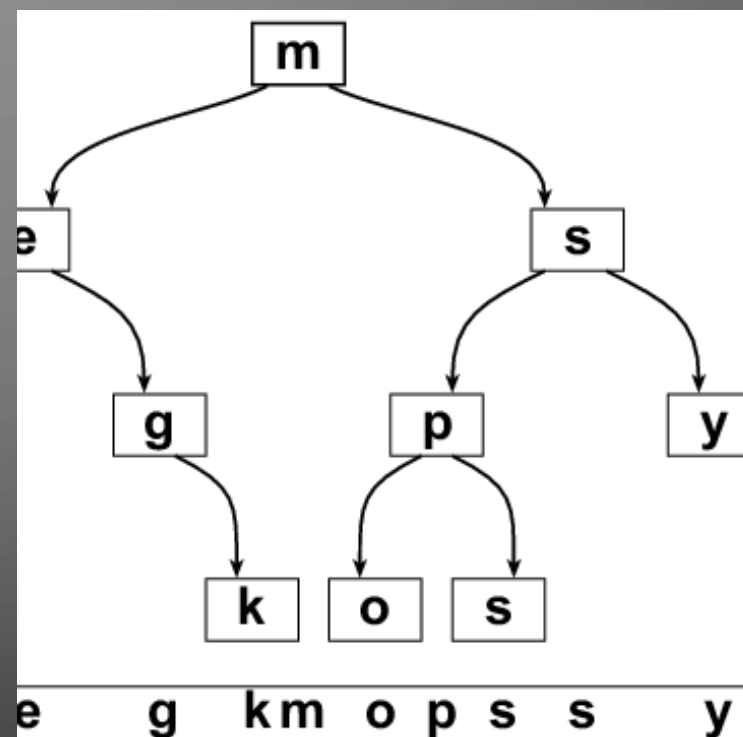
- Региональный поиск — одна из базовых задач вычислительной геометрии. Для упрощения используют прямоугольники минимального объёма со сторонами, параллельными осям координат.



# ИСТОРИЯ



	A	B	C	D	E	F
	Presenter ID	Last Name	First Name	Organization	Country	Bio
1	20	Hartman	Roel	Logica	Netherlands	Roel Hartman is a very e
2	20	Hartman	Roel	Logica	Netherlands	Roel Hartman is a very e
3	23	Muir	Chris	SAGE Computing Services	Australia	Chris Muir is an Oracle A
4	23	Muir	Chris	SAGE Computing Services	Australia	Chris Muir is an Oracle A
5	23	Muir	Chris	SAGE Computing Services	Australia	Chris Muir is an Oracle A
6	23	Muir	Chris	SAGE Computing Services	Australia	Chris Muir is an Oracle A
7	23	Muir	Chris	SAGE Computing Services	Australia	Chris Muir is an Oracle A
8	28	Flack	John	Synectics for Management Decisions	United States	John Flack is a database
9	29	Cannell	Karen	TH Technology	United States	Karen Cannell is preside
10	29	Cannell	Karen	TH Technology	United States	Karen Cannell is preside
11	31	Gielis	Dimtri	APEX Evangelists	Belgium	Dimtri Gielis is a direct
12	31	Gielis	Dimtri	APEX Evangelists	Belgium	Dimtri Gielis is a direct
13	31	Gielis	Dimtri	APEX Evangelists	Belgium	Dimtri Gielis is a direct
14	34	Rokitta	Christian	isKT	Netherlands	Christian Rokitta is an i
15	36	Gralka	Marco	AMIS Services	Netherlands	Marco Gralka, working f
16	42	Vesterli	Sten	Scott/Tiger A/S	Denmark	Sten Vesterli is an Orac
17	42	Vesterli	Sten	Scott/Tiger A/S	Denmark	Sten Vesterli is an Orac
18	43	Nath	Shyam	IBM	United States	Shyam Nath is a busine
19	52	Shmelkzer	Shay	Oracle Corporation	United States	Shay Shmelkzer is a gro
20	52	Shmelkzer	Shay	Oracle Corporation	United States	Shay Shmelkzer is a gro
21	58	Crisci	Gary	Morgan Stanley	United States	Gary Crisci is a busines
22	74	Lackpour	Cameron	CL Solve	United States	Cameron Lackpour first
23	81	Dijcks	Jean-Pierre	Oracle Corporation	United States	Jean-Pierre Dijcks is a s
24	84	Wolf	Patrick	Oracle Corporation	Austria	Patrick Wolf is working
25	84	Wolf	Patrick	Oracle Corporation	Austria	Patrick Wolf is working
26	90	Millcap	Cary	Method R Corporation	United States	Cary Millcap is the four
27	97	Bryson	Stewart	Rittman Mead	United States	Stewart Bryson is the m
28	98	Dikmans	Lonneke	Vennster	Netherlands	As an Oracle ACE Direc
29	98	Dikmans	Lonneke	Vennster	Netherlands	As an Oracle ACE Direc
30	99	Baranovskis	Andrejus	Red Samurai Consulting	Lithuania	Andrejus Baranovskis is
31	100	van Luttikhuisen	Ronald	Vennster	Netherlands	Ronald van Luttikhuisen
32	100	van Luttikhuisen	Ronald	Vennster	Netherlands	Ronald van Luttikhuisen



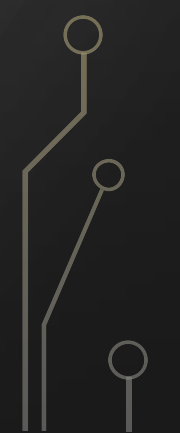




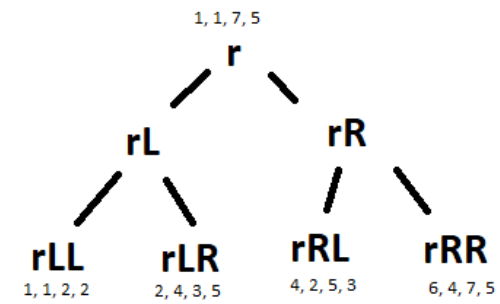
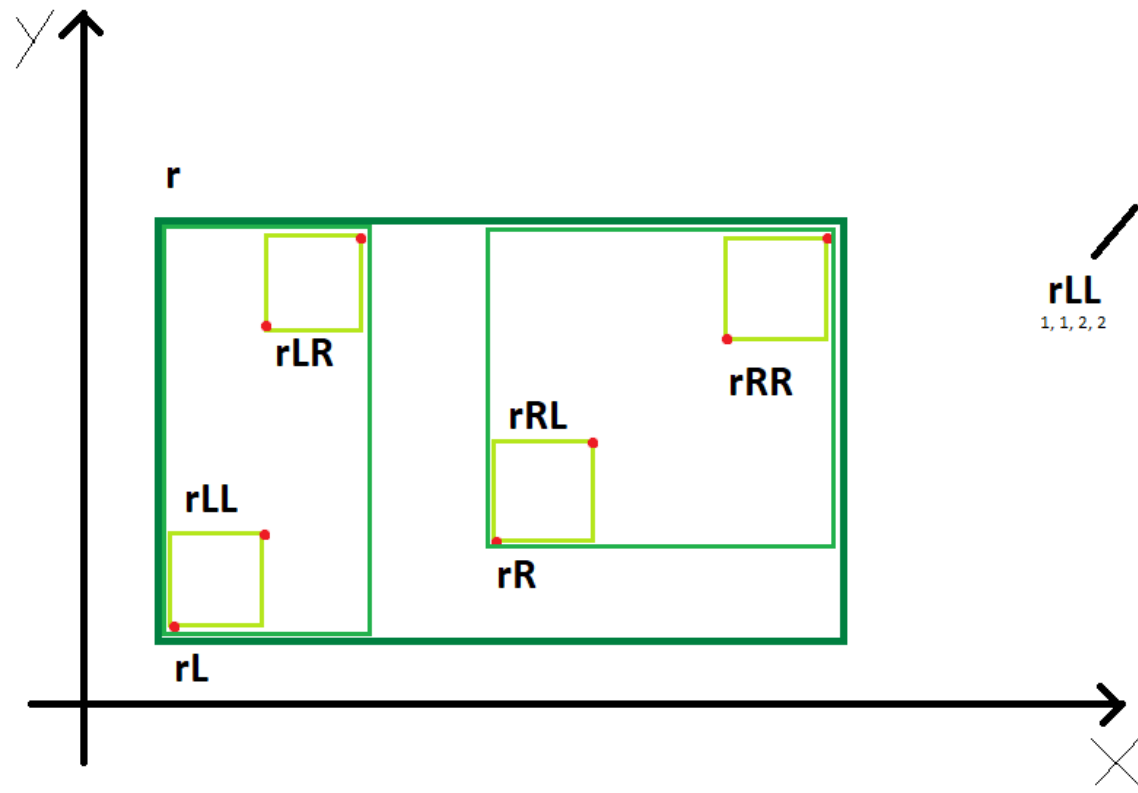
# ОПИСАНИЕ АЛГОРИТМА

Дерево имеет корень, дочерние узлы и листья

R-Дерево имеет следующие функции:

- Вставка;
  - Поиск;
  - Удаление.
- 
- 
- 

# ПРИМЕР



# ОПИСАНИЕ РЕАЛИЗАЦИИ. КЛАСС JOINT

Переменные:

- `Joint* Child[2]`
- `Bool leaf`
- `Int rect[2][2]`

Функции:

- `SetChild()`
- `Inside()`
- `Equal()`

# ОПИСАНИЕ РЕАЛИЗАЦИИ. КЛАСС RTREE

## Переменные:

- Int size
- Joint\* root

## Функции:

- Insert()
- Find()
- Delete()

# ОПИСАНИЕ РЕАЛИЗАЦИИ. ВСПОМОГАТЕЛЬНЫЕ ФУНКЦИИ

- `Between()`
- `Distance()`
- `Closest()`



# ТЕСТИРОВАНИЕ

```
size of tree: 4

structure:
r: (148762, 234670), (714508, 847623)
rL: (179465, 327465), (714508, 847623)
rLL: p(179465, 847623)
rLR: p(714508, 327465)
rR: (148762, 234670), (487528, 549628)
rRL: (148762, 234670), (246782, 438766)
rRLL: p(246782, 438766)
rRLR: p(148762, 234670)
rRR: p(487528, 549628)

test 14 OK
time: 0.015s

-----press ENTER to continue-----

minimum time: 0.002
maximum time: 0.062
middle time: 0.014
```

# ЗАКЛЮЧЕНИЕ

Мне удалось реализовать структуру R-дерева, но есть некоторые недочеты, которые надо исправить:

- Более 2-ух дочерних узлов
- Исправить добавление новых узлов для оптимизации поиска

СПАСИБО ЗА ВНИМАНИЕ!

