

Prioritetni red - primjer

Milenko Mosurović

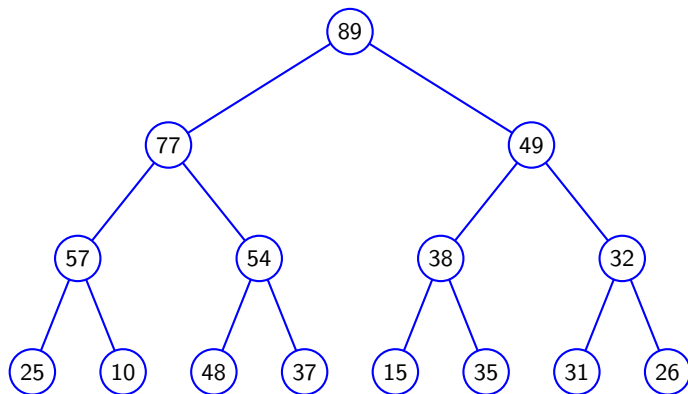
Univerzitet Crne Gore

maj 2019.godine

Uvod

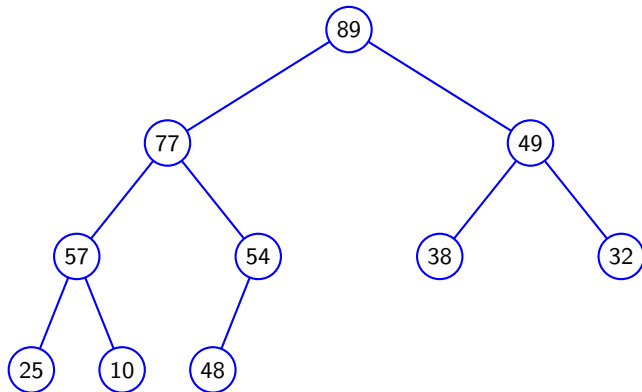
- Dobra realizacija prioritetnog reda je pomoću hipa. Definicije pripritetnog reda, hipa kao i procedure za umetanje i brisanje su navedene na prethodnoj prezentaciji.
- Ovdje se navodi primjer kako same procedure funkcionišu.
- Iako je hip binarno stablo realizujemo ga pomoću vektora. Korjen hipa, u tom vektoru, čuvamo na poziciji 1 (tj. indeks mu je 1). Dalje, ako je neki element sačuvan na poziciji i onda njegovog lijevog sina čuvamo na poziciji $2i$ a desnog na poziciji $2i + 1$. Pošto je hip skoro kompletno stablo u vektoru neće biti praznina.
- Niže navodimo vizuelni prikaz stabla i njegovu reprezentaciju pomoću vektora.

Primjer hipa i njegove vektorske reprezentacije



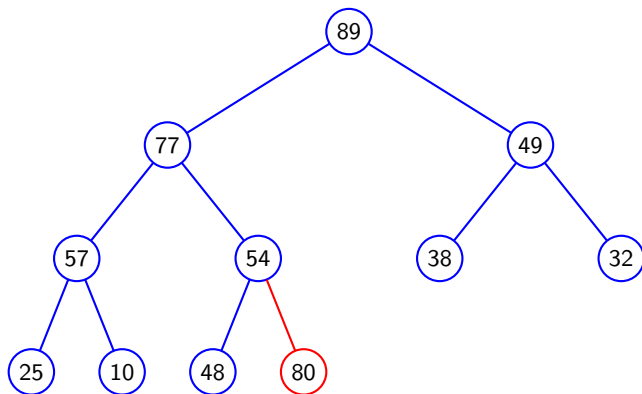
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 89 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | 37 | 15 | 35 | 31 | 26 |

Umetanje - početna situacija



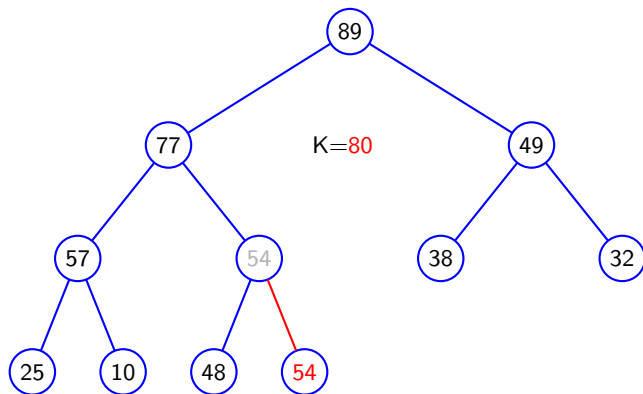
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 89 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | | | | | |

Umetanje ključa 80 u hip-početak



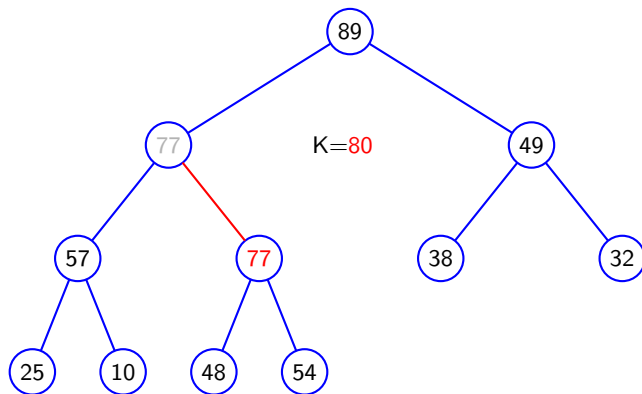
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 89 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | 80 | | | | |

Umetanje ključa 80 u hip-nastavak 1



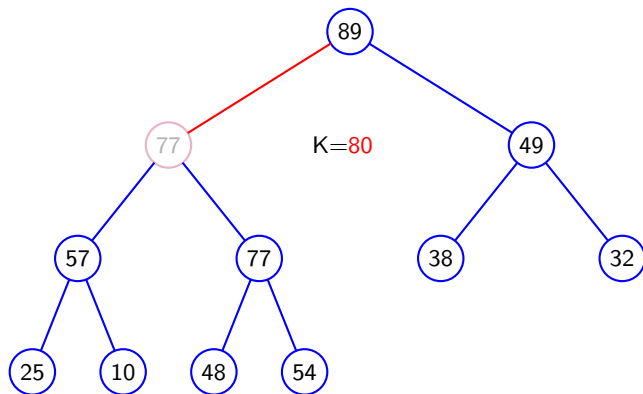
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 89 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | 54 | | | | |

Umetanje ključa 80 u hip-nastavak 2



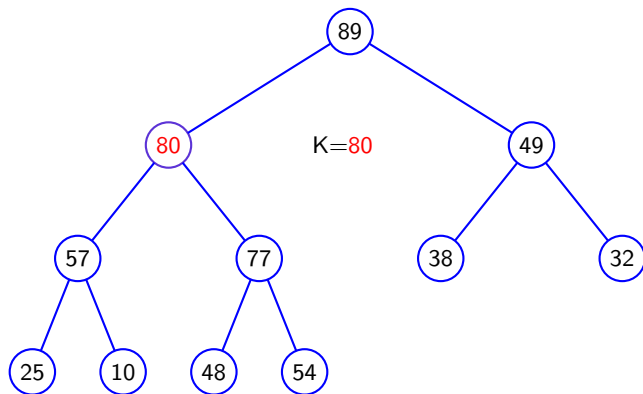
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 89 | 77 | 49 | 57 | 77 | 38 | 32 | 25 | 10 | 48 | 54 | | | | |

Umetanje ključa 80 u hip-nastavak 3



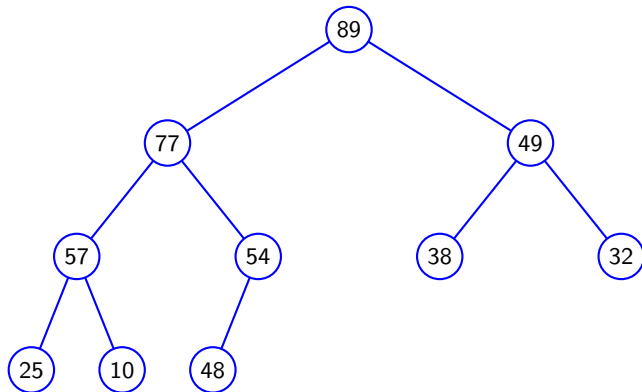
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 89 | 77 | 49 | 57 | 77 | 38 | 32 | 25 | 10 | 48 | 54 | | | | |

Umetanje ključa 80 u hip-kraj



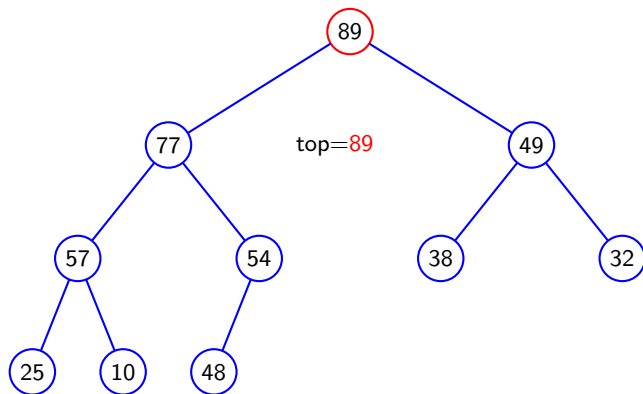
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 89 | 80 | 49 | 57 | 77 | 38 | 32 | 25 | 10 | 48 | 54 | | | | |

Brisanje - početna situacija



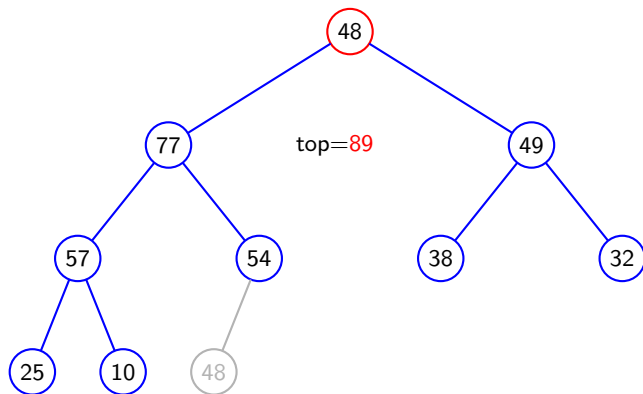
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 89 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | | | | | |

Brisanje - početak



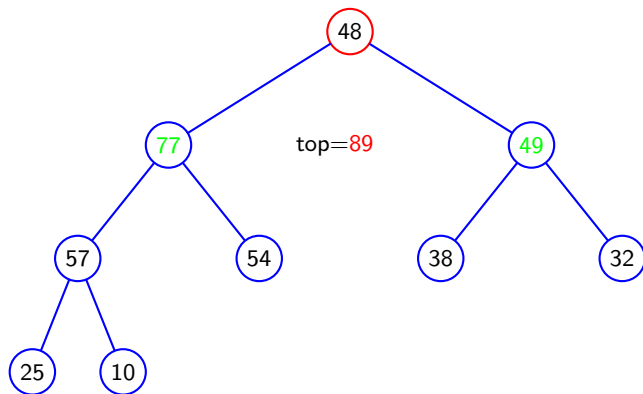
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 89 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | | | | | |

Brisanje - nastavak 1



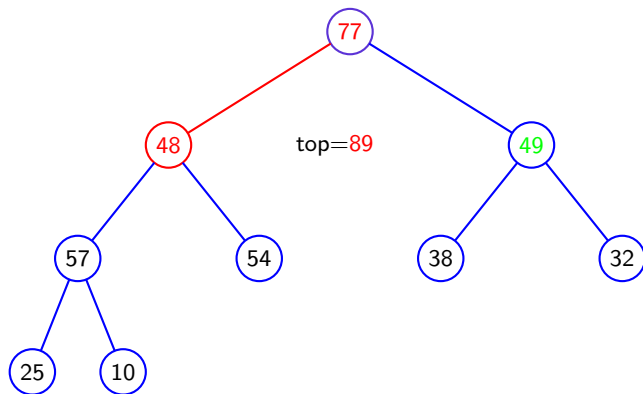
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 48 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | 48 | | | | | |

Brisanje - nastavak 2



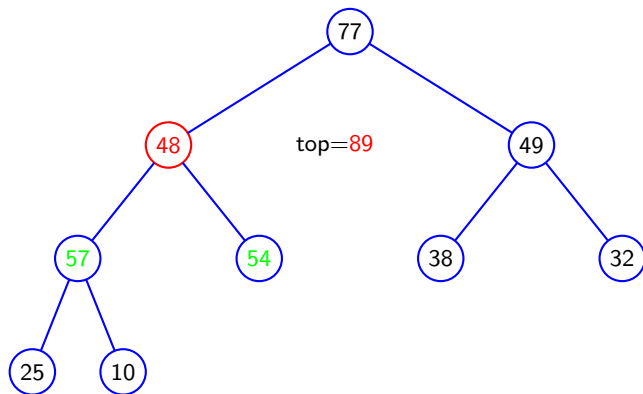
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 48 | 77 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | | | | | | |

Brisanje - nastavak 3



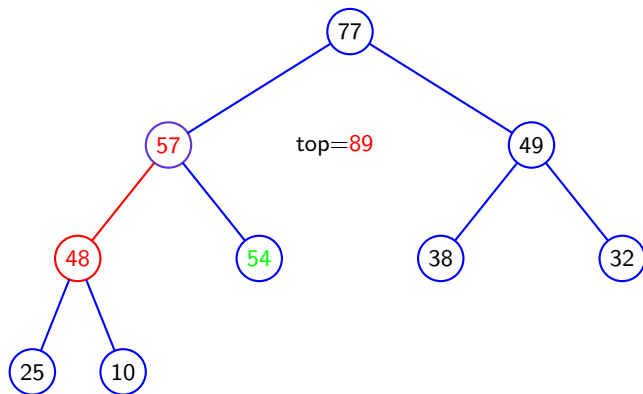
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 77 | 48 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | | | | | | |

Brisanje - nastavak 4



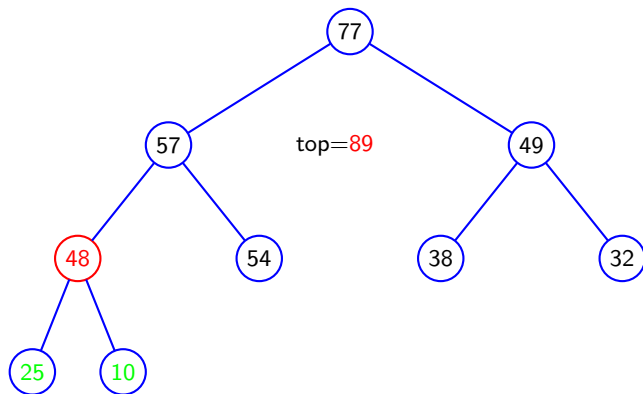
| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 77 | 48 | 49 | 57 | 54 | 38 | 32 | 25 | 10 | | | | | | |

Brisanje - nastavak 5



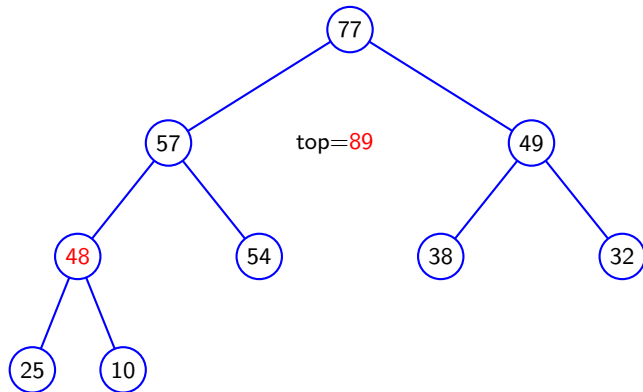
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 77 | 57 | 49 | 48 | 54 | 38 | 32 | 25 | 10 | | | | | | |

Brisanje - nastavak 6



| | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 77 | 57 | 49 | 48 | 54 | 38 | 32 | 25 | 10 | | | | | | |

Brisanje - kraj



| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 77 | 57 | 49 | 48 | 54 | 38 | 32 | 25 | 10 | | | | | | |