



# Zkoušková písemka z C++

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# Pokyny

- 4 hodiny
- 60 bodů
- Cheats
  - Internet pouze na C++ příručky - cppreference, cplusplus,...
  - NE stackoverflow, atd...
  - Slajdy (přednášky, cvičení)
- Nepoužívat existující kód
- Nahrát výsledný kód do SISu (studijní mezivýsledky)

# Battleship simulator

## Input:

```
[width] [height] // numbers >= 0
[player1] [player2] ... [playerN] // names without spaces
[ship types count] // numbers >= 0
[ship_name1] x1 y1 x2 y2 ... x_m y_m // names without spaces, numbers, x y are offsets from the main square
[ship_name2] x1 y1 x2 y2 ... x_m y_m // names without spaces, number
...
[ship input count] // number >= 0, multiple ships from the same type
[player] [ship_name1] x y // x y of the main square
[player] [ship_name2] x y
...
[player] x y
[player] x y
....
```

## Output:

If input line is OK -> print "**ok**"  
otherwise print "**invalid**" + program exit

If the ship is hit -> print „**hit**“

If the ship sinks -> print "**[ship\_name] sank**"

If the last ship of a player sinks -> print "**[player] died**"


If only one player -> print "**[player] won**" + program exit

## Notes:

- No overlapping coordinates (ships, inserts)
- Out-of-bounds check
- No rotation
- No need to check type, check ranges
- Indexing from 0 0



# Example



```
10 20 // ok
Adam Eva // ok
3 // ok
type1 1 0 0 1 // ok
type2 // ok
type3 1 0 0 1 -1 0 -2 0 0 -1 // ok
3
Adam type2 0 0 // ok
Eva type2 9 19 // ok
Eva type3 5 5 // ok
Adam 4 4 // ok
Adam 4 5 // ok
Adam 5 5
// ok
// hit
Eva 0 0
// ok
// hit
// type1 sank
// Eva won
```