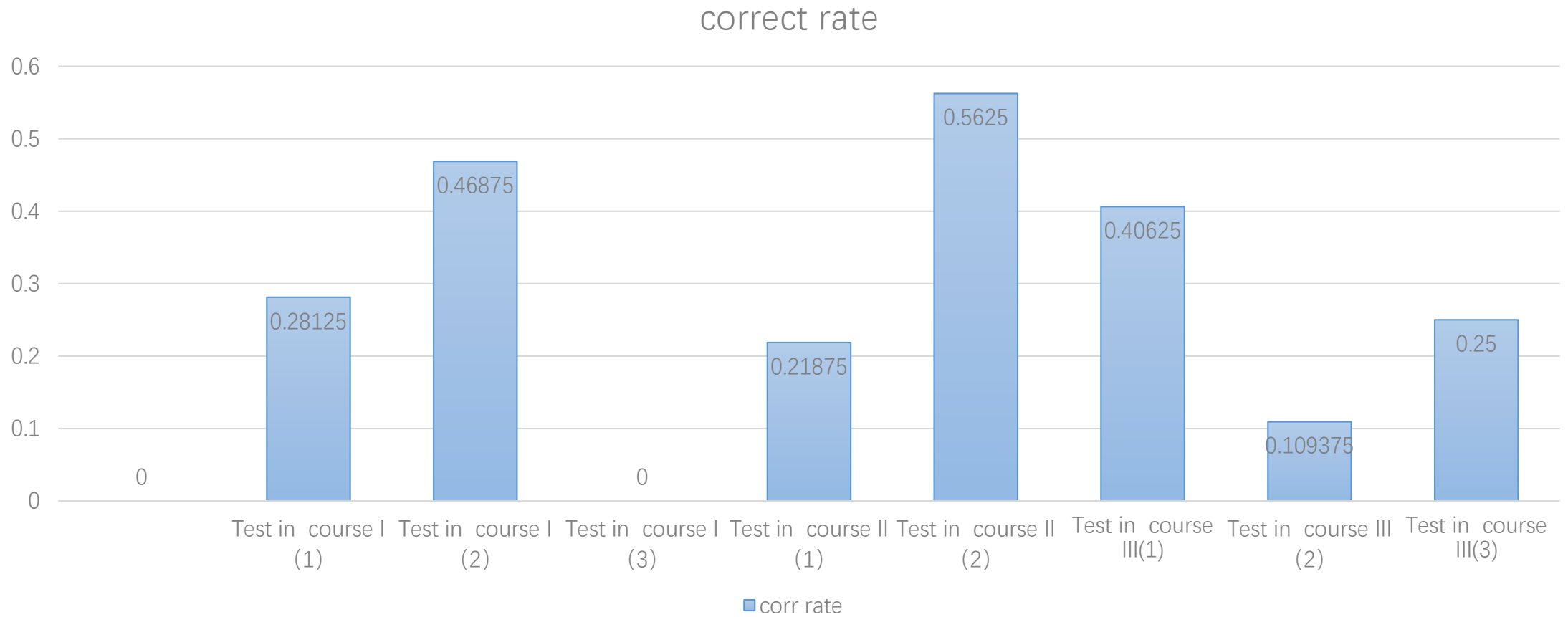


C programming exercise

Prof. J. Lu

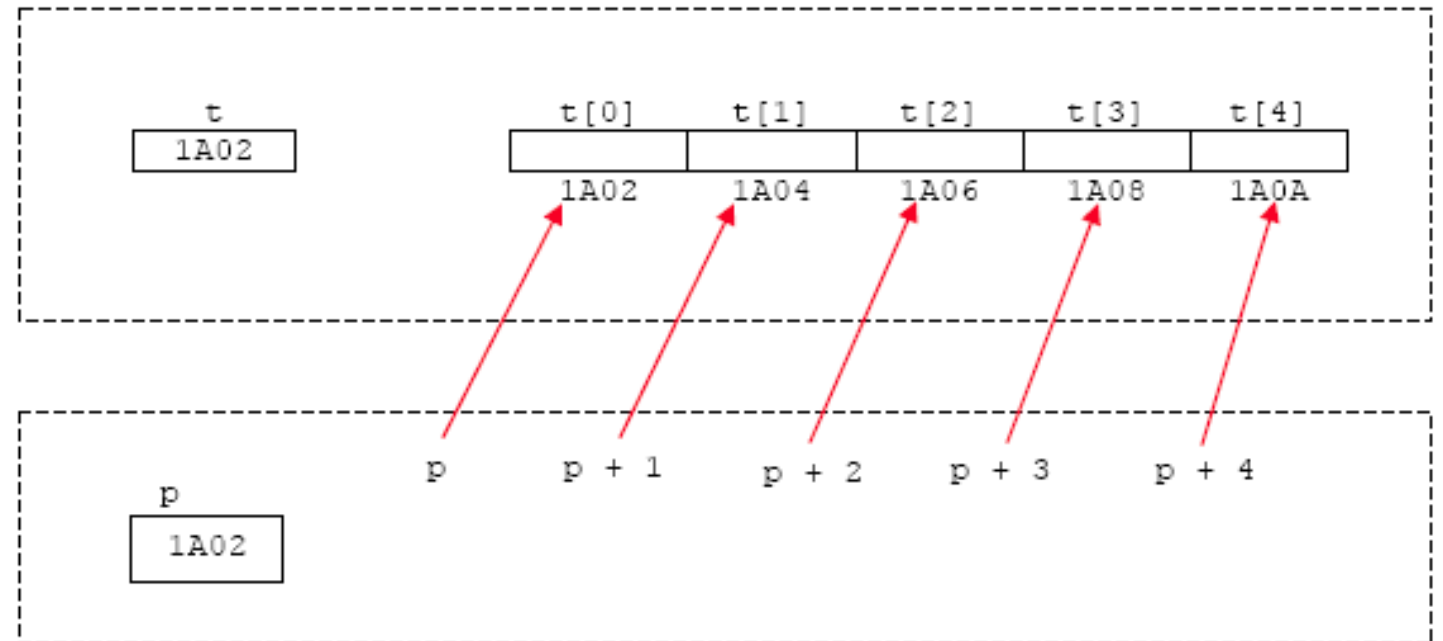
TA: H. Zheng

Correct rate



Exercise I

- What's a pointer?
- `int a[10] => *a = a[0]`, 'a' is also a pointer.
- 'p++' means p moves to next index,
but not value +1



Exercise II

- 1. simple but we need to understand what means “a++” and “||”
 - “a++” \Leftrightarrow $a = a+1$ after execution; ++a \Leftrightarrow $a = a+1$ before execution
 - || / &&: “or” operator will continue execution only if one condition is met; but “and” need all conditions satisfied.
- 2. The same as ex. I
 - If you comprehend ex. I, this is not confusing.

Exercise III

- How to design a program?
- Why shall we write function but not mix them all?

Exercise III (1)

- How to reverse a given word.
- Function:
 - Char reverse(char * word){ do something...}
 - Various method to reverse: swap, store in another array, etc.
 - Recommend: swap

```
void swap(int *x, int *y)
    // x, y are copies of the addresses a, b
{
    int temp;
    temp = *x;    // using pointers to access
    *x     = *y;    // originals (not copies)
    *y     = temp; // and swap them via temp
}
```

Exercise III (2)

- Line change: take a step to the whole string, which contains several words
 - To apply the previous function, this function serves split the string to words and reverse them.
 - How to split?
 - Split by space.
 - Pointers are recommended, otherwise index.

Exercise III (3)

- Main
 - Now merge them up
- Main generally serves i/o
- Not recommend: i/o in several functions
 - hard to debug.
 - Parameters cause segmentation faults, e.g. `const *`