

```
1 def Deeping(N):
2     newstr=""
3     const=0
4     for num in N:
5         i=int(num)
6         if i > const:
7             newstr+="("*(i-const)
8             const=i
9             for x in range(const-i):
10                 newstr+=")"
11         const=i
12         newstr+=num
13     newstr+=")"*i
14     return newstr
15
16 for t in range(int(input())):
17     numero=str(input())
18     print("Case #"+str(t) + ": " + Deeping(numero))
```

Test Driven Development

What is in
today's
presentation?



What is it this?



Process of using TDD



Example



TDD Cycle



Pros



Cons



Key points

Refactoring



Test First
Development

TDD

Software development
technique

1. Write tests first
2. Write code
3. Pass test
4. Refactor code

Process of using TDD

1. Client has a request.
2. Together with your client you agree upon some criteria, breaking down and simplifying as much as you can
3. You choose one of these criteria and translate it into a unit test.
4. Check test failure
5. Write code specifically to pass the test
6. Refactor code
7. Pass the test again

Ex



it's something

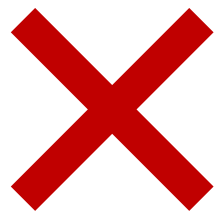
```
def subTest():  
    assert substra(7,2) == 5
```

```
def substra(a,b):  
    c=a-b  
    return c
```

```
def substra(a,b):  
    return a-b
```

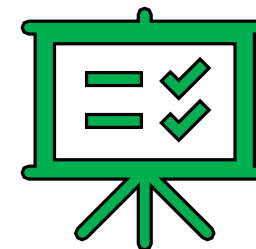
```
substra = lambda a,b: a-b
```

TDD Cycle

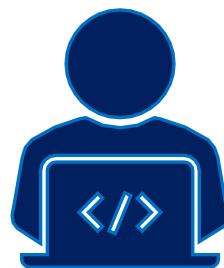


Test
Fails

Test
Passes



Refactor



PROS

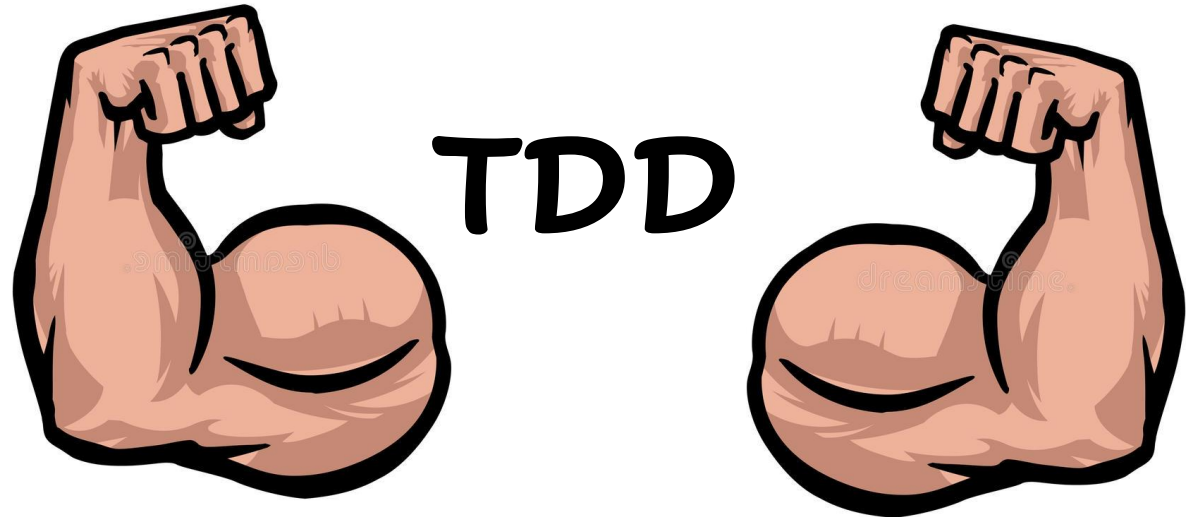
- Code only what you need to
- Uses simple and short Units
- Reduces bugs and debugging time
- Test versions
- Series of small steps
- Boosts confidence
- Increases productivity

YAGNI

"You aren't gonna need it"

KISS

"Keep it simple, stupid!"



CONS

Write more code



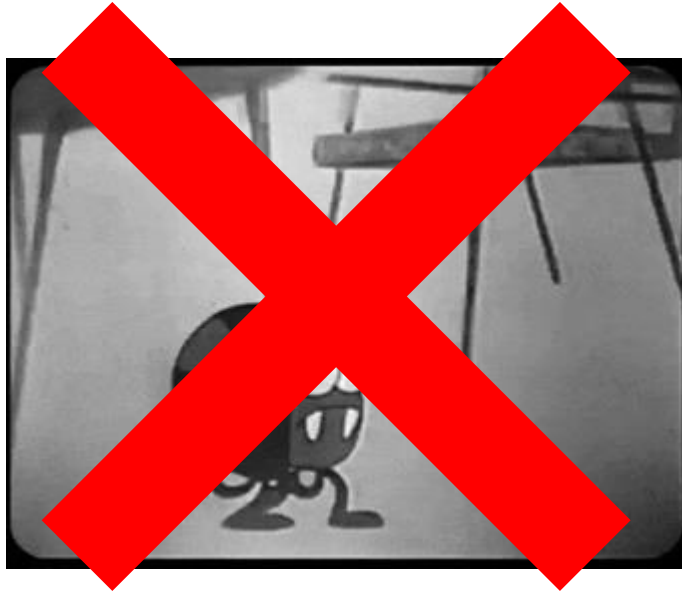
Not useful for full functional tests

Doesn't perform well with

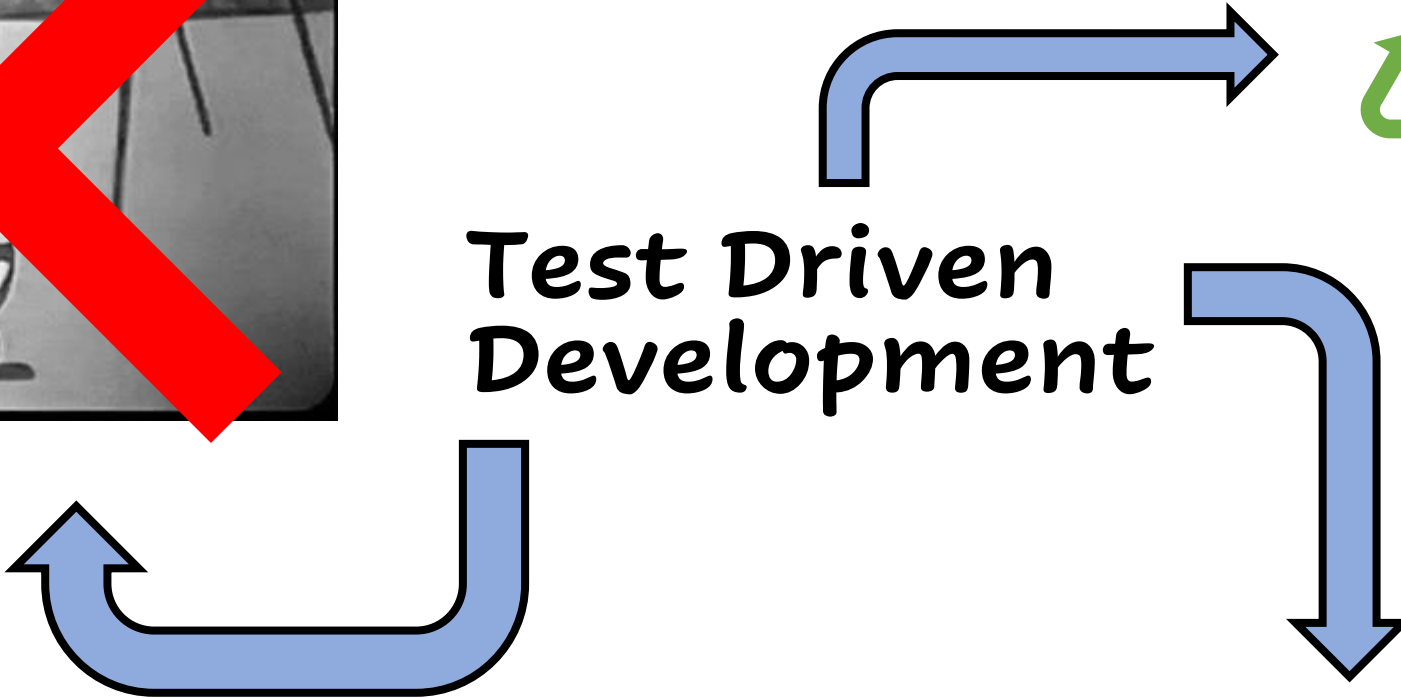
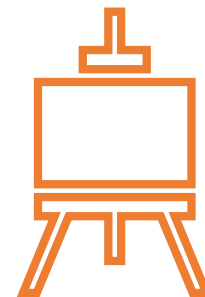
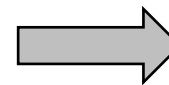
- User interfaces
- Database
- Network configurations



Takeaways



Test Driven Development





Thank you!