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BIL 481 HW 1 Part 1

1.

```
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ {

    if ( items.length ==0 || items.length != counts.length)
        throw new IllegalArgumentException();

    int maxIndex =0;
    int maxCount= counts[0];
    for(int i=1; i< items.length; i++){
        if( counts[i] > maxCount){
            maxIndex =i;
            maxCount = counts[i];
        }
    }
    return items[maxIndex];
}
```

2.

```
- - - - - - - - - - - {

@Test void throwsException_whenNoNumbersProvided() {
    assertThrows (
        IllegalArgumentException.class,
        () -> { App.sum(3,5); } );

}
@Test   void throwsException_whenLowBoundIsHigher() {
    assert Throws (
        IllegalArgument Exception.class,
        () -> { App.sum( 6, 5, 3,2,1);}});

}
@Test   void throwsException_whenLowBoundIsNegative() {
    assertThrows (
        Illegal ArgumentException.class,
        () -> { App.sum (-1, 5,3,2,1);});

}
@Test  void  findsSumSuccessfully() {
    assertEquals( 24 , App.sum (5, 15, 3, 7,8,9, 17));

}

}
```

3.

```
@BeforeEach void setUp() {
    dataService  = mock (DataService.class);
    mailService  = mock (mailService.class);
    monitor      = new Monitor( dataService, mailService);

}

@Test void alertsWhenAboveThreshold() {
    List <Integer> list = Arrays.asList (20, 30);
    when( dataService. lastWindowOfData (anyString())). thenReturn (list);
    monitor. alertIfAboveThreshold ("placeholder", 10);
    verify (mailService, times (1)). sendEmail (
        anyString(),
        eq( String.format ("metric %s is above threshold: %d vs. %d", "placeholder"
                                                          , 20, 10 ))

    );

}
@Test void doesNotAlertsWhenBelowThreshold() {
    List <Integer> list = Arrays.asList (20,30);
    when (dataService, lastWindowOfData (anyString())). thenReturn(list);
    monitor, alertIfAboveThreshold ("placeholder", 50);
    verify (mailService, never());

}
@Test void alertsWhenNoDataPoints (){
    List <Integer> list = new ArrayList ();
    when (dataService.lastWindow OfData (anyString())). thenReturn (list);
    monitor, alertIfAboveThreshold ("placeholder", 10);
    verify (mailService, times (1)). sendEmail (
        anyString(),
        eq( String.format ("No data for metric %s", "placeholder"))
    );
}
```

4.

```
import static Java.lang.Math.pow;

public class App{
    public static double multiply (int n1, int n2){
        return pow(n1,n2);
    }
}

public class AppTest{
    @Test void multiplyWorks (){
        assertEquals(App.multiply (2,2),4);
    }
}
```

Test coverage %100 and test passes successfully but it fails to do expected task (ex. App.multiply (2,3))

5.

	Working Directory	Index	HEAD
f.txt	Isaac , Asimov	Isaac Asimov	Isaac Asimov
g.txt	Jules Verne	—	—
h.txt	Arthur C. Clarke	—	—

6.

	Working Directory	Index	HEAD
f.txt	Isaac Asimov	Isaac Asimov	Isaac Asimov
g.txt	Jules Verne	—	—
h.txt	—	—	—

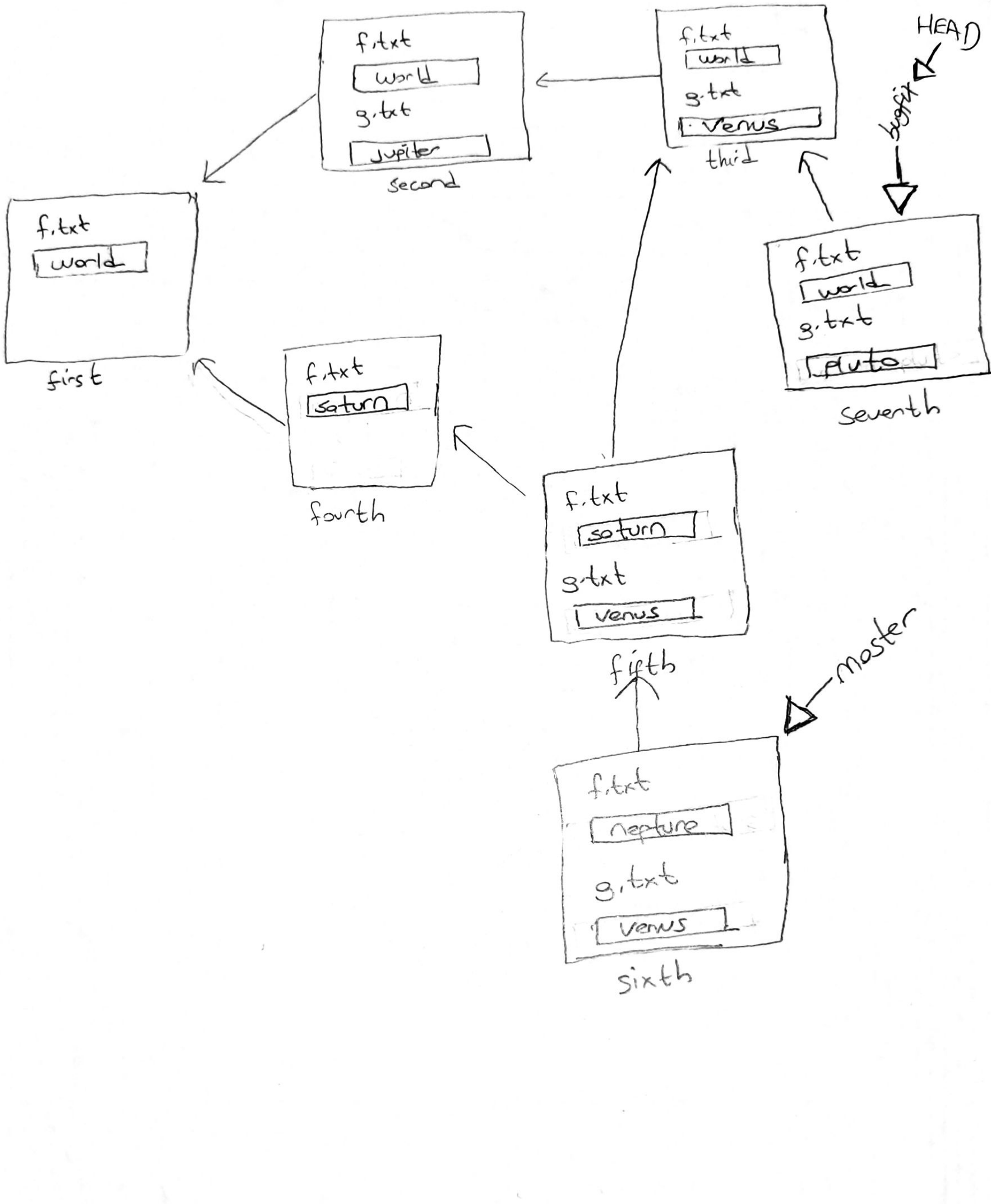
7.

first : martian.txt space_odyssey.txt animal_farm.txt

second : martian.txt

third : martian.txt space_odyssey.txt animal_farm.txt

8.



f.txt
world
g.txt
jupiter
second
f.txt
world
g.txt
venus
third
HEAD
bugfix
f.txt
world
first
f.txt
world
g.txt
pluto
seventh
f.txt
saturn
fourth
f.txt
saturn
g.txt
venus
fifth
master
f.txt
neptune
g.txt
venus
sixth

9.

```
git init
echo "armut" > f.txt
git add .
git commit -m "1 Ocak"
git checkout -b bugfix
echo "elma" > g.txt
git add .
git commit -m "5 Ocak"
echo "uzum" > g.txt
git add .
git commit -m "10 Ocak"
git checkout master
echo "kiraz" > f.txt
git add .
git commit -m "15 Ocak"
git merge bugfix -m "merge"
echo "ayva" > f.txt
git add .
git commit -m "20 Ocak"
git checkout bugfix
echo "nar" > g.txt
git add .
git commit -m "25 Ocak"
git checkout master
```