

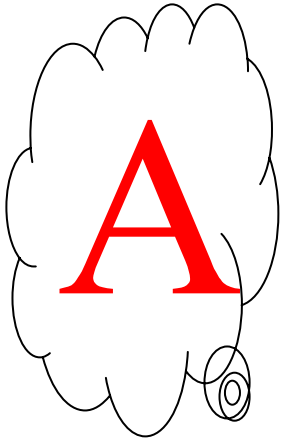
# Gender Differences in Programming?

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UNIVERSITY OF KENT  
AT CANTERBURY ■■■■

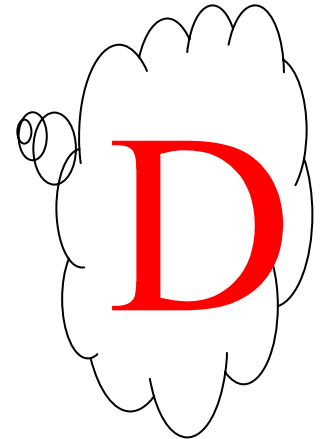
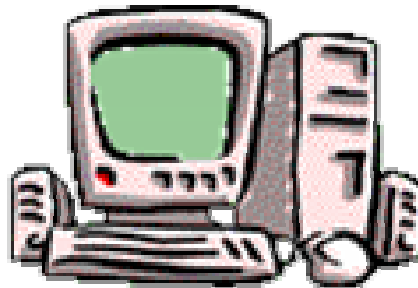
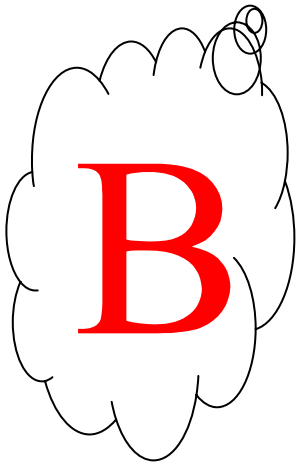
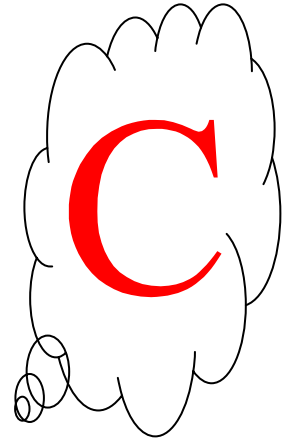


# Gender Differences in Programming?



Take a look at the code displayed here. It is extracted from the work of students. For each piece of code:

- Did a male or female student write it?
- How can you tell?
- Are you sure?



# Numerical Results 1 (%)

	Java		C++	
	A	B	C	D
Male	53.3	36.7	51.7	26.7
Female	33.3	48.3	28.3	58.3
???	13.3	15.0	20.0	15.0

# Numerical Results 2 (%)

	Java	C++
2 correct	25	47
1 correct	36	33
0 correct	39	20

All 4 correct	19
All 4 incorrect	6

The comments ...

# Code A

- Male

- *1<sup>st</sup> comment is a justification*
- *Single character variable names*
- *Comments are*
- *They “miss” of the mark object*

- Female

- *Comments are personalised*
- *Descriptive variable names*
- *Neatly laid out*
- *Follows the “rules”*

**Female**

# Code B

- Male

- *Not many comments*
- *Sloppy*
- *Phrasing of comments*
- *Thinking aloud*  
*comments*

- Female

- *Many comments*
- *Concise*
- *Wording of comments*
- *Thinking aloud*  
*comments*

male

# Code C

- Male

- *Terse*
- *Short feedback*
- *Very little descriptive code*
- *Self-corrective code*

- Female

- *Formal layout*
- *Explicit prompts*
- *Avoids mentioning the problem*
- *Polite!*

male

# Code D

- Male

- *Brevity of code*
- *The layout*
- *Only comment*
- *re standard*
- *The name*

- Female

- *A sentence form*
- *A layout*
- *Well commented*
- *Descriptive variable names*

**Female**

# Deciding factors?

- The 19% that deduced all 4 correctly say ...
  - *Female code is more explanatory with longer variable names and reasoning within comments*
  - *Female code has casual commenting and neat, consistent coding layout*
  - *Descriptiveness*
  - *Phrasing of comments*

Who wrote these ...

```
for (;;) {
    int status;
    int started_child = 0;

    do {
        comms_fd = accept(sock_fd, (struct sockaddr *)&serv_addr,
            &addr_len);
    } while (comms_fd == -1 && errno == EINTR);

    remote_addr = serv_addr;

    if (comms_fd < 0, "accept failed");

    if (getpeername(comms_fd, (struct sockaddr *)&serv_addr,
        &addr_len) == -1) {
        errf("getpeername failed (%m)");
    } else {
```

filter\_list( [], \_, []).

filter\_list( [Word|T1], Ending, [Word|T2]) :-

ends\_in( Word, Ending), !,

filter\_list( T1, Ending, T2).

filter\_list( [\_|T1], Ending, T2) :-

filter\_list( T1, Ending, T2).

ends\_in( Word, Ending) :-

atom( Word), atom( Ending),

length( Word, Len), length( Ending, Len),

ends\_with( AsciiWord, AsciiEnding).

ends\_with( SameList, SameList).

ends\_with( [\_|T1], T2) :-

ends\_with( T1, T2).

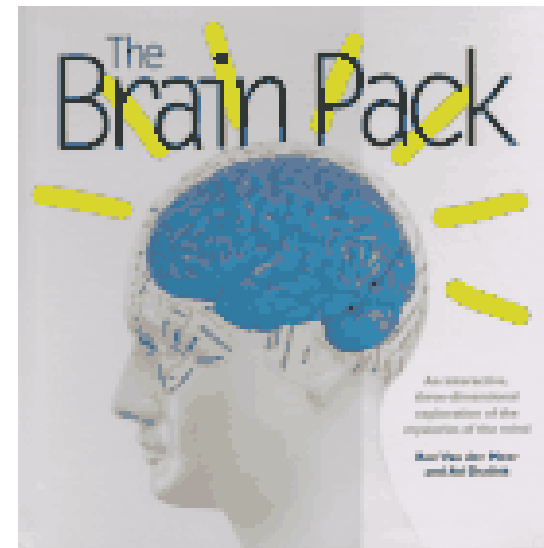
**Female**

# Gendered Code?

- Difficult to tell from fragments
- Personality is revealed by
  - Variable names
  - Comments
- There may be a gendered *approach*, but does it affect the outcome?

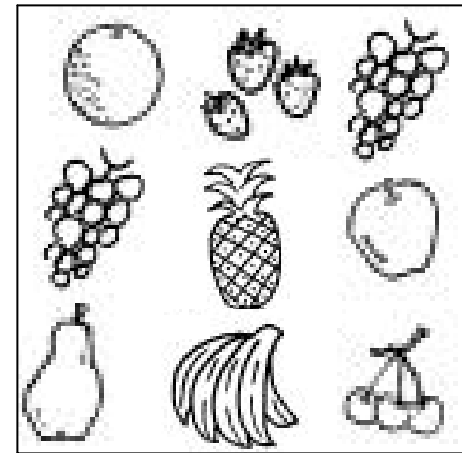
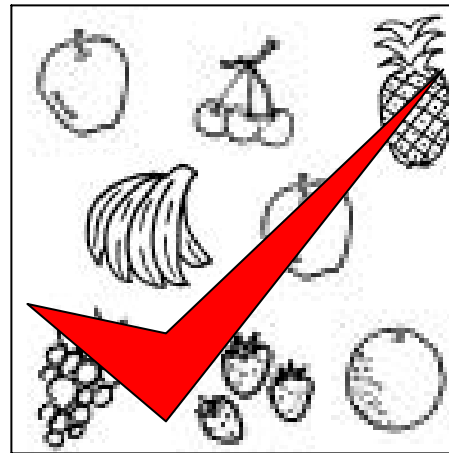
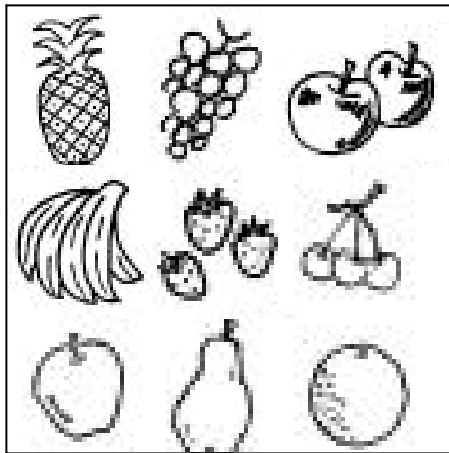
# A Quiz

- The Brain Pack: an interactive 3-D exploration of the mysteries of the mind  
*Ron Van Der Meer  
and Ad Dudink*



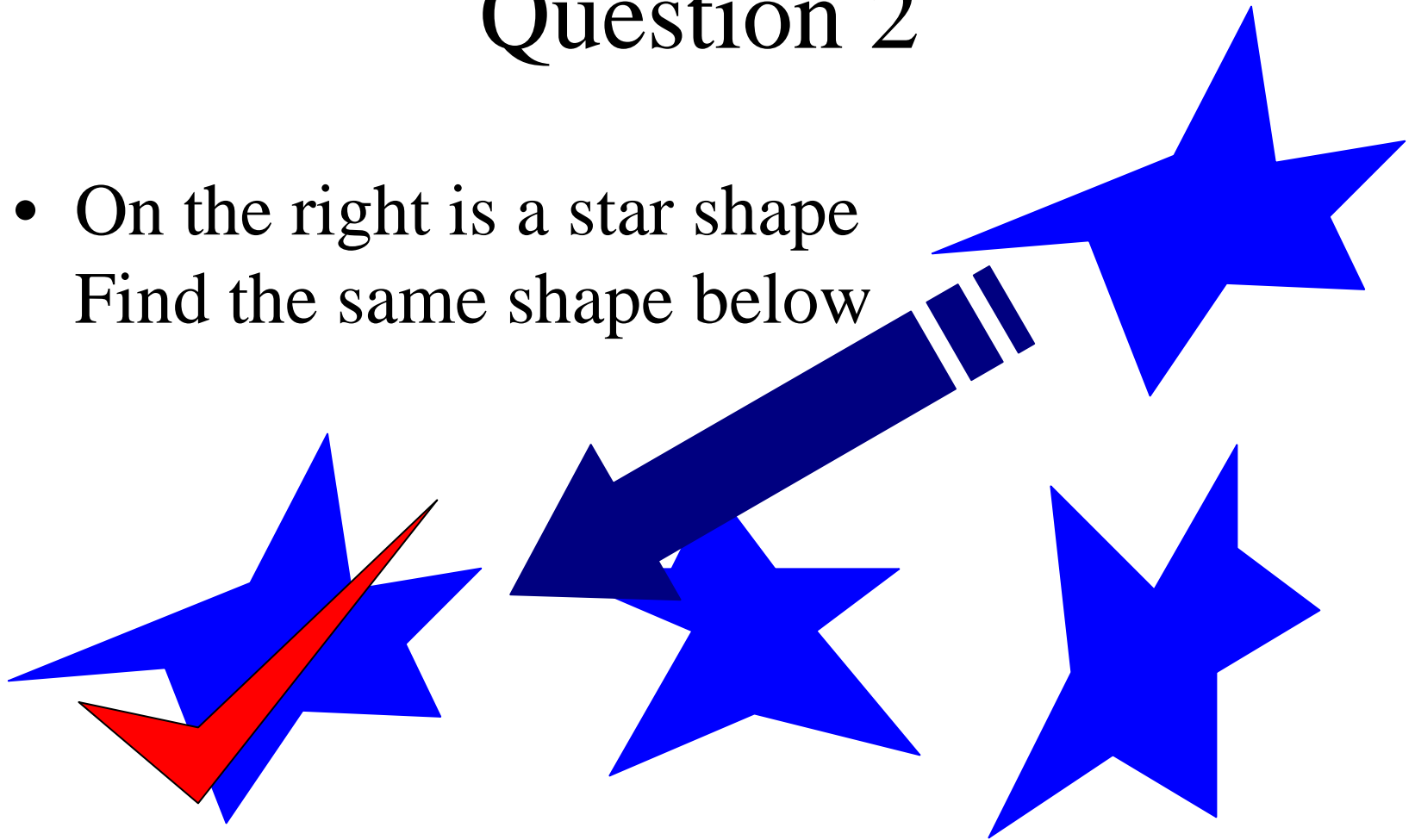
# Question 1

- Which of the frames below does not contain the fruit on the right?



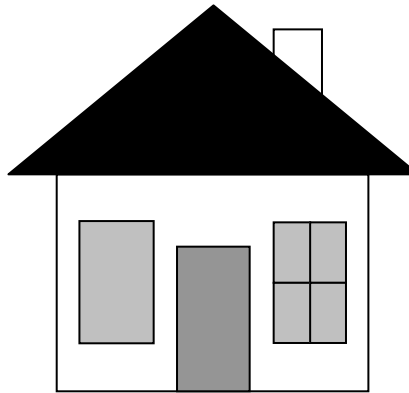
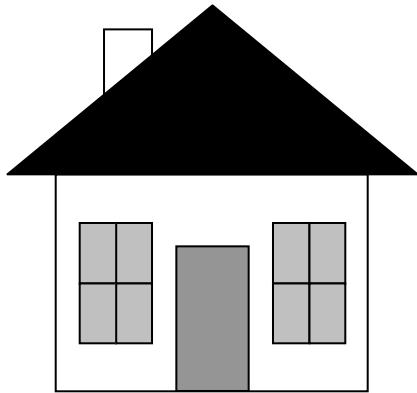
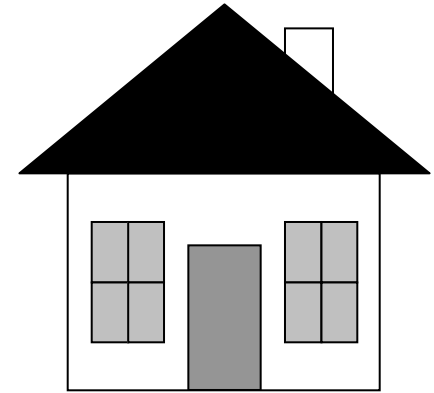
# Question 2

- On the right is a star shape  
Find the same shape below



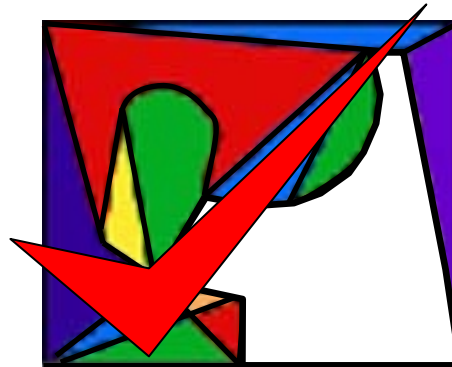
# Question 3

- Which house below is identical to the one shown on the right?



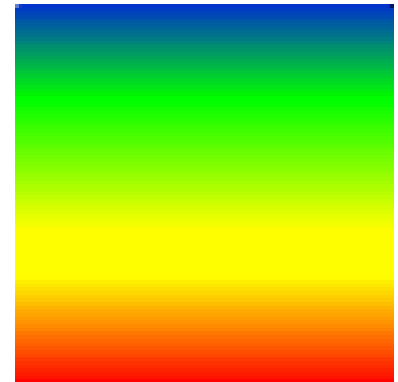
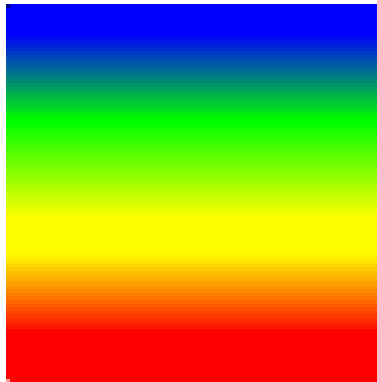
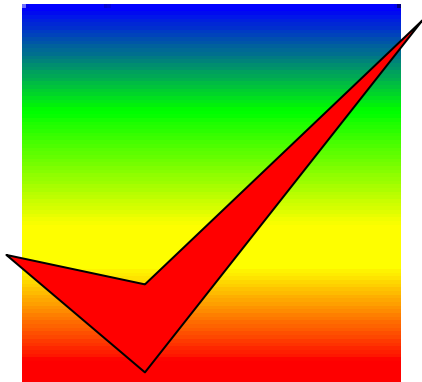
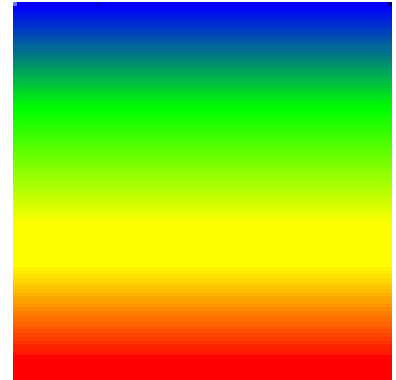
# Question 4

- Which picture below contains the shape on the right?



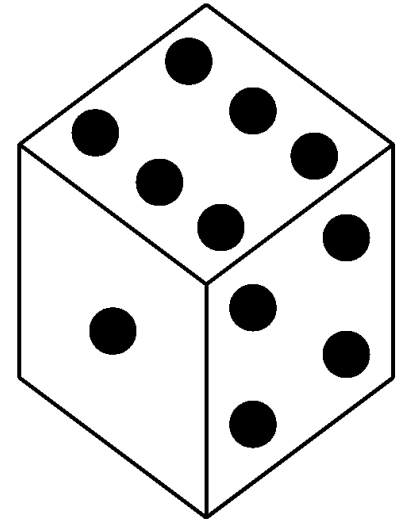
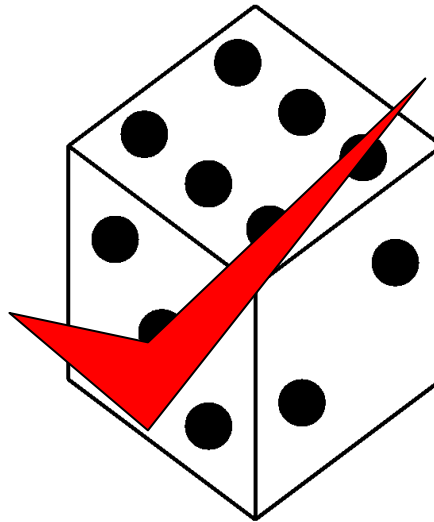
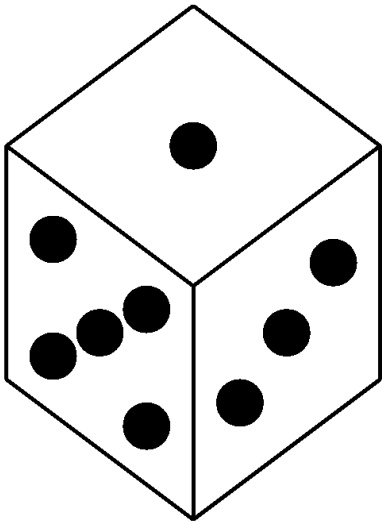
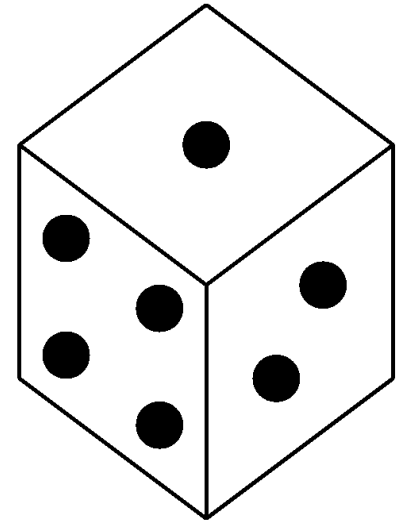
# Question 5

- Find the same colour range below as shown to the right

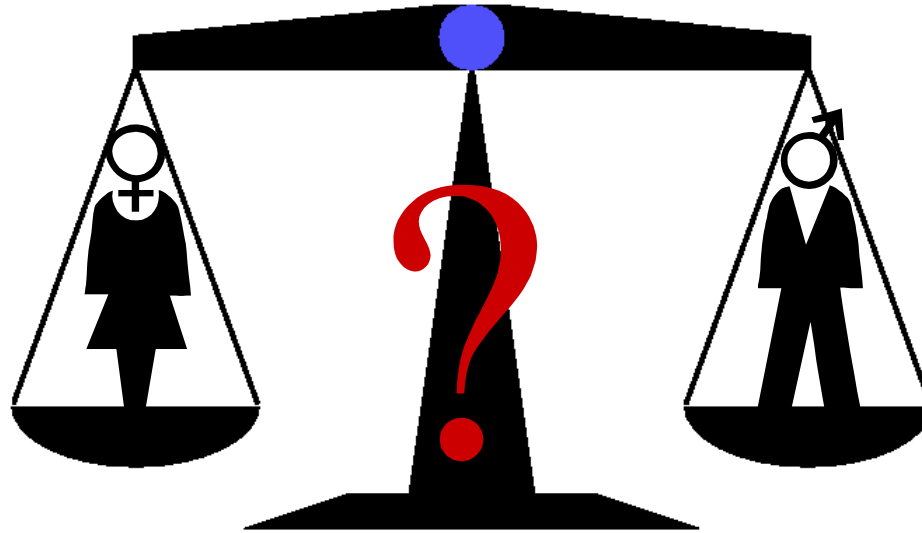


# Question 6

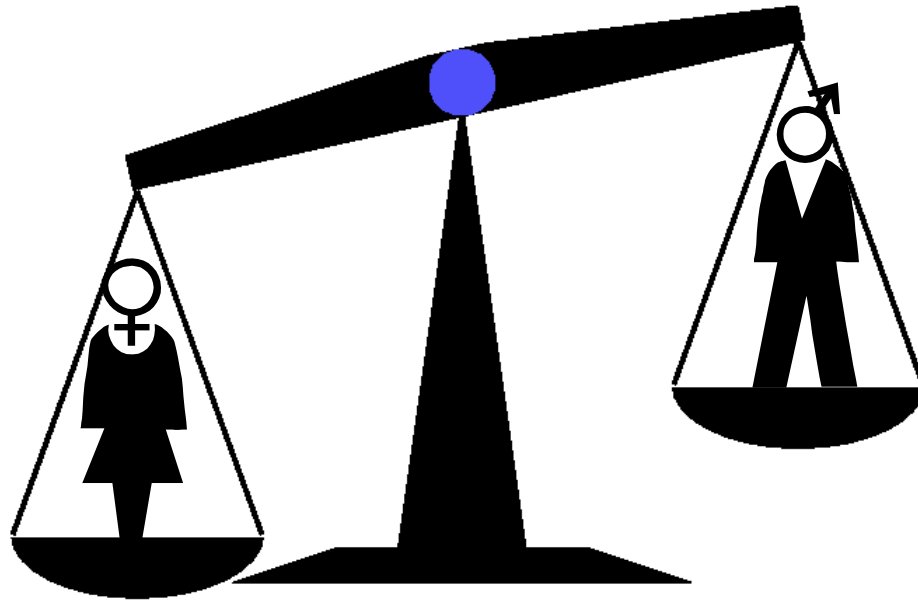
- Which picture below is of the die on the right?



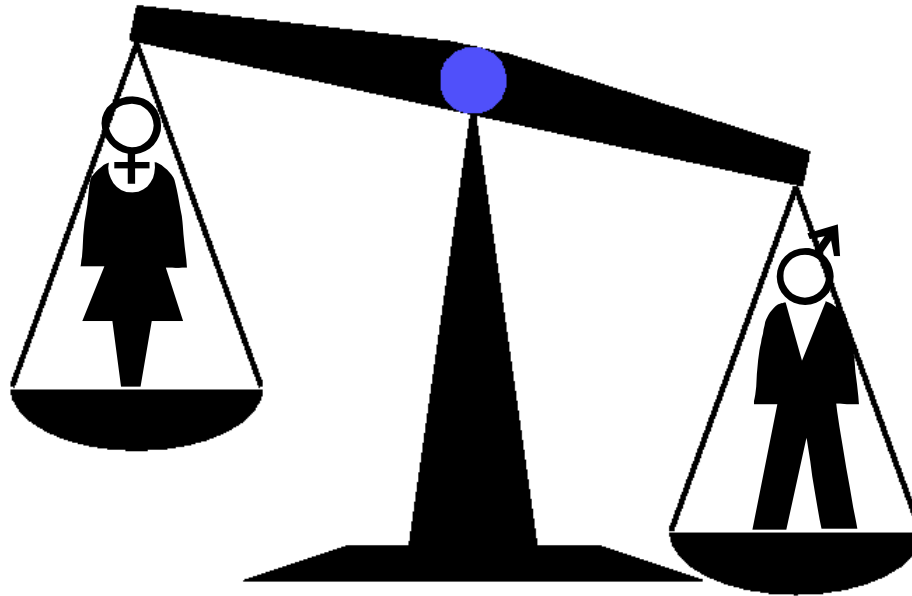
# How did you do?



# Questions 1, 3 & 5



# Questions 2, 4 & 6



# Student Code

- Is written in response to an assessment
- Not their own choice of
  - Language
  - Subject
- Following somebody else's guidelines

What about non-student code?

Turkle says ...

# Gendered Code

- Hard master



- Soft master



McKenna says ...

# No such thing!

- Most hackers are male
- Women are more likely to write documentation
- Ability to abstract is dependent upon mathematical ability
- ‘Hard’ or ‘Soft’ approach adopted depending upon circumstance

