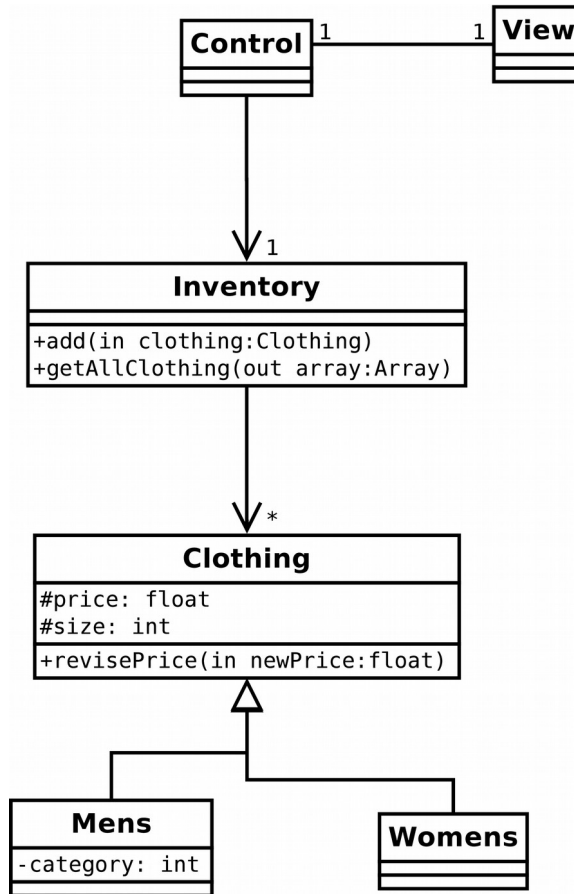


# COMP 2404

## Midterm Exam Solution (version 2)

1. [2 marks] d
2. [2 marks] c
3. [2 marks] a
4. [2 marks] a
5. [20 marks]



Classes:	6 marks (1 mark each)
Control-Inventory:	2 marks (1 directionality, 1 multiplicity)
Control-View:	4 marks (1 each directionality, 1 each multiplicity)
Inventory:	2 marks (add function with correct parameter)
Inventory-Clothing:	2 marks (1 directionality, 1 multiplicity)
Clothing:	2 marks (1 attributes, 1 function with correct parameters)
Clothing-Mens-Womens:	2 marks (1 association, 1 attribute)

6.

a. [10 marks]

```
// 2 marks for dealing with empty array
if (size == 0)
    return 0;

// 1 mark for saving first element for return value
Animal* goner = elements[0];

// 4 marks for shifting elements to the front
// -- 2 marks for loop with correct header
// -- 2 marks for moving each element toward the front
for (int i=1; i<size; ++i)
    elements[i-1] = elements[i];

// 2 marks for decreasing size
--size;
// 1 mark for returning former first element
return goner;
```

b. [12 marks]

```
Node *newNode, *currNode, *prevNode;
// 4 marks for creating and initializing new node
newNode = new Node; newNode->data = critter;
newNode->prev = 0;  newNode->next = 0;

// 2 marks for finding end of list
prevNode = 0;  currNode = head;
while (currNode != 0) {
    prevNode = currNode;  currNode = currNode->next;
}

// 2 marks for dealing with empty list
if (prevNode == 0) head = newNode;
// 2 marks for dealing with inserting in middle/end position
else prevNode->next = newNode;

// 2 marks for linking back to rest of list
newNode->prev = prevNode;
```