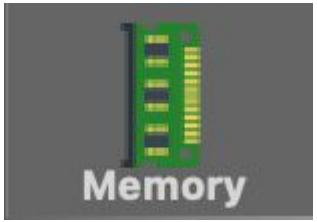
Arrays & Functions

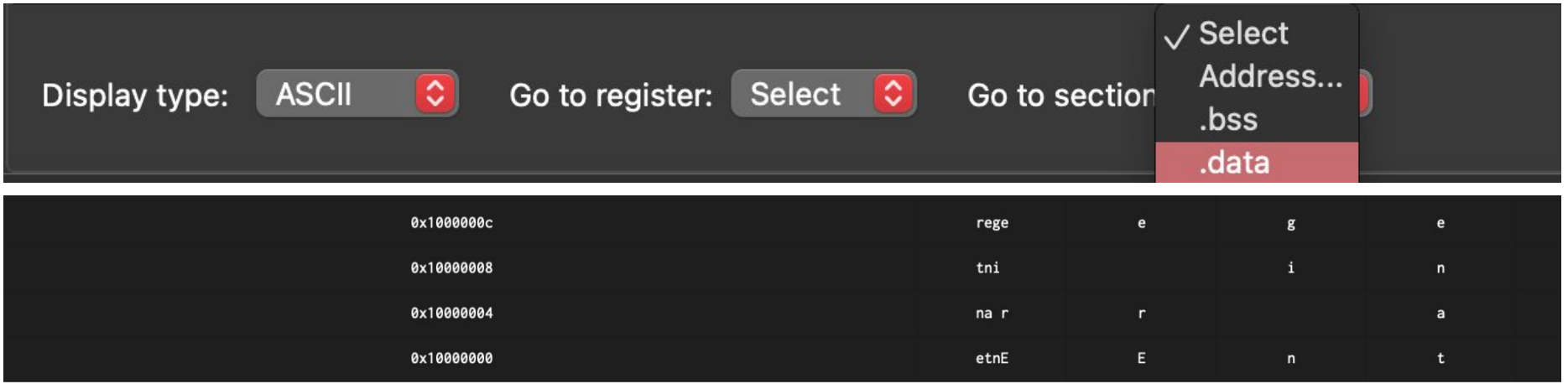
CSC258 LAB 3

Jan 30, 2023

Suggested Workflow

Spend some time to play with the **Memory** section of the Ripes

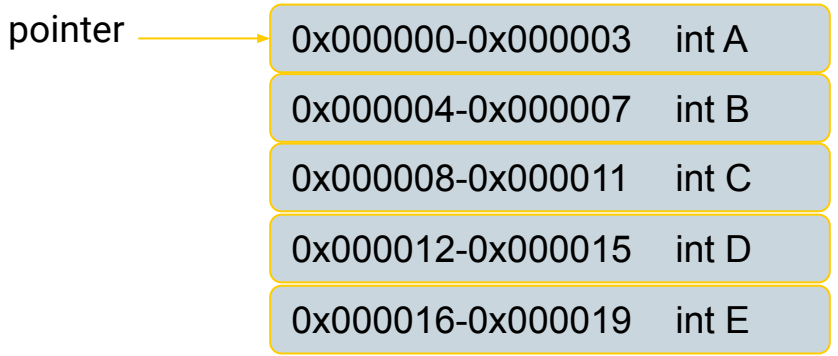




Read handout section 3: Arrays

```
.data
array1:     .word     5, 8, 3, 4, 7, 2
```

Similarly to C, arrays elements are accessed by calculating “base + offset”



Read handout section 4: Function Calls

```
def main():
    A = 5
    B = 3
    print "Before function"
    print "A + B = ", doAdd(A, B)
    print "A - B = ", doSub(A, B)

def doAdd(A, B):
    return A + B

def doSub(A, B):
    return A - B
```

Similar to high level languages, but:

Func call: Jump instruction

Func args: use registers a0 and a1
Func return: use register a0

Read handout section 5: Multi-Level Function Calls and Recursion

```
def main():
    n = input("Enter a number\n")
    print("The result is ", mystery(n))

def mystery(n):
    if n == 0:
        return 0
    return mystery(n-1) + 2*n - 1
```

Call func inside another func

Call func inside self

Be careful with return address (where your program should go after a func is done) in multi level func calls
Consider using call stack with SP (stack pointer)