

algorithms Homework

1. Prints largest two elements of a numeral string

```
print "please enter a numeral string"
read n
i=0
```

```
while n!=0
  x[i]=n
  i=i+1
  read n
```

```
f=1
while (f<i) {
  j=f
  while( j>0 and x[j]<x[j-1]) {
    temp=x[j]
    x[j]=x[j-1]
    x[j-1]=temp
    j=j-1}
  f=f+1 }
```

```
print "max two numbers:"
print x[i-1],x[i-2]
```

2. calculates $x+y$ and $x-y$ using add_one and sub_one

```
print "enter x and y"
read x,y
```

```
xaddy-recursive(x,y)
if (y==0)
  return 0
else
  return xaddy-recursive(x,y-1)+1
```

```
xsuby-recursive(x,y)
if (y==0)
  return 0
else
  return xsuby-recursive(x,y-1)-1
```

```
print "x+y=",xaddy-recursive(x,y)"
print "x-y=",xsuby-recursive(x,y)"
```

3. Numeral set subtraction

```
print "please enter number of x members:"
read x_cnt
print "please enter number of y members:"
read y_cnt
```

```
i=0
print "enter x members:"
while (i<x_cnt)
    read x[i]
    i=i+1
```

```
j=0
print "enter y members:"
while (j<y_cnt)
    read y[j]
    j=j+1
```

```
x_test_cnt=0
y_test_cnt=0
z_cnt=0
```

```
while (x_test_cnt<x_cnt)
    while (y_test_cnt<y_cnt)
        if (x[x_test_cnt]=y[y_test_cnt])
            y_test_cnt=y_test_cnt+1
        else
            z[z_cnt]=x[x_test_cnt]
            z_cnt=z_cnt+1
        x_test_cnt=x_test_cnt+1
```

```
print "number of x-y members is:"
print z_cnt-1
```

```
k=0
while (k<z_cnt)
    print z[k]
    k=k+1
```

4.Digits reverse and subtraction

```
print "please enter a positive integer"
read x
```

```
reversed=0
while (x>0)
    unity=x mod 10
    reversed=reversed*10+unity
    x=x-unity
    x=x/10
y=reversed
```

```
print "the result is:"
print x-y
```

5.local reverse and subtraction

```
print "please enter a positive integer with even number of digits"
read x
```

```
p=1
while (x / 10p) > 10p
    p=p+1
```

```
part2=x mod 10p
part1=(x-part2)/10p
```

```
reversed_part1=0
while (part1>0)
    unity1=part1 mod 10
    reversed_part1=reversed_part1*10+unity1
    part1=part1-unity1
    part1=part1/10
```

```
reversed_part2=0
while (part2>0)
    unity2=part2 mod 10
    reversed_part2=reversed_part2*10+unity2
    part2=part2-unity2
    part2=part2/10
```

```
y=(reversed_part1*10p)+reversed_part2
```

```
print "the result is:"
print x-y
```

6.The tile dimensions to save!

```
Print "please enter the length of the hall:"  
read length
```

```
print "please enter the width of the hall:"  
read width
```

```
tile_dimension(x, y)  
{  
    if (y==0)  
        return x  
    else if (x>=y and y>0)  
        return tile_dimension(y,x mod y)  
}
```

```
print "tile dimension is:"  
print tile_dimension(length,width)
```

7.inter-array sort