Output

```
First Fit
Process 0 in Block  0
Process 1 in Block  2
Process 2 in Block  1
Fragmantation   134

Worst Fit
Process 0 in Block 2
Process 2 in Block 0
Fragmantation   189

Best Fit
Process 0 in Block 1
Process 1 in Block 2
Process 2 in Block 0
Fragmantation   134
```

Solution Code

```
processes=(12 100 5)
blocks=(56 45 150)
blocked=(0 0 0)

fragma=0

first_fit() {
    for p in "${!processes[@]}"
    do
        for b in "${!blocks[@]}"
        do
            if ((${blocked[$b]} == 0 && ${processes[$p]} <= ${blocks[$b]}))
            then
                blocked[$b]=${processes[$p]}
                echo "Process " $p "in Block " $b
                fragma=$(($fragma + ${blocks[$b]} - ${processes[$p]}))
                break
            fi
        done
    done
}

worst_fit() {
    idx=0
    prev=-1
    for p in "${!processes[@]}"
    do
        idx=0
        for b in "${!blocks[@]}"
        do
            if ((${blocked[$b]} == 0 && ${processes[$p]} <= ${blocks[$b]} &&
${blocks[$b]} > prev))
```

```
            then
                idx=$b
                prev=${blocks[$b]}
                # echo $prev
            fi
        done
        if (($prev != -1))
        then
            blocked[$idx]=${processes[$p]}
            echo "Process " $p "in Block" $idx
            prev=-1
            fragma=$(($fragma + ${blocks[$idx]} - ${processes[$p]}))
        fi
    done
}

best_fit() {
    idx=0
    prev=1000000000
    for p in "${!processes[@]}"
    do
        idx=0
        for b in "${!blocks[@]}"
        do
            if ((${blocked[$b]} == 0 && ${processes[$p]} <= ${blocks[$b]} &&
${blocks[$b]} - ${processes[$p]} < prev))
            then
                idx=$b
                prev=${blocks[$b]}
            fi
        done
        if (($prev != 1000000000))
        then
            blocked[$idx]=${processes[$p]}
            prev=1000000000
            echo "Process " $p "in Block" $idx
            fragma=$(($fragma + ${blocks[$idx]} - ${processes[$p]}))
            # echo "$fragma"
        fi
    done
}

print_blocked() {
    for i in "${!blocked[@]}"
    do
        echo ${blocked[$i]}
    done
}

reset() {
    for i in "${!blocked[@]}"
    do
        blocked[$i]=0
    done
    fragma=0
}

main() {
```

```
    echo "First Fit"
    first_fit
    # print_blocked
    echo "Fragmantation " $fragma

    reset
    echo ""
    echo "Worst Fit"
    worst_fit
    # print_blocked
    echo "Fragmantation " $fragma

    reset
    echo ""
    echo "Best Fit"
    best_fit
    # print_blocked
    echo "Fragmantation " $fragma
    reset
}

main
```