Bài Tập Thực Hành Lab 5

Câu 1:

```
ubuntu@ubuntu-2274802010449:~$ vim atbash.sh
ubuntu@ubuntu-2274802010449:~$ chmod +x atbash.sh
ubuntu@ubuntu-2274802010449:~$ ./atbash.sh
Chon chuc nang:
1. Ma hoa
2. Giai ma
Lua chon cua ban (1/2): 1
Nhap van ban: abc
Ket qua ma hoa:
zyx
ubuntu@ubuntu-2274802010449:~$ ./atbash.sh
Chon chuc nang:
1. Ma hoa
2. Giai ma
Lua chon cua ban (1/2): 2
Nhap van ban: xyz
Ket qua giai ma:
cba
ubuntu@ubuntu-2274802010449:~$
```

```bash
#!/bin/bash

# Ham ma hoa Atbash
atbash_cipher() {
    local text="$1"
    local alphabet="abcdefghijklmnopqrstuvwxyz"
    local reversed_alphabet="zyxwvutsrqponmlkjihgfedcba"
    local encoded_text=""

    # Chuyen tat ca chu cai thanh chu thuong va ma hoa tung ky tu
    text=$(echo "$text" | tr '[:upper:]' '[:lower:]')

    # Lap qua tung ky tu
    for ((i=0; i<${#text}; i++)); do
        char="${text:$i:1}"

        if [[ "$char" =~ [a-z] ]]; then
            index=$(expr index "$alphabet" "$char")
            encoded_char="${reversed_alphabet:index-1:1}"
            encoded_text+="$encoded_char"
        elif [[ "$char" =~ [0-9] ]]; then
            encoded_text+="$char"   # Giu nguyen so
        fi
    done

    # Chia thanh nhom 5 ky tu
    echo "$encoded_text" | sed 's/.\{5\}/& /g'
}

# Ham giai ma Atbash (cung thao tac nhu ma hoa)
atbash_decipher() {
    atbash_cipher "$1"
}

# Menu lua chon
echo "Chon chuc nang:"
echo "1. Ma hoa"
echo "2. Giai ma"
read -p "Lua chon cua ban (1/2): " choice

read -p "Nhap van ban: " text
```

Câu 2:

```bash
#!/bin/bash

# Ham raindrops
raindrops() {
    local number=$1
    local result=""

    # Kiem tra dieu kien chia het
    if (( number % 3 == 0 )); then
        result+="Pling"
    fi
    if (( number % 5 == 0 )); then
        result+="Plang"
    fi
    if (( number % 7 == 0 )); then
        result+="Plong"
    fi

    # Neu khong chia het cho 3, 5, hoac 7 thi ket qua la so do
    if [[ -z "$result" ]]; then
        result="$number"
    fi

    echo "$result"
}

# Nhap so tu nguoi dung
read -p "Nhap mot so: " number
echo "Ket qua:"
raindrops "$number"
```

```
ubuntu@ubuntu-2274802010449:~$ vim raindrops.sh
ubuntu@ubuntu-2274802010449:~$ chmod +x raindrops.sh
ubuntu@ubuntu-2274802010449:~$ ./raindrops.sh
Nhap mot so: 4
Ket qua:
4
ubuntu@ubuntu-2274802010449:~$ ./raindrops.sh
Nhap mot so: 3
Ket qua:
Pling
ubuntu@ubuntu-2274802010449:~$ ./raindrops.sh
Nhap mot so: 5
Ket qua:
Plang
ubuntu@ubuntu-2274802010449:~$ ./raindrops.sh
Nhap mot so: 7
Ket qua:
Plong
```

Câu 3:

```
ubuntu@ubuntu-2274802010449:~$ vim baseball_scores.sh
ubuntu@ubuntu-2274802010449:~$ chmod +x baseball_scores.sh
ubuntu@ubuntu-2274802010449:~$ ./baseball_scores.sh
Nhap cac thao tac (phan cach bang dau cach): 5 2 C D +
Tong diem cuoi cung:
30
```

```bash
calculate_score() {
    local operations=("$@")
    local record=()

    for op in "${operations[@]}"; do
        case "$op" in
            "+")
                # Tinh tong cua hai diem truoc do va them vao bang diem
                local last=${record[-1]}
                local second_last=${record[-2]}
                record+=($((last + second_last)))
                ;;
            "D")
                # Gap doi diem truoc do va them vao bang diem
                local last=${record[-1]}
                record+=($((last * 2)))
                ;;
            "C")
                # Xoa diem truoc do khoi bang diem
                unset record[-1]
                ;;
            *)
                # Them diem moi vao bang diem
                record+=($op)
                ;;
        esac
    done

    # Tinh tong cua tat ca diem trong bang diem
    local total=0
    for score in "${record[@]}"; do
        (( total += score ))
    done

    echo "$total"
}

# Nhap danh sach thao tac tu nguoi dung
read -p "Nhap cac thao tac (phan cach bang dau cach): " -a operations
echo "Tong diem cuoi cung:"
calculate_score "${operations[@]}"
```