

# **FREE OPEN SOURCE SOFTWARE LAB**

A REPORT

Submitted by

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# Question 1

## 1.1 Problem Statement

Write a bash script to find the binary equivalent of a given number.

Input : 8

Output : 1000

Input : 23

Output : 10111

(Input must be taken from the user)

## 1.2 Explanation

Converting decimal to binary number equivalents is to continually divide by decimal number by 2 to give a result and a remainder of either a 1 or a 0 until the final result equals zero.

## 1.3 Implementation

1. read input from user to a variable
2. **while** num less than 0
3. **binary** = num MOD 2
4. **print** binary
5. **num** = num / 2
6. **end while**
7. read from bottom to get output

## 1.4 Program Execution

Save the program as 1.sh

To run the program

```
$bash1.sh
```

## 1.5 Test Runs and Outputs

1. enter number 8

Output : 1000

2. enter number 10

Output : 1010

3. enter number 20

Output : 10100

## 1.6 Program

```
read -p "enter number " num    #to read user input
while [ "$num" != "0" ] ; do    #do while number != 0
    binary=$(expr $num % 2)      #number MOD 2 is saved into a variable called
binary
    echo $binary                #printing binary
    num=$(expr $num / 2)        #value of number now is number divide by 2
done
```

## 1.7 Souce Code and Testcase files

Source code : <https://github.com/hishamalip/FOSS-Lab/blob/master/finalexam/1.sh>

# Question 2

## 2.1 Problem Statement

Given a file containing the marks obtained by students for 3 subjects in an exam. In order to pass, student should score at least 50 marks in every subject. The file has one record(line) for each student in the following format:

rollnumber subject1 subject2 subject3

A sample line from the file will be like :

TVE14CS021 88 49 69

This means the student with roll number 'TVE14CS021' has scored 88 marks for first subject, 49 for second subject, and 69 for third subject. The student has failed since marks for second subject is 49, less than 50.

Using a scripting language, print pass/fail status of each student in the following format:

rollnumber pass/fail

The output line corresponding to the above sample line will be :

TVE14CS021 fail

## 2.2 Explanation

We can solve the above problem by using AWK scripting. First check the column numbers that mark is listed. If column numbers that displayed is greater than or equal to 50, then set pass to a variable else set fail. Then print corresponding column of roll number and the value in the variable that is pass or fail

## 2.3 Implementation

1. **begin** AWK script
2. **if** columns 2 and 3 and 4 are greater than or equal 50
3.     set score is pass
4. **else**
5.     score is fail
6. **end if**
7. **print** first column and score and read input from file

## 2.4 Program Execution

Save the program as 2.awk

Make the file executable by following command

```
$chmod +x 2.awk
```

To run the program

```
$/2.awk
```

## 2.5 Test Runs and Outputs

1. output of testcase.txt  
TVE14CS001 fail  
TVE14CS002 pass  
TVE14CS003 pass  
TVE14CS004 fail  
TVE14CS005 pass  
TVE14CS006 fail  
TVE14CS007 pass  
TVE14CS008 pass  
TVE14CS009 fail  
TVE14CS010 fail

2. output of testcase.txt

TVE14CS001 pass

TVE14CS002 pass

TVE14CS003 fail

TVE14CS004 fail

TVE14CS005 fail


TVE14CS006 fail

TVE14CS007 pass

TVE14CS008 fail

TVE14CS009 fail

TVE14CS010 fail



```
hishamalip@savage:~/Documents/fossilab/assignments/finalexam$ ./2.awk
TVE14CS001 fail
TVE14CS002 pass
TVE14CS003 pass
TVE14CS004 fail
TVE14CS005 pass
TVE14CS006 fail
TVE14CS007 fail
TVE14CS008 fail
TVE14CS009 pass
TVE14CS010 fail
hishamalip@savage:~/Documents/fossilab/assignments/finalexam$
```

## 2.6 Program

```
awk scripting # start awk '{
    if ( $2>=50 && $3>=50 && $4>=50 ) #check if 2nd, 3rd 4th column
values are >=50
        score="pass"; # then set score is pass
    else score="fail"; #else set score is fail
}' print $1,score ' testcase.txt # print 1st coloumn and score of testcase file
```

## 2.7 Soucecode and Testcase files

Source code : <https://github.com/hishamalip/FOSS-Lab/blob/finalexam/2.awk>

Testcase file 1: <https://github.com/hishamalip/FOSS-Lab/blob/finalexam/testcase.txt>

Testcase file 1: <https://github.com/hishamalip/FOSS-Lab/blob/finalexam/testcase2.txt>

# Question 3

## 3.1 Problem Statement

Implement PHP application that asks a random question(from a given set) to the user and evaluates if the users answer is correct.

A set of questions and its corresponding answers are available in folder 3

## 3.2 Explanation

Create a HTML form with 3 questions and and 4 radio button options. Set correct value to one radio button and connect the form with a PHP file to check the answers are same or not and print result in PHP page.

## 3.3 Implementation

HTML file : a.html

1. create html form
2. connect html to php file
3. create 3 questions and 4 radio buttons
4. assign correct value to one radio button of each question
5. if submit button is pressed redirect to php file

PHP file : b.php

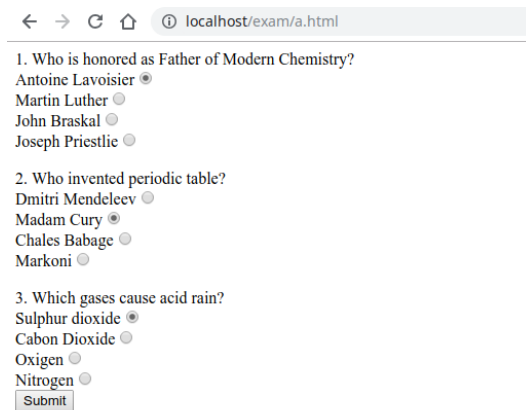
1. read values from html forms
2. check values are true with corresponding right values using if conditio
3. create 3 questions and 4 radio buttons
4. if values are true print right answer else print wrong answer for each questions

### 3.4 Program Execution

Put a.html and b.php in htdocs of localhost folder Run html file as localhosta.html in webbrowser

### 3.5 Test Runs and Outputs

a.html



← → ↻ 🏠 localhost/exam/a.html

1. Who is honored as Father of Modern Chemistry?

- ☒ Antoine Lavoisier
- ☐ Martin Luther
- ☐ John Braskal
- ☐ Joseph Priestlie

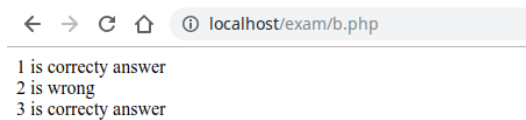
2. Who invented periodic table?

- ☐ Dmitri Mendeleev
- ☒ Madam Cury
- ☐ Chales Babage
- ☐ Markoni

3. Which gases cause acid rain?

- ☒ Sulphur dioxide
- ☐ Cabon Dioxide
- ☐ Oxigen
- ☐ Nitrogen

b.php



← → ↻ 🏠 localhost/exam/b.php

1 is correcty answer  
2 is wrong  
3 is correcty answer



### 3.6 Program

a.html

```
<html>
<body>
<form action="b.php" method="post">
1. Who is honored as Father of Modern Chemistry?<br>
Antoine Lavoisier<input type="radio" name="q1" value="Antoine Lavoisier"><br>
Martin Luther<input type="radio" name="q1" value="A"><br>
John Braskal<input type="radio" name="q1" value="B"><br>
Joseph Priestlie<input type="radio" name="q1" value="C"><br><br>

2. Who invented periodic table?<br>
Dmitri Mendeleev<input type="radio" name="q2" value="Dmitri Mendeleev"><br>
Madam Cury<input type="radio" name="q2" value="A"><br>
Charles Babage<input type="radio" name="q2" value="B"><br>
Markoni<input type="radio" name="q2" value="C"><br><br>

3. Which gases cause acid rain?<br>
Sulphur dioxide<input type="radio" name="q3" value="Sulphur dioxide"><br>
Carbon Dioxide<input type="radio" name="q3" value="A"><br>
Oxygen<input type="radio" name="q3" value="B"><br>
Nitrogen<input type="radio" name="q3" value="C"><br>

<input type="submit" name="submit">
</body>
</html>
```

b.php

```
<?php
$a1 = $_POST['q1'];
if ($a1 == "Antoine Lavoisier")
{
    echo "1 is correctly answer";
    echo "<br>";
}
else
{
    echo "1 is wrong";
    echo "<br>";
}

$a2 = $_POST['q2'];
if ($a2 == "Dmitri Mendeleev")
{
    echo "2 is correctly answer";
    echo "<br>";
}
else
{
    echo "2 is wrong";
    echo "<br>";
}

$a3 = $_POST['q3'];
if ($a3 == "Sulphur dioxide")
{
    echo "3 is correctly answer";
    echo "<br>";
}
else
{
    echo "3 is wrong";
    echo "<br>";
}
?>
```

### 3.7 Source Code and Testcase files

html : <https://github.com/hishamalip/FOSS-Lab/blob/master/finalexam/a.html>

php : <https://github.com/hishamalip/FOSS-Lab/blob/master/finalexam/b.html>

# Conclusion

The examination had 3 questions for SET-2 . 2 of them where from scripting and the last one was PHP related question.As a whole SET 2 questions where comparatively easy as the same time checking the knowledge of bash ,awk and php.

All questions are completely executed and out put is verified succussfully