

# Quiz Automation Tool

Using BASH Scripting

6-16-2022

Linux for Biological Sciences

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## Executive Summary

Quiz automation is a kind of program which execute a program repeatedly. For that you need to make a bash file. Then apply infinite while loop. Variable score initiated with zero and # as IFS would do wonders. echo questions and choices make them print at once on a screen. Use \c command to take input of choices. \$score + 1 will increase you. Then make a txt file where you saved your questions with answers. Basic syntax.

```
score=0
while IFS='#' read -r question choices a
do
    echo
    echo $question
    echo
    echo $choices
    echo
    echo "Your answer:\c"
    read student_answer </dev/tty
    if [ "$student_answer" = "$answe
        score=`expr $score + 1`
    fi
    clear
done <fq.txt

echo
echo "Your score is: $score"
```

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# Introduction

Test automation is the practice of running tests automatically, managing test data, and utilizing results to improve software quality. One major goal of automation is to save time, effort, and money. Because it is repeatable and determinant. Every project has some functions and sequence, so is my project. First you prepare for it, then take action and then get YOUR-RESULT and CORRECTANSWERS.

## Main functions

### While Loop

Used while condition to pop out next question, once you answer the MCQ. **Infinite**

### while loop

Used this condition to make the quiz repeatable, without going to bash terminal every time you end **if statement**

If condition is used to display different marks you obtained, and also used with switch to make our program repeatable.

### Switch statement

Switch condition used to select different subjects, to exit or retake and to see result or correct answer.

**txt files** txt files used multiple times, where questions with answers are saved using the “#” used as IFS.

# Step by step explanation

---

```
1#!/bin/bash
2while :
3do
4echo "Enter your name"
5read name
6score=0
7echo
8echo " Instructions"
9echo " $name you have only 10 sec to attemp every question"
10echo
11
12echo "English"
13echo "Mathematics"
14echo "Biology"
15echo "Chemistry"
16echo
17echo -n "Enter the name of a subject: "
18read subject
19case $subject in
```

1. Shebang bash is nothing but the absolute path to the Bash interpreter. All scripts under Linux execute using the interpreter specified on a first line.
2. Infinite loop is applied to make the program repeatable.
3. Then user is asked for his/her name
4. Read will read the name and then used as variable in “8 line” to give the instructions.
5. Variable is set as ‘Score=0’ so that number can be added to it just by calling its name
6. Case statement is used to give choice in different subjects. User will enter the subject name, Read command would read it and then proceed the program.

```

21 English)
22 echo -n "Test start"
23 while IFS='#' read -r question choices answer
24 do
25
26     echo
27     echo $question
28     echo
29     echo $choices
30     echo " You have only 10 sec to answer:\c"
31
32     sleep 10
33     echo "time is up"
34     echo
35     read student_answer </dev/tty
36     if [ "$student_answer" = "$answer" ]; then
37         score=`expr $score + 1`
38     fi
39
40 done <eng.txt

```

1. If user has entered the choice 'English' in case statement, then questions in the txt attached file would appear.
2. “#” is used as IFS in text files by sequence of, question then choices and then answer.
3. \$question and \$choices make appear question and choices on the at once.
4. \c give space to give answer you want.
5. Sleep 10 set the time of 10 second for each question. If you answer and press enter, next question will appear in 10 sec. but if you don't press enter or give answer. “Time is up” will appear on screen.
6. Command on line number 35 would read your answer given on the terminal.
7. If statement is used, that if your answer is equal to saved answer on txt file then your \$score will be increased by 1
8. Line 40 show how to attach a txt file in bash file.

```

42 echo "Enter what you want to see My-result or Correct-answers"
43 echo
44 read Result
45 case $Result in
46 My-result)
47     echo -n "$name!! you got $score marks out of 5"
48     if [ $score -eq 5 ]
49 then
50     echo " congratulations you got full marks"
51 else
52     echo " you performed well"
53 fi
54 ;;
55 Correct-answers)
56     echo "1=a"
57     echo "2=b"
58     echo "3=a"
59     echo "4=c"
60     echo "5=c"
61 ;;
62 *)
63     echo -n "unknown"
64 ;;
65 esac

```

1. Again, case statement is use to give the choice to user whether he/she wants to see result or correct answer.
2. If user “my result” then If condition is again used in case statement that if user’s marks are equal to 5 then it would echo “congratulations, you got full marks” else echo “you performed well”.
3. If user enter “correct answers” line 56-60 would appear. “Esac” end the case statement.

```

305 ;;
306 esac
307 echo
308 echo -n "Enter 1 if you want a re-take and 2 if you want to exit: "
309 read number
310 if [ $number -eq 1 ]
311 then
312 echo
313 echo -n "---- RE-TAKE ---- "
314 else
315 echo
316 echo -n "---- EXIT ---- "
317 fi
318 echo
319 case $number in
320
321 1)
322     echo
323     ;;
324
325 2)
326     exit
327     ;;
328
329 *)
330     echo -n "unknown"
331     ;;
332
333 esac
334 done

```

This is the last part of program, because in the center, different choices of subject are provided to user else every thing is same.

1. Again, case statement is used to give choices to user whether they want a retake or want to exit.
2. And if else condition is nested in the case statement that if user inputs 1, quiz will start again but if user inputs 2 programs will terminate.
3. The last done is the part of Infinite loop used in the beginning of program.

## Recommendations

You can always make your program better if you are improving your programming skill. But following were some of the recommendations

1. First, if you start the quiz, camera will open. But that needs a real environment, which means you should not use ubuntu on VMware. First you install “cheese” using “sudo apt-get install cheese” and then enter “cheese”.
2. Second, if user open browser program immediately terminates.



# Complete code

```
#!/bin/bash while : do echo "Enter your name" read name
score=0 echo echo " Instructions" echo " $name you have only 10
sec to attempmt every question" echo
```

```
echo "English" echo
"Mathematics" echo
"Biology" echo "Chemistry" echo echo
-n "Enter the name of a subject: "
read subject case $subject in
```

```
English) echo -n "Test start" while IFS='#'
read -r question choices answer do
```

```
    echo
    echo $question
echo
    echo $choices echo " You have only
10 sec to answer:\c"
```

```
    sleep 10 echo
"time is up"
    echo
    read student_answer </dev/tty if [
"$student_answer" = "$answer" ]; then
score=`expr $score + 1`
fi
```

```
done <eng.txt
```

```

echo echo "Enter what you want to see My-result or Correct-
answers" echo read Result case $Result in My-result) echo -n
"$name!! you got $score marks out of 5"
if [ $score -eq 5 ] then
echo " congratulations you got full marks" else
echo " you performed well"
fi
;;
Correct-answers)
echo "1=a" echo "2=b"
echo
"3=a" echo
"4=c" echo
"5=c"
;;
*)
echo -n "unknown"
;;
esac echo echo echo "Enter what you want to see "My-result" or
"Correct-answers"" read Result case $Result in My-result) echo -n
"$name!! you got $score marks out of 5"
if [ $score -eq 5 ] then
echo " congratulations you got full marks" else
echo " you performed well"
fi
;;
Correct-answers)
echo "1=a" echo "2=b"
echo
"3=a" echo
"4=c"
echo "5=c"
;;
*)
echo -n "unknown"
;;
esac
;;
Biology) echo -n
"Test start"
while IFS='#' read -r question choices answer do
echo
echo $question
echo

```

```
        echo $choices      echo "You have only
10 sec to answer:\c"  sleep 10
```

```
        echo "time is up"
```

```
        read student_answer </dev/tty  if [ "$student_answer" =
"$answer" ]; then
        score=`expr $score + 1`
        fi
```

```
done <bio.txt echo  echo "Enter what you want to see My-result
or Correct-answers" echo read Result case $Result in My-result)
echo -n "$name!! you got $score marks out of 5"  if [ $score -eq
5 ] then
    echo " congratulations you got full marks" else
    echo " you performed well"
fi
;;
Correct-answers)
echo "1=a"  echo "2=c"
echo
"3=a"  echo
"4=c"  echo
"5=b"
;;
*)
    echo -n "unknown"
    ;;
esac echo
echo echo
"Enter
what you
want to
see "My-
result" or
"Correctanswers"
" read
Result
case
$Result in
My-
result)  echo -n "$name!! you got $score marks
out of 5"
```

```

if [ $score -eq 5 ] then
echo " congratulations you got full marks" else
echo " you performed well"
fi
;;
Correct-answers)
echo "1=a" echo "2=c"
echo
"3=a" echo
"4=c" echo
"5=b"
;;
*)
echo -n "unknown"
;;
esac
;;

Mathematics)
echo -n "Test start"
while IFS='#' read -r question choices answer do
echo
echo $question
echo

echo $choices echo "You have only
10 sec to answer:\c" sleep 10
echo "time is up"

read student_answer </dev/tty if [ "$student_answer" =
"$answer" ]; then
score=`expr $score + 1`
fi

done <math.txt echo echo "Enter what you want to see My-
result or Correct-answers"
echo read Result case $Result in My-result)
echo -n "$name!! you got $score marks out of 5"
if [ $score -eq 5 ]
then
echo " congratulations you got full marks" else
echo " you performed well"
fi
;;

```

```

Correct-answers)
echo "1=c"  echo "2=c"
echo
"3=a"  echo
"4=b"  echo
"5=a"
;;
*)
    echo -n "unknown"
    ;;
esac echo echo  echo "Enter what you want to see "My-result" or
"Correct-answers"" read Result case $Result in My-result)  echo -n
"$name!! you got $score marks out of 5"
if [ $score -eq 5 ] then
    echo " congratulations you got full marks" else
    echo " you performed well"
fi
;;
Correct-answers)
echo "1=c"  echo "2=c"
echo
"3=a"  echo
"4=b"
echo "5=a"
;;
*)
    echo -n "unknown"
    ;;
esac
;;

Chemistry)  echo n
"Test start"  while
IFS='#' read -r
question choices
answer do
    echo
    echo $question
    echo

    echo $choices      echo "You have only
10 sec to answer:\c"  sleep 10

    echo "time is up"

```

```

        read student_answer </dev/tty  if [
"$student_answer" = "$answer" ]; then
    score=`expr $score + 1`
    fi

done <che.txt echo echo "Enter what you want to see My-result
or Correct-answers" echo read Result case $Result in My-result)
echo -n "$name!! you got $score marks out of 5"
if [ $score -eq 5 ] then
    echo " congratulations you got full marks" else
    echo " you performed well"
fi
;;
Correct-answers)
echo "1=d"  echo
"2=b"      echo
"3=b"  echo "4=c"
echo "5=b"
;;
*)
    echo -n "unknown"
    ;;
esac echo echo echo "Enter what you want to see "My-result" or
"Correct-answers"" read Result case $Result in My-result)  echo -n
"$name!! you got $score marks out of 5"  if [ $score -eq 5 ] then
    echo " congratulations you got full marks" else
    echo " you performed well"
fi
;;
Correct-answers)
echo "1=d"  echo "2=b"
echo "3=b"  echo "4=c"
echo "5=b"
;;
*)
    echo -n "unknown"
    ;;
esac
;;
esac echo echo -n "Enter 1 if you want a re-take and 2 if you
want to exit: "
read number if [ $number -eq 1 ]
then echo

```

```
echo -n "---- RE-TAKE ---- " else
echo
echo -n "---- EXIT ---- " fi
echo case
$number in
```

```
1)
echo
;;
```

```
2)
exit
;;
```

```
*)
echo -n "unknown"
;;
esac done
```

## txt files

### bio.txt file

1. How many bones a young adult have? #a) 206 b) 200 c) 300 d) 102#a
2. The fluid spaces in which chondrocytes lives is classified as#a) collagen fluid b) tendons c) lacuna d) ligaments#c
3. The movement of flexor muscle is classified as? #a) flexion b) extension c) contraction d) relaxation#a
4. The joint between skull bone is an example of? #a) ball and socket joint b) hinge joint c) immoveable joint d) slightly moveable joint#c
5. Considering the Earth's ecosystem, the consumers are classified as? #a) autotrophs b) heterotrophs c) tertiary autotrophs d) secondary autotrophs#b

### math.txt

1. Methods to find L.C.M is/are? #a) 1 b) 2 c) 3 d) 5#c
2. What is meant by Prime Numbers?#a) divided by any Number b) divided by Even Numbers c) divided by Number 1 & by itself Number d) divided by Odd Numbers#c
3. What is the greater of the two if the division of 2 consecutive odd integers gives 0.71 as the result? #a) 7 b) 6 c) 4 d) 9#a

- Which one is false if an integer R leaves a remainder 5 when it is divided by 8? #a) Number 5 less than R is a multiple of 8. b) When multiplied by 3 R always gives a result which is completely divisible by
2. c) None of these d) All of these#b
5. inches equal to how many centimeters?#a) 30.48 b) 27 c) 32.12 d) 23#a

### eng.txt

1. Lencho wrote a letter to? #a) God b) Postmaster c) a friend d) village head#a
2. Where was Lencho's house?#a) Near the sea b) At the top of a hill c) At the bottom of a hill d) In a valley#b
3. For Lencho, there was a single hope: help from? #a) God b) Postmaster c) a friend d) village head#a
4. Lencho's field needed ..... for a good harvest #a) Manure b) rain c) Rain d) ploughing#c 5. Based on the detail of the house's location, how can it best be described? #a) majestic b) imposing c) solitary d) unique#c **che.txt**

1. Which one of the following is acidic? #a) Lemon juice b) Tomatoes c) Milk d) All#d
2. Which one of the following will turn red litmus blue? #a) Vinegar b) Baking soda solution c) Lemon juice d) Soft drinks#b
3. Lime water is? #a)  $\text{CaO}$  (b)  $\text{Ca(OH)}_2$  (c)  $\text{CaCO}_3$  (d)  $\text{CaCl}_2$ #b
4. Which of the following salts has no water of crystallization? #a) (a) Blue vitriol (b) Washing soda (c) Baking soda (d) Gypsum#c
5. Which of the following does not form an acidic salt? #a) Phosphoric acid (b) Carbonic acid (c) Hydrochloric acid (d) Sulphuric acid#b



## Execution

```
atiqa2102@ubuntu:~$ sh sd.sh
Enter your name
AATIQA BANO

Instructions
AATIQA BANO you have only 10 sec to attemp every question

English
Mathematics
Biology
Chemistry

Enter the name of a subject: English
Test start
1.Lencho wrote a letter to?

a) God b) Postmaster c) a friend d) village head
You have only 10 sec to answer:a
time is up

2. Where was Lencho's house?

a) Near the sea b) At the top of a hill c) At the bottom of a hill d) In a valley
You have only 10 sec to answer:time is up
```

1. Use sh filename.sh to execute the file which contains txt files
2. You enter your name, your name would be used as variable.
3. The case statement would give you choice in subjects.
4. Question of English would begin.
5. If you enter answer in 10 sec you will wait for remaining sec but if you won't choice show "Time is up".

```
Enter what you want to see My-result or Correct-answers
unknown

Enter what you want to see My-result or Correct-answers
unknown
Enter 1 if you want a re-take and 2 if you want to exit:
```

1. Once the quiz end, you willable able to see your result and correct answer.
2. And then re-take and exit option.