School Of Engineering

Linux Programming
Assignment-7

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Q1. What is a bash shell script? Give one example.

Ans: A **bash shell script** is a text file containing commands that the bash shell can execute automatically.

Example Code:

```
#!/bin/bash
echo "Hello World!"
```

Output:

Hello World!

Q2. Write a simple shell script to print "Hello World".

Ans:

Example Code:

```
#!/bin/bash
echo "Hello World!"
```

Output:

Hello World!

Q3. What is the purpose of comments (#) in a shell script?

Ans:

Purpose of Comments (#) in Shell Scripts:

Documentation: Explain what the code does.

Organization: Divide script into logical sections.

Debugging: Temporarily disable code without deleting.

Clarity: Help other developers understand the logic.

Metadata: Record author, date, version information.

Q4. How do you declare variables (int, float, double, string, Boolean, and char in a shell script?

Ans: In shell scripting, all variables are treated as strings by default. There are no explicit data types like int, float, double, etc. However, you can simulate different types through usage:

Example Code:

```
# String (default)
name="John"

# Integer (treated as string until used in arithmetic)
count=10

# Float (stored as string, requires external tools for math)
```

```
price=19.99

# Boolean (convention: 0=true, 1=false or use strings)
success=0
flag="true"

# Character (single character string)
grade="A"
```

Q5. Write a shell script to display the current date and time of the system.
Ans:
Example Code:

```
#!/bin/bash
echo "Current date and time: $(date)"
```

Q6. Explain the difference between a constant and a variable in bash script.
Ans:
Variables:

- Can change values.
- Declared with ‘name=value’.
- Mutable.

Constants:

- Cannot change values.
- Declared with ‘readonly name=value’.
- Immutable.
- Throws error if modified.

Q7. Write a shell script to read two integer number from the user and compute the sum of both the number.
Ans:
Example Code:

```
#!/bin/bash
echo "Enter first number:"
read num1
echo "Enter second number:"
read num2

sum=$((num1 + num2))
```

```
echo "The sum of $num1 and $num2 is: $sum"
```

Output:

```
Enter first number:
5

Enter second number:
3
The sum of 5 and 3 is: 8
```

Q8. What is the use of source command in shell scripting?

Ans:

Purpose of 'source' Command:

- Executes script in current shell.
- Preserves** variables/functions in current session.
- Alternative syntax: '. script.sh'.
- Used for loading configurations, environment variables.

Example Code:

```
# config.sh
DB_NAME="mydatabase"
API_KEY="12345"

# Terminal:
source config.sh
echo $DB_NAME
```

Output: mydatabase

Q9. How can you debug a shell script? Give two methods.

Ans :

Two Methods to Debug Shell Scripts:

1. Using '-x' Option

- **Example Code:** bash -x script.sh
- Shows each command before execution.
- Displays expanded variables.
- Reveals execution flow.

2. Using '-v' Option

- **Example Code:** bash -v script.sh
- Shows each line as it's read from the script
- Displays original code
- Good for syntax checking

Q10. Write a bash script to create and delete a file.

Ans:

Example Code:

```
#!/bin/bash

echo "Choose an option:"
echo "1. Create a file"
echo "2. Delete a file"
read -p "Enter your choice (1 or 2): " choice

if [ "$choice" -eq 1 ]; then
    read -p "Enter the filename to create: " filename
    touch "$filename"
    echo "File '$filename' created successfully."
elif [ "$choice" -eq 2 ]; then
    read -p "Enter the filename to delete: " filename
    if [ -f "$filename" ]; then
        rm "$filename"
        echo "File '$filename' deleted successfully."
    else
        echo "File '$filename' does not exist."
    fi
else
    echo "Invalid choice!"
fi
```

THANK YOU