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Batch: BCS_AI_3C

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1. "Hello World" Shell Script

This script is a simple example that uses the `echo` command to display a line of text on the terminal.

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

Output:

```
Hello, World!
```

2. "Add Two Numbers" Shell Script

This program prompts the user for two numbers, reads them, calculates their sum using an arithmetic expression, and then prints the result.

```
#!/bin/bash
# Get input from the user
echo "Enter the first number:"
read num1
echo "Enter the second number:"
read num2

# Perform addition
sum=$((num1 + num2))

# Display the result
echo "The sum is: $sum"
```

Output:

```
Enter the first number:
10
Enter the second number:
20
The sum is: 30
```

3. "Check if a Number is Even or Odd" Shell Script

This script takes a number from the user and uses the modulo operator (`%`) to determine if it's even or odd. If the remainder of the number divided by 2 is 0, it's even; otherwise, it's odd.

```
#!/bin/bash

# Get input from the user
echo "Enter a number:"
read num

# Check if the number is even or odd
if (( num % 2 == 0 )); then
   echo "$num is an even number."
else
   echo "$num is an odd number."
fi
```

Output (for an even number):

```
Enter a number:
4
4 is an even number.
```

Output (for an odd number):

```
Enter a number:
7
7 is an odd number.
```

4. "Print Numbers from 1 to 10 using a Loop" Shell Script

This script uses a `for` loop in conjunction with the `seq` command to iterate and print each number from 1 to 10 on a new line.

```
#!/bin/bash

# Loop from 1 to 10 and print each number
for i in $(seq 1 10); do
   echo $i
done
```

Output:

```
1
2
3
4
5
6
7
8
9
10
```

5. "Check if a File Exists" Shell Script

This program prompts for a filename and uses the `-f` flag in an `if` statement to check if a regular file with that name exists in the current directory.

```
#!/bin/bash
# Get the filename from the user
echo "Enter the filename to check:"
read filename

# Check if the file exists
if [ -f "$filename" ]; then
    echo "The file '$filename' exists."
else
    echo "The file '$filename' does not exist."
fi
```

Output (if the file exists):

```
Enter the filename to check:
my_document.txt
The file 'my_document.txt' exists.
```

Output (if the file doesn't exist):

```
Enter the filename to check:
non_existent_file.log
The file 'non_existent_file.log' does not exist.
```