Shell Topic 02: Environment Variables

Note 1. Environment variables are a method for passing parameters from a parent program to all of its descendants. They are commonly used to store sensitive information like passwords or API keys.

Problem 2. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<EOF
4  echo $message
5  EOF
6  $ sh quiz.sh
```

Fraction of LLMs with correct answer: $45 / 57 = 0.79$

Problem 3. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<'EOF'
4  echo $message
5  EOF
6  $ sh quiz.sh
```

Fraction of LLMs with correct answer: $57 / 57 = 1.00$

Problem 4. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<EOF
4  echo '$message'
5  EOF
6  $ sh quiz.sh
```

Fraction of LLMs with correct answer: $22 / 57 = 0.39$

Problem 5. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ export message="hello world"
3  $ cat > quiz.sh <<EOF
4  echo $message
5  EOF
6  $ sh quiz.sh
```

Fraction of LLMs with correct answer: $51 / 57 = 0.89$

Problem 6. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ export message="hello world"
3  $ cat > quiz.sh <<'EOF'
4  echo $message
5  EOF
6  $ sh quiz.sh
```

Fraction of LLMs with correct answer: $43 / 57 = 0.75$

Problem 7. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ cat > quiz.sh <<EOF
3  echo $message
4  EOF
5  $ message="hello world" sh quiz.sh
```

Fraction of LLMs with correct answer: $57 / 57 = 1.00$

Problem 8. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ cat > quiz.sh <<'EOF'
3  echo $message
4  EOF
5  $ message="hello world" sh quiz.sh
```

Fraction of LLMs with correct answer: $47 / 57 = 0.82$

Note 9. Variables never get passed from children to their parents. For a script to set a variable, the script must be *sourced*.

Problem 10. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<EOF
4  message="hola mundo"
5  EOF
6  $ sh quiz.sh
7  $ echo "$message"
```

Fraction of LLMs with correct answer: $43 / 57 = 0.75$

Problem 11. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<EOF
4  message="hola mundo"
5  EOF
6  $ source quiz.sh
7  $ echo "$message"
```

Fraction of LLMs with correct answer: $1 / 57 = 0.02$

Problem 12. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<EOF
4  export message="hola mundo"
5  EOF
6  $ sh quiz.sh
7  $ echo "$message"
```

Fraction of LLMs with correct answer: $43 / 57 = 0.75$

Problem 13. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.sh <<EOF
4  export message="hola mundo"
5  EOF
6  $ . quiz.sh
7  $ echo "$message"
```

Fraction of LLMs with correct answer: 0 / 57 = 0.00

Note 14. In python, the function `os.getenv` is used to get the value of an environment variable. The first parameter is the name of the variable, and the second parameter is a default value to use if the environment variable has not been set.

Problem 15. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ cat > quiz.py <<'EOF'
3  import os
4  print(os.getenv('message', 'hola mundo'))
5  EOF
6  $ message="hello world" python3 quiz.py
```

Fraction of LLMs with correct answer: 51 / 57 = 0.89

Problem 16. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.py <<EOF
4  import os
5  print(os.getenv('message', 'hola mundo'))
6  EOF
7  $ python3 quiz.py
```

Fraction of LLMs with correct answer: 34 / 57 = 0.60

Problem 17. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ message="hello world"
3  $ cat > quiz.py <<'EOF'
4  import os
5  print(os.getenv('message', 'hola mundo'))
6  EOF
7  $ python3 quiz.py
```

Fraction of LLMs with correct answer: $35 / 57 = 0.61$

Problem 18. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ export message="hello world"
3  $ cat > quiz.py <<EOF
4  import os
5  print(os.getenv('message', 'hola mundo'))
6  EOF
7  $ python3 quiz.py
```

Fraction of LLMs with correct answer: $53 / 57 = 0.93$

Problem 19. Write the output of the final command in the following shell script.

```
1  $ cd; rm -rf quiz; mkdir quiz; cd quiz
2  $ var=echo echo echo
3  $ touch "$var"
4  $ ls | wc -l
```

Fraction of LLMs with correct answer: $0 / 57 = 0.00$

LLM Model Performance