## EBPL Syntax Reference

### 1. Basic Syntax Structure

```

create variable [variable\_name] with value [value]

print [expression]

```

### 2. Data Types & Variables

\*\*Numbers:\*\*

```ebpl

create variable age with value 25

create variable price with value 19.99

create variable temperature with value -5

```

\*\*Strings:\*\*

```ebpl

create variable name with value "John Doe"

create variable message with value "Hello World"

create variable empty with value ""

```

\*\*Boolean (using numbers):\*\*

```ebpl

create variable is\_active with value 1

create variable is\_completed with value 0

```

### 3. Arithmetic Operations

\*\*Basic Math:\*\*

```ebpl

create variable x with value 10

create variable y with value 5

create variable sum with value x + y

create variable difference with value x - y

create variable product with value x \* y

create variable quotient with value x / y

```

\*\*Complex Expressions:\*\*

```ebpl

create variable result with value (10 + 5) \* 2

create variable calculation with value x \* y + 100 / 2

```

### 4. String Operations

\*\*Concatenation:\*\*

```ebpl

create variable first\_name with value "John"

create variable last\_name with value "Doe"

create variable full\_name with value first\_name + " " + last\_name

```

### 5. Control Structures

\*\*If-Else Statements:\*\*

```ebpl

create variable score with value 85

if score is greater than 80 then

print "Excellent!"

create variable grade with value "A"

else

print "Good effort!"

create variable grade with value "B"

end if

```

\*\*Comparison Operators:\*\*

```ebpl

create variable a with value 10

create variable b with value 20

if a is less than b then

print "a is smaller than b"

end if

if a is equal to 10 then

print "a equals 10"

end if

if a is not equal to b then

print "a and b are different"

end if

```

\*\*Logical Operators:\*\*

```ebpl

create variable age with value 25

create variable has\_license with value 1

if age is greater than 18 and has\_license is equal to 1 then

print "You can drive!"

end if

if age is less than 13 or age is greater than 65 then

print "Special discount available"

end if

```

### 6. Loops

\*\*While Loops:\*\*

```ebpl

create variable counter with value 1

while counter is less than 5 do

print counter

create variable counter with value counter + 1

end while

```

## Example Code Snippets to Run

### Example 1: Basic Calculator

```ebpl

create variable num1 with value 15

create variable num2 with value 3

create variable addition with value num1 + num2

create variable subtraction with value num1 - num2

create variable multiplication with value num1 \* num2

create variable division with value num1 / num2

print "Calculator Results:"

print addition

print subtraction

print multiplication

print division

```

### Example 2: Student Grading System

```ebpl

create variable student\_name with value "Alice"

create variable math\_score with value 92

create variable science\_score with value 88

create variable english\_score with value 95

create variable total\_score with value math\_score + science\_score + english\_score

create variable average\_score with value total\_score / 3

print "Student Report:"

print student\_name

print "Total Score:"

print total\_score

print "Average Score:"

print average\_score

if average\_score is greater than 90 then

print "Grade: A+"

else if average\_score is greater than 80 then

print "Grade: A"

else if average\_score is greater than 70 then

print "Grade: B"

else

print "Grade: C"

end if

```

### Example 3: Shopping Cart

```ebpl

create variable item1\_price with value 25.50

create variable item2\_price with value 15.75

create variable item3\_price with value 8.99

create variable subtotal with value item1\_price + item2\_price + item3\_price

create variable tax with value subtotal \* 0.08

create variable total with value subtotal + tax

print "Shopping Cart Summary:"

print "Subtotal:"

print subtotal

print "Tax (8%):"

print tax

print "Total:"

print total

if total is greater than 50 then

print "You qualify for free shipping!"

else

print "Add $10 for shipping"

end if

```

### Example 4: Number Counter with Loop

```ebpl

create variable number with value 1

print "Counting from 1 to 10:"

while number is less than 11 do

print number

create variable number with value number + 1

end while

print "Counting complete!"

```

### Example 5: Temperature Converter

```ebpl

create variable celsius with value 25

create variable fahrenheit with value (celsius \* 9/5) + 32

print "Temperature Conversion:"

print celsius

print "degrees Celsius ="

print fahrenheit

print "degrees Fahrenheit"

if celsius is greater than 30 then

print "It's a hot day!"

else if celsius is less than 10 then

print "It's a cold day!"

else

print "The weather is pleasant!"

end if

```

### Example 6: String Manipulation

```ebpl

create variable company with value "Tech"

create variable domain with value "Solutions"

create variable year with value 2024

create variable company\_name with value company + " " + domain

create variable welcome\_message with value "Welcome to " + company\_name + "!"

create variable copyright with value "Copyright © " + year

print welcome\_message

print copyright

print "We provide excellent services!"

```

### Example 7: Simple Login System

```ebpl

create variable username with value "admin"

create variable password with value "12345"

create variable attempts with value 0

create variable input\_username with value "admin"

create variable input\_password with value "12345"

if input\_username is equal to username and input\_password is equal to password then

print "Login successful!"

print "Welcome back, " + username

else

print "Invalid credentials!"

create variable attempts with value attempts + 1

print "Attempts:"

print attempts

end if

```

### Example 8: Fibonacci Sequence

```ebpl

create variable a with value 0

create variable b with value 1

create variable count with value 1

print "Fibonacci Sequence:"

while count is less than 10 do

print a

create variable next with value a + b

create variable a with value b

create variable b with value next

create variable count with value count + 1

end while

```

### Example 9: Math Operations Demo

```ebpl

create variable base with value 10

create variable height with value 5

create variable radius with value 7

create variable triangle\_area with value (base \* height) / 2

create variable circle\_area with value 3.14159 \* radius \* radius

print "Geometry Calculator:"

print "Triangle Area (base=10, height=5):"

print triangle\_area

print "Circle Area (radius=7):"

print circle\_area

create variable perimeter with value 2 \* (base + height)

print "Rectangle Perimeter:"

print perimeter

```

### Example 10: Conditional Messages

```ebpl

create variable hour with value 14

create variable is\_weekend with value 0

if hour is less than 12 then

print "Good morning!"

else if hour is less than 18 then

print "Good afternoon!"

else

print "Good evening!"

end if

if is\_weekend is equal to 1 then

print "Enjoy your weekend!"

else

print "Have a productive day!"

end if

```

## Advanced Examples

### Example 11: Nested Conditions

```ebpl

create variable age with value 20

create variable has\_ticket with value 1

create variable has\_parent with value 0

if age is greater than 18 then

print "You can enter the event"

else if has\_parent is equal to 1 then

print "You can enter with parent"

else

print "Sorry, you cannot enter"

end if

if has\_ticket is equal to 1 then

print "Ticket verified"

else

print "Please buy a ticket first"

end if

```

### Example 12: Complex Calculations

```ebpl

create variable principal with value 1000

create variable rate with value 5

create variable time with value 3

create variable interest with value (principal \* rate \* time) / 100

create variable total\_amount with value principal + interest

print "Investment Calculator:"

print "Principal:"

print principal

print "Interest Rate:"

print rate

print "Time (years):"

print time

print "Total Interest:"

print interest

print "Total Amount:"

print total\_amount

```

## Quick Test Codes

\*\*Test 1: Basic Output\*\*

```ebpl

print "Hello, EBPL World!"

create variable test with value 42

print test

```

\*\*Test 2: Math Test\*\*

```ebpl

create variable a with value 10

create variable b with value 3

print a + b

print a - b

print a \* b

print a / b

```

\*\*Test 3: String Test\*\*

```ebpl

create variable greeting with value "Hello"

create variable name with value "Developer"

print greeting + " " + name

```

## Common Syntax Patterns

1. \*\*Variable Declaration:\*\*

```

create variable [name] with value [expression]

```

2. \*\*Print Statement:\*\*

```

print [expression]

```

3. \*\*If Statement:\*\*

```

if [condition] then

[statements]

else

[statements]

end if

```

4. \*\*While Loop:\*\*

```

while [condition] do

[statements]

end while

```

5. \*\*Comparisons:\*\*

- `is greater than`

- `is less than`

- `is equal to`

- `is not equal to`

6. \*\*Logical Operators:\*\*

- `and`

- `or`

- `not`

Try these examples in your compiler! Start with the basic ones and gradually move to more complex examples to test all the features of your EBPL compiler.