# **Function**

1.Just Print(Function এর মধ্যে টাইপ দিতে হয় না।)

#### 2.value return

# 3.Array Return

```
//no need to specify variable type
//value return
function areaRectangle(){
    return ["name"=>"utsab","age"=>20];
}

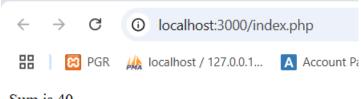
$personData=areaRectangle();
print_r($personData);
?>
```

#### 4. Built in function

## 5.Default parameter

এখানে দুটি argument pass না করে একটা pass করলে ডিফল্ট argument কাজ করবে।দুটি argument pass ডিফল্ট কাজ করবে না।

```
<?php
   function sum($a,$b=10){
      return $a+$b;
   }
   echo"Sum is ".sum(20,20)."<br>";
   echo "Sum is ".sum(15);
?>
```



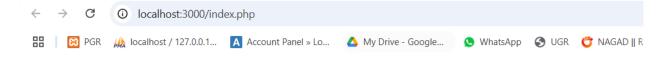
Sum is 40 Sum is 25 6. Single Type Declaration

(এক্ষেত্রে parameter এ টাইপ দেয়া যায় এবং return type ও দেয়া যায়।)

# 7.Strict Types

(এখানে int এর জায়গায় string পাঠালেও কাজ করতেছে কিন্তু আমরা চাচ্ছি datatype match না হলে এরর দেখাবে এজন্য string type enable করতে হয়।)

```
<?php
declare(strict_types=1);
//we can give data type in method and give return type
function square(int $number): int {
    return $number * $number;
}
echo square("10"); // Outputs: 16
?>
```

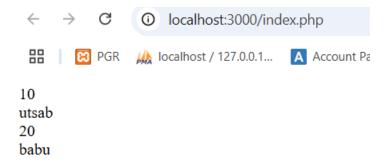


Fatal error: Uncaught TypeError: Argument 1 passed to square() must be of the type integer, string given, called in C:\xampp\htdocs\Module 7\index.php(8): square('10') #1 {main} thrown in C:\xampp\htdocs\Module 7\index.php on line 4

# 8. Multiple Type Hint

এক্ষেত্রে একটা argument এ একাধিক টাইপ দিয়ে দিতে পারি অর্থাত যে কোন টাইপ match করলে রিসিভ হবে ডাটা।(তবে এটা php 8 এ সাপোর্ট করবে।)

```
<?php
function add(int|float $a, int|float $b): int|float {
    return $a + $b;
}
echo add(5, 3.5); // Outputs: 8.5
echo add(4, 2); // Outputs: 6
?>
```



### 9. Variadic Function

(এখানে একসাথে একাধিক value recive হয়।)

```
<?php
    //we can recive multiple data
    function allData(...$values){
        foreach($values as $value){
            echo $value."<br>";
        }
    }
    allData(10,"utsab",20,"babu")
?>
```

- **10.** anonymous functions or closures.
- () Function define
- () Function call

# এই ফাংশন পেইজ যখন লোড হবে তখন execute হবে।

```
<?php
(function() {
    // Function code
})();
?>
```

Hellow world!

//value pass করতে পারি anonymous function এ।

# **LOOP**

#### **FOR LOOP**

## WHILE LOOP

```
    $i=1;
    while($i<=2){
        echo "Iteration $i <br>";
        $i++;
    }
?>
```

#### **DO-WHILE LOOP**

# **Array**

**Indexed Arrays:** Use numeric indices (either default or custom).

(এখানে ইনডেক্স ০,১,... থাকে)

Indexed array access করা যাবে for loop এবং foreach loop দিয়ে।

```
//index array access by for loop and foreach loop
$indexed_array=[10,20,30,"utsab","babu"];
//for loop
for($i=0;$i<count($indexed_array);$i++){
    echo "Index=$i value= $indexed_array[$i] <br>;
}

//foreach
foreach($indexed_array as $value){
    echo "value=$value<br>";
}
?>
```

**Associative Array:** Use descriptive keys (either strings or integers) to associate with values.

[key value থাকবে এবং এটা foreach লুপ দিয়ে access করতে হবে।]

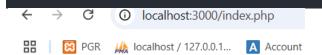
# **Memory structure**

```
$person

\[
\to Array (hash table)
\[
\to Bucket 0
\]
\[
\to Key: "name" (String)
\]
\[
\to Value: "utsab" (String)
\]
\[
\to Bucket 1
\]
\[
\to Key: "id" (String)
\]
\[
\to Value: 154061 (Integer)
\]
\[
\to Bucket 2
\]
\[
\to Key: "result" (String)
\]
\[
\to Value: 3.41 (Float)
\]
```

Bucket #	Key	Value	Туре
0	"name"	"utsab"	String
1	"id"	154061	Integer
2	"result"	3.41	Float

```
$students = [
    "student1" => [
        "name" => "Utsab",
        "subjects" => [
            "Math" => "A",
            "English" => "B+",
            "Science" => "A-"
    "student2" => [
        "name" => "Babu",
        "subjects" => [
            "Math" => "B",
            "English" => "A",
            "Science" => "B+"
    ],
    "student3" => [
        "name" => "Alice",
        "subjects" => [
            "Math" => "A-",
            "English" => "B",
            "Science" => "A"
];
foreach ($students as $studentKey => $studentInfo) {
    echo "Student ID: $studentKey<br>";
    echo "Name: " . $studentInfo["name"] . "<br>";
    echo "Subjects and Grades:<br>";
    foreach ($studentInfo["subjects"] as $subject => $grade) {
        echo "- $subject: $grade<br>";
    echo "<br>";
```



Student ID: student1

Name: Utsab

Subjects and Grades:

- Math: A - English: B+ - Science: A-

Student ID: student2

Name: Babu

Subjects and Grades:

- Math: B - English: A - Science: B+

Student ID: student3

Name: Alice

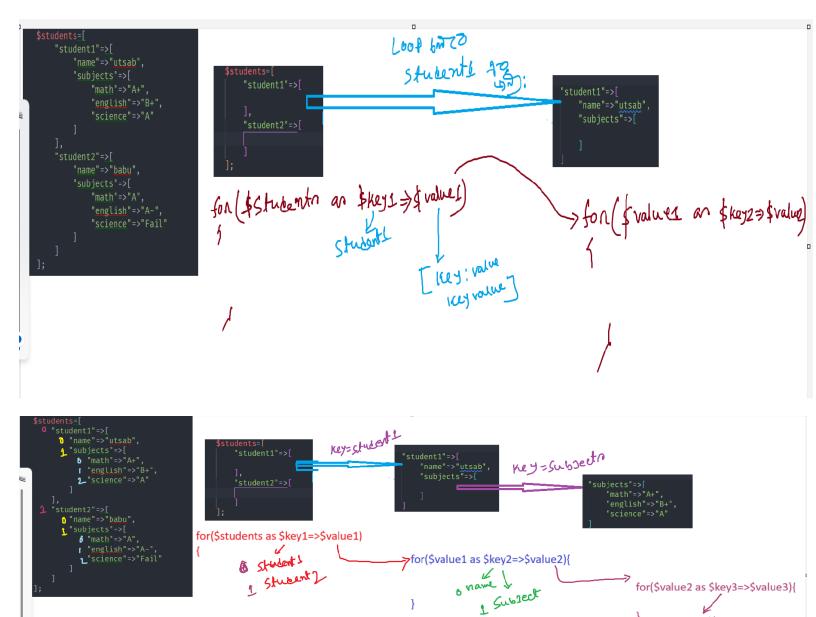
Subjects and Grades:

- Math: A-- English: B - Science: A

```
$students
└-> Array (hash table)
      ├ Bucket 0
           ├ Key: "student1"
           └─ Value: Array
                  ⊢ Bucket 0
                     ├ Key: "name" -> "Utsab" (String)
                  └─ Bucket 1
                       ├ Key: "subjects"
                       └─ Value: Array
                              ├─ Bucket 0
                               ├ Key: "Math" -> "A" (String)
                              ─ Bucket 1
                                  ├─ Key: "English" -> "B+" (String)
                              L Bucket 2
                                   ├ Key: "Science" -> "A-" (String)
      ─ Bucket 1
           ├ Key: "student2"
           └─ Value: Array
                 ├─ Bucket 0
                     ├ Key: "name" -> "Babu" (String)
                 └─ Bucket 1
                      ├ Key: "subjects"
                      └─ Value: Array
                             ├─ Bucket 0
                                 ├ Key: "Math" -> "B" (String)
                             ─ Bucket 1
                                 ├ Key: "English" -> "A" (String)
                             └─ Bucket 2
                                 ├ Key: "Science" -> "B+" (String)
```

# 3 loop

```
foreach($students as $singleStudent=>$studentInfos){
    echo"Student Id $singleStudent <br>";
    foreach($studentInfos as $studentInfoKey=>$studentInfoValue){
        if($studentInfoKey=='subjects'){
            foreach($studentInfoValue as $singleSubject=>$singleSubjectResult){
                echo"$singleSubject $singleSubjectResult<br>";
        }
    }else{
        echo" $studentInfoKey $studentInfoValue<br>";
    }
}
echo"<br/>';
}
```



}

6 math

2 science