Php Assignment two

**Answer for question 1**

<?php

function getGrade($cgpa) {

if ($cgpa >= 4.0) {

return "Excellent (A)";

} elseif ($cgpa >= 3.5) {

return "Very Good (B+)";

} elseif ($cgpa >= 3.0) {

return "Good (B)";

} elseif ($cgpa >= 2.5) {

return "Fair (C+)";

} elseif ($cgpa >= 2.0) {

return "Pass (C)";

} else {

return "Fail (F)";

}

}

// Example usage:

$studentCGPA = 3.7;

$result = getGrade($studentCGPA);

echo "CGPA: $studentCGPA, Grade: $result";

?>

**Answer for question 2**

<?php

function isValidDate($year, $month, $day) {

return checkdate($month, $day, $year);

}

function getDayOfWeek($year, $month, $day) {

$dateString = "$year-$month-$day";

$timestamp = strtotime($dateString);

if ($timestamp === false) {

return false; // Invalid date

}

$dayOfWeek = date('l', $timestamp);

return $dayOfWeek;

}

// Get user input

$year = (int) readline("Enter the year (e.g., 2022): ");

$month = (int) readline("Enter the month (1-12): ");

$day = (int) readline("Enter the day (1-31): ");

// Validate the date

if (!isValidDate($year, $month, $day)) {

echo "Invalid date entered. Please provide a valid date.\n";

exit();

}

// Handle leap years

if ($month == 2 && $day == 29 && !date('L', strtotime("$year-01-01"))) {

echo "Invalid date. $year is not a leap year, so February can't have 29 days.\n";

exit();

}

// Use switch statement to get the day of the week

$dayOfWeek = getDayOfWeek($year, $month, $day);

if ($dayOfWeek === false) {

echo "Invalid date entered. Please provide a valid date.\n";

exit();

}

// Display the result

echo "The day of the week for $year-$month-$day is $dayOfWeek.\n";

?>

**Answer for question 3**

<?php

function twoSum($nums, $target) {

$indices = [];

foreach ($nums as $key => $num) {

$complement = $target - $num;

// Check if the complement exists in the array

if (isset($indices[$complement])) {

return [$indices[$complement], $key];

}

// Store the current element's index in the hash map

$indices[$num] = $key;

}

// No valid answer found

return [];

}

// Example usage:

$nums = [2, 7, 11, 15];

$target = 9;

$result = twoSum($nums, $target);

if (empty($result)) {

echo "No valid answer found.\n";

} else {

echo "Indices of two numbers that add up to $target: [" . implode(', ', $result) . "]\n";

}

?>

**Answer for question 4**

<?php

function isPalindrome($s) {

// Remove non-alphanumeric characters and convert to lowercase

$cleanedString = strtolower(preg\_replace('/[^A-Za-z0-9]/', '', $s));

// Compare the original string with its reverse

return $cleanedString == strrev($cleanedString);

}

// Example usage:

$string = "A man, a plan, a canal, Panama!";

if (isPalindrome($string)) {

echo "$string is a palindrome.\n";

} else {

echo "$string is not a palindrome.\n";

}

?>