R VRSHA SOLACHI

NPTEL ASSIGNMENT -

Problem Solving Through Programming In C

WEEK 8 – MCQ QUIZ

Week 8 : Assignment 8

The due date for submitting this assignment has passed.

Due on 2023-09-20, 23:59 IST.

Assignment submitted on 2023-09-20, 23:27 IST

1) A function prototype is used for *1 point*

- a) Declaring the function logic
- b) Calling the function from the main body
- c) Telling the compiler, the kind of arguments used in the function
- d) Telling the user for proper use of syntax while calling the function

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) Telling the compiler, the kind of arguments used in the function

2) What is the default return type if it is not specified in function definition? *1 point*

- a) void
- b) integer
- c) double
- d) float

Yes, the answer is correct.
Score: 1
Accepted Answers:
b) integer

3) *1 point*

What will be the output?

```
#include <stdio.h>
int main()
{
    {
        int a = 70;
    }
{
        printf("%d", a);
    }
  return 0;
}
```

- a) 70
- b) Garbage value
- c) Compilation error
- d) None

Yes, the answer is correct.
Score: 1
Accepted Answers:
c) Compilation error

4) *1 point*

How many times will 'Hello world' be printed?

```
#include<stdio.h>
int main()
{
   printf("Hello world\n");
   main();
   return 0;
}
```

- a) Infinite times
- b) 32767
- c) 65535
- d) Till stack overflows

Yes, the answer is correct.
Score: 1

Accepted Answers:
d) Till stack overflows

5) *1 point*

How many times 'Hi' will be printed in the program given below

```
#include<stdio.h>
int i;
int fun();

int main()
{
   while(i)
   {
      fun();
      main();
   }
   printf("Hello\n");
   return 0;
}
int fun()
{
   printf("Hi");
}
```

- a) Only once
- b) Zero times
- c) Infinite times
- d) Compilation error

Yes, the answer is correct.
Score: 1

Accepted Answers:
b) Zero times

6) How many times the function factorial will be executed?

```
#include<stdio.h>
int factorial(int);
int main()
{
int n=5;
long int f;
f = factorial(n);
printf("%d! = %ld\n", n, f);
return 0;
}
int factorial(int n)
{
if (n == 0)
return 1;
else
return(n * factorial(n-1));
}
```

6

Hint

Yes, the answer is correct.
Score: 1
Accepted Answers:
(Type: Numeric) 6

1 point

7) What will be the output?

```
#include<stdio.h>
void func(int n, int sum)
{
int k = 0, j = 0;
if (n == 0) return;
        k = n % 10;
j = n / 10;
sum = sum + k;
func (j, sum);
printf ("%d,", k);
}

int main ()
{
int a = 2048, sum = 0;
func (a, sum);
printf ("%d ", sum);
}
```

1 point

- a) 8 ,4, 0, 2, 14
- b) 8, 4, 0, 2, 0
- c) 2, 0, 4, 8, 14
- d) 2, 0, 4, 8, 0

Yes, the answer is correct.
Score: 1
Accepted Answers:
d) 2, 0, 4, 8, 0

8) What is the output of the following C program?

```
#include <stdio.h>
int fun(int n)
{
   int i, j, sum = 0;
   for(i = 1; i<=n; i++)
      for(j=i; j<=i; j++)
         sum = sum + j;
   return(sum);
```

1 point

```
}
int main()
{
   printf("%d", fun(10));
   return 0;
}
```

- a) 55
- b) 45
- c) 66
- d) 10

Yes, the answer is correct.
Score: 1
Accepted Answers:
a) 55

9) *1 point*

Consider the function

```
int find(int x, int y)
{
        return((x<y) ? 0 : (x-y));
}
```

Let a and b be two non-negative integers. The call find(a, find(a, b)) can be used to find the

- a) Maximum of a, b
- b) Positive difference between a and b
- c) Sum of a and b
- d) Minimum of a and b

Yes, the answer is correct.
Score: 1
Accepted Answers:
d) Minimum of a and b

10)

What is the output of the C code given below

```
#include <stdio.h>
float func(float age[ ]);

int main()
{
   float result, age[] = { 23.4, 55, 22.6, 3, 40.5, 18 };
   result = func(age);
   printf("%0.2f", result);
return 0;
}

float func(float age[ ])
{
   int i;
   float result, sum = 0.0;
   for (i = 0; i < 6; ++i) {
      sum += age[i];
   }
   result = (sum / 6);
   return result;
}
```

27.08

Hint

Yes, the answer is correct.
Score: 1
Accepted Answers:
(Type: Numeric) 27.08

1 point

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WEEK 8 – PROGRAMMING ASSIGNMENT

Week 8 : Programming Assignment 1

Due on 2023-09-21, 23:59 IST

Write a C Program to find HCF of 4 given numbers using recursive function

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	50 455 60 200	The HCF is 5	The HCF is 5	Passed
Test Case 2	67 89 45 41	The HCF is 1	The HCF is 1	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-09-21, 23:31 IST

Your last recorded submission was :

```c
#include<stdio.h>
int HCF(int, int); //You have to write this function which calculates the HCF.

int main()
{
   int a, b, c, d, result;
   scanf("%d %d %d %d", &a, &b, &c, &d); /* Takes 4 number as input from the test data */
   result = HCF(HCF(a, b), HCF(c,d));
   printf("The HCF is %d", result);
}

//Complete the rest of the program to calculate HCF
int HCF(int x, int y)
{
   while (x != y)
   {
      if (x > y)
      {
           return HCF(x - y, y);
      }
      else
      {
           return HCF(x, y - x);
      }
   }
   return x;
}
```

Week 8 : Programming Assignment 2

Due on 2023-09-21, 23:59 IST

Write a C Program to find power of a given number using recursion. The number and the power to be calculated is taken from test case

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	16 3	16^3 is 4096	16^3 is 4096	Passed

The due date for submitting this assignment has passed.
1 out of 1 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-09-21, 23:33 IST
Your last recorded submission was :

```c
#include <stdio.h>
long power(int, int);
int main()
{
int pow, num;
long result;

scanf("%d", &num); //The number taken as input from test case data

scanf("%d", &pow); //The power is taken from the test case
result = power(num, pow);
printf("%d^%d is %ld", num, pow, result);
return 0;
}
long power(int num, int pow)
{
  if(pow)
  {
    return (num * power(num, pow - 1));
  }
  return 1;
}
```

Week 8 : Programming Assignment 3

Due on 2023-09-21, 23:59 IST

Write a C Program to print Binary Equivalent of an Integer using Recursion

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	30	The binary equivalent of 30 is 11110	The binary equivalent of 30 is 11110\n	Passed
Test Case 2	111	The binary equivalent of 111 is 1101111	The binary equivalent of 111 is 1101111\n	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-09-21, 23:33 IST
Your last recorded submission was :

```c
#include <stdio.h>
int binary_conversion(int); //function to convert binary to decimal number
int main()
  {
  int num, bin;  //num is the decimal number and bin is the binary equivalent for the number

  scanf("%d", &num); //The decimal number is taken from the test case data
  bin = binary_conversion(num); //binary number is stored in variable bin
  printf("The binary equivalent of %d is %d\n", num, bin);
  return 0;
  }
int binary_conversion(int num)
{
    if(num == 0)
    {
       return 0;
    }
    else
    {
       return (num%2) + 10 * binary_conversion(num/2);
    }
}
```

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Week 8 : Programming Assignment 4

Due on 2023-09-21, 23:59 IST

Write a C Program to reverse a given word using function. e.g. INDIA should be printed as AIDNI

Private Test cases used for evaluation	Input	Expected Output	Actual Output	Status
Test Case 1	INDIA	The string after reversing is: AIDNI	The string after reversing is: AIDNI	Passed
Test Case 2	DELHI	The string after reversing is: IHLED	The string after reversing is: IHLED	Passed

The due date for submitting this assignment has passed.
2 out of 2 tests passed.
You scored 100.0/100.

Assignment submitted on 2023-09-21, 23:34 IST

Your last recorded submission was :

```c
#include<stdio.h>
#include<string.h>

void reverse(char[], int, int);
    int main()
    {
        char str1[20];
        scanf("%s", str1); //The string is taken as input form the test data.

/* Complete the program to print the string in reverse order using the function
void reverse(char[], int, int);
Use the printf statement as
printf("The string after reversing is: %s\n", str1);
You can use different variable also.
*/
 int length = strlen(str1);
    reverse(str1, 0, length - 1);
    printf("The string after reversing is: %s", str1);
    return 0;
}

void reverse(char str[], int start, int end) {
    while (start < end) {
        char temp = str[start];
        str[start] = str[end];
        str[end] = temp;
        start++;
        end--;
    }
}
```