Answer of Assignment 8– 19.01.2021

SUBJECT-PROGRAMMING AND DATA STRUCTURE USING C (PDSC)

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1. Read from a terminal using scanf function and print using printf function.

PROGRAM:

```
#include<stdio.h>
int main()
{
    char arr[20];
    printf("Enter a word :: ");
    scanf("%s",arr);
    printf("Enter word :: %s",arr);
   return 0;
}
```

OUTPUT:

```
Enter a word :: TANMOY
Enter word :: TANMOY
```

2. Read a lines of text from a terminal using fgets function and print using puts function.

PROGRAM:

```
#include<stdio.h>
int main()
```

```
{
    char arr[20];
    printf("Enter your name :: ");
    fgets(arr,20,stdin);
    puts(arr);
    return 0;
}
```

OUTPUT:

```
Enter your name :: TANMOY PRAMANICK
TANMOY PRAMANICK
```

3. Convert

    a. Upper case to Lower case

    b. Lower case to Upper case

    c. Toggle case

    d. Sentence case

a. **Upper case to Lower case:**

PROGRAM:

```
#include<stdio.h>
int main()
{
   char arr[20];
   int i=0;
   printf("enter a string in uppercase :: ");
   scanf("%s",arr);
   while(arr[i] != '\0')
{
    printf("%c",arr[i]+32);
```

```
    i++;
 }

   return 0;
}
```

OUTPUT:

enter a string in uppercase :: MANGO

mango

b. Lower case to Upper case:

PROGRAM:

```
#include<stdio.h>
int main()
{
   char arr[20];
   int i=0;
   printf("enter a string in lowercase :: ");
   scanf("%s",arr);
   while(arr[i] != '\0'){
   printf("%c",arr[i]-32);
   i++;
 }

   return 0;
}
```

OUTPUT:

enter a string in lowercase :: mango

MANGO

c. Toggle case:

PROGRAM:

```
#include<stdio.h>


int main()
{
    char arr[20];
    int i=0;


   printf("enter a string  :: ");
   scanf("%s",arr);
   while(arr[i] != '\0')
   {
      if(arr[i] >= 65 && arr[i] <=90 ){
      printf("%c",arr[i]+32);
    }
    else
  {
         printf("%c",arr[i]-32);
    }
    i++;
   return 0;
}
```

OUTPUT:

```
enter a string  :: hELLO
Hello
```

d. **Sentence case:**

```
#include<stdio.h>
int main()
{
    char arr[20];
    int i=0;
    printf("enter a string :: ");
    gets(arr);
    while(arr[i] != '\0')
   {
       if(i==0 && arr[i] >= 97 && arr[i] <=122 )
    {
       printf("%c",arr[i]-32);
     }
    else if(i==0 && arr[i] >= 65 && arr[i] <=90 )
    {
          printf("%c",arr[i]);
     }
      if(arr[i]== ' ')
      {
          if(arr[i+1] >= 97 && arr[i+1] <=122 )
        {
             printf("%c",arr[i+1]-32);
         }
          else if(arr[i+1] >= 65 && arr[i+1] <=90 )
        {
         printf("%c",arr[i+1]);
```

```
        }
i++;
     }


     i++;
    if(arr[i]>=65 && arr[i]<=90)
    {
        printf("%c",arr[i]+32);
     }
    else
  {
        printf("%c",arr[i]);
    }
 }
  return 0;
}
```

OUTPUT:

```
enter a string :: tanmoy pramanick
Tanmoy Pramanick
enter a string :: TANMOY PRAMANICK
Tanmoy Pramanick
enter a string :: Tanmoy Pramanick
Tanmoy Pramanick
```

4.Perform String Concatenation (With and Without String Handling Functions).

PROGRAM: (WITHOUT USING STRING HANDLING FUNCTION)

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

```
int main()
{
  char str1[20], str2[20], i, j;
  printf("\nEnter first string: ");
  scanf("%s",str1);
  printf("\nEnter second string: ");
  scanf("%s",str2);
  for(i=0; str1[i]!='\0'; ++i);
  for(j=0; str2[j]!='\0'; ++j, ++i)
  {
    str1[i]=str2[j];
  }
  str1[i]='\0';
  printf("\nOutput: %s",str1);
  return 0;
}
```

OUTPUT:

Enter first string: TANMOY

Enter second string: PRAMANICK

Output: TANMOYPRAMANICK

PROGRAM: (USING STRING HANDLING FUNCTION)

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

```
int main()
{
    char str1[20], str2[20];
    printf("Enter the first string\n");
    gets(str1);
    printf("Enter the second string\n");
    gets(str2);
    strcat(str1,str2);
    printf("String obtained on concatenation is %s\n",a);
    return 0;
}
```

OUTPUT:

```
Enter the first string
TANMOY
Enter the second string
PRAMANICK
String obtained on concatenation is TANMOYPRAMANICK
```

5. Perform String Reversal (With and Without String Handling Functions).

PROGRAM: (WITHOUT USING STRING HANDLING FUNCTION)

```
#include<stdio.h>
#include<string.h>
int main()
{
   char str[20], temp;
   int i, j = 0;
   printf("\nEnter the string :");
```

```
   gets(str);
   i = 0;
   j = strlen(str) - 1;

   while (i < j)
{
      temp = str[i];
      str[i] = str[j];
      str[j] = temp;
      i++;
      j--;
   }
   printf("\nReverse string is :%s", str);
   return 0;
}
```

OUTPUT:

```
Enter the string :BATISTA

Reverse string is :ATSITAB
```

PROGRAM: (USING STRING HANDLING FUNCTION)

```
#include <stdio.h>
#include <string.h>
int main()
{
   char str[20];

   printf("Enter a string to reverse\n");
```

```
  gets(str);
  strrev(str);
  printf("Reverse of the string: %s\n", str);
  return 0;
}
```

OUTPUT:

```
Enter a string to reverse
BATISTA
Reverse of the string: ATSITAB
```

7. Copy one string into another and count the no of elements copied. (With and Without String Handling Functions).

PROGRAM: (WITHOUT USING STRING HANDLING FUNCTION)

```
#include<stdio.h>
int main()
{
char str1[20], str2[20];
int i;
printf("Input a string: ");
scanf("%s", str2);
for(i=0; str2[i]!='\0'; i++)
str1[i]=str2[i];
str1[i]='\0';
printf("\n");
printf("Original string: %s", str1);
printf("\n");
printf("\nNumber of elements copied = %d\n", i);
```

```
return 0;
}
```

OUTPUT:

```
Input a string: TANMOY

Original string: TANMOY

Number of elements copied = 6
```

PROGRAM: (USING STRING HANDLING FUNCTION)

```
#include<stdio.h>
#include<string.h>
int main()
{
   char str1[20];
   char str2[20];
   printf("\nEnter the String 1 : ");
   gets(str1);
   strcpy(str2, str1);
   printf("\nCopied String : %s", str2);
   return (0);
}
```

OUTPUT:

```
Enter the String 1 : TANMOY

Copied String : TANMOY
```

8. Read a string and prints if it is a palindrome or not.

PROGRAM:

```
#include<stdio.h>
int main()
{
    char arr[30],rev[30];
    int i=0,j=0,c=0,s=0;
    printf("enter a string :: ");
    fgets(arr,30,stdin);
    while(arr[i] != '\0')
  {
    c++;
    i++;
  }
    i=0;
    j=c-2;
    while(i<c-1)
  {
        if(arr[i] != arr[j]){
        s++;
        break;
    }
     j--;
     i++;
 }
if(s==1)
    printf("%s is not a palindrom string.",arr);
else
```

```
    printf("%s is a palindrom string.",arr);


 return 0;
}
```

Output:

enter a string :: katak

katak is a palindrom string.

10. Read a string and rewrite it in the alphabetical order.

PROGRAM:

```
#include<stdio.h>
int main()
{
    int arr[30],i=0,j=0,c=0,temp=0;
    char arr2[30];
   printf("Enter a string either upper case or lower case :: ");
   fgets(arr2,30,stdin);
   while(arr2[i] != '\0')
  {
      arr[i] = arr2[i];
      c++;
      i++;
   }
    for(i=0;i<c-1;i++)
   {
       for(j=0;j<c-1;j++)
    {
```

```
        if(arr[i] < arr[j]){
        temp = arr[i];
        arr[i] = arr[j];
        arr[j] = temp;

     }
   }
}
printf("String in alphabetical order :: ");
for(i=0;i<c-1;i++)
{
    printf("%c",arr[i]);
}
return 0;
}
```

OUTPUT:

```
Enter a string either upper case or lower case :: mango
String in alphabetical order :: agmno
```

11. Print the Words Ending with Letter S

PROGRAM:

```
#include<stdio.h>
int main()
{
   int i=0,j=0,c=0,k=0;
   char arr[30],store[30];
   printf("Enter a string :: ");
```

```
   fgets(arr,30,stdin);
   printf("\nwords ending with letter 's' :: ");
    while(arr[i] != '\0')
{
      if(arr[i] == ' ')
    {
         c = i;
       if(arr[i-1] == 's')
      {
           for(;k<c;k++)
           {
               printf("%c",arr[k]);
            }
           k=c;
       }
    }
    i++;
}
if(arr[i]=='\0')
{
    if(arr[i-2]=='s')
    {
         i=c;
         while(arr[i] != '\0')
        {
            printf("%c",arr[i]);
            i++;
```

```
        }
     }
   else
   {
      printf("\nhere no words ending with letter 's'");
   }
}
   return 0;
}
```

OUTPUT:

Enter a string :: yes this is not a bus

words ending with letter 's' :: yes this is bus