**Department of Electrical and Computer Engineering, NSU**

**CSE 115L: Fundamentals of Computer Programming (Section 4)**

**Lab 17 (Structure), Faculty: Rsl**

**Ex-1( returning a structure from a function)**

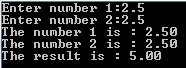
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| --- | --- |
| #include<stdio.h>  typedef struct person  {  char name[50];  int id;  }student;  student\* inputPerson();  int main()  {  student \*s;  s=inputPerson();  int i;  for(i=0; i<2; i++)  {  printf("Print student %d name and id: \n",i+1);  printf("Name: %s\n", s[i].name);  printf("ID: %d\n", s[i].id);  }  return 0;  } | student\* inputPerson()  {  int i;  static student stu[2];  for(i=0; i<2; i++)  {  printf("Enter student %d name and id: \n",i+1);  gets(stu[i].name);  scanf("%d",&stu[i].id);  fflush(stdin);  }  return stu;  } |

**LAB TASK(10 marks)**

**1.** Create a struct numbers which contains two floating numbers and one floating variable to hold the result. Write a function call add() which returns a structure type numbers. In the add( ) function you declare a **struct numbers n** where you take input two floating numbers and store their result in n.result field and return the structure n.

Call the add() function in main method and print out the numbers along with their result.

|  |  |
| --- | --- |
| struct numbers  {  float n1;  float n2;  float result;  }; | struct numbers add();  add():  takes two floating numbers n1 and n2 as define in the struct numbers  store the addition of n1 and n2 into result which is also define in the struct numbers  return the struct to the point where it was called |



**2.** Create a structure called Shape which has two components length and width. Create a **structure variable rectangle** and take its length and width as input from the user in the main function. Implement the two functions float findArea(struct Shape r) and float findPerimeter(struct Shape r). From the main function, call these two functions to get the area and perimeter of the rectangle.

**float findArea(struct Shape r);**

**float findPerimeter(struct Shape r);**

**struct Shape**

**{**

**float length;**

**float width;**

**}**

**NOTE: area of rectangle= length\* width and perimeter= 2\* (length+width)**

