**LAB Week 8**

**Name: Muhammad Talha Shafiq Choudhary**

**Reg#:Sp21-BSE-008**

**Exercise 1.** Given the following piece of code

int i = 10;

char c= 'A';

double f = 25.5;

int \*iptr = &i;

char \*cptr = &c;

You are expected to write the result of following statements from the output you got after running your program for the above given values.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Value of i** | **Address of i** | **Value of iptr** | **Address of iptr** | **Derefrenced Value of \*iptr** | **Size of iptr** | **Size of i** |
|  |  |  |  |  |  |  |
| **Value of c** | **Address of c** | **Value of cptr** | **Address of cptr** | **Derefrenced Value of \*cptr** | **Size of cptr** | **Size of c** |
|  |  |  |  |  |  |  |

Note: The format specifier for displaying address of any data item is %p

|  |
| --- |
| **Solution of Question 1:** |

**Exercise 2**

Consider the following array of integers:

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Array of integers, named *‘arr’*** | | | | | | | | | |
| 2 | 6 | -4 | 8 | 10 | -12 | 14 | 16 | 18 | 20 |
| num[0] | num[1] | num[2] | num[3] | num[4] | num[5] | num[6] | num[7] | num[8] | num[9] |

Implement the following pointer notations to traverse and display the given array ‘arr’.

1. Printing array using array[i] notation.
2. Printing array using ptr[i] notation.
3. Printing array using \*(array+i) notation.
4. Printing array using \*(ptr+i) notation.
5. Printing array using \*ptr notation.

|  |
| --- |
| #include<stdio.h>  int main()  {  int arr[]={2,6,-4,8,10,-12,14,16,18,20};  int i;  for(i=0;i<10;i++)  {  int \*p;  p=&arr[i];  printf("num[%d] = %d\n",i,\*p);  }  printf("===================================\n");  for(i=0;i<10;i++)  {  printf("num[%d] = %d\n",i,arr[i]);  }  printf("===================================\n");  for(i=0;i<10;i++)  {  printf("num[%d] = %d\n",i,\*(arr+i));  }  printf("===================================\n");  for(i=0;i<10;i++)  {  int\* p;  p=&arr[10];  printf("num[%d] = %d\n",i,\*(p+i));  }  }  **MRTHOD 2**  #include <stdio.h>  int main()  {  int \*ptr, i,array[10] = {2, 6, -4, 8, 10, -12, 14, 16, 18, 20};  ptr = array;  printf("\narray[i] notation\n\t");  for(i = 0; i < 10; i++)//array[i] notation  printf("\t%d", array[i]);  printf("\nptr[i] notation\n\t");  for(i = 0; i < 10; i++)//ptr[i] notation  printf("\t%d", ptr[i]);  printf("\n\*(array+i) notation\n\t");  for(i = 0; i < 10; i++)//\*(array + i) notation  printf("\t%d", \*(array + i));  printf("\n\*(ptr+i) notation\n\t");  for(i = 0; i < 10; i++)//\*(ptr + i) notation  printf("\t%d", \*(ptr + i));  printf("\n\*ptr notation\n\t");  for(i = 0; i < 10; i++, ptr++)//\*ptr notation  printf("\t%d", \*ptr);  printf("\n\n");  return 0;  } |