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Class: SY-IT
Batch: S3
Roll no: 47

Experiment No. 01

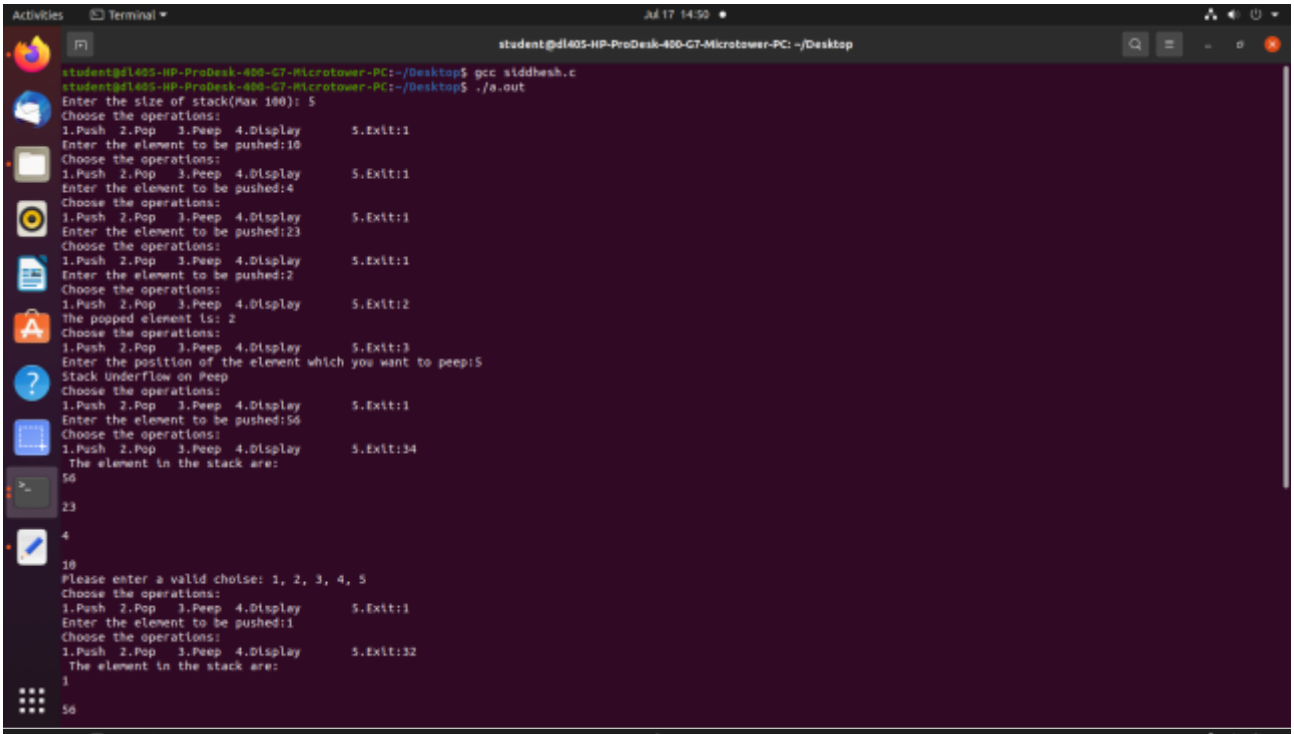
Program:

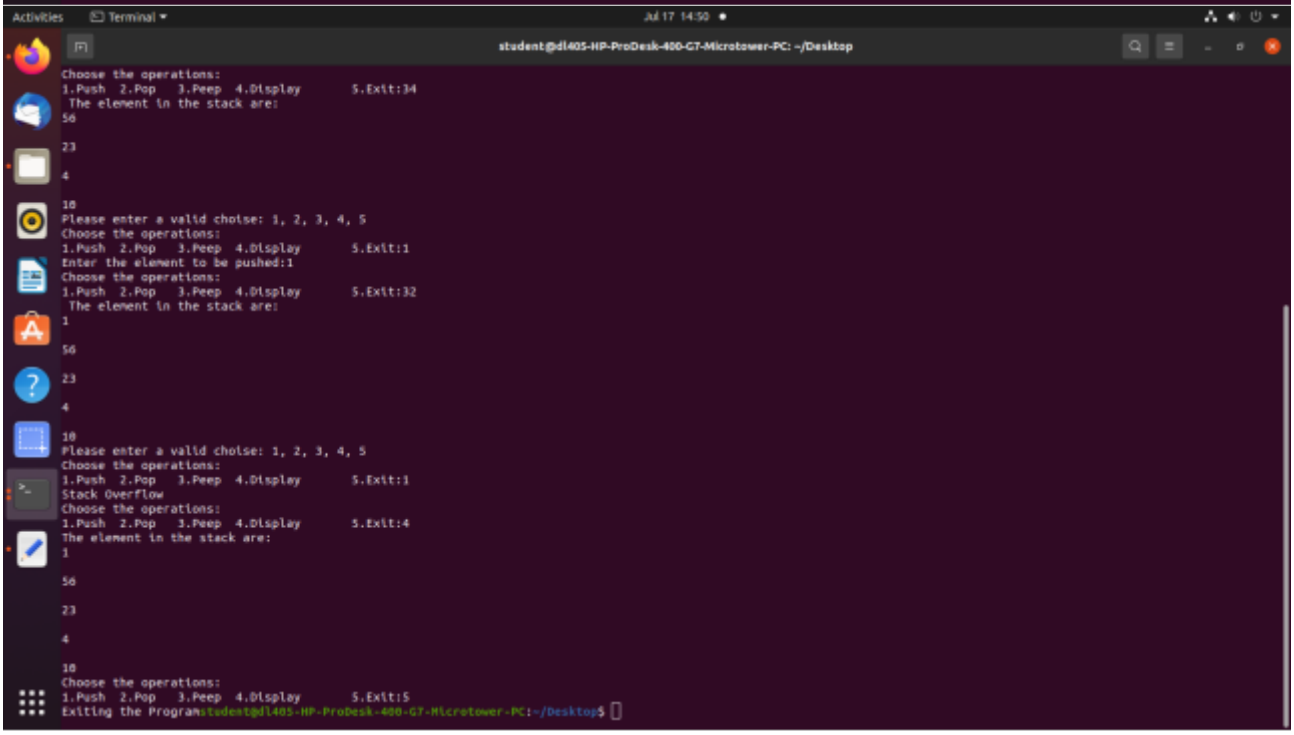
```
#include<stdio.h>
int STK[100],Top=-1,i,n,x,choice;
void push();
void pop();
void peep();
void display();
void main()
{ printf("Enter the size of stack(Max 100): ");
  scanf("%d",&n);
  do
  { printf("Choose the operations:\n");
    printf("1.Push\t2.Pop\t3.Peep\t4.Display\t5.Exit:");
    scanf("%d",&choice);
    switch(choice)
    { case 1: push();
              break;
      case 2: pop();
              break;
      case 3: peep();
              break;
      case 4: display();
              break;
      case 5: printf("Exiting the Program");
              break;
      default:#include<stdio.h>
int STK[100],Top=-1,i,n,x,choice;
void push();
void pop();
void peep();
void display();
void main()
{ printf("Enter the size of stack(Max 100): ");
  scanf("%d",&n);
  do
  { printf("Choose the operations:\n");
    printf("1.Push\t2.Pop\t3.Peep\t4.Display\t5.Exit:");
    scanf("%d",&choice);
    switch(choice)
    { case 1: push();
              break;
      case 2: pop();
              break;
      case 3: peep();
              break;
      case 4: display();
              break;
      case 5: printf("Exiting the Program");
              break;
```

```
      default:
           printf(" The element in the stack are:");
        for (i=Top;i>-1;i--)
        {
           printf("\n%d\n",STK[i]);
        }printf("Please enter a valid choise: 1, 2, 3, 4, 5 \n");
    }
  }
  while(choice !=5);
}
void push()
{ if(Top>=n-1)
    { printf("Stack Overflow\n");
    }
  else{ printf("Enter the element to be pushed:");
         scanf("%d",&x);
         Top++;
         STK[Top] = x;
        }
}
void pop()
{ if(Top<0)
    { printf("Stack Underflow\n");
    }
    else{ printf("The popped element is: %d \n", STK[Top]);
          Top--;
        }
}
void peep()
{  printf("Enter the position of the element which you want to peep:");
   scanf("%d",&i);
   if(Top-i+1<0)
     { printf("Stack Underflow on Peep\n");
     }
   else{ printf("The %d element from the top is: %d \n",i,STK[Top-i+1]);
       }
}
void display()
{ if(Top<0)
    { printf("Stack is empty\n");
    }
  else{ printf("The element in the stack are:");
        for(i=Top;i>-1;i--)
        { printf("\n%d\n",STK[i]);
        }
      }
}
           printf(" The element in the stack are:");
        for (i=Top;i>-1;i--)
        {
           printf("\n%d\n",STK[i]);
        }printf("Please enter a valid choise: 1, 2, 3, 4, 5 \n");
    }
  }
  while(choice !=5);
}
void push()
```

```
{ if(Top>=n-1)
    { printf("Stack Overflow\n");
    }
  else{ printf("Enter the element to be pushed:");
         scanf("%d",&x);
         Top++;
         STK[Top] = x;
       }
}
void pop()
{ if(Top<0)
    { printf("Stack Underflow\n");
    }
    else{ printf("The popped element is: %d \n", STK[Top]);
         Top--;
       }
}
void peep()
{  printf("Enter the position of the element which you want to peep:");
   scanf("%d",&i);
   if(Top-i+1<0)
     { printf("Stack Underflow on Peep\n");
     }
   else{ printf("The %d element from the top is: %d \n",i,STK[Top-i+1]);
       }
}
void display()
{ if(Top<0)
    { printf("Stack is empty\n");
    }
  else{ printf("The element in the stack are:");
        for(i=Top;i>-1;i--)
        { printf("\n%d\n",STK[i]);
        }
      }
}
```

Output:


Activities
Terminal
Jul 17 14:50
student@dl405-HP-ProDesk-400-G7-Microtower-PC: ~/Desktop
student@dl405-HP-ProDesk-400-G7-Microtower-PC:~/Desktop$ gcc siddhesh.c
student@dl405-HP-ProDesk-400-G7-Microtower-PC:~/Desktop$ ./a.out
Enter the size of stack(Max 100): 5
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:10
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:4
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:23
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:2
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:2
The popped element is: 2
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:3
Enter the position of the element which you want to peep:5
Stack Underflow on Peep
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:56
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:34
The element in the stack are:
56
23
4
10
Please enter a valid choise: 1, 2, 3, 4, 5
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:1
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:32
The element in the stack are:
1
56


Activities
Terminal
Jul 17 14:50
student@dl405-HP-ProDesk-400-G7-Microtower-PC: ~/Desktop
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:34
The element in the stack are:
56
23
4
10
Please enter a valid choise: 1, 2, 3, 4, 5
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Enter the element to be pushed:1
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:32
The element in the stack are:
1
56
23
4
10
Please enter a valid choise: 1, 2, 3, 4, 5
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:1
Stack Overflow
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:4
The element in the stack are:
1
56
23
4
10
Choose the operations:
1.Push 2.Pop 3.Peep 4.Display 5.Exit:5
Exiting the Programstudent@dl405-HP-ProDesk-400-G7-Microtower-PC:~/Desktop$