

# Lecture 6

Programs for each loop



# Sum of 10 Integers

```
#Include <stdio.h>
main()
{ int i, a,sum;
  sum = 0;
  for (i=0;i < 10; i++)
  { printf("enter number \n");
    scanf("%d",&a);
    sum = sum + a;
  };
  printf("total is %d",sum);
}
```

# Largest of 10 Integers

```
#Include <stdio.h>
main()
{ int i, a,max;
  printf("enter number \n");
  scanf("%d",&a);
  max = a;
  for (i=1;i < 10; i++)
{ printf("enter number \n");
  scanf("%d",&a);
If (a > max) max = a;
};
printf("largest is %d",max);
}
```

# Loop until

```
#Include <stdio.h>
```

```
main()
```

```
{ int a,
```

```
do
```

```
{ printf("enter number \n");
```

```
scanf("%d",&a);
```

```
};
```

```
while (a < 100)
```

```
printf("The number which ended the loop is %d",a);
```

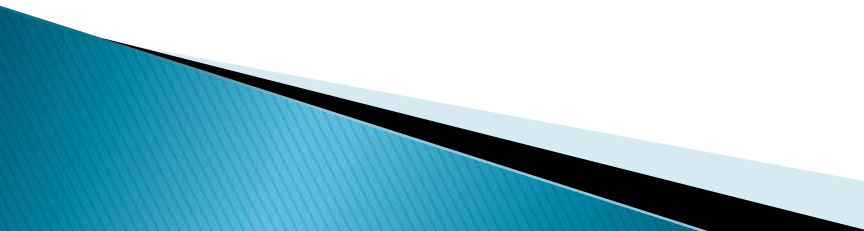
```
}
```



# While

```
#Include <stdio.h>
main()
{ int a,
  a= 0;
while (a < 100)
{ printf("enter number \n");
  scanf("%d",&a);
};
printf("The number which ended the loop is
%d",a);
}
```

# Iterations and Loops

- ▶ The purpose of a loop is to repeat the same action a number of times
  - ▶ We refer to each time an action is repeated as an iteration.
  - ▶ We continue repeating the action until a terminating condition is satisfied.
  - ▶ This terminating condition is called a loop guard
  - ▶ The loop guard is represented by a boolean expression in the same way as the condition of an IF statement.
  - ▶ Before the loop starts we initialise variables involved in the loop
  - ▶ In C there are a number of ways to represent loops
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# Integer Square Root

```
#Include <stdio.h>
main()
{ int i,a;
printf("enter number \n");
scanf("%d",&a);
If (a < 0)
{printf("No Square Root available")}
else
{ i= 0;
while (i*i < a)
{i++};
printf("The integer square root of %d is %d",a,i);
}
}
```

# Read until 45

```
#include <stdio.h>
main()
{int x;
do
{ printf("enter no");
scanf("%d", &x);
}
while(x != 45) ;
}
```



# Minimum

```
#include <stdio.h>
main()
{int x,min,counter;
counter = 0;
do
{ printf("enter no");
scanf("%d", &x);
if (counter == 0)
{min = x;}
else
{If (x < min) min = x; }
counter++;}
While (counter < 100) ;
printf("minimum is %d",min);
}
```

# Minimum with while loop

```
#include <stdio.h>
main()
{int x,min,counter;
counter = 1;
printf("enter no");
scanf("%d", &x);
min = x;
While (counter < 100)
{ printf("enter no");
scanf("%d", &x);
If (x < min) min = x;
  counter++;}
printf("minimum is %d",min);
}
```