Union Practice Programs

A union is a special data type available in C that allows
to store different data types in the same memory
location. You can define a union with many members,
but only one member can contain a value at any given time.
Unions provide an efficient way of using the same memory
location for multiple-purpose.

Syntax:

```
union union_name {
   member definition;
   member definition;
   ...
   member definition;
} [one or more union variables];
```

Example:

```
union car
{
  char name[50];
  int price;
};
```

Just example to create , union variables, *car3 is a pointer variable

```
#include<stdio.h>
union car
{
  char name[50];
  int price;
};

int main()
{
  union car car1, car2, *car3;
  return 0;
}
```

Example 1:

```
#include <stdio.h>
union unionJob
{
  //defining a union
  char name[32];
  float salary;
  int workerNo;
} uJob;

struct structJob
{
  char name[32];
  float salary;
  int workerNo;
} sJob;

int main()
{
  printf("size of union = %d bytes", sizeof(uJob));
  printf("\nsize of structure = %d bytes", sizeof(sJob));
  return 0;
}
```

Example 2:

```
#include <stdio.h>
union Job {
  float salary;
  int workerNo;
} j;

int main() {
  j.salary = 12.3;

  // when j.workerNo is assigned a value,
  // j.salary will no longer hold 12.3
  j.workerNo = 100;

  printf("Salary = %.1f\n", j.salary);
  printf("Number of workers = %d", j.workerNo);
  return 0;
}
```

Example 3:

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

union Data {
   int i;
   float f;
   char str[20];
};

int main( ) {

   union Data data;

   printf( "Memory size occupied by data : %d\n", sizeof(data));

   return 0;
}
```

Example 4:

```
#include <stdio.h>
#include <string.h>
union Data {
   int i;
   float f;
   char str[20];
};
int main( ) {
   union Data data;
   data.i = 10;
   data.f = 220.5;
   strcpy( data.str, "C Programming");
   printf( "data.i : %d\n", data.i);
   printf( "data.f : %f\n", data.f);
   printf( "data.str : %s\n", data.str);
   return 0;
}
```

Example 5:

```
#include <stdio.h>
#include <string.h>
union Data {
   int i;
```

```
   float f;
   char str[20];
};

int main( ) {
   union Data data;
   data.i = 10;
   printf( "data.i : %d\n", data.i);
   data.f = 220.5;
   printf( "data.f : %f\n", data.f);
   strcpy( data.str, "C Programming");
   printf( "data.str : %s\n", data.str);
   return 0;
}
```