**// A C program to demonstrate different storage**

**// classes**

**#include <stdio.h>**

**// declaring the variable which is to be made extern**

**// an intial value can also be initialized to x**

**int x;**

**void autoStorageClass()**

**{**

**printf("\nDemonstrating auto class\n\n");**

**// declaring an auto variable (simply**

**// writing "int a=32;" works as well)**

**auto int a = 32;**

**// printing the auto variable 'a'**

**printf("Value of the variable 'a'"**

**" declared as auto: %d\n",**

**a);**

**printf("--------------------------------");**

**}**

**void registerStorageClass()**

**{**

**printf("\nDemonstrating register class\n\n");**

**// declaring a register variable**

**register char b = 'G';**

**// printing the register variable 'b'**

**printf("Value of the variable 'b'"**

**" declared as register: %d\n",**

**b);**

**printf("--------------------------------");**

**}**

**void externStorageClass()**

**{**

**printf("\nDemonstrating extern class\n\n");**

**// telling the compiler that the variable**

**// z is an extern variable and has been**

**// defined elsewhere (above the main**

**// function)**

**extern int x;**

**// printing the extern variables 'x'**

**printf("Value of the variable 'x'"**

**" declared as extern: %d\n",**

**x);**

**// value of extern variable x modified**

**x = 2;**

**// printing the modified values of**

**// extern variables 'x'**

**printf("Modified value of the variable 'x'"**

**" declared as extern: %d\n",**

**x);**

**printf("--------------------------------");**

**}**

**void staticStorageClass()**

**{**

**int i = 0;**

**printf("\nDemonstrating static class\n\n");**

**// using a static variable 'y'**

**printf("Declaring 'y' as static inside the loop.\n"**

**"But this declaration will occur only"**

**" once as 'y' is static.\n"**

**"If not, then every time the value of 'y' "**

**"will be the declared value 5"**

**" as in the case of variable 'p'\n");**

**printf("\nLoop started:\n");**

**for (i = 1; i < 5; i++) {**

**// Declaring the static variable 'y'**

**static int y = 5;**

**// Declare a non-static variable 'p'**

**int p = 10;**

**// Incrementing the value of y and p by 1**

**y++;**

**p++;**

**// printing value of y at each iteration**

**printf("\nThe value of 'y', "**

**"declared as static, in %d "**

**"iteration is %d\n",**

**i, y);**

**// printing value of p at each iteration**

**printf("The value of non-static variable 'p', "**

**"in %d iteration is %d\n",**

**i, p);**

**}**

**printf("\nLoop ended:\n");**

**printf("--------------------------------");**

**}**

**int main()**

**{**

**printf("A program to demonstrate"**

**" Storage Classes in C\n\n");**

**// To demonstrate auto Storage Class**

**autoStorageClass();**

**// To demonstrate register Storage Class**

**registerStorageClass();**

**// To demonstrate extern Storage Class**

**externStorageClass();**

**// To demonstrate static Storage Class**

**staticStorageClass();**

**// exiting**

**printf("\n\nStorage Classes demonstrated");**

**return 0;**

**}**

**// This code is improved by RishabhPrabhu**