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| **Experiment 2 :**  Write a program to find area of circle, square, triangle and rectangle and perform equivalence class testing. |
| **Solution:**  #include<iostream>  using namespace std;  int main()  {  int ch;  char c;  float b, h, a;  start:  cout<<"\n1 Triangle";  cout<<"\n2 Square";  cout<<"\n3 Rectangle";  cout<<"\n4 Circle";  cout<<"\n5 Exit\n";  cout<<"Enter your choice";  cin>>ch;  switch(ch)  {  case 1 :  b:  cout<<"\nEnter the base of the triangle (1-200)";  cin>>b;  if ((b<=0)||(b>200))  {  cout<<"\nInvalid entry for base \n";  goto b;  }  h:  cout<<"\nEnter the height of the triangle (1-200)";  cin>>h;  if ((h<=0)||(h>200))  {  cout<<"\nInvalid height\n";  goto h;  }  a= 0.5\*b\*h;  cout<<"\nThe area is "<< a;  cout<<"\nWant to enter more?(y/n) ";  cin>>c;  if((c=='y')||(c=='Y'))  goto start;  break;  case 2 :  s:  cout<<"\nEnter the side of the square (1-200)";  cin>>b;  if ((b<=0)||(b>200))  {  cout<<"\nInvalid entry for base \n";  goto s;  }  a= b\*b;  cout<<"\nThe area is "<< a;  cout<<"\nWant to enter more?(y/n) ";  cin>>c;  if((c=='y')||(c=='Y'))  goto start;  break;  case 3:  d:  cout<<"\nEnter the base of the triangle (1-200)" ;  cin>>b;  if((b<=0)||(b>200))  {  cout<<"\nInvalid entry for base \n";  goto d;  }  p:  cout<<"\nEnter the height of the triangle (1-200) ";  cin>>h;  if ((h<=0)||(h>200))  {  cout<<"\nInvalid height\n";  goto p;  }  a=b\*h;  cout<<"\nThe area is "<< a;  cout<<"\nWant to enter more?(y/n) ";  cin>>c;  if((c=='y')||(c=='Y'))  goto start;  break;  case 4:  t:  cout<<"\nEnter the radius of the circle ";  cin>>b;  if ((b<=0)||(b>200))  {  cout<<"\nInvalid entry for base \n";  goto t;  }  a= 3.14\*b\*b;  cout<<"\nThe area is "<< a;  cout<<"\nWant to enter more?(y/n)";  cin>>c;  if ((c=='y')||(c=='Y'))  goto start;  break;  case 5:  exit(0);  break;  default :  cout<<"\n WRONG CHOICE";  goto start;  }  return 0;  }  **Output :**  **Area Of Triangle:**  Graphical user interface, text, application  Description automatically generated   |  |  |  |  | | --- | --- | --- | --- | | **Test case** | **H** | **B** | **Expected Output** | | 1 | 0 | 100 | Invalid Output | | 2 | 100 | 100 | 5000 | | 3 | 201 | 100 | Invalid Output | | 4 | 100 | 0 | Invalid Output | | 5 | 100 | 100 | 5000 | | 6 | 100 | 201 | Invalid Output |   **Area of Square :**     |  |  |  | | --- | --- | --- | | **Test Case** | **S** | **Expected Output** | | 1. | 0 | Invalid Output | | 2 | 100 | 10000 | | 3 | 201 | Invalid Output |   **Area of Rectangle :**     |  |  |  |  | | --- | --- | --- | --- | | **Test Case** | **L** | **B** | **Expected Output** | | 1 | 0 | 100 | Invalid input | | 2. | 100 | 100 | 10000 | | 3. | 201 | 100 | Invalid input | | 4. | 100 | 0 | Invalid input | | 5. | 100 | 100 | 10000 | | 6. | 100 | 201 | Invalid input |   **Area of Circle :**  Text  Description automatically generated   |  |  |  | | --- | --- | --- | | **Test Case** | **Radius** | **Generated Output** | | 1. | 0 | Invalid Output | | 2. | 100 | 31400 | | 3. | 201 | Invalid Output | |