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**2.3. 3.Write a program for storing and display data about cricketer. You must include at least following data items for cricketer. a) Name b) Age c) Total score d) Total Match played e) Centuries f) Fifties**

**Source Code:**

#include <iostream>

#include <cstring>

using namespace std;

class cricketer

{

char name[20];

int age;

double score;

int matchno;

int fifties;

int centuries;

public:

cricketer(char n[20],int a,double s,int m,int f,int c)

{

strcpy(name,n);

age=a;

score=s;

matchno=m;

fifties=f;

centuries=c;

}

void display()

{

cout<<"\n cricketer "<<name<<"of age "<<age<<" with score "<<score<<" in "<<matchno<<" number of matches has made "<<fifties<<" fifties and "<<centuries<<" centuries. ";

}

};

int main()

{

char c[20];

int a,n,f,h;

double s;

cout<<"\n Enter name,age,score,no of matches,no of fifties and 100s of cricketer";

cin>>c>>a>>s>>n>>f>>h;

cricketer c1(c,a,s,n,f,h);

c1.display();

return 0;

}

**Output:**

Enter name, age, score, no of matches, no of fifties and 100s of cricketer

>>Rahul Dravid

>>57

>>200000

>>5000

>>2000

>>1578

cricketer Rahul Dravid of age 57 with score 200000 in 5000 number of matches has made 2000 fifties and 1578 centuries.

**2.4.** **Write a friend function that will calculate the average for the cricketer.**

**Source Code:**

#include <iostream>

#include <cstring>

using namespace std;

class cricketer

{

char name[20];

int age;

double score;

int matchno;

int fifties;

int centuries;

public:

cricketer(char n[20],int a,double s,int m,int f,int c)

{

strcpy(name,n);

age=a;

score=s;

matchno=m;

fifties=f;

centuries=c;

}

void display()

{

cout<<"\n cricketer "<<name<<"of age "<<age<<" with score "<<score<<" in "<<matchno<<" number of matches has made "<<fifties<<" fifties and "<<centuries<<" centuries. ";

}

friend void average(cricketer c1);

};

void average(cricketer c1)

{

double av;

av=c1.score/c1.matchno;

cout<<"\n Hence have an average of "<<av;

}

int main()

{

char c[20];

int a,n,f,h;

double s;

cout<<"\n Enter name,age,score,no of matches,no of fifties and 100s of cricketer";

cin>>c>>a>>s>>n>>f>>h;

cricketer c1(c,a,s,n,f,h);

c1.display();

average(c1);

return 0;

}

**Output:**

Enter name, age, score, no of matches, no of fifties and 100s of cricketer

>>Rahul Dravid

>>57

>>200000

>>5000

>>2000

>>1578

cricketer Rahul Dravid of age 57 with score 200000 in 5000 number of matches has made 2000 fifties and 1578 centuries.

Hence have an average 40.

**2.5. Create a C++ program to show the order of constructors and destructors.**

**Write a class for the book store to help book seller about the books that he sells. It must include a) Book Code b) Title c) Author d) Edition e) Publisher Enter information about ten books and display one by one on screen. Allocate the memory dynamically and use dynamic initialization of object to enter the value. Also include destructor.**

**Source Code:**

#include <iostream>

#include <cstring>

using namespace std;

class book

{

char title[20];

int bookno;

char author[20];

int edition;

char publisher[20];

public:

book()

{

}

book(char t[],int bno,char a[],int e,char p[])

{

strcpy(title,t);

bookno=bno;

strcpy(author,a);

edition=e;

strcpy(publisher,p);

}

void display()

{

cout<<"\n"<<title<<" having book number "<<bookno<<"and edition"<<edition<<" by author "<<author<<" is published by "<<publisher;

}

~book()

{

cout << "Object is being deleted::Number"<<endl;

}

};

int main()

{

char c[20],a[20],p[20];

int b,e,i;

book \*book1= new book[10];

for(i=0;i<10;i++)

{

cout<<"\n Enter values for title,bookno,author,edition and publisher in order";

cin>>c>>b>>a>>e>>p;

book1[i] = book(c,b,a,e,p);

book1[i].display();

}

}

**Output:**

Enter values for title, book no ,author, edition and publisher in order

>>Harry Potter 4 J.K.Rowling 1 Penguin

Title Harry Potter having book no 4 and edition 1 and author J.K.Rowling is published by Penguin.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Sherlock Holmes 1 Arthur Conan Doyle 2 Rupa & Co.

Title Sherlock Holmes having book no 1 and edition 2 and author Arthur Conan Doyle is published by Rupa & Co..

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Pride and Prejudice 3 Jane Austen 7 Arrow

Title Pride and Prejudice having book no 3 and edition 7 and author Jane Austen is published by Arrow.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Rebecca 2 Daphne du Maurier 10 Bantam Books.

Title Rebecca having book no 2 and edition 10 and author Daphne du Maurier is published by Bantam Books.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Love Story 5 Erich Seagul 3 Bloomsberry

Title Love Story having book no 5 and edition 3 and author Eric Seagul is published by Bloomsberry.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Prodigal Daughter 6 Jeffery Archer 6 Arrow.

Title Prodigal Daughter having book no 6 and edition 6 and author Jeffery Archer is published by Arrow.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Diary of a young girl 7 Anne Frank 3 Collins

Title Diary of a young girl having book no 7 and edition 3 and author Anne Frank is published by Collins.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Way to Live Forever 8 Sally Nicolas 2 Penguin

Title Way to Live Forever having book no 8 and edition 2 and author SallyNicolas is published by Penguin.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>Chronicles of Narnia 9 C.S.Lewis 4 Rupa & Co.

Title Chronicles of Narnia having book no 9 and edition 4 and author C.S.Lewis is published by Rupa & Co.

Object is being deleted::Number

Enter values for title, book no ,author, edition and publisher in order

>>A Walk to Remember 10 Nicolas Sparks 1 Bloomsberry

Title A Walk to Remember having book no 10 and edition 1 and author Nicolas Sparks is published by Bloomsberry.

Object is being deleted::Number

**2.** **6. Write a C++ program to implement a) Stack b) Queue With all there operation.**

**Source Code (a):**

# include<iostream>

using namespace std;

# define SIZE 10

class stack

{

int a[SIZE];

int top;

public:

void stk()

{

top=-1;

}

void push(int i)

{

top++;

if(top>=0)

{

a[top]=i;

cout<<"\n The data has been pushed!"<<i;

}

else

cout<<"\n Error: Stack overflow!";

}

void pop()

{

if(top>=0)

{

cout<<"\n The Data is popped! "<<a[top];

top--;

}

else

cout<<"\n ";

}

void display()

{

int i=0;

if(top>=0)

{

cout<<"\n The elements in the stack are";

for(i--;i<=top;i++)

{

cout<<a[i]<<" ";

cout<<endl;

}

}

else

cout<<"\n Error: Empty Stack";

}

};

int main()

{

stack s;

int x,n;

s.stk();

while(1)

{

cout<<"\n 2 for pop\nPress 3 for display\nPress 0 Press 1 for push \nPress for exit\n";

cin>>n;

switch(n)

{

case 1:

cout<<"\n Enter the value you want to push ";

cin>>x;

s.push(x);

break;

case 2:

s.pop();

break;

case 3:

s.display();

break;

case 0: return(0);

default: cout<<"Check your choice!\n";

}

}

return 0;

}

**Output:**

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>2

Error: Empty stack

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>1

Enter value to be pusher

>>4

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>1

Enter value to be pusher

>>4

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>21

Enter value to be pusher

>>4

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>3

The element in the stack are

4 21

Enter value to be pusher

>>4

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>Value deleted

Enter value to be pusher

>>4

2 for pop

Press 3 for display

Press 0 Press 1 for push

Press for exit

>>3

The element in the stack are

4

**Source Code (b):**

# include<iostream>

using namespace std;

# define SIZE 10

class queue

{

int a[SIZE];

int front;

int rear;

public:

void que()

{

front=-1;

rear=-1;

}

void insert(int i)

{

if(rear>=SIZE-1)

{

cout<<"The queue is full !\n";

}

else if(front == -1)

{

cout<<"The data has been inserted!\n";

front++;

rear++;

a[rear] = i;

}

else

{

cout<<"The data has been inserted!\n";

rear++;

a[rear] = i;

}

}

void dlete(void)

{

if(front > rear || rear ==-1)

cout<<"The queue is empty !\n";

else

{

cout<<"The data has been deleted!\n";

front++;

}

}

void display(void)

{

int i=front;

if(front>rear || rear ==-1 )

cout<<"The queue is empty!\n"<<endl;

else if (i=front);

cout<<"The elements in the queue are:-\n"<<endl;

for(i;i<=rear;i++)

cout<<a[i]<<" ";

cout<<endl;

}

};

int main()

{

queue q;

q.que();

int n,x;

while(1)

{

cout<<"Press 1 for insert \nPress 2 for delete\nPress 3 for display\nPress 0 for exit\n"<<endl;

cin>>n;

switch(n)

{

case 1:

cout<<"Enter the value you want to insert "<<endl;

cin>>x;

q.insert(x);

break;

case 2:

q.dlete();

break;

case 3:

q.display();

break;

case 0:

return(0);

default: cout<<"Please check your choice!\n";

break;

}

}

return 0;

}

**Output:**

Press 1 for insert

Press 2 for delete

Press 3 for display

Press 0 for exit

>>1

Enter value to be pusher

>>4

2 for pop

Press 1 for insert

Press 2 for delete

Press 3 for display

Press 0 for exit

>>1

Enter value to be pusher

>>4

Press 1 for insert

Press 2 for delete

Press 3 for display

Press 0 for exit

>>21

Enter value to be pusher

>>4

Press 1 for insert

Press 2 for delete

Press 3 for display

Press 0 for exit

>>3

The element in the queue are

4 21

Enter value to be pusher

>>4

2 for pop

Press 1 for insert

Press 2 for delete

Press 3 for display

Press 0 for exit

>>Value deleted

Enter value to be pusher

>>4

Press 1 for insert

Press 2 for delete

Press 3 for display

Press 0 for exit

>>3

The element in the queue are

4