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**ABOUT C++**

[](https://en.wikipedia.org/wiki/File:ISO_C++_Logo.svg)

**C++** is a [general-purpose programming language](https://en.wikipedia.org/wiki/General-purpose_programming_language). It has [imperative](https://en.wikipedia.org/wiki/Imperative_programming), [object-oriented](https://en.wikipedia.org/wiki/Object-oriented_programming) and [generic](https://en.wikipedia.org/wiki/Generic_programming) programming features, while also providing facilities for low-level memory manipulation.

It was designed with a bias toward system programming and embedded, resource-constrained and large systems, with performance, efficiency and flexibility of use as its design highlights.  C++ has also been found useful in many other contexts, with key strengths being software infrastructure and resource-constrained applications, including [desktop applications](https://en.wikipedia.org/wiki/Application_software), servers (e.g. [e-commerce](https://en.wikipedia.org/wiki/E-commerce), [Web search](https://en.wikipedia.org/wiki/Web_search_engine) or [SQL](https://en.wikipedia.org/wiki/SQL) servers), and performance-critical applications (e.g. [telephone switches](https://en.wikipedia.org/wiki/Telephone_switches) or [space probes](https://en.wikipedia.org/wiki/Space_probes)).

C++ is a [compiled language](https://en.wikipedia.org/wiki/Compiled_language), with implementations of it available on many platforms. Many vendors provide [C++ compilers](https://en.wikipedia.org/wiki/List_of_compilers#C.2B.2B_compilers), including the Free Software Foundation, Microsoft, Intel, and IBM.



Before the initial standardization in 1998, C++ was developed by[**Bjarne Stroustrup**](https://en.wikipedia.org/wiki/Bjarne_Stroustrup) at [Bell Labs](https://en.wikipedia.org/wiki/Bell_Labs) since 1979, as an extension of the [C language](https://en.wikipedia.org/wiki/C_(programming_language)) as he wanted an efficient and flexible language similar to C, which also provided high-level features for program organization. [C++20](https://en.wikipedia.org/wiki/C%2B%2B20) is the next planned standard thereafter, keeping with the current streak of a new version every three years.

Throughout C++'s life, its development and evolution has been guided by a set of principles:

* It must be driven by actual problems and its features should be useful immediately in real world programs.
* Every feature should be implementable (with a reasonably obvious way to do so).
* Programmers should be free to pick their own programming style, and that style should be fully supported by C++.
* Allowing a useful feature is more important than preventing every possible misuse of C++.
* It should provide facilities for organising programs into well-defined separate parts, and provide facilities for combining separately developed parts.
* No implicit violations of the [type system](https://en.wikipedia.org/wiki/Type_system) (but allow explicit violations; that is, those explicitly requested by the programmer).
* User-created types need to have the same support and performance as built-in types.
* Unused features should not negatively impact created executables (e.g. in lower performance).
* There should be no language beneath C++ (except [assembly language](https://en.wikipedia.org/wiki/Assembly_language)).
* C++ should work alongside other existing [programming languages](https://en.wikipedia.org/wiki/Programming_language), rather than fostering its own separate and incompatible [programming environment](https://en.wikipedia.org/wiki/Programming_environment).
* If the programmer's intent is unknown, allow the programmer to specify it by providing manual control.

**CODE**

// Program to book flight ticket

#include<iostream.h>

#include<conio.h>

#include<string.h>

#include<ctype.h>

#include<stdio.h>

{ locations[8][10]={"Chennai","Bangalore","Hyderabad","Mumbai",

"Pune","Kolkata", "Ahmedabad", "New Delhi"};

char classes[2][10]={"Business","Economy"};

char name[50];

int nseats, dchoice, achoice, classchoice, dateday, datemonth, dateyear,time;

char roundtrip;

float tcost;

int age,gchoice;

}//declaration of variables

void passengerDetails();

void location();

void schedule();

void seats();

void ticketCost();

void displayTicket();

void payment();//declaration of functions

void passengerDetails()

{

cout<<"\t\tPassenger Details:";

cout<<"\nEnter your Name";

cin.getline(name,50);

cout<<"\nEnter your Age";

cin>>age;

cout<<"\n1.Male"<<"\n2.Female"<<"\nEnter your Gender";

cin>>gchoice;

}

void location()

{

cout<<"\n\t\tLIST OF AVAILABLE LOCATIONS:";

for(int i=0;i<8;i++)

cout<<(i+1)<<"."<<locations[i]<<endl;

cout<<"Please enter the desired destination of departure: "<<endl;

cin>>dchoice;

if(dchoice>0&&dchoice<9)

{

}

else

{

cout<<"Invalid destination!"<<endl;

location();

}

cout<<"Please enter the desired destination of arrival: "<<endl;

cin>>achoice;

if(achoice>0&&achoice<9&&achoice!=dchoice)

{

}

else

{

cout<<"Invalid destination!"<<endl;

location();

}

}

void schedule()

{

cout<<"Please enter the date of departure "<<endl;

cout<<"\nDate(dd): "<<endl;

cin>>dateday;

if(dateday>0&&dateday<32)

{

}

else

{

cout<<"\nInvalid date";

schedule();

}

cout<<"\nMonth(mm):";

cin>>datemonth;

if(datemonth>0&&datemonth<13)

{

}

else

{

cout<<"\nInvalid month";

schedule();

}

cout<<"\nYear(yyyy): ";

cin>>dateyear;

cout<<"\nPlease Enter Time of Departure(0-24)";

cin>>time;

if(time>=0&&time<25)

{

}

else

{

cout<<"\nInvalid Time";

schedule();

}

cout<<"\nWill it be a round trip?(y/n) :"<<endl;

cin>>roundtrip;

roundtrip=toupper(roundtrip);

}

void seats()

{

cout<<"\t\tSEAT BOOKING: "<<endl;

cout<<"Please enter the desired number of seats(Maximum 9): "<<endl;

cin>>nseats;

if(nseats>0&&nseats<10)

{

}

else

{

cout<<"Invalid number of seats!"<<endl;

seats();

}

cout<<"\t\tSELECT CLASS"<<endl;

cout<<"1. Business\n2. Economy"<<endl;

cin>>classchoice;

if(classchoice<0||classchoice>2)

{

cout<<"Invalid choice!"<<endl;

seats();

}

}

void ticketCost()

{

switch(dchoice)

{

case 1:

switch(achoice)

{

case 2:tcost=1800;break;

case 3:tcost=3000;break;

case 4:tcost=4500;break;

case 5:tcost=4500;break;

case 6:tcost=8000;break;

case 7:tcost=6000;break;

case 8:tcost=7500;break;

}break;

case 2:

switch(achoice)

{

case 1:tcost=1800;break;

case 3:tcost=2500;break;

case 4:tcost=4500;break;

case 5:tcost=4500;break;

case 6:tcost=8000;break;

case 7:tcost=6000;break;

case 8:tcost=7000;break;

}break;

case 3:

switch(achoice)

{

case 1:tcost=3000;break;

case 2:tcost=2500;break;

case 4:tcost=4000;break;

case 5:tcost=4500;break;

case 6:tcost=7500;break;

case 7:tcost=6000;break;

case 8:tcost=7000;break;

}break;

case 4:

switch(achoice)

{

case 1:tcost=4500;break;

case 2:tcost=4500;break;

case 3:tcost=4500;break;

case 5:tcost=1500;break;

case 6:tcost=6000;break;

case 7:tcost=3000;break;

case 8:tcost=6500;break;

}break;

case 5:

switch(achoice)

{

case 1:tcost=4500;break;

case 2:tcost=4500;break;

case 3:tcost=4500;break;

case 4:tcost=1500;break;

case 6:tcost=6000;break;

case 7:tcost=3000;break;

case 8:tcost=6500;break;

}break;

case 6:

switch(achoice)

{

case 1:tcost=8000;break;

case 2:tcost=8000;break;

case 3:tcost=7500;break;

case 4:tcost=6000;break;

case 5:tcost=6000;break;

case 7:tcost=6500;break;

case 8:tcost=5000;break;

}break;

case 7:

switch(achoice)

{

case 1:tcost=6000;break;

case 2:tcost=6000;break;

case 3:tcost=6000;break;

case 4:tcost=3000;break;

case 5:tcost=3000;break;

case 6:tcost=6500;break;

case 8:tcost=6500;break;

}break;

case 8:

switch(achoice)

{

case 1:tcost=7500;break;

case 2:tcost=7000;break;

case 3:tcost=7000;break;

case 4:tcost=6500;break;

case 5:tcost=6500;break;

case 6:tcost=5000;break;

case 7:tcost=6500;break;

}break;

}

tcost=nseats\*tcost;

if(classchoice==1)

tcost=2\*tcost;

else

tcost=1\*tcost;

if(roundtrip=='y')//yes

tcost=(95/100)\*tcost;

}

void displayTicket()

{

cout<<"\t\tPassenger Details:\nname: "<<strupr(name)<<"\nage: "<<age;

cout<<"\nGender: ";

if(gchoice==1)

cout<<"\nMale";

else

cout<<"\nFemale";

cout<<"\n\t\tLocation:"<<"\nLocation of Departure: "<<locations[dchoice]<<"\nLocation of Arrival: "<<locations[achoice];

cout<<"\n\t\tDeparture Schedule: "<<"\nDate: "<<dateday<<"."<<datemonth<<"."<<dateyear<<"\nTime: "<<time;

cout<<"\nRoundTrip: "<<roundtrip;

cout<<"\n\t\tSeat Details:”"<"\nNo. Of seats: "<<nseats<<"\nClass: ";

if(classchoice==1)

cout<<"\nBusiness Class";

else

cout<<"\nEconomy Class";

cout<<"\n\t\tEdit Details:";

int echoice;

cout<<"\nEnter 1 to edit Passenger Details" <<"\nEnter 2 to edit Location Details"

<<"\nEnter 3 to edit Departure Schedule Details" <<"\nEnter 4 to edit Seat Details"

<<"\nEnter 5 to proceed to Payment";

cin>>echoice;

switch(echoice)

{

case 1: passengerDetails();break;

case 2: location();break;

case 3: schedule();break;

case 4: seats();break;

case 5:payment();break;

default:cout<<"\nInvalid choice";break;

}

}

void payment()

{

cout<<"\nPrice of your tickets: "<<tcost;

cout<<"\nEnter 1 to pay through credit card" <<"\nEnter 2 to pay through debit card"

<<"\nEnter 3 to pay through Net Banking";

int pchoice;

cin>>pchoice;

if(pchoice>0&&dchoice<4)

{

}

else

{

cout<<"Invalid choice"<<endl;

payment();

}

char cardnum[12],cardname[25];

int expm,expy,cvv;

switch(pchoice)

{

case 1:

cout<<"\nEnter Card Number";

cin.getline(cardnum,12);

cout<<"\nEnter Card Holder Name";

cin.getline(cardname,25);

cout<<"\nEnter expiration month of your credit card";

cin>>expm;

cout<<"\nEnter expiration year of your credit card";

cin>>expy;

cout<<"\nEnter CVV";

cin>>cvv;

break;

case 2:

cout<<"\nEnter Card Number";

cin.getline(cardnum,12);

cout<<"\nEnter Card Holder Name";

cin.getline(cardname,25);

cout<<"\nEnter expiration month of your debit card";

cin>>expm;

cout<<"\nEnter expiration year of your debit card";

cin>>expy;

cout<<"\nEnter CVV";

cin>>cvv;

break;

case 3:

int bchoice,pin;

char banks[6][50]={"State Bank of India","Allahabad Bank","Bank of Baroda","Axis Bank","Canara Bank","Punjab National Bank"}

for(i=0,i<6,i++)

{

cout<<"\n"<<(i+1)<<"."<<banks[i];

}

cout<<"\nIf you choose State Bank of India, you get an additional 5% discount";

cout<<"\nEnter choice of bank";

cin>>bchoice;

if(bchoice>0&&dchoice<7)

{

}

else

{

cout<<"Invalid choice"<<endl;

}

cout<<"\nEnter PIN number";

cin>>pin;

if(bchoice==1)

tcost=(95/100)\*tcost;

}

}

void main()

{

clrscr();

passengerDetails();

location();

schedule();

seats();

ticketCost();

displayTicket();

payment();//calling all functions

cout<<"Your final cost is "<<tcost;

cout<<"Thank you for flying with Jet Airways";

getch();

}

**OUTPUT**

**FURTHER SCOPE**

The code above just illustrates the basics of how we book flight tickets to travel to many destinations around the world at affordable prices. Through all the various online facilities available today, flight booking has become so much easier compared to doing that so in earlier times, and the code above shows the most basic processes that occur when booking a flight, without you noticing it.

The code above can be more elaborated by graphically designing it, in order to attract tourists. This code is a simple input-output text-based program to illustrate the basic processes of flight booking. A system can be developed such that it feeds the program with real time updates of flight schedules and to display a variety of flight choices at any given time interval chosen by the user on any particular day through any destination of departure and arrival.

The payment system also can be made more elaborated by offering tourists more choices for mode of payment and enabling real time transactions with banks through net banking. The choice of payment through e-wallet like Paytm, PhonePe for short flights will help the tourists a lot and removes the inconvenience of internet banking.

The above code can be made a bit more complex and user-friendly so that it can executed on a much larger scale without much difficulties. This way the program is made more elaborate and fit for commercial use by many airlines out there.

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