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## File: addressbook.proto

### Message: Person

This message describes the personal contact information of a person in the database. The person contact information includes names, emails and other various contact information.

Field	Type	Rule	Description
name	<u>string</u>	required	This field describes the full name of the person. It should be in lastname/firstname format, and may or may not be unique.
id	<u>int64</u>	required	This field describes the unique ID number for this person. Seriously, this field must be globally unique, otherwise horrible things will happen.
email	<u>string</u>	optional	This field describes the email address of this person. If this person does not have a email addres, omit it.
phone	<u>PhoneNumber</u>	repeated	Nowadays, a person may have more than one phone. So this field allows for 0-n number of phones.

### Enum: Person.PhoneType

This enumeration describes the different type of phone number for this person.

Element	Value	Description
MOBILE	0	Mobile cell phone type
HOME	1	Home phone type
WORK	2	Work phone type

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## Message: Person.PhoneNumber

This message describes the phone number of a person.

Field	Type	Rule	Description
number	<u>string</u>	required	The number is required, and should be in (area code)-number format.
type	<u>PhoneType</u>	optional	The type of this phone number. By default, pretend this is a home phone number.  [default = HOME ]

## Message: AddressBook

Our address book file is just one of these.

Field	Type	Rule	Description
person	<u>Person</u>	repeated	The person list in the address book.

## Scalar Value Types

A scalar message field can have one of the following types - the table shows the type specified in the .proto file, and the corresponding type in the automatically generated class:

Type	Notes	C++ Type	Java Type
double		double	double
float		float	float
int32	Uses variable-length encoding. Inefficient for encoding negative numbers - if your field is likely to have negative values, use sint32 instead.	int32	int
int64	Uses variable-length encoding. Inefficient for encoding negative numbers - if your field is likely to have negative values, use sint64 instead.	int64	long
uint32	Uses variable-length encoding.	uint32	int
uint64	Uses variable-length encoding.	uint64	long
sint32	Uses variable-length encoding. Signed int value. These more efficiently encode negative numbers than regular int32s.	int32	int

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Type	Notes	C++ Type	Java Type
sint64	Uses variable-length encoding. Signed int value. These more efficiently encode negative numbers than regular int64s.	int64	long
fixed32	Always four bytes. More efficient than uint32 if values are often greater than $2^{28}$ .	uint32	int
fixed64	Always eight bytes. More efficient than uint64 if values are often greater than $2^{56}$ .	uint64	long
sfixed32	Always four bytes..	int32	int
sfixed64	Always eight bytes.	int64	long
bool		bool	boolean
string	A string must always contain UTF-8 encoded or 7-bit ASCII text.	string	String
bytes	May contain any arbitrary sequence of bytes.	string	ByteString