Q1. Write a C++ program to demonstrate the use of try, catch block with the argument as an integer and string using multiple catch blocks.

```
#include <iostream>
using namespace std;

int main() {

	int a;

	cout << "Enter number : ";
	cin >> a;

	try {

		if ( (a % 2) == 0)
			throw a;
		else
			throw "odd number : ";

	} catch (int a) {
		cout << "even number : " << a;

	} catch (const char *s ) {
		cout << s << a;

	}
}
```

Q2. Write a C++ program to demonstrate try, throw and catch statements.

```
#include <iostream>
using namespace std;


int main() {

	float a, b;

	cout << "Enter two numbers : ";
	cin >> a >> b;

	try {

		if (b == 0)
			throw "divide by zero error";

		cout << "Answer : " << a / b;
	} catch (const char *s) {

		cout << s;
	}

}
```

Q3. Write a C++ program to perform arithmetic operations on two numbers and throw an exception if the dividend is zero or does not contain an operator.

```
#include <iostream>
using namespace std;

float add(int x, int y) {
	return x + y;
}

float sub(int x, int y) {
	return x - y;
}

float multi(int x, int y) {
	return x * y;
}

float divide(int x, int y) {

	if (y == 0)
		throw "Divide by zero error";
	return x / y;
}

int main() {

	char opr;
	float a, b;

	cout << "Enter 1st number : ";
	cin >> a;

	cout << "Enter 2nd number : ";
	cin >> b;

	fflush(stdin);

	try {

		cout << "Enter Operator : ";
		cin >> opr;

		if ( (opr != '+' ) && (opr != '-') && (opr != '*') && (opr != '/') ) {

			throw "does not contain an operator";
		}

		switch (opr) {

			case '+':
				cout << "Addition : " << add(a, b);
				break;

			case '-':
				cout << "Subtraction : " << sub(a, b);
```

```
                        break;

                case '*':
                        cout << "Multiplication : " << multi(a, b);
                        break;

                case '/':
                        cout << "Division : " << divide(a, b);
                        break;
                }
        } catch (const char *s) {
                cout << s;
        }
}
```

Q4. Write a C++ program to accept an email address and throw an exception if it does not contain @ symbol.

```
#include <iostream>
#include <conio.h>
using namespace std;

int validEmail(char *);

int main() {

	char mail[50];

	cout << "Enter email : ";
	gets(mail);

	try {
		if (validEmail(mail)) {
			throw "Not valid email";
		}
	} catch (const char *s) {
		cout << s;
	}
}

int validEmail(char *mail) {

	for (int i = 0; mail[i] != '\0'; i++) {

		if (mail[i] == '@')
			return 0;
	}
	return 1;
}
```

Q5. Write a C++ program to accept a mobile number and throw an exception if it does not contain 10 digits.

```
#include <iostream>
using namespace std;

int main() {

	char num[20];

	cout << "Enter Number : ";
	gets(num);

	try {

		if (strlen(num) > 10 || strlen(num) < 10)
			throw " does not contain 10 digits";
	} catch (const char *s) {
		cout << s;
	}

}
```

Q6. Write a C++ program to accept area pin code and throw an exception if it does not contain 6 digits.

```
#include <iostream>
#include <string.h>

using namespace std;

int main() {

	char pin[20];

	cout << "Enter Pin code : ";
	gets(pin);

	try {

		if (strlen(pin) > 6 || strlen(pin) < 6)
			throw " does not contain 6 digits";
	} catch (const char *s) {
		cout << s;
	}
}
```

Q7. Write a C++ program to accept a username if the username has less than 6 characters or does contain any digit or special symbol.

```
#include <iostream>
#include <string>
using namespace std;

int digit(string s);
int symbol(string s);

int main() {

	string str;

	cout << "Enter Username : ";
	getline(cin, str);

	try {

		if (str.length() > 6) {

			if (!digit(str)) {

				if (symbol(str))
					throw "if your username is greater than 6 character then include digit
or special symbol";
			}
		}

	} catch (const char *s) {
		cout << s;
	}
}

int digit(string s) {

	for (int i = 0; i < s.length(); i++) {
		if ( isdigit(s[i]) )
			return 1;
	}

	return 0;
}

int symbol(string s) {

	for (int i = 0; i < s.length(); i++) {

		if (((s[i] >= 32 && s[i] <= 47)  || (s[i] >= 58 && s[i] <= 64) || (s[i] >= 91 && s[i] <= 96))) {

			return 0;
		}
	}
	return 1;
}
```

Q8. Write a C++ program to accept a password and throw an exception if the password has less than 6 characters or does not contain a digit or does not contain any special character or does not contain any capital letter.

```
#include <iostream>
#include <string>
using namespace std;

int digit(string s);
int symbol(string s);
int capital(string s);

int main() {

	string str;

	cout << "Enter Password : ";
	getline(cin, str);

	try {

		if (str.length() < 6) {

			throw "your password is lower than 6 character";
		}

		if (!digit(str)) {

			throw "your password does not contain digit";
		}

		if (symbol(str)) {

			throw "your password does not contain special symbol";
		}

		if (capital(str)) {

			throw "your password does not contain capital letter";

		}

	} catch (const char *s) {
		cout << s;
	}
}

int digit(string s) {

	for (int i = 0; i < s.length(); i++) {
		if ( isdigit(s[i]) )
			return 1;
	}

	return 0;
}
```

```
int symbol(string s) {

	for (int i = 0; i < s.length(); i++) {

		if (((s[i] >= 32 && s[i] <= 47)  || (s[i] >= 58 && s[i] <= 64) || (s[i] >= 91 && s[i] <= 96))) {

			return 0;
		}
	}
	return 1;
}

int capital(string s) {

	for (int i = 0; i < s.length(); i++) {

		if (s[i] >= 65 && s[i] <= 90) {

			return 0;
		}
	}
	return 1;
}
```

Q9.Write a C++ program to accept Gmail id only and throw an exception if the id does not contain @ and gmail.com.

```
#include <iostream>
using namespace std;

int valid(string str);

int main() {

	string str;

	cout << "Enter Gmail id : ";
	getline(cin, str);

	try {

		if (valid(str)) {
			throw "Enter correct gmail id";
		} else {
			cout << "Gmail id correct";
		}
	} catch (const char *s) {
		cout << s;
	}
}

int valid(string str) {

	if (str.at(0) != '@') {

		string s = "@gmail.com";

		int f = str.find(s);

		if (f == -1) {
			return 1;
		} else {
			return 0;
		}

	} else {
		return 1;
	}
}
```

Q10. Write a C++ program to accept Nickname and throw an exception if it has greater than 8 characters or does contain a digit or special symbol or space.

```
#include <iostream>
#include <string>
using namespace std;

int digit(string s);
int symbol(string s);
int space(string s);

int main() {

	string str;

	cout << "Enter Nickname : ";
	getline(cin, str);

	try {

		if (str.length() >= 9) {

			throw "your nickname is greater than 8 character";
		}

		if (digit(str)) {

			throw "your nickname contain digit";
		}

		if (symbol(str)) {

			throw "your nickname contain special symbol";
		}

		if (space(str)) {

			throw "your nickname contain space";
		}

	} catch (const char *s) {
		cout << s;
	}
}

int digit(string s) {

	for (int i = 0; i < s.length(); i++) {
		if ( isdigit(s[i]) )
```

```
                return 1;
        }

        return 0;
}

int symbol(string s) {

        for (int i = 0; i < s.length(); i++) {

                if (((s[i] >= 33 && s[i] <= 47)  || (s[i] >= 58 && s[i] <= 64) || (s[i] >= 91 && s[i] <= 96))) {

                        return 1;
                }
        }
        return 0;
}

int space(string s) {

        for (int i = 0; i < s.length(); i++) {

                if (s[i] == ' ') {

                        return 1;
                }
        }
        return 0;
}
```