~\OneDrive\Desktop\p3.cpp

```cpp
1   #include<iostream>
2   #include<cmath>
3   using namespace std;
4   //1
5   int maxNumber(int a,int b){
6       if(a>b){
7           return a;
8       }
9       else{
10          return b;
11      }
12  }
13  //2
14  int factorial(int n){
15      int r=1;
16      if(n==0){
17          return 1;
18      }
19      else{
20          for(int i=1;i<=n;i++){
21              r*=i;
22          }
23      }
24      return r;
25  }
26  //3
27  void reversenum(int n){
28      while(n!=0){
29          int a=n%10;
30          n=n/10;
31          cout<<a;
32      }
33  }
34  //4
35  int sod(int n){
36      int sum=0;
37      while(n!=0){
38          int a=n%10;
39          sum+=a;
40          n=n/10;
41      }
42      return sum;
43  }
44  //5
45  bool palindrome(int n){
46      int c=0,oa=n;
47      while(n!=0){
48          n=n/10;
```

```
49              c++;
50          }
51      int a[c];
52      for(int i=0;i<c;i++){
53              while(oa!=0){
54                  a[i]=oa%10;
55                  oa/=10;
56                  continue;
57              }
58      }
59      int b;
60      for(int i=0;i<c;i++){
61
62          if(a[i]==a[c-1-i]){
63              b=true;
64          }
65          else{
66              b=false;
67              break;
68          }
69      }
70      return b;
71  }
72  //6
73  int fibbo(int n){
74      int arr[n];
75      arr[0]=0;
76      arr[1]=1;
77      for(int i=2;i<n;i++){
78          arr[i]=arr[i-1]+arr[i-2];
79      }
80      return arr[n-1];
81  }
82  //7
83  void gcd(int a,int b){
84      int oa=a,ob=b,r=1;
85      while(a!=1||b!=1){
86          if(a%i==0 && b%i==0){
87              r*=i;
88              a/=i;
89              b/=i;
90          }
91
92          else if(a%i==0){
93              r*=i;
94              a/=i;
95          }
96          else if(b%i==0){
97              r*=i;
98              b/=i;
```

```cpp
 99            }
100            else{
101                i++;
102            }
103        }
104        cout<<"HCF:"<<(oa*ob)/r<<endl;
105 }
106 //8
107 void print(string s){
108     cout<<s<<endl;
109 }
110 void print(int a){
111     cout<<a<<endl;
112 }
113 void print(string s,int a){
114     cout<<s<<" "<<a;
115 }
116 //9
117 class s{
118     public:
119     void sum(int a,int b){
120         cout<<a+b<<endl;
121     }
122     void sum(double c,double d,double e){
123         cout<<c+d+e<<endl;
124     }
125     void sum(int a,float d){
126         cout<<a+d<<endl;
127     }
128 };
129 //10
130 void multiply(int a,int b){
131     cout<<a*b<<endl;
132 }
133 void multiply(int a,double c){
134     cout<<a*c<<endl;
135 }
136 void multiply(float c,float d,float e){
137     cout<<c*d*e<<endl;
138 }
139 //11
140 void greet(string name,int age,string country){
141     cout<<"your name:"<<name<<endl;
142     cout<<"your age:"<<age<<endl;
143     cout<<"your country:"<<country<<endl;
144 }
145 //12
146 void area(int a,int b){
147     cout<<"rectangle area:"<<a*b;
148 }
```

```cpp
149   void area(int c){
150       cout<<"square area:"<<c*c;
151   }
152   void area(double r){
153       cout<<"circle area:"<<3.14*r*r;
154   }
155   //13
156   void concat(string s1,string s2){
157       cout<<"concat. string will be:"<<s1<<s2<<endl;
158   }
159   void concat(int a,string s1){
160       int c=0,oa=a;
161       while(a!=0){
162           a=a/10;
163           c++;
164       }
165       int arr[c];
166       int i=0;;
167       while(oa!=0){
168           arr[i]=oa%10;
169           i++;
170       }
171       for(int j=c-1;j>=0;j--){
172           cout<<char(arr[j]);
173       }
174       cout<<s1;
175   }
176   //14
177   void power(int a,int b){
178       cout<<pow(a,b);
179   }
180   void power(float d,int a){
181       cout<<pow(d,a);
182   }
183   //15
184   va_list args;
185   va_start(args, count);
186
187   int sum = 0;
188   for(int i=0;i<count;i++){
189       sum = sum+ va_arg(args,int);
190   }
191   va_end(args);
192   return sum;
193   int main(){
194       //1
195       int a,b;
196       cout<<"provide two numbers:"<<endl;
197       cin>>a>>b;
198       int r=maxNumber(a,b);
```

```cpp
199        cout<<"max:"<<r<<endl;
200        //2
201        int n;
202        cout<<"enter the number:"<<endl;
203        cin>>n;
204        int r=factorial(n);
205        cout<<"factorial:"<<r<<endl;
206        //3
207        int n;
208        cout<<"enter the number:"<<endl;
209        cin>>n;
210        reversenum(n);
211        //4
212        int n;
213        cout<<"enter the number:"<<endl;
214        cin>>n;
215        int r=sod(n);
216        cout<<"sum:"<<r<<endl;
217        //5
218        int n;
219        cout<<"enter the number:"<<endl;
220        cin>>n;
221        int r=palindrome(n);
222        cout<<"result:"<<r<<endl;
223        //6
224        int n;
225        cout<<"enter the number:"<<endl;
226        cin>>n;
227        int r=fibbo(n);
228        cout<<"result:"<<r<<endl;
229        //7
230        int a,b;
231        cout<<"enter the 2 numbers:";
232        cin>>a>>b;
233        gcd(a,b);
234        //8
235        int a;
236        string s;
237        cin>>s>>a;
238        print(s);
239        print(a);
240        print(s,a);
241        //9
242        int a,b;
243        float c,d,e;
244        cout<<"enter 2 integers and 3 float values:"<<endl;
245        cin>>a>>b>>c>>d>>e;
246        s s1;
247        s1.sum(a,b);
248        s1.sum(c,d,e);
```

```cpp
249        s1.sum(a,c);
250        //10
251        int a,b;
252        float c,d,e;
253        cout<<"enter 2 integers and 3 float values:"<<endl;
254        cin>>a>>b>>c>>d>>e;
255        multiply(a,b);
256        multiply(c,d,e);
257        multiply(a,c);
258        //11
259        string n,c;
260        int a;
261        cout<<"enter your age,name,country:"<<endl;
262        cin>>a>>n>>c;
263        greet(n,a,c);
264        //12
265        int a,b,c;
266        float r;
267        cout<<"enter the length and width of the the rectangle:"<<endl;
268        cin>>a>>b;
269        cout<<"enter the side of the square:"<<endl;
270        cin>>c;
271        cout<<"enter the radius of the circle:"<<endl;
272        cin>>r;
273        area(a,b);
274        area(c);
275        area(r);
276        //13
277        string s1,s2;
278        int a;
279        cout<<"enter 2 strings and 1 integer value"<<endl;
280        cin>>s1>>s2>>a;
281        concat(s1,s2);
282        concat(a,s1);
283        //14
284        int a,b;
285        float d;
286        cout<<"enter 2 integers and one float value:"<<endl;
287        cin>>a>>b>>d;
288        power(a,b);
289        power(d,a);
290        //15
291        cout<<"Sum of 1,2,3,4,5: "<<sum(5,1,2,3,4,5,6,7,8)<<endl;
292        cout<<"Sum of 1,2,3: "<<sum(3,1,2,3)<<endl;
293 }
```