

PRACE Summer of HPC 2020

30 June 2020 to 31 August 2020

CET timezone

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✉ sohpc16-coord@fz-juelic...

Registration

Application Form

☎ **Contact info**
sohpc@hpc.fs.uni-lj.si

i When registering please fill in all fields. Applicants need to provide the email address of a reference who knows him/her well enough to assess her/his abilities for the programme and who is willing to write a letter of recommendation in support of his/her application. The PRACE Summer of HPC coordinator will contact these referees directly. Applicants must waive their rights to access returned documents. Applicants without recommendation returned will not be considered. Please note that recommendation invites to your referee are not automatic as we firstly check your application for eligibility and then, usually within the same day, send request by email to your referee. At the application submission you will receive an automatic e-mail that contains a link which allows you to modify application one day after applications are closed. Applicants may apply 2 days after the deadline as long as they are sure that the recommendation will be received in time. Successful applicants will be notified no later than 6 April 2020. Please, contact us if you have any questions, problems with submission.

Please, do not submit your application more than once! Once submitted you will immediately receive email with registration summary that contains link for further modifications of the registration form until submission deadline.

Sample of the Registration Form is available in PDF under Overview for reference only!

1. Contact and Personal Information

Please complete the information below, filling in the text boxes or selecting from the drop down boxes where relevant.

Title

First Name(s) *

Surname(s) *

Address

City *

Country *

Phone
Do not enter (). Just numbers and + is allowed

Email *

Gender * Male Female

Age (years) *
How old are you?

Curriculum Vitae * no file selected

Please provide your CV (in PDF if possible).

Nationality

Personal homepage

2. Your University/Institution

Please complete the information below, filling in the text boxes or selecting from the drop down boxes where relevant.

Institution name *

Institution address

Institution City *

Institution Country *

Department

Undergraduate *

Please specify Programme below if your answer is NO

Programme

Course

Year

3. Motivation

Please explain your interest in HPC and PRACE and why you would like to participate in the Summer of HPC Programme (max 500 words).

The form can be expanded by dragging the lower-right hand corner

Reason

4. Project selection

Please enter the project reference number for your preferred projects and explain why you selected these. See list <http://summerofhpc.prace-ri.eu/projects-2019/>. The project reference numbers can be found under each project description.

Please state how you meet the prerequisites which can be found in the project description. You may repeat the procedure for up to 3 of your most preferred projects but the minimum is 2 projects.

Please note that the preferred projects are not guaranteed to the successful applicants .

First Choice:

1

* *Please select the project reference title*

First Choice: Why do you have a preference for this project? *

Max 200 words

First Choice: How do you meet the prerequisites?

Max 100 words

Second Choice:

2

** Please select the project reference title*

Second Choice: Why do you have a preference for this project? *

Max 200 words

Second Choice: How do you meet the prerequisites?

Max 100 words

Third Choice:

3

Please select the project reference title

Third Choice: Why do you have a preference for this project?

Max 200 words

Third Choice: How do you meet the prerequisites?

Max 100 words

Project ID

5. Social media

The Summer Of HPC program is centered around outreach and participants play a significant role in that. Blogging and the use of social media are a large part of the outreach aspect. What experiences in blogging, writing, and social media do you have that can contribute to your participation in the outreach portion of the program?

Social media *

Max 300 words

6. Special Considerations

Please note: this section is optional. Please let us know if you have any special needs or requirements, which we can facilitate e.g. wheel-chair accessible accommodation etc. All information will be treated confidentially and will not be considered as part of the student selection process.

Optional

7. Please provide the contact details for your academic referee

Please give the contact details of an Academic Referee who may be contacted to give a statement in support of your application. PRACE Summer of HPC programme requires that you waive your rights to access information returned by referee! If the recommendation by referee is not returned timely (one week after invitation received) your application will be incomplete and consequently rejected. Please note that invitations must be set manually and be done in batches so there is a delay between application submitted and invitation received.

Referee Title

Referee First Name *

Referee Surname *

Referee Email *

Referee Institution *

Referee Country

Connection

Please describe how the reference knows you.

Waiver *
By checking box you waive your rights to access recommendation.

8. Code Test

Below you will find a programming exercise that you must attempt and submit with your application. You may complete the exercise in C, C++, Fortran, Java or Python. Code should be in plain text. We are keen to see how you approached each problem, even if you did not arrive at a full solution. Therefore please submit incomplete code rather than no code at all. Please flag areas that are incorrect or incomplete with comments.

NOTE, programming example can be solved in many many different ways, all of which are correct with huge differences in efficiencies between them.

Programming Exercise background

The following expansion, shown in image (open the following link in a new tab) <https://events.prace-ri.eu/event/845/images/127-pi-series.png>, gives an approximation to the exact value of π . For example, it is easy to check by hand that for $N=1$ the result is as shown in equation image (open the following link in a new tab) <https://events.prace-ri.eu/event/845/images/126-pi-example.png>. It can be shown that the approximation continues to become more accurate as N is increased.

Exercises

Note that you must use double-precision variables for ALL floating-point numbers.

Exercise 1

Write a program in C, C++, Fortran, Java or Python that computes an approximation to π using the above formula for the following values of N : 1, 2, 10, 50, 100, 500. For each value of N , print out the approximate value $\pi(N)$ and the error $err(N)$. The error is the difference between $\pi(N)$ and the true value of π , ie $err(N) = \pi(N) - \pi$. As N increases the value of the error should decrease.

Source code for Exercise 1 no file selected

Screen Output for Exercise 1 (Even if you did not arrive to a

full solution):

Exercise 2

We now want to find out the minimum value of N that is required to give a value for $\pi(N)$ that is accurate to some specified value. We will call this value N_{min} . By computing $\pi(N)$ for increasing values of N , calculate N_{min} such that $err(N_{min}) < 10^{-6}$

Source code for Exercise 2

no file selected

Screen Output for Exercise 2 (Even if you did not arrive to a full solution):

Exercise 3

This way of computing N_{min} is clearly inefficient. For example, if we require $err(N_{min}) < 10^{-6}$. and we calculate $err(2) = 0.02$, it is a waste of time to calculate $err(3)$ as it is already obvious that N_{min} is very much larger than 2! Rewrite your program so that it uses a more efficient way to locate the minimum value of N . Your new method must produce exactly the same value for N_{min} as before but should be faster. For example, you might try and reduce the number of times that you have to evaluate $err(N)$. You should also tell us how much faster your new program is.

Source code for Exercise 3

no file selected

Screen Output for Exercise 3 (Even if you did not arrive to a full solution):

Explain

Does the increase in speed vary depending on the accuracy that is required? If so, can you explain this variation?

Signature

By typing your name into the space provided, you certify that all the information entered in the form is accurate and true and that you are the author of the source code.

Signature

Remarks

Please note that all information will be treated as strictly confidential. By submitting this form you authorise PRACE to use your data for the purpose of the selection procedure of Summer of HPC and for follow-on correspondence. Eligible applicants will remain listed on the web page. Non eligible applicants will be notified and erased at the end of the summer.

Feedback

We want to learn from your experience on application process. Please provide us the following stats.

Leads

- None
- Email from Professor/Lecturer
- Email from Career Services
- Email from Graduate Club

- Email from Society Club
- Saw the flyer on the campus
- Through other students
- Announcement in the class
- Friends liked Facebook page
- Facebook add
- Twitter
- Blog
- PRACE website
- Email from PRACE contact
- PRACE partner website
- Flyer via PRACE partner
- Following some other web sites/portals
- Accidentally browsing web
- Other (describe below)

Where did you heard about Summer of HPC programme?

Other or comment

Any comment on the application process?

*(All the fields marked with * are mandatory)*

Register



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